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

ENCLOSURE

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATING TO THE PROGRAMMATIC ASPECTS OF THE

CATEGORY I CABLE TRAY AND CABLE TRAY SUPPORTS

CORRECTIVE ACTION PROGRAM PLAN

TENNESSEE VALLEY AUTHORITY

WATTS BAR NUCLEAR POWER PLANT

UNIT 1

DOCKET NO. 50-390

1.0 INTRODUCTION

TVA, in a letter dated November 18, 1988, submitted the Corrective Action Program (CAP) Plan for Category I Cable Tray and Cable Tray Supports, Revision 0. The program was developed as a result of information which became known to TVA related to deficiencies within the area of the adequacy of Category I cable tray support system. The program involves revisions to the design criteria, revisions to output design documents for the cable tray hardware and cable tray supports, field walkthroughs for all cable tray runs for hardware installation, and sample and selective walkthroughs for the cable tray supports for adequacy based on a sampling program.

2.0 SCOPE

The scope as defined in the program plan is the structural qualification of all cable trays and supports in Category I structures required for Unit 1 operations. This effort is to address such items as the tray connectors, fittings, covers, tray configurations and orientations as well as the auxiliary members used as the structural supports for the cable trays. The effort will involve the evaluation of the cable trays and the cable tray supports against the regulatory and licensing requirements including the FSAR design criteria as well as the lower-tier design, fabrication, installation, inspection and test requirements imposed by TVA.

Included within this scope is the resolution of the various deficiencies which formed the basis for the program. The sources of these deficiencies included such areas as employee concerns, findings from NRC inspections as well as the issues identified by the TVA quality assurance program. The range of deficiencies can be characterized by the following subject areas:

- Incomplete design basis for cable tray, cable tray fittings/hardware and cable tray supports.
- Inadequate design documents.
- As-built configurations not in conformance with existing design documents.
- Inspection documentation incomplete or inadequate.
- Incomplete inspections.

Based on a review of the elements encompassed by the program, the staff finds the scope adequate to address the known deficiencies and uncover any new problem areas which, if left uncorrected, could jeopardize the health and safety of the public.

3.0 PROGRAM DESCRIPTION

The TVA program can be described as consisting of six major steps which are as follows:

1. Review, correct, update and document the design bases and design criteria for the cable trays and cable tray support system.
2. Review, correct, update and document all existing design output and issue additional documents where guidance is needed.
3. Revise construction, maintenance and QA procedures to be compatible with the design output documents.
4. Complete an engineering walk-through in accordance with a procedure addressing cable tray routing, offsets, fittings, tray spans, configuration and covers. Take any necessary corrective action and complete any necessary modifications to the hardware.
5. Review existing cable tray support walkdown documents and develop a list of supports that need over-inspection. Sample the population based on the existing procedural guidance. Take any necessary corrective action and complete any necessary hardware modifications.
6. Complete actions to prevent recurrence of this type problem in the future.

Based on the program description contained in the Corrective Action Program, the staff finds that there is reasonable assurance that the objectives can be met.

4.0 METHODOLOGY FOR EXECUTION

The execution of the program can be described as consisting of seven major steps which are as follows:

1. Review, correct, update and document the design criteria for the cable trays and cable tray supports.

2. Review, correct, update and document all existing design output and issue additional documents where guidance is required.

3. Revise construction, maintenance and QA procedures to be compatible with the design output documents.

4. For the cable tray hardware, complete a walk-through procedure over the entire system of safety-related cable trays using qualified engineers, develop the critical cases for evaluation and complete any necessary corrective action or modifications to the hardware.

5. For the cable tray supports being reinspected for resolution of NCR-57-37, Revision 1, a sample size of 60 from a group of 2,700 will be selected to meet a confidence level of 95% that at least 95% of the 2,700 will meet the criteria.

6. For the remainder of the cable tray supports, which total approximately 1,000 which were not addressed by NCR-57-37, Revision 1, a complete walk through will be conducted of the important engineering parameters by qualified engineers.

7. Critical cases will be evaluated and cases that do not meet the design criteria will identify unacceptable attributes. Those attributes will then be surveyed across the entire population. Modifications will be completed as necessary.

TVA has identified the necessary interfaces for the execution of the program which relate to actions being taken in the area of cable issues, electrical issues, the CAPs on fire protection and seismic analysis as well as the issues on the design baseline verification program and QA records.

Based on its review of the program plan, the staff finds that the methodology is well-defined and adequate to accomplish the program objectives.

5.0 CONCLUSION

Based on the program as outlined in the Corrective Action Program Plan, the NRC staff concludes that the document describes a plan for action which provides, upon successful implementation, an acceptable methodology to assure

that the cable tray runs are adequately supported for all plant design conditions. The details of the CAP implementation including criteria, methodologies and issue resolution will be evaluated by the staff in future reviews, audits and inspections.

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