UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

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FCTC:RHO
71-0230

Babcock & Wilcox Company
Research & Development Division
ATTN: Mr. A. F. Olsen
P.O. Box 1260
Lynchburg, VA 24505

Gentlemen:

We have evaluated your quality assurance program for the Lynchburg Research Center submitted with your December 21, 1978, letter to satisfy the requirements of 10 CFR §71.51.

Our review indicates that additional information is required to satisfy the applicable requirements of Appendix E to 10 CFR Part 71. Please address the enclosed request for additional information and submit seven copies of the revised program within 60 days following receipt of this letter.

If you have any questions regarding this request, please feel free to contact Mr. Jim Conway at (301) 492-7741.

Sincerely,

R H Odegaarden

for Charles E. MacDonald, Chief
Transportation Certification Branch
Division of Fuel Cycle and Material
Safety, NMSS

Enclosure:
Request for Additional
Information

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BABCOCK & WILCOX COMPANY (71-0230)

Request for Additional Information

1. Provide an organizational chart which identifies the organizational elements which function under the control of the QA program.

2. Describe the QA responsibilities of each organizational element identified in item 1 above.

3. Identify the level of management that is responsible for establishing the corporate or company QA policies, goals, and objectives.

4. Provide evidence that the authority and independence of the Quality Assurance Administrator are such that he can direct and control the organization's QA/QC program.

5. Describe the qualification requirements for the position of Quality Assurance Administrator.

6. Provide a statement 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.

7. Provide a statement that designated QA individuals have the responsibility and authority, delineated in writing, to stop unsatisfactory work and control further processing, delivery, or installation of nonconforming material.

8. Provide a statement that trained, qualified personnel within B&W are assigned to determine that functions delegated to his suppliers are being properly accomplished.

9. Give a brief summary of B&W's corporate QA policies, goals, and objectives.

10. Provide a statement that all responsible organizations and individuals are aware that quality policies, QA manuals, and procedures are mandatory requirements.

11. List the QA procedures plus a matrix of these procedures cross referenced to each criterion of Appendix E to 10 CFR Part 71.

12. Identify the safety-related structures, systems, and components controlled by the QA program.

13. Provide a statement that B&W reviewers and documents agreement with the QA program provisions of his suppliers to the extent that he can be assured that Appendix E will be implemented.

14. Provide a statement that an indoctrination and training program is established such that:

    a. Personnel responsible for performing quality-affecting activities are instructed as to the purpose, scope, and implementation of the quality-related manuals, instructions, and procedures.

    b. Personnel performing quality-affecting activities are trained and qualified in the principles and techniques of the activity being performed.

    c. The scope, the objective, and the method of implementing the indoctrination and training program are documented.

    d. Proficiency of personnel performing quality-affecting activities is maintained by retraining, reexamining, and/or recertifying.

15. Provide a statement that quality-related activities are performed with specified equipment and under suitable environmental conditions.

16. Provide a statement that quality standards are specified in the design documents, and deviations and changes from these quality standards are controlled.

17. Provide a statement that suitable design controls are applied to such activities as seismic, stress, thermal, hydraulic, radiation, and accident analyses; compatibility of materials; and accessibility for inservice inspection, maintenance, and repair.

18. Provide a statement that designs are reviewed to assure that (1) design characteristics can be controlled, inspected, and tested and (2) inspection and test criteria are identified.

19. Provide a statement that proper selection and accomplishment of design verification or checking processes such as by design reviews, alternate calculations, or qualification testing are performed. When a test program is used to verify the adequacy of a design, a qualification test of a prototype unit under adverse design conditions shall be used.

20. Provide a statement that errors and deficiencies in the design, including the design process, that could adversely affect safety-related structures, systems, and components are documented; and corrective action is taken to preclude repetition.

21. Provide a statement that materials, parts, and equipment which are standard, commercial (off the shelf) or which have been previously approved for a different application are reviewed for suitability prior to selection.

22. Identify the positions or groups responsible for design reviews and other design verification activities.

23. Provide a statement that measures are established for the selection of suitable materials, parts, equipment, and processes for safety-related structures, systems, and components which include the use of valid industry standards and specifications.

24. Provide a statement that the review and approval of procurement documents are documented prior to release and available for verification.

25. Provide a statement that procurement documents for 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.

26. Provide a statement that the QA organization reviews and concurs with inspection plans; drawings and specifications; and changes thereto or describe acceptable alternatives.

27. Provide a statement that surveillance of suppliers during fabrication, inspection, testing, and shipment of materials, equipment, and components is planned and performed in accordance with written procedures to assure conformance to the purchase order requirements. These procedures provide for:

    a. Instructions that specify the characteristics or processes to be witnessed, inspected or verified, and accepted; the method of surveillance and the extent of documentation required; and those responsible for implementing these instructions.

    b. Audits and surveillance which assure that the supplier complies with the quality requirements. Surveillance is performed on those items where verification of procurement requirements cannot be determined upon receipt.

28. Provide a statement that the supplier furnishes the following records as a minimum to B&W:

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

    b. Documentation that identifies any procurement requirements which have not been met together with a description of those nonconformances dispositioned "accept as is" or "repair."

    The review and acceptance of these documents shall be described in the purchaser's QA program and as a minimum shall be undertaken by a responsible QA individual.

29. Provide a statement that supplier's certificates of conformance are periodically evaluated by audits, independent inspections, or tests to assure they are valid.

30. Provide a statement that receiving inspection of the supplier-furnished material, equipment, and services is performed to assure:

    a. The material, component, or equipment is properly identified and corresponds with the identification on receiving documentation.

    b. Material, components, equipments, and acceptance records are inspected and judged acceptable in accordance with predetermined inspection instructions, prior to installation or use.

    c. Inspection records or certificates of conformance attesting to the acceptance of material, components, and equipment are available prior to installation or use.

    d. Items accepted and released are identified as to their inspection status prior to forwarding them to a controlled storage area or releasing them for installation or further work.

31. Provide a statement that the effectiveness of the control of quality by suppliers is assessed by B&W at intervals consistent with the importance, complexity, and quantity of the item.

32. Provide a statement that identification requirements are determined during generation of specifications and design drawings.

33. Provide a statement that the location and the method of identification do not affect the fit, function, or quality of the item being identified.

34. Provide a statement that inspection procedures or instructions are used with necessary drawings and specifications when performing inspection operations.

35. Provide a statement that inspectors are qualified in accordance with applicable codes, standards, and company training programs; and their qualifications and certifications are kept current.

36. Provide a statement that modifications, repairs, and replacements are inspected in accordance with the original design and inspection requirements or acceptable alternatives.

37. Provide a statement that provisions are established that identify mandatory inspection hold points for witness by an inspector.

38. Provide a statement that provisions are established for indirect control by monitoring processing methods, equipment, and personnel if direct inspection is not possible.

39. Provide a statement that written test procedures incorporate or reference:

    a. The requirements and acceptance limits contained in applicable design and procurement documents.

    b. Instructions for performing the test.

c. Mandatory inspection hold points for witness by owner, contractor, or inspector.

d. Acceptance and rejection criteria.

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

40. Provide a statement that measuring and test equipment is identified and traceable to the calibration test data.

41. Provide a statement that measuring and test equipment is labeled or tagged to indicate date of the next calibration.

42. Provide a statement that calibrating standards have an uncertainty (error) requirement of no more than 1/4th of the tolerance of the equipment being calibrated. A greater uncertainty may be acceptable when limited by the "state-of-the-art."

43. Provide a statement that bypassing of required inspections, tests, and other critical operations is procedurally controlled under the cognizance of the QA organization.

44. Provide a statement that documentation identifies the nonconforming item; describes the nonconformance, the disposition of the nonconformance, and the inspection requirements; and includes signature approval of the disposition.

45. Provide a statement that acceptability of rework or repair of materials, parts, components, systems, and structures is verified by reinspecting and retesting the item as originally inspected and tested or by a method which is at least equal to the original inspection and testing method. Inspection, testing, rework, and repair procedures are documented.

46. Provide a statement that nonconformance reports dispositioned "accept as is" or "repair" are made part of the inspection records and forwarded with the hardware to B&W for review and assessment.

47. Provide a statement that QA records include results of reviews, inspections, tests, audits, and material analyses; monitoring of work performance; qualification of personnel, procedures, and equipment; and other documentation such as drawings, specifications, procurement documents, calibration procedures and reports; nonconformance reports; and corrective action reports.

48. Provide a statement that record storage facilities are constructed, located, and secured to prevent destruction of the records by fire, flooding, theft, and deterioration by environmental conditions such as temperature or humidity.

49. Provide a statement that audits include an objective evaluation of quality-related practices, procedures, and instructions and the effectiveness of implementation.

50. Provide a statement that audits include the objective evaluation of work areas, activities, processes, and items, and the review of documents and records.