

UNITED STATES GOVERNMENT

Memorandum

RWJ
GNS '81 0717 051
TENNESSEE VALLEY AUTHORITY

TO : Those listed

FROM : H. N. Culver, Director of Nuclear Safety Review Staff, 249A HBB-K

DATE : July 14, 1981

SUBJECT: SEQUOYAH NUCLEAR PLANT - NUCLEAR SAFETY REVIEW STAFF REVIEW REPORT
NO. R-81-12-SQN

Attached is the NSRS report for the routine review conducted at SQN during the period of June 15-19 and 22-23, 1981. The primary purpose of this review was to determine the status of outstanding NSRS review items.

Twenty-three previously identified items were reviewed and one new concern was raised. These items are detailed in section V of the attached report and recommendations are listed in section III. Only five concerns had been fully addressed and are therefore considered closed. However, our review revealed that many of our previous recommendations for the remaining concerns were being implemented but work had not been completed. Consequently, NSRS will pursue the resolution of the remaining open items during subsequent reviews.

If you have any questions regarding this report or transmittal memorandum, contact R. W. Travis at extension 4814.

H. N. Culver
H. N. Culver

A. W. Crevasse, 401 UBB-C
H. J. Green, 1750 CST2-C
M. N. Sprouse, W11A9 C-K

JOV:LML

Attachment

cc: J. M. Ballentine, Sequoyah NUC PR
G. H. Kimmons, W12A9 C-K
MEDS, 100 UB-K
F. A. Szczepanski, 417 UBB-C (Attachment)

TENNESSEE VALLEY AUTHORITY
NUCLEAR SAFETY REVIEW STAFF
REVIEW

NSRS REPORT NO. R-81-12-SQN

SUBJECT: TENNESSEE VALLEY AUTHORITY
SEQUOYAH NUCLEAR PLANT UNITS 1 AND 2
ROUTINE REVIEW

DATES OF
ONSITE REVIEW: *June 15-19, 1981
*June 22, 1981
+*June 23, 1981

REVIEWERS: Ronald W. Travis / gov 7-15-81
+RONALD W. TRAVIS DATE

Janice O. Vantrease 7-15-81
*JANICE O. VANTREASE DATE

APPROVED BY: K. W. Whitt 7/15/81
KERMIT W. WHITT DATE

TABLE OF CONTENTS

	<u>Page</u>
I. Scope	1
II. Conclusions	1
III. Recommendations	1
IV. Status of Previously Identified Open Items	1
V. Details	4
VI. Personnel Contacted	18
VII. Documents Reviewed (References)	19

I. Scope

This was a routine review of potential safety concerns and a followup review of 23 open items from previous reviews by the Nuclear Safety Review Staff (NSRS) on units 1 and 2 at Sequoyah Nuclear Plant (SQN).

II. Conclusions

The routine review of potential safety concerns indicates that the Division of Nuclear Power (NUC PR) does not have a consistent method for determining the average essential raw cooling water (ERCW) suction temperature.

The followup review of open items from previous reviews indicates that five open items have been resolved, and the remaining items require additional followup activity.

III. Recommendations

R-81-12-SQN-1, ERCW Flow and Suction Temperature Concerns (See section V.B. for details.)

NUC PR should:

- A. Incorporate the resolution of the ERCW flow deficiencies to the electrical board rooms and the main control room air conditioning in the unit 1 test data package for preoperational test TVA-18C.
- B. Revise Surveillance Instruction (SI)-3, step 3.1.5, to state clearly where the ERCW suction temperature will be taken daily to comply with Technical Specification surveillance requirement 4.7.5.b

IV. Status of Previously Identified Open Items

- A. R-80-05-SQN-2, Installation of Hydrogen Analyzer Calibration Gas Bottles

This item is closed. (See section V.A.1 for details.)

- B. R-80-05-SQN-3, Nitrogen Cover Gas on Primary Containment Electrical Penetrations

This item remains open pending further work by NUC PR to complete the surveillance instructions and to perform a satisfactory test of the nitrogen system. (See section V.A.2 for details.)

- C. R-80-05-SQN-5, Additional Operator Training for Hydrogen Control

This item remains open pending completion of the Westinghouse owners' group analysis and NUC PR's response regarding specific modifications to the analysis for ice condenser containments. (See section V.A.3 for details.)

- D. R-80-05-SQN-7, Potential Design and Installation Problems Associated with Flexible Metal Conduit

This item remains open pending completion of flex hose installation procedures and the revision of flexible metal conduit installation procedures by NUC PR. (See section V.A.4 for details.)

