ENCLOSURE

WATTS BAR NUCLEAR PLANT UNITS 1 AND 2
QA PROGRAM IMPLEMENTATION BREAKDOWN
NCR QEB 79-1 AND NCR 1477R
10 CFR 50.55(e)
THIRD INTERIM REPORT

Deficiency

The principal deficiency (NCR QEB 79-1) is in the QA program implementation breakdown, associated with the high density spent fuel storage racks supplied by Wachter Associates, Incorporated, Pittsburgh, Pennsylvania. Wachter performed the structural calculations for the racks and subcontracted criticality calculations to Pickard, Lowe, and Garrick; concrete calculations to D'appolona; and fabrication to U. S. Tool and Die. There are 16 rack modules made up of individual rectangular stainless steel boxes which are about 14 feet long and have a neutron absorbing material "sandwiched" between the box walls. The boxes are welded together with intermittent structural welds along the length of the box to form the rack module.

The fabrication data packages supplied with the two racks shipped to the site provided adequate documentation. We believe the supplier's written QA program to be adequate also. However, an audit of the supplier's facility revealed an apparent lack of implementation of his written QA program, and thus creates questions regarding the acceptability of the data packages and the racks themselves. The four pertinent implementation breakdown items are: (1) Document control to ensure that current documents were used and obsolete ones deleted, (2) QA records not identifiable and retrievable, (3) Subcontractors not audited by Wachter for control of purchased material, equipment, and services, and (4) Wachter activities not accomplished in accordance with approved instructions, procedures, and drawings. Therefore, in the absence of the required documentation to support the Wachter program implementation, the rack design, materials, and fabrication are suspect, and an obvious need to verify the structural integrity of the racks exists.

A secondary deficiency was identified in NCR 1477R as a result of discovering that some of the cosmetic welds joining the top edges of the boxes cracked during shipment of the two rack modules which were shipped to the site. Since these cosmetic welds only serve the purpose of providing a smooth seat for the lead-in guide assembly and have no structural significance, this NCR is not considered to be a separate reportable condition.

Corrective Actions

Since the last interim report on this subject, TVA has taken the following actions in order to determine the acceptability of the subject racks.

1. TVA has performed a "walk-through" at Wachter's facilities of the the entire procurement and fabrication process which was performed on the racks. During this "walk-through," Wachter explained the step-by-step process which they have followed since the time the contract was awarded up to the present time. Purchase orders, inspection sheets, and other procurement documents were examined in detail to see if they were in compliance with the contract requirements. In addition, a visit was made to Wachter's fabrication subcontractor, U.S. Tool & Die, to examine route cards and other fabrication documentation and to see how work in the shop was physically handled. The results of this "walk through" indicated to TVA representatives that Wachter had followed a procurement and fabrication process which would satisfy contract requirements. TVA informed Wachter that the next step with regard to the investigation of the racks would be for TVA to provide Wachter with further direction as to what additional information was needed from them and to schedule and coordinate a physical check of the rack markings against the documentation.

2. As indicated in item 1, TVA has directed Wachter to provide the following information.

   a. Review sheets showing that an independent design review was performed for the calculations shown in appendices C, D, H, and sections RA1.11 through RA1.13 of revision 5 to Wachter's Seismic and Mechanical Design Report.

   b. Verify to the TVA inspector that correct material required by design was used in the fabrication by correlating the visible heat numbers on all fabricated pieces with the following data.

      (1) Route cards and other supporting documentation at U.S. Tool and Die Corporation

      (2) Barger's packing list

      (3) Certified material test reports supplied by the material manufacturer

      (4) Material specifications prepared by Wachter

   c. Verify to TVA inspector that the exact as-fabricated configuration of material is in full compliance with the latest "approved" revision to the design drawings.

   d. Verify to the TVA inspector that the welding procedures and welders shown on the U.S. Tool and Die route cards have acceptable qualifications.

e. Verify to the TVA inspector that an "approved" welding procedure was used for the TIG fusion welds used for the row-to-row attachment of the storage boxes and that this procedure was properly identified on U.S. Tool and Die route cards.

We are in the process of reviewing the above information and coordinating with Wachter and the TVA inspector the required physical checks on the racks at his facilities. In addition, TVA field employees have performed the same physical checks on the two racks at Watts Bar, and the results of these checks are being reviewed by Civil Engineering Branch employees in Knoxville.

3. TVA has closed out 30 of the 36 audit findings written against Wachter's QA Program Manual. Of the six audit findings still outstanding, two were reported as significant and cannot be closed until a reaudit of Wachter has been performed.

4. After all the physical checks have been performed, documentation completely reviewed and the two significant audit findings closed out, TVA will determine if the racks are acceptable and prepare a final report.