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Docket Nos.: 50-352/353

Mr. Edward G. Bauer, Jr.
Vice President & General Counsel
Philadelphia Electric Company
2301 Market Street
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Dear Mr. Bauer:

Subject: Request for Additional Information - Limerick (Quality Assurance)

The Quality Assurance Branch has reviewed FSAR Section 17 which describes your Quality Assurance Program. This review has indicated a need for the additional information delineated in Enclosure 1. To expedite the review, we would like to meet with the appropriate members of your staff in the near future to discuss the staff's requirements regarding quality assurance.

Please provide us, within 7 working days from receipt of this letter, with the date(s) on which you plant to respond to the above. Any questions concerning this information request should be directed to Dr. Harvey Abelson (301) 492-9774, the Licensing Project Manager.

Sincerely,

A. Schwencer, Chief
Licensing Branch No. 2
Division of Licensing

Enclosure:
As stated

cc: See next page

OFFICE	DL:LB#2/PM	DL:LB#2/BC					
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Limerick

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ENCLOSURE 1

REQUEST FOR ADDITIONAL INFORMATION

Limerick Units 1 & 2

260.0 Quality Assurance Branch

260.1 Identify in more detail on organizational charts all the "onsite" and "offsite" organizational elements which function under the cognizance of the QA program (such as design, engineering, procurement, manufacturing, construction, inspection, test, instrumentation and control, nuclear engineering, operations, and maintenance). (1A5)*

260.2 Describe the criteria for determining the size of the QA organization including the inspection staff. (1A5)

260.3 Describe those provisions which assure that verification of conformance to established requirements is accomplished by individuals or groups within the QA organization who do not have direct responsibility for performing the work being verified. If this function is performed by individuals other than the QA organization, then identify the organizational position and the QA/QC qualification of that position. (1B2)

260.4 Describe those provisions which assure that persons and organizations performing QA functions have direct access to management levels which will assure the ability to: (1B3)

a. Identify quality problems.

b. Initiate, recommend, or provide solutions through designated channels.

c. Verify implementation of solutions.

Those persons and organizations with the above authority are identified and a description of how those actions are carried out is provided.

260.5 Describe those provisions which assure that designated QA and QC personnel, sufficiently free from direct pressures for cost/schedule, have the responsibility delineated in writing to stop unsatisfactory work and control further processing, delivery, or installation of nonconforming material. (1B4a)

260.6 Describe those provisions which assure that designated QA/QC individuals are involved in day-to-day plant activities important to safety (i.e., the QA/QC organizations routinely attend and participate in daily plant work schedule and status meetings to assure they are kept abreast of day-to-day work assignment throughout the plant and that there is adequate QA/QC coverage relative to procedural and inspection controls, acceptance criteria, and QA/QC staffing and qualification of personnel to carry out QA assignments). (1B6)

* This designation represents the particular item of Standard Review Plan Section 17.1 that the requests originate from.

260.7 Describe the qualification requirements of the QA Manager which includes the following prerequisites: (1C2)

a. Management experience through assignments to responsible positions.

b. Knowledge of QA regulations, policies, practices, and standards.

c. Experience working in QA or related activity in reactor design, construction, or operation or in a similar high technological industry.

The qualifications of the QA Manager should be at least equivalent to those described in Section 4.4.5 of ANSI/ANS-3.1-1978, "Selection and Training of Nuclear Power Plant Personnel," as endorsed by the regulatory positions in Regulatory Guide 1.8.

260.8 Identify the position responsible for the onsite QA/QC program and describe those provisions which assure this position has appropriate organizational responsibilities and authority to exercise proper control over the QA program. (1C3)

260.9 Describe those provisions which assure that the development, control and use of computer code programs associated with items important to safety will be conducted in accordance with the QA program and a description of how the QA program will be applied. (2A1c)

260.10 Describe or reference the QA program that will apply to the fire protection program.

260.11 Describe those provisions for notifying NRC of changes (1) for review and acceptance in the accepted description of the QA program as presented or referenced in the SAR prior to implementation, and (2) in organizational elements within 30 days after announcement. (Note - editorial changes or personnel reassignments of nonsubstantive nature do not require NRC notification). (2B2)

260.12 Describe those QA program provisions which assure that PEC will comply with 10 CFR Part 50, §50.55a; will conduct activities under 10 CFR Part 50, §50.55(e) in accordance with the QA program; and will comply with 10 CFR Part 50, Appendix A, General Design Criterion 1 for the Limerick Station, Units 1 & 2.