- E. R-80-05-SQN-8, Environmental Qualification and Isolation for the Primary Containment Vacuum Breakers and Associated Isolation Valves

This item remains open pending completion of Engineering Change Notice (ECN) L-5049 by NUC PR. (See section V.A.5 for details.)

- F. R-80-05-SQN-9, Temporary Helicopter Pad Located Between the Diesel Generator and Auxiliary Buildings

This item remains open pending elimination of the temporary pad by NUC PR. (See section V.A.6 for details.)

- G. R-80-05-SQN-11, Siltation and Clam Buildup in Systems Utilizing River Water

This item remains open pending completion of (1) the preventative maintenance program, (2) procedures on ERCW piping inspection, and (3) ECN L-5009 by NUC PR. NUC PR must also determine if procedures will be written to address the use of flow and temperature measurements instead of visual inspection as a method of detecting clams. (See section V.A.7 for details.)

- H. R-80-20-SQN-1, Unreviewed Safety Question Determination

This item is closed. (See section V.A.8 for details.)

- I. R-80-20-SQN-2, Inadequate Documentation of Startup Test Deficiencies and Procedural Conflicts Encountered

This item remains open pending completion of NUC PR's implementation of our recommendations. (See section V.A.9 for details.)

- J. R-81-01-SQN-1, Inadequate Document Control Utilized to Resolve Startup Test Deficiencies or Procedural Conflicts Encountered

This item is closed. (See section V.A.10 for details.)

- K. R-81-01-SQN-2, Failure of OPQAA to Perform Audit Function

This item remains open pending completion of OPQAA's startup test audit function. (See section V.A.11 for details.)

- L. R-81-01-SQN-3, Preoperational Test Performance Witnessing

This item is closed. (See section V.A.12 for details.)

M. R-81-05-SQN-1, RHR Isolation

This item remains open pending completion of procedure revision by NUC PR. (See section V.A.13 for details.)

N. R-81-05-SQN-2, Personnel Statements and Logs

This item remains open pending additional discussions with NUC PR regarding personnel statements. (See section V.A.14 for details.)

O. R-81-05-SQN-3, Data Availability

This item remains open pending completion by NUC PR of the design of the technical support center. (See section V.A.15 for details.)

P. R-81-05-SQN-4, Personnel Evacuation

This item is closed. (See section V.A.16 for details.)

Q. R-81-07-SQN-1, Employee Concern No. 79-12-01 Required Material Not in Sequoyah FSAR - Safety Concern on ERCW Pumping Station

This item remains open pending issuance of the FSAR revisions 68 and 69. (See section V.A.17 for details.)

R. R-81-07-SQN-2, Lack of Maintenance Instructions

This item remains open pending completion of the instructions by NUC PR. (See section V.A.18 for details.)

S. R-81-07-SQN-3, Lack of Management Control of Surveillance Program

This item remains open pending further evaluation of our recommendations by NUC PR. (See section V.A.19 for details.)

T. R-81-07-SQN-4, Inaccurate Organization Representation

This item remains open pending completion of document revisions by NUC PR. (See section V.A.20 for details.)

U. R-81-07-SQN-5, Lack of Management Control in the Area of Nuclear Operator Training Program

This item remains open pending completion of the document revisions by NUC PR. (See section V.A.21 for details.)

V. R-81-07-SQN-6, Errors and Inconsistencies in Sequoyah Nuclear Plant Instructions

This item remains open pending completion of the procedure revisions by NUC PR. (See section V.A.22 for details.)

W. R-81-07-SQN-7, Unreviewed Temporary Alteration Control Forms

This item remains open pending further discussions with NUC PR. (See section V.A.23 for details.)

V. Details

A. Previously Identified Open Items

1. R-80-05-SQN-2, Installation of Hydrogen Analyzer Calibration Gas Bottles

The details and recommendations related to this concern were first discussed in section IV.B.3 of reference A. A second review of this item with additional recommendations was discussed in section IV.B.1 of reference B.

The results of this review show that all of the hydrogen analyzer calibration gas bottles for unit 1 have been properly installed, and ECN L-5219 has been closed. Consequently, all of our previous recommendations have been implemented.

This item is closed.

