

APPENDIX A

NOTICE OF NONCONFORMANCE

During an inspection conducted on October 9-10, 1989, the implementation of the quality assurance (QA) program at Rotork Controls, Limited (Rotork) of Bath, England was reviewed with respect to the supply of valve actuators to the commercial nuclear industry in the United States of America. The applicable QA requirements are Appendix B to 10 CFR Part 50 and various Rotork manuals and procedures. Based on the results of the inspection, it appears that activities at Rotork were not conducted in accordance with Appendix B, which was imposed on Rotork by contract. The findings are listed below:

1. Criterion IV, "Procurement Document Control," of Appendix B to 10 CFR 50 states in part: "Measures shall be established to assure that applicable...requirements...which are necessary to assure adequate quality are suitably included or referenced in documents for procurement whether purchased by...contractors or subcontractors. To the extent necessary, procurement documents shall require contractors or subcontractors to provide a quality assurance program consistent with the pertinent provisions of this appendix."

Contrary to the above, the standard QA provisions Rotork imposes on their subcontractors do not require the subcontractors to pass down appropriate QA provisions. This resulted in subcontractors accepting material based on Certificates of Conformance (CoCs) or Certified Material Test Report (CMTRs) without requiring the suppliers to have any controls or verifying the validity of certifications. (89-01-01)

2. Criterion VI, Document Control, of Appendix B to 10 CFR 50 states, in part: "Measures shall be established to control the issuance of documents such as instructions, procedures, or drawings including changes thereto, which prescribe all activities affecting quality. These measures shall assure that documents...are distributed to and used at the location where the prescribed activity is performed."

Paragraph 3.8 of Rotork's Procedure QC-152 states: "Recipients of QC procedures are responsible for the upkeep and use of procedures issued to them."

Contrary to the above, Volume 2 of the Quality Assurance Manager's QC Procedures contained four obsolete procedures; QC-174, "Calibration of Field Engineers Test Boxes;" QC-171, "Quadrex Test Rig Calibration;" QC-189, "Calibration of Final Inspection and Goods Inwards Inspection Millipot Test Boxes;" and QC-192, "Calibration of Paint Oven Temperature Recorder." (89-01-02)

3. Criterion VII, "Control of Purchased Material, Equipment, and Services," of Appendix B to 10 CFR 50 states, in part: "Measures shall be established to assure that purchased material, equipment, and services, whether purchased directly or through contractors and subcontractors, conform to the procurement documents. These measures shall include provisions, as appropriate, for source evaluation and selection, objective evidence of quality furnished by the contractor or subcontractor, inspection at the contractor or subcontractor source, and examination of products upon delivery... The effectiveness of the control of quality by contractors and subcontractors shall be assessed...at intervals consistent with the importance, complexity, and quantity of the product or services."

Paragraph 6.2.10 of Rotork's Quality Assurance Policy Manual states: "Selection of subcontractors from the 'Approved Supplier File' is the responsibility of the Purchasing Department."

Contrary to the above:

- a. Paragraph 4.5 of the Purchasing Department Manual states: "The Purchasing Department reserves the right to place orders on companies which are not approved by QC." (89-01-03)
- b. Rotork has not established measures to assess the effectiveness of the control of quality by their subcontractors. Rotork places the majority of their subcontractors on the approved suppliers list based on historical performance. Vendor ratings are compiled on a regular basis and sent to the vendor. A request for corrective action is included if the rating indicates four percent or greater rejected parts. Vendors with ratings of five percent rejected parts are removed from the approved supplier list. However, most parts are not subjected to receipt inspection unless problems occur during assembly or inspection or test of assemblies, and audits or source inspections are not conducted for most suppliers until after a problem is discovered. (89-01-04)
- c. Although Rotork personnel claimed that Procedure QC-80, "Material Certification," performed the function of assuring effective control for material properties, the procedure was not adequate for the purpose and was not adequately implemented.

The testing performed did not require that all material properties be verified and the results of the testing are not factored into the vendor ratings compiled and issued by Rotork. One test report reviewed, Number 1736, for 11 pieces, gave results that 2 items were not within the specification for chemistry, 1 item did not

meet the hardness requirement, and 6 items met neither requirement. These nonconformances were not factored into the appropriate vendor rating. (89-01-05)

4. Criterion VIII, "Identification and Control of Materials, Parts, and Components," of Appendix B to 10 CFR 50 states, in part: "Measures shall be established for the identification and control of materials, parts, and components... These measures shall assure that identification of the item is maintained by heat number, part number, serial number, or other appropriate means either on the item or on records traceable to the item, as required throughout fabrication."

Rotork Drawing N2135013 for the wormshaft requires certification that the chemical content and hardness meet drawing requirements.

Contrary to the above, heat treatment certificates, including hardness test results, for wormshafts supplied by Davall and heat treated by TEE, Limited are not traceable to the individual wormshafts or the base material certificate that provides the results of the chemical analysis. (89-01-06)

5. Criterion XVI, "Corrective Action," of Appendix B to 10 CFR 50 states in part: "Measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances are promptly identified and corrected... The identification of the significant condition adverse to quality, the cause of the condition, and the corrective action taken shall be documented and reported to appropriate level management."

Paragraph 14.2 of Section 17, "Corrective Action," of Rotork's Quality Assurance Policy Manual states: "The Reject/Concession Note (QC1/x-Rev 1) format, used to reject nonconforming material/components back to a subcontractor, requires that the latter completes and returns a tear-off-slip on which they have described their action to prevent recurrence of the defect."

- a. Contrary to the above, in discussions with the External Auditor the inspector determined that completion and return of the tear-off-slips is not tracked in any manner to assure corrective action is taken by the vendor. In addition, the External Auditor stated the he was aware that some companies were not returning the tear-off-slips. (89-01-07)
- b. Deviations or nonconforming material discovered as a result of testing performed under Procedure QC-80 are not controlled under a program that requires the documentation of the cause of the condition and the corrective action taken to prevent recurrence.

Test Report No. 1769, for Drive Pin 09332, indicated that nickel content was out of specification low, 2.82 vs 3.00 percent minimum. No tests of the mechanical properties were performed to determine if the nonconforming nickel content affected the mechanical properties. (89-01-08)

6. Criterion XVII, "Quality Assurance Records," of Appendix B to 10 CFR 50 states in part: "Sufficient records shall be maintained to furnish evidence of activities affecting quality."

Paragraph 16.5 of Rotork's Quality Assurance Policy Manual states that the Purchasing Department is responsible for procedures on storage of purchase orders.

Section 17 of the Purchasing Department Manual states that purchase orders are kept for a minimum of 5 years.

Contrary to these requirements, the Purchasing Department could not locate Purchase Order 19889, which was less than 5 years old.
(89-01-09)