260.13 Describe those provisions which assure that the QA organization and the necessary technical organizations participate early in the QA program definition stage to determine and identify the extent QA controls are to be applied to specific structures, systems, and components. (2B3)

260.14 Identify those existing or proposed QA procedures that require that Regulatory Guides listed in Section 1.8 of the SAR, General Design Criterion 1 of Appendix A to 10 CFR Part 50, and 10 CFR Part 50, §50.55a, will be met by documented procedures. In addition, provide assurance that activities conducted under 10 CFR Part 50, §50.55(e) will conform to the requirement of the QA program. (2B4)

260.15 Provide a description that emphasizes how the docketed QA program description, particularly the Regulatory Guides listed in Appendix 17.2A.1 and 17.2B.1 of the SAR, will be properly carried out. (2B5)

260.16 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 Part 50, Appendix B. These measures should include: (2C1)

a. Frequent contact with program status through reports, meetings, and/or audits.

b. Performance of an annual assessment preplanned and documented. Corrective action is identified and tracked.

260.17 Describe those provisions which assure that the indoctrination and training program includes the following: (2D)

a. Proficiency tests are given to those personnel performing and verifying activities affecting quality, and acceptance criteria are developed to determine if individuals are properly trained and qualified.

b. Certificate of qualifications clearly delineates (a) the specific functions personnel are qualified to perform and (b) the criteria used to qualify personnel in each function.

260.18 Describe those provisions for assuring the QA program for operations is implemented at least 90 days prior to fuel loading. (SRP 17.2.2, item 2)

260.19 Provide a commitment to continue implementation of the PSAR QA program for the remaining design and construction activities or describe an acceptable alternative. (SRP 17.2.2, item 3)

260.20 Describe those provisions which assure procedures are established requiring a documented check to verify the dimensional accuracy and completeness of design drawing and specifications. (3E1)

260.21 In addition to the design controls specified in Section 17.2A and 17.2B describe those provisions which assure procedures are established requiring that design drawings and specifications be reviewed

by the QA organization to assure that the documents are prepared, reviewed, and approved in accordance with company procedures and that the documents contain the necessary quality assurance requirements such as inspection and test requirements, acceptance requirements, and the extent of documenting inspection and test results. (3E2)

260.22 Describe those provisions which assure guidelines or criteria are established for determining the method of design verification (design review, alternate calculations, or test). (3E3)

260.23 Describe those provisions which assure procedures are established for design verification activities which assure the following: (3E4)

a. The verifier is qualified and is not directly responsible for the design (i.e., neither the performer or his immediate supervisor). In exceptional circumstances, the designer's immediate supervisor can perform the verification provided:

   (1) The supervisor is the only technically qualified individual.

   (2) The need is individually documented and approved in advance by the supervisor's management.

   (3) QA audits cover frequency and effectiveness of use of supervisors as design verifiers to guard against abuse.

b. Design verification, if other than by qualification testing of a prototype or lead production unit, is completed prior to release for procurment, manufacturing, construction or to another organization for use in other design activities. In those cases where this timing cannot be met, the design verification may be deferred, providing that the justification for this action is documented and the unverified portion of the design output document and all design output documents, based on the unverified data, are appropriately identified and controlled. Construction site activities associated with a design or design change should not proceed without verification past the point where the installation would become irreversible (i.e., require extensive demolition and rework). In all cases, the design verification should be complete prior to fuel load for a plant under construction, or in the case of an operating plant, prior to relying upon the component, system, or structure to perform its function.