2. R-80-05-SQN-3, Nitrogen Cover Gas on Primary Containment Electrical Penetrations

The details and recommendations related to this concern were first discussed in section IV.B.5 of reference A. A second review of this item revealed that some effort had been made to address our concerns; however, much work still remained to clear this deficiency. Section IV.3.2 of reference B contains the detailed information and remaining recommendations for this item.

During this review period, SI-157 (reference I) and SI-599 (reference J) were reviewed to determine how the penetrations and manifold systems were periodically inspected for leaks and also to determine the interface between the leak rate testing and the nitrogen manifold system. It was learned that both surveillance instructions were required to be conducted simultaneously during each refueling outage. This is to ensure that the nitrogen pressure instrumentation for each electrical penetration is operational, that the penetration is pressurized to 15 lb/in²g, and finally, that overall containment leakage does not exceed a specified value. Another surveillance instruction, SI-658 (reference K), which has been conducted weekly, ensures that the nitrogen supply header pressure will be maintained between 14.5 and 15.0 lb/in²g. NSRS feels that these procedures are adequate to satisfy our previous recommendations regarding establishment of a program to ensure 15 lb/in²g pressurization of the electrical penetrations.

One basic problem, however, still remains and that is the assurance that all electrical penetrations on unit 1 are pressurized to 15 lb/in²g. The NSRS reviewer learned that SI-599 had never been conducted. Also, it was to be rewritten before conduct of the test for the first time. Conduct of

SI-599 had been officially scheduled for the first refueling outage. It was also learned that SI-157 had been conducted only once and that was in September 1979. Conduct of the test had been officially scheduled again for September 1980. NSRS first raised this nitrogen pressurization concern in May 1980 when we discovered that a large number of the electrical penetrations were not pressurized. Consequently, the results of SI-157, which was conducted in September 1979, were no longer valid. In reference E it was stated that some of the penetrations had been pressurized to 15 lb/in²; however, during this review the NSRS reviewer was unable to determine that anything had been done to ensure that all penetrations had been properly pressurized. Therefore, our previous recommendation still applies, i.e., NUC PR should ensure that each electrical penetration is pressurized with nitrogen to 15 lb/in². This could be accomplished by conducting SI-157 and SI-599. Finally, as an additional recommendation, NUC PR should complete the revision of SI-599 as soon as possible since the plant staff feels this is necessary before the test can be conducted. This item remains open.

3. R-80-05-SQN-5, Additional Operator Training for Hydrogen Control

This NSRS concern was initially detailed in section IV.B.7 of reference A. According to the SQN Operator Training Officer no additional operator training for hydrogen control had been planned because the Westinghouse owners' group had not completed the required analysis. Also, no efforts had been made to determine how this generic analysis will apply to ice condenser containments. Therefore, our previous recommendations, as stated in reference A, still apply. NSRS will pursue this further with NUC PR during a subsequent review.

This item remains open.

4. R-80-05-SQN-7, Potential Design and Installation Problems Associated with Flexible Metal Conduit

In section IV.C.2 of reference A, NSRS raised this item as a potential concern that needed more investigation as information became available. NSRS became aware of installation problems associated with safety-related flexible metal conduit through nonconformance report (NCR) EEB 80-21 (reference L). This NCR resulted from observations by the Division of Engineering Design (EN DES) Civil Engineering Branch (CEB) and Nuclear Engineering Branch (NEB) pipe rupture field evaluation team. Discussions with EN DES personnel revealed that the pipe rupture analyses assumed that the conduit was installed properly. This assumption was the basis for saying that certain pipe rupture interactions would not damage the flexible metal conduit and thereby prevent damage to essential safety-related equipment

required for plant shutdown. Additional conversations with EN DES personnel revealed that the same assumption applied to the installation of safety-related flex hose.

EN DES personnel held several meetings with the flex hose and flexible metal conduit vendors. They obtained considerable information about the strength of the hose and conduit and about the manufacturer's installation requirements.

NSRS reviewed the General Construction Specifications, G-43 and G-40, which described the installation methods to be used for flex hose and flexible metal conduit. The revisions of these documents at that time gave no specifics on seismic installation requirements; however, it was stated that manufacturer's installation requirements would be followed.

Walk through of the unit 1 reactor building and the auxiliary building by NSRS personnel, outage personnel, and EN DES personnel revealed that a large portion of the flexible metal conduit had not been installed properly, i.e., according to manufacturer's directions, and much of it had been damaged by personnel using it as a ladder to climb from place to place. The major problem with the installation was that the flexible metal conduit coupling had not been screwed together properly so that a slight tug on the conduit would uncouple it leaving the cables exposed.

