



UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555

January 11, 1993

Docket No. 50-390

MEMORANDUM FOR: Ellis W. Merschoff, Director
Division of Reactor Projects
Region II

FROM: Gus C. Lainas, Assistant Director
for Region II Projects
Division of Reactor Projects I/II
Office of Nuclear Reactor Regulation

SUBJECT: WATTS BAR UNIT 1 - TIA 92-027, MATERIAL TRACEABILITY
(TAC M71922)

The purpose of this memorandum is to forward NRR's response to your TIA dated September 30, 1992, requesting NRR technical assistance to resolve concerns about the Watts Bar material traceability issues. The NRR staff was asked to evaluate a March 1986 TVA position on traceability of material used to fabricate Seismic Category I supports at Watts Bar and determine whether this position complied with 10 CFR 50, Appendix B, Criterion VIII, and ANSI N45.2-1971. In addition, Region II requested an evaluation of the acceptability of the purchase and use of non-dedicated commercial grade material in safety-related applications. The full staff response to both requests is enclosed.

Summarizing our response to the first request, the staff finds that the TVA Corporate Position on Material Traceability as stated in the letter from S. White (TVA) to H. Denton (NRC) dated March 20, 1986, complies with 10 CFR 50, Appendix B. However, TVA must demonstrate that the approach described was properly implemented. We discussed our concerns with TVA during the management meeting at Watts Bar on January 5, 1993. We agreed to schedule a meeting with TVA to give them an opportunity to describe the basis for their conclusion that the approach described in the March 1986 letter was properly implemented. Peter Tam will have the lead for setting up this meeting.

In addition, as we discussed during our meeting on January 5, 1993, it is our understanding that Region II will continue to evaluate this issue, including various allegations and employee concerns, to determine whether there are cases where incorrect material was used at Watts Bar.

Regarding the commercial grade dedication issue, the staff finds that TVA should establish and implement a method for demonstrating that any non-conforming material will not jeopardize the intended function of the systems involved and therefore meets Appendix B requirements. However, since the staff is currently working with the industry to resolve questions on what constitutes acceptable methodologies to dedicate various types of components, it was agreed in our internal meeting at Watts Bar on January 5, 1993, that we would not discuss this issue with TVA until these broader questions are resolved generically.

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Ellis W. Merschoff

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NRR's efforts on Watts Bar material traceability and commercial grade dedication continue, while its efforts to respond to TIA 92-027 are considered complete.



Gus C. Lainas, Assistant Director
for Region II Reactors
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Enclosure:
Response to TIA 92-027

cc w/enclosure:
C. Hehl, Region I
E. Greenman, Region III
A.B. Beach, Region IV
K. Perkins, Region V

NRR's efforts on Watts Bar material traceability and commercial grade dedication continue, while its efforts to respond to TIA 92-027 are considered complete.

Original signed by
 Gus C. Lainas, Assistant Director
 for Region II Reactors
 Division of Reactor Projects - I/II
 Office of Nuclear Reactor Regulation

Enclosure:
 Response to TIA 92-027

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* When this document was issued, it was not originally designated as PDR-available. This designation was added by me after discussions with R. Gramm and G. Zech. Also, due possibly to a clerical error, this document was not filed in Docket File until today.

Peter S. Jam
 4/15/93

ENCLOSURE

OFFICE OF NUCLEAR REACTOR REGULATION

RESPONSE TO REGION II TIA 92-027

WATTS BAR MATERIAL TRACEABILITY CONCERNS

STAFF EVALUATION OF THE TVA CORPORATE POSITION FOR MATERIAL TRACEABILITY

The region requested technical assistance in the evaluation of the TVA Corporate Position for Material Traceability as documented in a letter from S. White (TVA) to H. Denton (NRC) dated March 20, 1986, to determine if that position is in compliance with 10 CFR 50, Appendix B, Criterion VIII, and ANSI N45.2-1971.

BACKGROUND

The subject letter was in response to a commitment made by TVA at a March 11, 1986, commission meeting as to whether or not, in light of the conclusion stated in the "NSRS Perceptions of Watts Bar Status," (NSRS Perceptions), the 10 CFR 50, Appendix B requirements are being met at the Watts Bar facility. The position on material traceability was one of eleven enclosed with the letter and was in response to the NSRS perception: "Material Traceability Very Poor, Especially Seismic Category I (Piping, HVAC, Conduit, Cable Trays, Instrument Lines, Etc)." Basically, TVA's position was that, based on its interpretation of Criterion VIII of 10 CFR 50, Appendix B and ANSI N45.2-1971, to which it was committed, TVA's material control program meets the requirements of those documents.

The TVA letter did not request a response, and the staff was unable to determine if a response was provided.

The region's questions about material traceability and TVA's Corporate Position at Watts Bar are a result of an inspection conducted in July and August 1992. The region's inspection report (50-390,391/92-21) documented a specific unresolved item, pending further NRC review, involving the lack of traceability of material used to fabricate Seismic Category I supports, cable tray material, conduit, and some HVAC materials. The region issued a Task Interface Agreement (TIA) request to NRR, TIA 92-27, dated September 30, 1992, requesting NRR technical assistance on the evaluation of TVA's corporate position and its compliance with Appendix B and ANSI N45.2-1971.