c. Procedural control is established for design documents that reflect the commitments of the SAR; this control differentiates between documents that receive formal design verification by interdisciplinary or multi-organizational teams and those which can be reviewed

by a single individual (a signature and date is acceptable documentation for personnel certification). Design documents subject to procedural control include, but are not limited to, specifications, calculations, computer programs, system descriptions, SAR when used as a design document, and drawings including flow diagrams, electrical single line diagrams, structural systems for major facilities, site arrangements, and equipment locations. Specialized reviews should be used when uniqueness or special design considerations warrant.

d. The responsibilities of the verifier, the areas and features to be verified, the pertinent considerations to be verified, and the extent of documentation are identified in procedures.

260.24 Describe those provisions which assure that the following are included if the verification method is only by test: (3E3)

a. Procedures provide criteria that specify when verification should be by test.

b. Prototype, component or feature testing is performed as early as possible prior to installation of plant equipment, or prior to the point when the installation would become irreversible.

c. Verification by test is performed under conditions that simulate the most adverse design conditions as determined by analysis.

260.25 Describe those provisions which assure that procedures are established to assure that verified computer codes are certified for use and that their use is specified. (3E4)

260.26 Describe those provisions which assure that responsible plant personnel are made aware of design changes/modifications which may affect the performance of their duties. (SRP Section 17.2.3, item 2)

260.27 Describe those provisions which assure that maintenance, modification and inspection procedures are reviewed by qualified personnel knowledgeable in QA disciplines (normally the QA organization) to determine: (SRP Section 17.2.6, item 2)

a. The need for inspection, identification of inspection personnel, and documentation of inspection results.

b. That the necessary inspection requirements, methods, and acceptance criteria have been identified.

260.28 Describe the extent as-built documents are controlled under the QA program. (6A1d)

260.29 Describe those provisions which assure that procedures are established for the review, approval, and issuance of documents and changes thereto and that the documents are reviewed for technical adequacy and inclusion of appropriate quality requirements prior to implementation. The QA organization, or an individual other than the person who generated the document but qualified in quality assurance, reviews and concurs with quality affecting documents with regards to QA-related aspects. (6A2)

260.30 Describe those provisions which assure that procedures are established to provide for the preparation of as-built drawings and related documentation in a timely manner to accurately reflect the actual plant design. (6C1)

260.31 Describe in more detail the responsibilities of the QA organization for the control of purchased material, equipment, and services, including interfaces between design, procurement, and QA organizations. (7A1)

260.32 Describe the role of the QA organization relative to the verification of suppliers' activities during fabrication, inspection, testing, and shipment of materials, equipment, and components. (7A2)

260.33 Describe those provisions which assure that the results of the selection of suppliers is documented and filed. (7A3)

260.34 Describe those provisions which assure that the supplier furnishes the following records to the purchaser: (7B3)

a. Documentation that identifies the purchased item and the specific procurement requirements (e.g., codes, standards, and specifications) met by the item.

b. Documentation identifying any procurement requirements that have not been met.

c. A description of those nonconformances from the procurement requirements dispositioned "accept as is" or "repair."

The review and acceptance of these documents should be described in the purchaser's QA program.

260.35 Describe those provisions which assure that for commercial "off-the-shelf" items where specific quality assurance controls appropriate for nuclear applications cannot be imposed in a practicable manner, special quality verification requirements will be established and described to provide the necessary assurance of an acceptable item by the purchaser. (7B4)

260.36 Describe those provisions which assure that controls are established to identify and control consumables. (8A)

260.37 Describe those provisions which assure that criteria are established for determining those processes that are controlled as special processes. (9A1)

260.38 Describe the responsibilities of the QA/QC organization for the qualification of special processes, equipment and personnel and in assuring that these qualifications have been satisfactorily performed. (9A2 & 9B1)

260.39 Describe those provisions which assure that an effective inspection program has been established which provides criteria for determining the accuracy requirements of inspection equipment and criteria for determining when inspections are required. Describe the responsibilities of the QA/QC organizations in the above functions. (10A)

