QUESTION 421.1

The Quality Assurance Branch (QAB) has reviewed Pennsylvania Power and Light Company's (PP&L) Fire Protection Report (dated January 18, 1978) for Susquehanna Steam Electric Station (SSES) Units 1 and 2. This report was submitted in response to Mr. Boyd's letter of September 30, 1976. Based on our review of this information, we find that adequate information has not been submitted by PP&L to permit completion of the QAB review of the fire protection program.

Item 26 (pg. 3-48) of your submittal does not indicate what the management control of the QA organization consists of. The description for QA management should consist of (1) formulating and/or verifying that the fire protection QA program incorporates suitable requirements and is acceptable to the management responsible for fire protection through review, surveillance, and audits. Performance of other QA program functions for meeting the fire protection program requirements may be performed by personnel outside of the QA organization. The QA program for fire protection should be part of the overall plant QA program. These QA criteria apply to those items within the scope of the fire protection program, such as fire protection systems, emergency lighting, communication and breathing apparatus, as well as the fire protection requirements of applicable safety-related equipment.

RESPONSE*:

Subsections 17.2.1.1.2 and 17.2.2 have been revised to include this information.

* The response provided to this question was to address a NRC concern at the time of the application for the operating license. This question and response are provided here for historic purposes only and will not be updated. Any revisions to the Nuclear Quality Assurance Organization have been submitted per 10CFR50.54(a) and are described in Section 17.2 of the FSAR.

QUESTION 421.2

We find that your response to Mr. Boyd's letter of September 30, 1976, does not describe sufficient detail to address the ten specific quality assurance criteria in Branch Technical Position ASB 9.5-1. In order for the QAB to fully evaluate your approach for meeting these criteria, additional detailed description is necessary. Examples of the detail we would expect PP&L to consider are provided in Attachment 6 of Mr. D. B. Vassallo's letter of August 29, 1977. If, however, you choose not to provide this detail, you may apply the same controls to each criterion that are commensurate with the controls described in your QA program for operations. These controls would apply to the remaining construction activities and for the operations phase of Unit Nos. 1 and 2. If you select this method, a statement to this effect would be adequate for our review of the fire protection QA program.

RESPONSE*:

Subsection 17.2.2 and Table 17.2.1 have been revised to provide this information. It is emphasized that this commitment does not take effect until the fire protection systems are turned over from the responsible contractor to PP&L control.

* The response provided to this question was to address a NRC concern at the time of the application for the operating license. This question and response are provided here for historic purposes only and will not be updated. Any revisions to the Nuclear Quality Assurance Organization have been submitted per 10CFR50.54(a) and are described in Section 17.2 of the FSAR.

QUESTION 421.3

Provide a description of how the QA Supervisor (located onsite) communicates with the offsite QA organizations relative to matters concerning QA/QC, and describe those conditions for determining when these actions should take place. The offsite/onsite interface should also be shown on the applicable organizational charts in the QA program description.

RESPONSE*:

Subsection 17.2.1.1.1.4.1.1.1 and Figure 17.2-4 have been revised to include this information.

* The response provided to this question was to address a NRC concern at the time of the application for the operating license. This question and response are provided here for historic purposes only and will not be updated. Any revisions to the Nuclear Quality Assurance Organization have been submitted per 10CFR50.54(a) and are described in Section 17.2 of the FSAR.

QUESTION 421.4

Identify on organizational charts the reporting relationship of the Nuclear Review Board.

RESPONSE:

Figures 17.2-2 and 17.2-3 have been revised to include this information.

QUESTION 421.5

FSAR Figure 17.2-2 has an organizational block listed as "others." Clarify what "others" are and describe their QA/QC functions, if any.

RESPONSE*:

FSAR Figures 17.2-2 and 17.2-3 have been revised.

* The response provided to this question was to address a NRC concern at the time of the application for the operating license. This question and response are provided here for historic purposes only and will not be updated. Any revisions to the Nuclear Quality Assurance Organization have been submitted per 10CFR50.54(a) and are described in Section 17.2 of the FSAR.

QUESTION 421.6

Describe in more detail the specific responsibilities of the Nuclear Quality Assurance Staff in executing the SSES QA program.

