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AUG 20 1990

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555

Gentlemen:

In the Matter of	)	Docket Nos. 50-327
Tennessee Valley Authority	)	50-328

SEQUOYAH NUCLEAR PLANT (SQN) - IMPLEMENTATION SCHEDULE FOR CABLE TRAY SUPPORT PROGRAM

Reference: TVA letter to NRC dated October 15, 1987," Sequoyah Nuclear Plant (SQN) - Unit 2 - Schedule for Compliance with Cable Tray Support Final Safety Analysis Report (FSAR) Commitments"

In the referenced letter, TVA provided the program plan to resolve the cable tray support issue at SQN. TVA now proposes deferral of a portion of the remaining activities until after the current Unit 2 Cycle 4 refueling outage. This letter documents the information provided to the Staff in the August 17, 1990, meeting between NRC and TVA. A copy of TVA's presentation material is included as Enclosure 1.

Efforts have been ongoing to meet the original schedule for cable tray supports. However, the very nature of qualification by iterative evaluation within groups of problems and subsequent identification of increases in engineering scope from initial projections have resulted in completion delays that would now impact the Unit 2 Cycle 4 refueling outage scheduled to begin September 7, 1990.

Extensive modification activities are scheduled for implementation during this outage. Examples include resolution of Appendix R issues, implementation of the Regulatory Guide 1.97 license condition, implementation of pipe support modifications as a result of both rigorously and alternately analyzed postrestart activities, and closure of moderate energy line break issues. Other safety-related and reliability improvement modifications scheduled for implementation during this outage include the Eagle 21 reactor protection system upgrade, boron injection tank deactivation, upper head injection removal, feedwater heater replacement, and reactor coolant pump cartridge seal replacement. These numerous efforts present a significant management and resource load and must be coordinated during an outage.

Engineering is continuing for the cable tray support commitment and will be complete before the end of the outage; however, TVA is proposing to defer implementation of the expected small number of support modifications until

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after the outage, as they are associated with accessible cable trays and largely consist of restoring margin. TVA has closely examined the remaining efforts associated with the subject commitment and believes the proposed deferral does not represent a significant reduction in safety. Additionally, completion of this commitment coincident with the extensive outage activities would adversely impact control and allocation of outage resources. Accordingly, TVA is proposing to defer a portion of the work and revise the implementation completion date for the cable tray support program as further detailed in the enclosures.

Enclosure 2 contains supporting information for the schedule revision. A summary statement of the commitments contained in this letter is provided in Enclosure 3. To facilitate immediate outage planning, TVA requests a response from NRC concerning the proposed schedule revision by August 24, 1990. Please direct questions concerning this issue to Marcia A. Cooper at (615) 843-6422.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

Mark O. Medford

for E. G. Wallace, Manager
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ENCLOSURE 1

PRESENTATION MATERIAL
FROM AUGUST 17, 1990, MEETING

TVA/NRC MEETING

AUGUST 17, 1990

UNIT 2 CYCLE 4 REFUELING OUTAGE

COMMITMENT CHANGE

AGENDA

I.	INTRODUCTION/OVERVIEW	M. A. Cooper
II.	CABLE TRAY SUPPORTS	P. G. Trudel
III.	OPEN DISCUSSION	

CABLE TRAY SUPPORTS

INTRODUCTION

- ISSUE: CABLE TRAY SUPPORTS
- COMMITMENT: ACHIEVE COMPLIANCE WITH FSAR REQUIREMENTS BY RESTART FROM U2C4 RFO
- PROPOSAL: DEFER COMMITMENT COMPLETION TO POST U2C4 RO - FEBRUARY 1991
- BASIS: COMMITMENT COMPLETION BY STARTUP FROM THE U2C4 RFO COULD RESULT IN UNNECESSARY OUTAGE RESOURCE/WORK CONTROL IMPACT WITHOUT A SIGNIFICANT INCREASE IN SAFETY