REQUIREMENTS

10 CFR 50, Appendix B provides quality assurance criteria to be applied in the use of structures, systems, and components of a nuclear power plant which have safety-related functions. The requirements of the appendix apply to all activities which affect these safety-related functions to provide a means to control the quality of the material from the design phase to component installation and beyond.

REQUIREMENTS

10 CFR 50, Appendix B provides quality assurance criteria to be applied in the use of structures, systems, and components of a nuclear power plant which have safety-related functions. The requirements of the appendix apply to all activities which affect these safety-related functions to provide a means to control the quality of the material from the design phase to component installation and beyond.

Criterion VIII of Appendix B, "Identification and Control of Material, Parts, and Components," provides that measures be established for the identification and control of materials from fabrication to installation and use. The means to accomplish this are either through identification of the item by physical markings or via records traceable to the item.

ANSI N45.2-1971, which is endorsed by Regulatory Guide 1.28, states in part that:

Measures shall be established and documented for the identification and control of material, parts, and components including partially fabricated sub-assemblies. These measures shall provide for assuring that only correct and accepted items are used and installed, and relating an item of production (batch, lot, component, part) at any stage, from initial receipt through fabrication, installation, repair or modification, to an applicable drawing, specification, or other pertinent technical document. Identification may be either on the item or on records traceable to the item, as appropriate. When codes, standards, or specifications require traceability of material, parts or components to specific inspection or test records, the program shall be designed to provide such traceability.

TVA's Nuclear Quality Assurance Plan, dated January 15, 1992, states that TVA recognizes 10 CFR 50, Appendix B and endorses ANSI N45.2-1971 and Regulatory Guide 1.28.

STAFF REVIEW

It is the staff's conclusion that the TVA Corporate Position on Material Traceability, stated in the letter from S. White (TVA) to H. Denton (NRC) dated March 20, 1986, does not contain sufficient detail to determine if it is in full compliance with 10 CFR 50, Appendix B and ANSI N45.2-1971. For example, TVA's interpretation of ANSI N45.2 would allow considerable latitude to a plant owner in determining the extent to which the standard applies, but does not address the basis or framework in which such decisions are made, the criteria the design engineer would use in making such determinations and the

presence of or requirements for Quality Assurance oversight in such a process. Without such provisions, those decisions would appear to be arbitrary and vulnerable to unidentified errors. The determining factor here would be the Quality Assurance plan in effect at the time the work was being performed as well as any other Quality Assurance related commitments.

With regard to traceability requirements, for Quality Level I material, as defined in WBN Construction Specification N3G-881, there appears to be no question that this material requires traceability from mill heat number to installation. However, for Quality Level II material, the WBN Construction Specification, N3G-881, requires traceability from the mill number to the project segregated warehouse storage. The TVA position is silent as to whether controls were in place to ensure that Quality Level II material was only drawn from the appropriate storage, i.e., that segregation was maintained and that evidence existed in the form of markings on materials, drawing notations, or other pertinent technical documents to correlate the material back to the appropriate warehouse storage.

Therefore, unless additional information is provided to address the above issues, TVA should be required to demonstrate its basis for concluding that the safety-related material installed at Watts Bar is capable of performing its design safety function.

SAFETY-GRADE DEDICATION ISSUE

The region requested an evaluation of the acceptability of the purchase and use of non-safety-related material in the safety-related applications noted in TIA 92-27. The material used in safety-related applications included conduit, anchor bolts, unistrut, rivets, and some HVAC materials.

BACKGROUND

The region's concerns about non-safety-related material at Watts Bar are a result of the July and August 1992 inspection to review the traceability of materials installed during the construction of Watts Bar. Inspection report (50-390,391/92-21) documented the purchase and use of non-safety-related material in safety-related applications. The region requested NRR technical assistance on the evaluation of the acceptability of the purchase and use of non-safety-related material in safety-related applications at Watts Bar.

During the inspection, the inspector found that conduit, anchor bolts, unistrut, rivets, and some HVAC material had been installed in safety-related systems but were not purchased as safety-related material nor were they dedicated by TVA as safety-related via their commercial-grade dedication program.

REQUIREMENTS

Criteria XV and XVI of 10 CFR 50, Appendix B require that measures be established to control materials which do not conform to requirements and that conditions adverse to quality, including non-conformances, are promptly identified and corrected.

STAFF REVIEW

Where commercial-grade materials have been already installed in safety-related applications without any previous dedication, the staff finds that, in accordance with 10 CFR 50, Appendix B, Criteria XV and XVI, TVA should establish and implement a method for demonstrating that any non-conforming material will not jeopardize the intended functions of the systems involved and therefore meets Appendix B. Any dedication should be performed and documented so as to provide adequate confidence that the material will perform satisfactorily in service.

Principal Contributors: A. Mendiola, R. Moist

Dated: January 11, 1993