RESPONSE*:

Subsection 17.2.1.1.2 has been revised to include this information.

* The response provided to this question was to address a NRC concern at the time of the application for the operating license. This question and response are provided here for historic purposes only and will not be updated. Any revisions to the Nuclear Quality Assurance Organization have been submitted per 10CFR50.54(a) and are described in Section 17.2 of the FSAR.

QUESTION 421.7

Describe in more detail those "quality activities" (ref. FSAR page 17.2-6) performed by the Manager, Power Production.

RESPONSE*:

Subsection 17.2.1.1.1.4 has been revised to include this information.

* The response provided to this question was to address a NRC concern at the time of the application for the operating license. This question and response are provided here for historic purposes only and will not be updated. Any revisions to the Nuclear Quality Assurance Organization have been submitted per 10CFR50.54(a) and are described in Section 17.2 of the FSAR.

QUESTION 421.8

Describe provisions which assure that the Vice-President, Systems Power and Engineering, maintains a continuing involvement in QA matters and how he communicates through intermediate levels of management. (e.g., review and concurrence of SSES operations, administrative control, and operational QA program.)

RESPONSE*:

Subsection 17.2.1.1 has been revised to include this information.

* The response provided to this question was to address a NRC concern at the time of the application for the operating license. This question and response are provided here for historic purposes only and will not be updated. Any revisions to the Nuclear Quality Assurance Organization have been submitted per 10CFR50.54(a) and are described in Section 17.2 of the FSAR.

QUESTION 421.9

Clearly identify the individual/position responsible for having overall responsibility and authority for the SSES operational QA program.

RESPONSE*:

Subsection 17.2.1.1 has been revised to include this information.

* The response provided to this question was to address a NRC concern at the time of the application for the operating license. This question and response are provided here for historic purposes only and will not be updated. Any revisions to the Nuclear Quality Assurance Organization have been submitted per 10CFR50.54(a) and are described in Section 17.2 of the FSAR.

QUESTION 421.10

Describe the amount of nuclear quality assurance experience required for the position of Quality Assurance Manager. The amount of experience should be at least equal to the one year experience listed in paragraph 4.4.5 of ANSI/ANS-3.1-1978, "Selection and Training of Nuclear Power Plant Personnel."

RESPONSE*:

Subsection 17.2.1.1.2 has been revised to include this information.

* The response provided to this question was to address a NRC concern at the time of the application for the operating license. This question and response are provided here for historic purposes only and will not be updated. Any revisions to the Nuclear Quality Assurance Organization have been submitted per 10CFR50.54(a) and are described in Section 17.2 of the FSAR.

QUESTION 421.11

Describe the qualifications established for the QA Supervisor regarding quality assurance and quality control related experience.

RESPONSE*:

Subsection 17.2.1.1.1.4.1.1.1 has been revised to include this information.

* The response provided to this question was to address a NRC concern at the time of the application for the operating license. This question and response are provided here for historic purposes only and will not be updated. Any revisions to the Nuclear Quality Assurance Organization have been submitted per 10CFR50.54(a) and are described in Section 17.2 of the FSAR.

QUESTION 421.12

Describe the measures which assure that personnel (including those outside the QA/QC organization) performing QA/QC functions have sufficient authority and organizational freedom to:

a) Identify quality problems.
b) Initiate, recommend, or provide solutions through designated channels, and
c) Verify implementation of solutions.

This description should also include measures to assure that verification of conformance to established requirements is accomplished by individuals or groups who do not have direct responsibility for performing the work being verified.

RESPONSE*:

10CFR50 Appendix B, Criterion I, states in part, "The persons and organizations performing quality assurance functions shall have sufficient authority and organizational freedom to identify quality problems; to initiate, recommend, or provide solutions; and to verify implementation of solutions."

The overall quality assurance program responsibilities lie with the NQA Section. Its organizational reporting path is shown in Figures 17.2-2 and 17.2-3. By reporting directly to the Executive Vice President - Operations and in accordance with statements made in Subsection 17.2.1.1.2, the Manager - NQA has the required authority and freedom.