CABLE TRAY SUPPORTS

HISTORY

PRE-RESTART/POST-RESTART APPROACH

- PRE-RESTART
  - RESTART CRITERIA APPROVED BY NRC
  - SUPPORTS EVALUATED TO RESTART CRITERIA
  - SUPPORTS MODIFIED THAT DID NOT MEET RESTART CRITERIA
  - SUPPORTS ACCEPTABLE FOR RESTART AND OPERATION
- POST RESTART
  - EVALUATE TO FSAR REQUIREMENTS
  - MODIFY SUPPORTS NOT MTG FSAR REQUIREMENTS
  - 600 ATTACHED TO SCV (EA UNIT)
  - 3460 IN CONTROL, AUXILIARY, REACTOR, AEB AND D/G BUILDINGS

CABLE TRAY SUPPORTS

STATUS

- 100% QUALIFIED TO RESTART CRITERIA OR FSAR REQUIREMENTS
- 91% QUALIFIED TO LONG TERM (FSAR) CRITERIA
  - NO ADDITIONAL MODS FOR SUPPORTS ATTACHED TO SCV
  - NO ADDITIONAL MODS FOR CONTAINMENT, CONTROL, OR D/G BUILDING SUPPORTS
- 9% UNDER REVIEW TO MEET LONG TERM (FSAR) CRITERIA
  - EXPECT APPROXIMATELY 60 ACCESSIBLE SUPPORT MODS
  - EXPECT APPROXIMATELY 1% OF TOTAL SUPPORTS TO REQUIRE MODS
  - 6 MODS ARE ISSUED WITH WORK PLANS IN PREPARATION

QUALIFICATION OF CABLE TRAY SUPPORTS TO LONG-TERM (FSAR) CRITERIA (AUGUST 14, 1990)

	SUPPORT POPULATION	SUPPORTS QUALIFIED	SUPPORT MODIFICATIONS
DIESEL GENERATOR BUILDING	195	195	0
REACTOR BUILDINGS (INSIDE CONTAINMENT)	37	37	0
STEEL CONTAINMENT VESSEL UNIT 2	600	600	0
STEEL CONTAINMENT VESSEL UNIT 1	600	600	0
AUXILIARY BUILDING/ CONTROL BUILDING	3176	*2683	*52
ADDITIONAL EQUIPMENT BUILDING	52	*43	*9
TOTAL	4660	*4219	*61

91% CURRENTLY QUALIFIED
EST. 1.3% TO REQUIRE MODIFICATIONS

*ESTIMATE BASED ON CURRENT DESIGN STATUS.

CABLE TRAY SUPPORTS

DEFERRAL SCOPE VS COMMITMENT SCOPE

- 91% QUALIFIED TO LONG TERM CRITERIA AS ORIGINALLY SCHEDULED
- NO DEFERRAL OF ENGINEERING
- DEFER APPROXIMATELY 60 ACCESSIBLE MODIFICATIONS TO POST-OUTAGE - APPROXIMATELY 1% OF TOTAL SUPPORTS

CABLE TRAY SUPPORTS

CONSIDERATIONS TO MEET CURRENT U2C4 COMMITMENT

- RECENT ENGINEERING SCOPE INCREASE IDENTIFICATION
- SIGNIFICANT EXISTING OUTAGE WORK/RESOURCE MANAGEMENT LOAD
- REMAINING MODIFICATIONS CAN BE WORKED POST OUTAGE
- SMALL NUMBER OF MODIFICATIONS

CABLE TRAY SUPPORTS

CONSIDERATIONS TO MEET CURRENT U2C4 COMMITMENT

- SIGNIFICANT SAFETY AND RELIABILITY MODIFICATIONS PLANNED ALONG WITH REGULATORY BACKLOG CLOSEOUT AND COMMITMENT COMPLETION AS PART OF INTEGRATED SCHEDULING PROGRAM

INSIDE CONTAINMENT

- MID LOOP LEVEL INSTRUMENTATION - GL 88-17
- UHI REMOVAL - MAINTENANCE AND ALARA
- STEAM GENERATOR EDDY CURRENT TESTING AND REPAIR - BULLETIN 88-02
- POSTACCIDENT MONITORING INSTRUMENTATION - RG 1.97 LICENSE CONDITION
- RIGOROUSLY ANALYZED PIPING SUPPORT MODIFICATIONS - COMMITMENT
- RTD BYPASS ELIMINATION - SOURCE TERM REDUCTION
- RCP CARTRIDGE SEAL REPLACEMENT - MAINTENANCE