At that time outage began a program to replace the damaged flexible metal conduit and to reinstall all improperly installed flexible metal conduit. Reference Q was used by outage to provide installation guidance.

The walk through also revealed that the flex hose installation was not a major problem because it was welded in place. The only concern here was to ensure the installation allowed seismic movement. EN DES found no problems in this area.

To minimize installation problems, EN DES requested the Division of Construction (CONST) to revise G-40 and G-43 (references O and P, respectively). The resulting revisions (references M and N) now provide adequate guidance for the installation of flex hose and flexible metal conduit.

NSRS discussed flex hose and flexible metal conduit installation practices and procedures with outage and plant staff personnel. Only three flex hoses have been installed by NUC PR, and the revised G-43 was followed since there was no NUC PR procedure. Discussions with outage and plant staff personnel revealed that they agreed with the NSRS reviewer on the need for a written NUC PR instruction. Consequently, NSRS recommended that an instruction for the installation of flex hose be written by NUC PR using the guidelines presented in G-43 (reference N).

Reference Q, a NUC PR procedure that addressed flexible metal conduit installation methods, has been reviewed by NSRS. It was found to contain most of the guidelines set forth in General Construction Specification, G-40, except for details on the minimum bending radius allowed for various sizes of flexible metal conduit. Consequently, NSRS recommends that NUC PR revise reference Q to include the minimum bending radius criteria listed in reference M. This is necessary to ensure adequate seismic installation.

This item remains open.

5. R-80-05-SQN-3, Environmental Qualification and Isolation for the Primary Containment Vacuum Breakers and Associated Isolation Valves

NSRS first raised this as a concern in section IV.C.3 of reference A. A second review was conducted and discussed in section IV.B.5 of reference B.

During this review period, NSRS again looked at the progress being made concerning implementation of our previous recommendations. The NSRS reviewer found that only the A-train solenoid on unit 1 had been replaced with an environmentally qualified one. Also, the redundant control air supply had been connected on the A-train valve. The B-train had not been modified yet because there had not been an outage of sufficient length to modify the valves in both trains. Consequently, all previous recommendations still apply. NUC PR should:

- a. Expedite the implementation of ECN L-5049 to correct the potential solenoid environmental qualification problems and the redundant control air supply problem.
- b. Ensure that TVA's final containment isolation requirements in light of TMI address the isolation requirements for the valves.

This item remains open.

6. R-80-05-SQN-9, Temporary Helicopter Pad Located Between the Diesel Generator and Auxiliary Buildings

This item was first detailed as a concern in section IV.C.5 of reference A. A second review was performed and the results presented in section IV.B.6 of reference B.

Our third review revealed that none of our previous concerns had been addressed although the temporary pad had only been used once since it was established. The permanent heliport, which is outside the SQN security area, had been completed so that all helicopters should use that facility. (See reference R for details of the heliport.) However, NSRS found that the white bullseye still marked the temporary

pad. Consequently, NSRS recommends that the temporary pad bullseye be covered over to eliminate confusion to helicopter pilots during future landings and thereby ensure use of the permanent heliport facilities and minimize the possibility of fuel oil explosion.

This item remains open.

7. R-80-05-SQN-11, Siltation and Clam Buildup in Systems Utilizing River Water

In section IV.C.7 of reference A, NSRS discussed this item as a potential problem at SQN since major problems had been found at BFN. Since that time, the Nuclear Regulatory Commission (NRC) has issued a bulletin, IEB 81-03, on this problem (reference S). In their response to IEB 81-03 (reference T), NUC PR stated that only asiatic clams, and not mussels, existed in the vicinity of SQN and then only to a moderate level. To date no clams had been found in the safety-related ERCW system, the fire protection (FP) system, the component cooling water heat exchangers, or the auxiliary ERCW cooling towers. In addition, NUC PR discussed actions, such as procedures, that would be implemented to monitor the raw water systems for a potential problem.

NSRS agreed with the actions planned; however, before some of them can be fully implemented NUC PR should:

- a. Complete SI 668.1 which addresses the inspection of ERCW piping for corrosion products and clam accumulation.
- b. Determine if procedures will be written to address the use of flow and temperature measurements instead of visual inspection as a method of detecting clams.
- c. Complete development of their preventative maintenance program for SQN. (This was previously recommended by NSRS in reference A.)