The reporting path of the Station Quality Supervisor is shown in Figure 17.2-4. Since the Quality Supervisor reports to the Superintendent of Plant, he and his staff are independent of the individuals who are directly responsible for performing the work being verified. In addition, the Quality Supervisor has direct recourse to the Manager - NQA in situations where he and the Superintendent of Plant disagree over quality requirements. (Refer to Subsection 17.2.1.1.1.4.1.1.1.)

Other organizations within PP&L do not perform quality assurance functions as used in the context of 10CFR50 Appendix B, Criterion I.

* The response provided to this question was to address a NRC concern at the time of the application for the operating license. This question and response are provided here for historic purposes only and will not be updated. Any revisions to the Nuclear Quality Assurance Organization have been submitted per 10CFR50.54(a) and are described in Section 17.2 of the FSAR.

QUESTION 421.13

Clarify whether the stop work authority vested in the Manager - NQA is delineated in writing.

RESPONSE*:

In addition to the description in Subsection 17.2.1.1.2, the authority of the Manager - NQA to stop work is contained in Operational Policy Statement, OPS-5, Deficiency Control (refer to Table 17.2-2).

* The response provided to this question was to address a NRC concern at the time of the application for the operating license. This question and response are provided here for historic purposes only and will not be updated. Any revisions to the Nuclear Quality Assurance Organization have been submitted per 10CFR50.54(a) and are described in Section 17.2 of the FSAR.

QUESTION 421.14

Describe provisions which assure that management (i.e., above or outside the QA organization) annually assesses the scope, status, implementation, and effectiveness of the QA program to assure that the program is functioning adequately and complies with 10 CFR Part 50, Appendix B criteria, and that the results of this assessment are documented.

RESPONSE*:

See Subsection 17.2.1.

* The response provided to this question was to address a NRC concern at the time of the application for the operating license. This question and response are provided here for historic purposes only and will not be updated. Any revisions to the Nuclear Quality Assurance Organization have been submitted per 10CFR50.54(a) and are described in Section 17.2 of the FSAR.

QUESTION 421.15

Table 17.2-1 of the FSAR addresses those Regulatory Guides and ANSI standards applicable to the operational QA program and the degree of compliance thereto. Since the docketing of your application (July 31, 1978), certain of these Regulatory Guides (RG) and ANSI standards have been upgraded and differ from the dates stated in Table 17.2-1. Therefore, update your application, and provide a specific commitment to comply with the regulatory positions of each of the following Regulatory Guides and ANSI standards: (RG 1.28, Rev. 1; RG 1.33, Rev. 2; RG 1.38, Rev. 2; RG 1.39, Rev. 2; RG 1.116, Rev. 0-R; RG 1.123, Rev. 1; and ANSI N45.2.12, Draft 3, Rev. 4, 2/22/74 or ANSI N45.2.12, Draft 4, Rev. 2, 1/1/76, as supplemented by regulatory position 4 of Regulatory Guide 1.33, Rev. 2 (2/78). Any exceptions and/or alternatives to the above Regulatory Guides/ANSI standards should be described in sufficient supporting detail to allow for NRC evaluation and acceptance.

RESPONSE*:

Refer to Table 17.2-1. The subject table has been modified to reference each of the indicated Regulatory Guides. However, the version of ANSI N45.2.12 remains as Draft 4, Revision 3, November 29, 1976. PP&L feels that this standard is more desirable since it is more current than the drafts indicated in the subject question. Thus, it reflects more recent industry practice.

* The response provided to this question was to address a NRC concern at the time of the application for the operating license. This question and response are provided here for historic purposes only and will not be updated. Any revisions to the Nuclear Quality Assurance Organization have been submitted per 10CFR50.54(a) and are described in Section 17.2 of the FSAR.

QUESTION 421.16

It is not clear as to your interpretation of the term "Commitment of the extent required by ANSI N18.7-1976" as used in FSAR Table 17.2.1. Please provide a more detailed explanation of what "Commitment to the extent required by ANSI N18.7-1976" means to PP&L and how it is to be used to assure consistent interpretation within PP&L.