260.40 Identify the organization responsible for inspection and provide assurance that individuals performing inspections are other than those who performed or directly supervised the activity being inspected and do not report directly to the immediate supervisors who are responsible for the activity being inspected. If the individuals performing inspections are not part of the QA/QC organization, the inspection procedures, personnel qualification criteria, and independence from undue pressure such as cost and schedule should be reviewed and found acceptable by the QA organization prior to the initiation of the activity. (10B1)

260.41 Describe those provisions which assure that inspection procedures, instructions, or checklists provide for the following as determined by the QA/QC organization: (10C1)

a. Specifying necessary measuring and test equipment including accuracy requirements.

260.42 Describe those provisions which assure that inspection results are documented, evaluated and their acceptability determined by a responsible individual or group. (10C3)

260.43 Describe the provisions which assure that when inspections associated with normal operations of the plant (such as routine maintenance, surveillance, and tests) are performed by individuals other than those who performed or directly supervised the work, but are within the same group, the following controls are met: (SRP Section 17.2.10, item 2)

a. The quality of the work can be demonstrated through a functional test when the activity involves breaching a pressure retaining item.

b. The qualification criteria for inspection personnel are reviewed and found acceptable by the QA organization prior to initiating the inspection.

260.44 Describe those provisions which assure that program procedures provide criteria for determining the accuracy requirements of test equipment,

and the criteria for determining when a test is required, providing mandatory inspection hold points as required. (11A1 & 11B1d)

260.45 Describe the QA and other organizations responsible for establishing, implementing and assuring effectiveness of the calibration program. (12.2)

260.46 Describe those provisions which assure that calibrating standards have a greater accuracy than standards being calibrated. (12.7)

260.47 Describe those provisions which assure that calibration of measuring and test equipment be against standards that have an accuracy of at least four times the required accuracy of the equipment being calibrated or, when this is not possible, have an accuracy that assures the equipment being calibrated will be within required tolerance and that the basis of acceptance is documented and authorized by responsible management. The management authorized to perform this function is identified. (12.6)

260.48 Describe those provisions which assure that the QA program provides controls for the storage of chemicals, reagents (including control of shelf life), lubricants, and other consumable materials. (SRP Section 17.2.12, item 2)

260.49 Describe those provisions which assure that procedures are established to control altering the sequence of required tests, inspections, and other operations important to safety. Such actions should be subject to the same controls as the original review and approval. (14.3)

260.50 Describe those provisions which assure that QA and other organizational responsibilities are described for the definition and implementation of activities related to nonconformance control. This includes identifying those individuals or groups with authority for the disposition of nonconforming items. (15.2)

260.51 Describe those provisions for analyzing nonconformances for trends and identify the upper levels of management responsible for periodic review and assessment of these quality trends. (15.5)

260.52 Describe those provisions which assure that the QA organization is involved in the documented concurrence of the adequacy of the corrective action and that follow-up action is taken by the QA organization to verify proper implementation of corrective action and to close out the corrective action in a timely manner. (16.2 & 16.3)

260.53 Describe the QA and other organizations responsible for record control and describe those provisions which assure that QA records include operating logs, maintenance and modification procedures, and related inspection results, reportable occurrences, and other records required by Technical Specifications. (SRP Section 17.2.17, item 2)

260.54 Upgrade the following Regulatory Guides listed in Section 1.8 of the SAR to reflect the latest applicable revision: change Reg. Guide 1.58 from Rev. 0 to Rev. 1, Reg. Guide 1.64 from Rev. 0 to Rev. 2, and Reg. Guide 1.88 from Rev. 0 to Rev. 2. Also include in Section 1.8 your commitment to Reg. Guide 1.146, Rev. 0, "Qualification of Quality Assurance Program Audit Personnel for Nuclear Power Plants."

260.55 In regards to the exceptions and clarifications to the quality-related Regulatory Guides addressed in Appendix 17.2A.11 and 17.2B.11 of the SAR, it is requested that additional discussions take place at the recommended meeting to determine the basis and the acceptability of the exceptions and clarifications.