In addition, our earlier recommendation still applies, i.e., to expedite the development of a schedule for the timely implementation of the ERCW piping changeout authorized by ECN L-5009.

NSRS will continue to follow the development and implementation of this program and will review procedures as they are developed.

This item remains open.

8. R-80-20-SQN-1, Unreviewed Safety Question Determination

The details and recommendations pertaining to this concern were discussed in section IV.B.2.a of reference D. The NSRS reviewer determined during this review that an unreviewed safety question determination (USQD) had been completed and approved by the Plant Operations Review Committee (PORC) as an attachment to test deficiency No. 1-7.2-1. In addition, Standard Practice, SQA 119 (reference U), was written to establish a plant program for handling unreviewed safety questions. NSRS feels this program is adequate.

This item is closed.

9. R-80-20-SQN-2, Inadequate Documentation of Startup Test Deficiencies and Procedural Conflicts Encountered

During the NSRS startup test program review, this problem was detailed in section V.B.2.b of reference D. Since issuance of our previous review report, which contained specific recommendations, NUC PR had made a conscientious effort to address these concerns. However, some of our recommendations, as explained below, were apparently overlooked by mistake since the plant staff agreed with the recommendations. NSRS feels that these will be incorporated as soon as possible into the various startup tests.

Test deficiency No. 1-7.2-1 had been written and PORC had approved it thereby documenting the failure to collect source range-intermediate range overlap data after initial criticality had been achieved. NSRS considers this item closed.

Another NSRS recommendation involved the need to write a test deficiency or temporary change to account for the failure to take rod worth data during the rod withdrawal sequence of startup test, SU-7.6. This had not been done. Consequently, this item remains open.

Step 5.5.19 of SU-7.7 had been deleted without the use of proper administrative controls. The NSRS reviewer found that test deficiency No. 1-7.7-1 had been written and approved by PORC to address this problem. NSRS considers this item closed.

During an earlier review, an NSRS reviewer noted several administrative concerns in section V.B.3 of reference D. The status of the resolution of those concerns is discussed below.

- a. The startup test engineers have received additional training in SQA 44 which deals with narrative log entries. NSRS considers this item closed.

- b. Temporary change (TC) 80-1348, had been added to the test package as required by AI-4 and as recommended by NSRS. This item is considered closed.
- c. The additional copies of data sheet 2 in SU-7.2 had been verified correct to the controlled copy revision and initialed as required by SQA 44. However, data sheet C1 in SU-8.5.3 had not been verified or initialed as requested by NSRS to comply with SQA 44. Therefore, this item remains open.
- d. The revision level of page 5 of SU-7.4 had not been verified as recommended by NSRS. This item remains open.
- e. Data sheet 1 of SU-8.5.7 had not been added to the test package to comply with our earlier recommendation. This item remains open.
- f. Another review of the startup test traces revealed that most of the traces still lacked the following information:
 - (1) boron concentration
 - (2) initial values of the parameters recorded
 - (3) name of person recording

Specific comments on each trace were again given to the reactor engineer who said they would be addressed.

This item remains open.

10. R-81-01-SQN-1, Inadequate Document Control Utilized to Resolve Startup Test Deficiencies or Procedural Conflicts Encountered

NSRS discussed the details and associated recommendations in section V.A.2.a of reference E. During this review effort the NSRS reviewer found that our previous recommendations had been implemented by NJC PR with the following results:

- a. Test deficiency No. 1-1.1-1 had been written to discuss the recorder hookup problems and the failure to record some data in SU-1.1. This deficiency had been approved by PORC. NSRS agreed with the resolution of this concern. This item is considered closed.
- b. TC 80-2419, which was superseded by TC 80-2323, had been written to cover our concern related to recorder hookup problems in SU-9.3. These changes had been approved by PORC. NSRS considers this item closed.

- c. Test deficiency No. 1-8.4-1 had been written and approved by PORC to account for the deletion of the computer printout from step 5.2.4 of SU-8.4. This item is considered closed.
- d. The following is the status of the administrative concerns raised in section V.A.2.b of reference E.
 - (1) Neither table 7 of SU-7.3.2 nor test deficiency No. 1-7.3.2-4 accounted for a -15.6 percent difference between the measured and predicted powers of fuel assembly M-7. The allowed difference was ± 15 percent. Since our previous recommendation had not been implemented, this item remains open.
 - (2) The acceptance criteria steps 6.1 and 6.2 of SU-8.3 had been signed; and thus, this item is closed.