RESPONSE*:

"Commitment to the extent required by ANSI N18.7-1976" is based upon the guidance presented in ANSI 18.7-1976 as far as the application of certain standards that are identified in Table 17.2-1. ANSI N18.7-1976 requires that these standards be applied to"...those activities occurring during the operational phase that are comparable in nature and extent to related activities occurring during construction."

To assure consistent interpretation of this commitment within PP&L, the Manager - NQA is responsible for reviewing extraordinary activities (such as major modifications) and determining when the above "nature and extent" criteria have been met. In those cases where he determines that the "nature and extent" criteria have been met, he shall direct, with the concurrence of the Executive VP - Operations, that the affected OQA Program documents be augmented to include the appropriate additional ASNI standard requirements.

As permitted by ANSI N18.7-1976, the standards indicated on Table 17.2-1 will be used as guidance in the preparation of program documents and procedures when the "nature and extent" criteria above are not met.

* The response provided to this question was to address a NRC concern at the time of the application for the operating license. This question and response are provided here for historic purposes only and will not be updated. Any revisions to the Nuclear Quality Assurance Organization have been submitted per 10CFR50.54(a) and are described in Section 17.2 of the FSAR.

QUESTION 421.17

Describe those provisions which assure that the docketed QA program description, particularly the commitment to Regulatory Guides and ANSI standards, will be properly carried out and with the use of QA procedures.

RESPONSE*:

Provisions which assure that the docketed QA program description, particularly the commitment to Regulatory Guides and ANSI Standards, will be properly carried out in accordance with instructions, procedures or drawings are as follows:

- By his review of Functional Unit Procedures, the Manager - NQA assures that each functional unit within PP&L recognizes the applicable OQA Program commitments and incorporates these commitments into their procedures.

- All functional units within PP&L are subject to formal periodic audits performed by NQA. These audits verify that the functional units are complying with and properly implementing their procedures.

- The Nuclear Review Board periodically assesses the scope, status, implementation and effectiveness of the OQA Program.

Refer to Subsections 17.2.1, 17.2.1.1.2 and 17.2.18.

* The response provided to this question was to address a NRC concern at the time of the application for the operating license. This question and response are provided here for historic purposes only and will not be updated. Any revisions to the Nuclear Quality Assurance Organization have been submitted per 10CFR50.54(a) and are described in Section 17.2 of the FSAR.

QUESTION 421.18

Provide a summary description on how responsibilities and control of quality-related activities are transferred between PP&L and principal contractors during the phaseout of design and construction and during preoperational testing and plant turnover.

RESPONSE*:

The responsibilities and control of quality-related activities are assigned to the organization retaining jurisdiction over the material, equipment, structure or system in question. This has been defined as:

1. Prior to turnover - the responsible contractor

2. Following turnover - PP&L

3. Items returned to a contractor for repair, rework, modification after having been turned over to PP&L - the responsible contractor.

The requirements for the transfer of material, equipment, structures or systems have been defined in the PP&L Quality Assurance Manual which provides procedures that are applicable to the construction and preoperational testing phases. The Startup Administrative Manual provides the specific details for implementing the responsibilities for the interface and control of quality-related activities for the preoperational testing and plant turnover phases.

In addition, the NQA Section performs audits to determine that the programmatic and procedural requirements are being fulfilled.

* The response provided to this question was to address a NRC concern at the time of the application for the operating license. This question and response are provided here for historic purposes only and will not be updated. Any revisions to the Nuclear Quality Assurance Organization have been submitted per 10CFR50.54(a) and are described in Section 17.2 of the FSAR.

QUESTION 421.19

Describe what measures to assure that appropriate 10 CFR Part 50 Appendix B requirements will be applied to the preoperational test program.

RESPONSE*:

The preoperational testing program is being conducted in accordance with the requirements of the PP&L Quality Assurance Manual which is applicable to both plant construction and preoperational testing. The provisions in this manual have been subjected to several NRC I&E Region I inspections and are assessed annually through an independent audit which is authorized by the PP&L QA Council. In all cases, the manual has been found to satisfactorily meet the requirements of 10CFR50 Appendix B.

* The response provided to this question was to address a NRC concern at the time of the application for the operating license. This question and response are provided here for historic purposes only and will not be updated. Any revisions to the Nuclear Quality Assurance Organization have been submitted per 10CFR50.54(a) and are described in Section 17.2 of the FSAR.