OUTSIDE CONTAINMENT

- CONTROL ROOM DESIGN REVIEW - NUREG 0737 FOR HUMAN FACTOR UPGRADE
- EAGLE 21 UPGRADE - REPLACE OBSOLETE EQUIPMENT AND FEEDWATER TRIP REDUCTION
- FW HEATERS 3 AND 4 REPLACEMENT - S/G PRESERVATION
- BORON INJECTION TANK DEACTIVATION - MAINTENANCE AND ALARA, GL 85-16

CABLE TRAY SUPPORTS

SAFETY ASSESSMENT

- EXPECT ONLY 1 PERCENT TO REQUIRE MODIFICATION TO MEET LONG TERM (FSAR) CRITERIA
- SUPPORTS TO BE MODIFIED ARE QUALIFIED TO RESTART CRITERIA
- ENGINEERING WILL BE COMPLETE BEFORE END OF OUTAGE
- RESOURCES ALLOCATED TO IMMEDIATE AND MOST BENEFICIAL OUTAGE PRIORITIES
- WORK SHIFTED SHORT DURATION FROM PEAK IN-PLANT ACTIVITY LOAD

CABLE TRAY SUPPORTS

CONCLUSION

- SUPPORTS QUALIFIED TO RESTART CRITERIA; ENGINEERING TO BE COMPLETE - NO OPERABILITY ISSUES
- 91 PERCENT OF POPULATION QUALIFIED AS ORIGINALLY SCHEDULED
- COMMITMENT COMPLETION BY STARTUP FROM THE U2C4 RFO COULD RESULT IN UNNECESSARY OUTAGE RESOURCE/WORK CONTROL IMPACT WITHOUT A SIGNIFICANT INCREASE IN SAFETY
- TVA REQUESTS NRC CONCURRENCE WITH REVISED SCHEDULE FOR FEBRUARY 28, 1991

ENCLOSURE 2

CABLE TRAY SUPPORT PROGRAM

TVA has previously committed to achieve compliance with SQN's Final Safety Analysis Report (FSAR) for safety-related cable tray supports (i.e., restore FSAR margin) by restart from the Unit 2 Cycle 4 refueling outage scheduled for September through November of 1990. Engineering and qualification activities have been ongoing; approximately 60 modifications are now projected to be necessary to restore FSAR qualification to the total population of safety-related cable tray supports. Required modifications are located in the auxiliary building and additional equipment building and therefore can be worked during dual unit operation. As a result of an already significant refueling outage workload and in consideration of the involved safety significance, TVA is now proposing to defer implementation of the necessary modifications to after the outage, by February 28, 1991.

The safety-related cable tray supports at SQN were evaluated and qualified to either the FSAR requirements or restart criteria prior to SQN restart in 1988. As of August 14, 1990, TVA has been able to qualify 91 percent of the supports to the FSAR requirements without need for postrestart modifications. The remaining 9 percent are currently under review for determination of actions necessary to achieve compliance with the FSAR.

Based on current design status, TVA expects that less than 60 modifications will be necessary; this represents approximately 1 percent of the total safety-related cable tray supports at SQN. In general, approximately 75 percent of the modifications are expected to be anchorage related, 20 percent localized stiffener to structural steel interface related, and 5 percent punching shear related at the tube steel to tube steel connection. Eleven modifications have been designed to date. Of these, 1 modifies anchors, 8 address localized stress at the attachment of the support to structural steel, and 2 result from punching shear.

There are several items that have impacted the projected schedule for completing this commitment. An increase in the scope of the engineering analysis required for support evaluation was recently identified. In January 1990, TVA reviewed the remaining eight categories of supports requiring evaluation and estimated that three of the categories would fail to generically meet the FSAR requirements. However, the review, which was completed in June 1990, indicated that seven instead of three of the eight categories would require specific support walkdowns and analyses. This increase represents 7,000 to 8,000 additional person-hours of work. Additionally, SQN Unit 2 has had a very successful operating run, and the outage is scheduled to begin approximately three weeks earlier than anticipated. These items combine to have compressed the planned preoutage activities such that required modifications would now need to be implemented concurrent with peak outage activity in order to meet the current commitment schedule.