11. R-81-01-SQN-2, Failure of OPQAA to Perform Audit Function

Our concern was first brought to the attention of OPQAA in section V.B.2.a of reference E. Discussions with the SQN OPQAA lead auditor revealed that none of our previous recommendations had been implemented. In reference V, OPQAA committed to witnessing some startup tests or monitoring the plant QA staff's program for test witnessing. The current audit schedule indicated audits will be performed during the unit 2 startup test program. It must be emphasized that NSRS felt that additional audits should have been performed on unit 1 startup testing as was clearly stated in our previous report. Since the unit 1 startup test program has been completed, NSRS will continue to monitor OPQAA audit activities during unit 2 startup testing. Our previous recommendations, which are detailed in reference E, section V.B.2.a, still apply.

This item remains open.

12. R-81-01-SQN-3, Preoperational Test Performance Witnessing

NSRS began this review effort earlier this year by observing conduct of three tests. These tests and the criteria used during test conduct observation were listed in section V.D of reference E. No recommendations were offered then since the NSRS reviewer planned to observe conduct of at least two more tests.

During this review period, conduct of portions of three preoperational tests was witnessed by the NSRS reviewer. The tests were:

- a. W-6.1F, "Integrated Engineering Safeguards Activation," portions of sections 5.1, 5.2, and 5.3.

- b. W-2.2, "Residual Heat Removal System," change sheet No. 8.
- c. TVA-1, "Shield Building Inleakage Rate Tests, Emergency Gas Treatment System Functional Tests," portions of section 5.8 and change sheet No. 1, step 5.7.1.1.18.

Three basic concerns were identified after observing conduct of the tests. These were identified to the preoperational test engineers and to the preoperational test group management. Since the preoperational test program is almost complete at SQN, our concerns will not be followed up in later reviews; however, they were discussed with preoperational test group management and agreement was reached to have our suggestions implemented. The major reason for implementation involved the fact that many of the SQN preoperational test engineers will be moving to preoperational test groups at other plants. Also this will aid in the continuation of a good program at SQN. The agreement included the following items:

- a. The guidelines for the use of change sheets presented in SQA 14 (reference W) should be followed. Specifically, change sheets should be written to change the testing sequence where a specified sequence was indicated in the test instruction. Also, a change sheet should be written to revise contact numbers in the test procedure; number changes should not be treated as typographical errors.
- b. The disposition portion of a deficiency statement should be filled in and signed only when the corrective action to resolve the deficiency has been completed. The OQAM, part II, section 4.1, item 7.2 (3/10/81), stated that "the NUC PR test director shall document the final disposition of each test deficiency in attachment 5 and shall sign each such disposition statement or certification that specified corrective actions have been completed" (reference X).
- c. Test deficiencies should be documented immediately after they occur. The OQAM, part II, section 4.1, item 7.1 (3/10/81), stated that "deficiencies shall be documented and then corrected and testing continued."

This item is considered closed.

13. R-81-05-SQN-1, RHR Isolation

The details of this concern were presented in section V.A of reference F. NUC PR responded to the recommendation associated with this concern in reference Y.

During this review period the NSRS reviewer discussed NUC PR's response with the SQN Operator Training Officer. The operators had received training on the event immediately after the spray event during their weekly onsite training sessions. The NUC PR report (reference Z) was discussed in depth. In addition, during the second week of the requalification program, all of the operators received additional classroom instruction and simulator training on the event. Finally, plant procedures (references AA through EE) are being revised to specify the required operator actions during a LOCA while on RHR cooling. This item remains open pending completion of plant procedure revisions.

14. R-81-05-SQN-2, Personnel Statements and Logs

This item was previously discussed in section V.B of reference F. NUC PR responded to our recommendation on this concern in reference Y.

In NUC PR's response it was stated that "the Plant Superintendent and Assistant Plant Superintendent of Operations discussed in detail the spray event with the appropriate Operations personnel and requested additional information and clarification before they left the plant following the event." It is obvious, as stated in our previous report on this item, that all of the information was not included in the statements. Discussions with the supervisor of the compliance staff confirm this. Consequently, NSRS reiterates the need to use good management practices and sound judgment to ensure accurate records of an event. This is essential to minimize the impact of review/audit groups on the plant staff and especially to be able to recreate the sequence of events after an accident. This item remains open.

The NSRS reviewer also learned that the plant staff had investigated several methods, such as voice recorders, to obtain an accurate event log. However, no conclusions regarding their adaption had been reached. