

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

400 Chestnut Street Tower II

October 12, 1983

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WBRD-50-390/83-25  
WBRD-50-391/83-24  
BLRD-50-438/83-29  
BLRD-50-439/83-24

U.S. Nuclear Regulatory Commission  
Region II

Attn: Mr. James P. O'Reilly, Regional Administrator  
101 Marietta Street, NW, Suite 2900  
Atlanta, Georgia 30303

Dear Mr. O'Reilly:

WATTS BAR AND BELLEFONTE NUCLEAR PLANTS UNITS 1 AND 2 - QA PROGRAM  
DEFICIENCIES PERTAINING TO TVA PERSONAL SERVICES CONTRACT (TV-49510A) -  
WBRD-50-390/83-25, WBRD-391/83-24, BLRD-50-438/83-29, BLRD-50-439/83-24 -  
FINAL REPORT

The subject deficiency was initially reported to NRC-OIE Inspector Linda Watson on April 6, 1983 in accordance with 10 CFR 50.55(e) as Audit 83V-26 Deficiencies Numbers 1, 2, and 3. This was followed by our interim reports dated May 5 and September 21, 1983. Enclosed is our final report.

Please note that TVA does not now consider the subject nonconforming condition adverse to the safe operation of the plant. Therefore, we will amend our records to delete the subject nonconformance as a 10 CFR 50.55(e) item.

If you have any questions, please get in touch with R. H. Shell at FTS 858-2688.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

*D S Kammer*

*for* L. M. Mills, Manager  
Nuclear Licensing

Enclosure

cc: Mr. Richard C. DeYoung, Director (Enclosure)  
Office of Inspection and Enforcement  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Records Center (Enclosure)  
Institute of Nuclear Power Operations  
1100 Circle 75 Parkway, Suite 1500  
Atlanta, Georgia 30339

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1983-TVA 50<sup>TH</sup> ANNIVERSARY

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ENCLOSURE

WATTS BAR AND BELLEFONTE NUCLEAR PLANTS UNITS 1 AND 2  
QA PROGRAM DEFICIENCIES PERTAINING  
TO TVA PERSONAL SERVICES CONTRACT (TV-49510A)  
AUDIT NO. 83V-26 DEFICIENCY NO. 1, 2, AND 3  
10 CFR 50.55(e)  
WBRD-50-390/83-25, WBRD-50-391/83-24  
BLRD-50-438/83-29, BLRD-50-439/83-24  
FINAL REPORT

Deficiency Description

Deficiency No. 1 -

TVA's Division of Engineering Design's (EN DES) engineering procedure (EP) 1.01, paragraph 2.1, "Policy," states that:

"NRC requires that all activities affecting the quality of design, construction, and operation of TVA nuclear projects will be done within a controlled system of written instructions and procedures. These written instructions and procedures therefore will be: (a) prepared and approved as described in this EP or EN DES-EP 1.44, "Handling," (b) issued before the QA-related activities begin, and (c) available for use at the location of QA-related activities."

Contrary to this requirement, Audit No. 83V-26 has found that:

1. Gilbert Associates with whom TVA has the personal services contract (TV-49510A) has not received formal documented instructions on methods and procedures to be followed in performing/documenting piping analysis. This pertains to both Watts Bar and Bellefonte tasks now under way.
2. Work for the task being audited (task 2 to personal service contract TV-49510A) is being performed totally under the TVA program. However, while work had begun in 1970, the first effort of documenting the applicable TVA procedures to operate under took place in November 1982 (Watts Bar). Some Bellefonte work has been accomplished during 1983 before establishing a program. Review of the method (or proposed method) of implementing a QA program with the two TVA Civil Engineering Branch (CEB) piping analysis groups (Watts Bar and Bellefonte) indicates that different methods of implementation are intended for the same task.
3. The mechanical analysis (MA) piping analysis handbooks are being used as design instructions by Gilbert. In addition, when EN DES-EP 3.28, "Detailed Piping Analysis Performed by TVA-Procedures for Documentation and Verification," was retired, the MA handbooks were specifically identified as replacement instructions. Although the handbook for Bellefonte is in draft form and lacks formal approval, it is being used to perform piping analysis. In addition, the handbook policy statement indicates that the handbooks are not quality assurance documents.

Deficiency No. 2 -

ANSI N45.2, section 4.0, paragraph 4.1, states in part that measures shall be established and documented to ensure that the specified design requirements such as design bases are correctly translated into specifications, drawings, procedures, or instructions.

Contrary to these requirements, a review of piping analysis calculation packages prepared by Gilbert Associates for Watts Bar showed inadequate documentation of the analysis input data. TVA transmits to Gilbert the input data required to perform the analysis but this data is not retained nor fully documented in the final Gilbert calculation package. The Gilbert transmittal letter to TVA does attempt to define this input baseline. However, every transmittal letter reviewed by the audit team contained errors concerning drawings and revision levels used to do the analysis. The audit team then reviewed two 1980 Gilbert packages (N2-1-3A and N2-62-12R) and their corresponding isometric and support load drawings to determine if a design baseline could be established from the drawings. No readily apparent baseline existed from the revision levels, dates, or reason for revision.

This design baseline is being documented by Gilbert for the Bellefonte task in their calculation packages.

Deficiency No. 3 -

TVA EN DES-EP 1.28, "Control of Documents Affecting Quality," paragraph 3.0, "Policy," states: "All design documents which prescribe activities affecting design and product quality shall be reviewed for adequacy, approved for release by authorized individuals, and distributed to and used at the location where the prescribed activity is being performed. Control of revisions to these documents (or of other documents which change the requirements contained in these documents) shall be commensurate with that of the original document.

Contrary to this requirement, a review of documentation (CEB reports, analysis handbooks, branch/project procedures, active valve list, design criteria documents, etc.), being used by Gilbert Associates' Watts Bar and Bellefonte piping analysis groups indicated that this documentation was not controlled. A controlled set of EPs had been transmitted to Gilbert but had not been received during the audit.

TVA Report N3C-912 Revision 1, which is being used by Gilbert showed no objective evidence of formal TVA signoff (did not have a completed cover sheet).

Safety Implications

Audit deficiency Nos. 1 and 3 identified a lack of controlled documented instructions being used by Gilbert Commonwealth (G/C) to perform analysis work for TVA. However, no documents or procedures in use at G/C were identified as being incorrect or of the wrong revision level by the audit nor during follow-up discussions with G/C. Thus, although the instructions, documents, and procedures were not formally controlled, G/C did have the proper information to perform piping analysis for TVA. Corrective measures have been taken to provide G/C with controlled copies of all documents and procedures necessary for their use.

Deficiency No. 2 identified a lack of a "readily apparent baseline" or baselining documentation in G/C transmittal packages to TVA. Subsequent investigation into the documentation of analysis input data has shown there is no deficiency in documenting this information for analysis work done for TVA by G/C. All calculations done by G/C were given an "owners review" at the time of receipt wherein TVA reviewed the design basis for the calculations (i.e., the baseline). Errors in the cover memorandum have no bearing on the final calculations nor on the documents/drawings used to produce them. TVA has found that there is adequate traceability from the calculations to the final design for the G/C work.

No specific problems with piping analysis problems performed by G/C for TVA have been identified by the subject audit, nor by subsequent investigation, which could have adversely affected the safety of operations of the plant. Thus, TVA believes that 10 CFR 50.55(e) no longer applies to this item.