Significant safety and reliability modifications are planned for implementation, both inside and outside containment during the Unit 2 Cycle 4 refueling outage. Inside containment these include the reduced reactor coolant system inventory level indication required by Generic Letter 88-17, upper head injection system removal, steam generator eddy current testing required by SQN technical specifications and repair work required by NRC Bulletin 88-02, postaccident monitoring instrumentation installation required by SQN license conditions, rigorously and alternately analyzed piping support modifications, resistance temperature detector bypass elimination, and reactor coolant pump cartridge seal replacement. Activities outside containment include the control room design review (NUREG 0737) human factors upgrade, Eagle 21 reactor protection system installation, Feedwater Heaters 3 and 4 replacements, remaining accessible rigorously and alternately analyzed piping support modifications, and boron injection tank deactivation. These numerous activities represent a significant outage management and resource management load. Working additional nonoutage activities is clearly undesirable from a variety of perspectives.

When this commitment was initially made, the number and location of potential modifications were unknown (i.e., the schedule anticipated potential for in-containment modifications of supports for both units). The completion date was accordingly tied to start-up from the Unit 2 Cycle 4 refueling outage, which would allow any necessary Unit 1 in-containment modifications to be completed during the Unit 1 Cycle 4 refueling outage completed in June of this year and Unit 2 in-containment modifications during the Unit 2 Cycle 4 refueling outage scheduled for fall of this year. Early efforts were focused at identifying potential Unit 1 in-containment modifications to support that schedule. Further iterative evaluations continued to minimize the required modifications as appropriate with the process inherently driving final modification identification until the end of the process. In the end, no support modifications were identified for either unit inside containment and accordingly commitment completion is no longer practically tied to an outage.

TVA has reviewed the scope of proposed deferred activities and does not believe the short deferral to represent a significant reduction in safety. A relatively small number, approximately 1 percent of total supports, of cable tray supports are involved, none attached to the steel containment vessel, none involved with the diesel generator building, and none involved with the cable spreading rooms in the control building. The supports expected to require modifications to restore FSAR margin are qualified to the restart criteria that provided acceptable basis and margin for demonstrating operability. Engineering will be completed by the original schedule, providing further assurance that no operability issues will exist at restart from the outage (i.e., any unanticipated issues would be resolved before restart).

Deferral of the small number of cable tray support modifications will allow resources to be allocated to the various beneficial projects that require an outage to implement. While performing work such as these support modifications with either or both of the units at power, necessary safety

measures are observed. Examples of these measures include designing the modifications to ensure that minimum factors of safety are maintained during the modification process, coordinating field implementation through the Work Control group with the Operations organization, and covering the cable trays during the support modifications to protect the cables from sparks and dust. Implementation of the modifications during the Unit 2 Cycle 4 refueling outage would still require similar precautions as the supports involve common equipment potentially impacting the operating Unit 1.

On the basis of a favorable NRC response, TVA would reduce ongoing related engineering and defer modification activities and transfer those resources to support of preoutage and outage activities. As the peak outage support activities begin to diminish, full engineering and modifications (workplan preparation) activities would be resumed; in any case engineering activities would be continued at a rate to ensure completion before start-up from the refueling outage with expected issuance of modification packages by October 30, 1990. Modification activities would resume as resources became available coming out of the outage. A somewhat longer duration (as compared with the 63-day outage duration) for postoutage modification implementation was considered in establishing the revised schedule (February 28, 1991) to account for year-end holiday impacts and nonoutage (minimizing overtime) work schedules.

In conclusion, the proposed deferral does not represent a significant safety reduction, and full implementation of the cable tray support modifications coincident with the extensive Unit 2 Cycle 4 refueling outage activities would result in adverse outage resource and work control impact. Therefore, TVA requests concurrence with the proposed revised schedule completion date of February 28, 1991.

ENCLOSURE 3

List of Commitments

1. TVA is proposing to defer a portion of the work and revise the implementation completion date for the cable tray support program to February 28, 1991.

2. Engineering will be completed by restart from the Unit 2 Cycle 4 refueling outage.

ENCLOSURE 3

List of Commitments

1. TVA is proposing to defer a portion of the work and revise the implementation completion date for the cable tray support program to February 28, 1991.

2. Engineering will be completed by restart from the Unit 2 Cycle 4 refueling outage.