QUESTION 421.20

Describe provisions which assure that the NRC will be notified of changes to the accepted SAR QA program description prior to implementation and of changed to organizational elements within 30 days after announcement. (Note - minor editorial changes or personnel reassignments of a nonsubstantive nature do not require NRC notification.)

RESPONSE*:

PP&L intends to keep the NRC fully informed in regard to changes to the OQA Program description through annual updates to the FSAR, revisions issued to controlled QA Manuals which NRC staff members may have in their possession, and other appropriate means.

* The response provided to this question was to address a NRC concern at the time of the application for the operating license. This question and response are provided here for historic purposes only and will not be updated. Any revisions to the Nuclear Quality Assurance Organization have been submitted per 10CFR50.54(a) and are described in Section 17.2 of the FSAR.

QUESTION 421.21

Identify those individuals evaluating the suppliers' capabilities to provide acceptable quality services and products prior to the award of procurement order or contract. (QA and Engineering should participate in the evaluation of those suppliers providing critical components.)

RESPONSE*:

Depending upon the item being procured, supplier evaluation is a joint effort of Power Plant Engineering, Nuclear Fuels and Nuclear Quality Assurance. Responsibility to provide this evaluation is assigned to the respective managers of these functional units in Subsections 17.2.1.1.1.2, 17.2.1.1.1.5 and 17.2.1.1.2.

* The response provided to this question was to address a NRC concern at the time of the application for the operating license. This question and response are provided here for historic purposes only and will not be updated. Any revisions to the Nuclear Quality Assurance Organization have been submitted per 10CFR50.54(a) and are described in Section 17.2 of the FSAR.

QUESTION 421.22

Clarify whether the purchase of spare or replacement parts of safety-related structures, systems, and components are subject to controls at least equivalent to those used for the original equipment.

RESPONSE*:

As stated in Subsection 17.2.4, "Procurement documents for safety-related spare or replacement parts for structures, systems and components are subject to controls the same as, or equivalent to, those used for the original equipment." The remainder of the procurement process will be at least equivalent to that used for the original equipment because of PP&L's commitment to more current regulatory guidance embodied in ASNI N45.2.13-1976 and ANSI N18.7-1976.

* The response provided to this question was to address a NRC concern at the time of the application for the operating license. This question and response are provided here for historic purposes only and will not be updated. Any revisions to the Nuclear Quality Assurance Organization have been submitted per 10CFR50.54(a) and are described in Section 17.2 of the FSAR.

QUESTION 421.23

Describe measures which assure that records are identifiable and retrievable.

RESPONSE*:

Per Subsection 17.2.17, the respective managers are responsible for developing procedures which control the origination of documents and provide for the inclusion of those documents in the QA Records System. PP&L is developing a microfilm based record management system with an on-line interactive computerized index that will provide access and retrievability of records in a reasonable time.

* The response provided to this question was to address a NRC concern at the time of the application for the operating license. This question and response are provided here for historic purposes only and will not be updated. Any revisions to the Nuclear Quality Assurance Organization have been submitted per 10CFR50.54(a) and are described in Section 17.2 of the FSAR.

QUESTION 421.24

Describe provisions to assure that the "offsite" QA organization:

a) Conducts sufficient audits to verify the activities conducted by the "onsite" QA organization.

b) Reviews and concurs in the schedule and scope of audits performed by the onsite QA organization.

RESPONSE*:

(a) The Nuclear Quality Assurance Section is responsible for auditing all safety-related aspects of nuclear plant operations. Subsection 17.2.18 describes the provisions used by the NQA Section in determining the frequency and types of activities that will be audited at the plant site. The schedule for auditing site activities will be based upon past audit results, observed trends, and the amount of success exhibited in implementing corrective action. As a minimum, the frequencies for audits performed by the NQA Section will parallel those specified in ANSI N45.2.12 (Draft 4, Rev. 3) and ANSI N18.7-1976. Furthermore, plant operations will be audited against the Susquehanna Technical Specifications to assure compliance with licensing commitments.

(b) The Station Quality Group reporting to the Superintendent of Plant has no responsibility for performing audits.

* The response provided to this question was to address a NRC concern at the time of the application for the operating license. This question and response are provided here for historic purposes only and will not be updated. Any revisions to the Nuclear Quality Assurance Organization have been submitted per 10CFR50.54(a) and are described in Section 17.2 of the FSAR.

QUESTION 421.25

Paragraph 17.2.1.1.1.4.1.1.1 on page 17.2-6 states the Quality Supervisor is assisted by Quality Specialists and engineers without identifying their reporting relationship on the appropriate organizational charts in Section 17.2 of the FSAR. The above paragraph implies there is more than one individual performing in these positions which appears to contradict the numbers specified in Figure 13.1-7. Please correct this discrepancy.

RESPONSE*:

Figure 17.2-4, Susquehanna Plant Staff Organization, only details the Plant Staff to the section head level with the inference that each of the supervisors have their own support personnel. Refer to Figure 13.1-7 for the reporting relationship of the Quality Supervisor and the quality specialists and engineers.

* The response provided to this question was to address a NRC concern at the time of the application for the operating license. This question and response are provided here for historic purposes only and will not be updated. Any revisions to the Nuclear Quality Assurance Organization have been submitted per 10CFR50.54(a) and are described in Section 17.2 of the FSAR.

QUESTION 421.26

The response to Q421.14 is not totally acceptable. Provide a description of how management (above or outside the QA organization) regularly assesses the scope, status, adequacy, and compliance of the QA program to 10 CFR 50 Appendix B. These measures should include:

(1) Frequent review of program status through reports, meetings and/or audits.

(2) Performance of an annual preplanned and documented assessment. Corrective action is identified and tracked.

Modify your QA program accordingly.

RESPONSE*:

Refer to Subsection 17.2.1.1 for response.

* The response provided to this question was to address a NRC concern at the time of the application for the operating license. This question and response are provided here for historic purposes only and will not be updated. Any revisions to the Nuclear Quality Assurance Organization have been submitted per 10CFR50.54(a) and are described in Section 17.2 of the FSAR.

QUESTION 421.27

The response to Q421.15 is not acceptable. The NRC has not endorsed N45.2.12 Draft 4, Revision 3 and therefore you should commit to comply with the provisions of ANSI N45.2.12 Draft 3, Revision 4, 2/22/74 or ANSI N45.2.12 Draft 4, Revision 2, 1/1/76 as supplemented by regulatory position C.4 of Regulatory Guide 1.33, Revision 2 (2/78). Any exceptions and/or alternatives to these controls should be described in sufficient supporting detail to allow for NRC evaluation and acceptance. Modify your QA program accordingly.

RESPONSE*:

Refer to Table 17.2-1 for response. This table has been updated to reference ANSI N45.2.12-1977 which has been endorsed by NRC Regulatory Guide 1.144.

* The response provided to this question was to address a NRC concern at the time of the application for the operating license. This question and response are provided here for historic purposes only and will not be updated. Any revisions to the Nuclear Quality Assurance Organization have been submitted per 10CFR50.54(a) and are described in Section 17.2 of the FSAR.

QUESTION 421.28

The response to Q421.16 requires clarification concerning the qualification requirements for individuals performing certain QA functions during the operational phase of your plant. Our position is as follows:

(1) The individuals performing inspection, examination and testing functions associated with normal operations of the plant, such as surveillance testing, routine maintenance and certain technical reviews normally assigned to the onsite operation organization shall be qualified to ANSI N18.1-1971.

(2) Personnel whose qualifications are not required to meet those specified in ANSI N18.1 and who are performing inspection, examination and testing activities during the operational phase of the plant shall be qualified to ANSI N45.2.6-1973 except that the QA experience cited for Levels I, II, and III shall be interpreted to mean actual experience in carrying out the types of inspection, examination and testing activity being performed.

This position is consistent with ANSI N18.7-1976, "Administrative Controls and Quality Assurance for the Operational Phase of Nuclear Power Plants," Section 3.4.2. Modify your QA program accordingly to address this staff position.

RESPONSE*:

Refer to Subsection 17.2.2 for response to this question.

* The response provided to this question was to address a NRC concern at the time of the application for the operating license. This question and response are provided here for historic purposes only and will not be updated. Any revisions to the Nuclear Quality Assurance Organization have been submitted per 10CFR50.54(a) and are described in Section 17.2 of the FSAR.

QUESTION 421.29

The response to Q421.20 is not acceptable. Describe provisions to notify the NRC of changes (1) to the accepted SAR QA program description prior to implementation, and (2) to organizational elements within 30 days after announcement. (Note - editorial changes or personnel reassignments of a non-substantive nature do not require NRC notification.) Modify your QA program accordingly.

RESPONSE*:

For response to this question, refer to Subsection 17.2.1.1.2.

* The response provided to this question was to address a NRC concern at the time of the application for the operating license. This question and response are provided here for historic purposes only and will not be updated. Any revisions to the Nuclear Quality Assurance Organization have been submitted per 10CFR50.54(a) and are described in Section 17.2 of the FSAR.

QUESTION 421.30

Describe measures to assure that responsible plant personnel are made aware of design changes/modifications which may affect the performance of their duties.

RESPONSE*:

Refer to Subsection 17.2.3 for response to this question.

* The response provided to this question was to address a NRC concern at the time of the application for the operating license. This question and response are provided here for historic purposes only and will not be updated. Any revisions to the Nuclear Quality Assurance Organization have been submitted per 10CFR50.54(a) and are described in Section 17.2 of the FSAR.

QUESTION 421.31

Clarify whether the Manager-Nuclear Quality Assurance reviews and concurs with changes to the onsite QA program.

RESPONSE*:

Please be advised that PP&L's QA program is an integrated program and is not divided into an "on-site QA program" and an "off-site QA program." Quality-related activities are performed on-site in accordance with Functional Unit Procedures which are responsive to the requirements of the OQA Manual (Refer to Figure 17.2-1). The Manager-NQA reviews the Functional Unit Procedures of all PP&L departments to assure compliance with the OQA Program, per Subsection 17.2.1.1.2. The review process provides a documented comment and resolution cycle that is subject to verification audits. Subsection 17.2.2 describes the contention process for resolving disagreements between NQA and other PP&L departments.

* The response provided to this question was to address a NRC concern at the time of the application for the operating license. This question and response are provided here for historic purposes only and will not be updated. Any revisions to the Nuclear Quality Assurance Organization have been submitted per 10CFR50.54(a) and are described in Section 17.2 of the FSAR.

QUESTION 421.32

Describe provisions which assure that maintenance, modification and inspection procedures are revised by qualified personnel knowledgeable in QA disciplines (normally the QA organization) to determine that the necessary inspection requirements, methods, and acceptance criteria have been identified.

RESPONSE*:

Refer to Subsection 17.2.1.1.1.4.1.1.1 for response. The adequacy and implementation of maintenance, modification and inspection procedures are verified by NQA in conjunction with its normally scheduled audits of such activities.

* The response provided to this question was to address a NRC concern at the time of the application for the operating license. This question and response are provided here for historic purposes only and will not be updated. Any revisions to the Nuclear Quality Assurance Organization have been submitted per 10CFR50.54(a) and are described in Section 17.2 of the FSAR.

QUESTION 421.33

Describe measures to assure that the QA organization or an individual qualified in quality assurance but other than the person who generated the document, reviews and concurs with the documents and changes thereto with regards to QA-related aspects to assure technical adequacy and inclusion of appropriate quality requirements prior to implementation. Such documents as a minimum include: design, procurement, as-built drawings, QA/QC manuals, SAR, non-conformance reports and instructions and procedures for inspection and testing.

RESPONSE*:

Refer to Subsection 17.2.6 for response to this question.

* The response provided to this question was to address a NRC concern at the time of the application for the operating license. This question and response are provided here for historic purposes only and will not be updated. Any revisions to the Nuclear Quality Assurance Organization have been submitted per 10CFR50.54(a) and are described in Section 17.2 of the FSAR.

QUESTION 421.34

Describe the organizational responsibilities for the control of purchased material, equipment, and services including the interface responsibilities of the QA organization relative to procurement.

RESPONSE*:

For response to this question, refer to Subsections 17.2.1.1.1.2, 17.2.1.1.1.2.1, 17.2.1.1.1.4.1.1.1, 17.2.1.1.1.5, 17.2.1.1.2 and 17.2.7.

* The response provided to this question was to address a NRC concern at the time of the application for the operating license. This question and response are provided here for historic purposes only and will not be updated. Any revisions to the Nuclear Quality Assurance Organization have been submitted per 10CFR50.54(a) and are described in Section 17.2 of the FSAR.

QUESTION 421.35

Describe the criteria for determining those processes that are controlled as special processes. As complete a listing as possible of special processes, which are generally those processes where direct inspection is impossible or disadvantageous, should be provided. Some examples are welding, heat treating, NDT, and chemical cleaning.

RESPONSE*:

See Subsection 17.2.9 for response to this question.

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QUESTION 421.36

Describe measures which assure that program procedures provide criteria for determining the accuracy requirements of inspection equipment and criteria for determining when inspections and tests are required.

RESPONSE*:

For response to this question, refer to Subsections 17.2.10 and 17.2.11.

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QUESTION 421.37

Describe provisions to assure that inspection procedures, instructions, or checklists provide, as required, for the following:

(1) Identification of required procedures, drawings and specifications and revisions.

(2) Specifying necessary measuring and test equipment including accuracy requirements.

RESPONSE*:

Refer to Subsection 17.2.10 for response to this question.

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QUESTION 421.38

Describe measures which assure that inspection results are documented, evaluated and their acceptability determined by a responsible individual or group.

RESPONSE*:

Refer to Subsection 17.2.10 for response to this question.

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QUESTION 421.39

Describe the organizational responsibilities for establishing, implementing, and assuring effectiveness of the calibration program.

RESPONSE*:

For response to this question, refer to Subsections 17.2.1.1.1.4.1.1.1 and 13.1.2.2.7.

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QUESTION 421.40

Describe the provisions established for the storage of chemical, reagents (including control of shelf life), lubricants, and other consumable materials.

RESPONSE*:

Refer to Subsection 17.2.13 for response to this question.

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QUESTION 421.41

The responses to the 421 series of questions appear to be separated from Section 17.2 of the FSAR. Incorporate or reference all responses to these QA questions in Section 17.2 of the FSAR. It is further requested that a statement be provided whereby the responses to Q421.1 and Q421.2 supersede previous submittals relative to QA for fire protection.

RESPONSE*:

The responses to the 421 series of questions have been incorporated, by revision, to Section 17.2 wherever possible. The few exceptions to this approach involve responses which only provided clarifying information that was felt to be unnecessary for inclusion directly in Section 17.2.

The responses to Questions 421.1 and 421.2 do, indeed, supersede previous submittals relative to QA for fire protection.

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QUESTION 421.42

It has come to our attention that some applicants did not intend to conduct confirmatory tests of some distribution systems and transformers supplying power to vital buses as required by Position 3 of Regulatory Guide 1.68, and more specifically by Part 4 of the staff position on degraded grid voltage (applied to all plants in licensing review by the Power Systems Branch since 1976). Part 4 of the degraded grid voltage position states as follows:

> "4. The voltage levels at the safety-related buses should be optimized for the full load and minimum load conditions that are expected throughout the anticipated range of voltage variations of the offsite power source by appropriate adjustment of the voltage tap settings of the intervening transformers. We require that the adequacy of the design in this regard be verified by actual measurement and by correlation of measured values with analysis results. Provide a description of the method for making this verification; before initial reactor power operation, provide the documentation required to establish that this verification has been accomplished."

Your test description in FSAR Chapter 14 does not contain sufficient detail for us to determine if you intend to conduct such a test. It is our position that confirmatory tests of all vital buses must be conducted including all sources of power supplies to the buses. Modify your test description to indicate that this testing will be conducted in accordance with Regulatory Guide 1.68 and the above cited position.

RESPONSE*:

Voltages recorded during the P100.1 Preoperational test (Subsection 14.2.12.1), were reviewed and analyzed against design calculations to assure optimal tap settings have been selected.

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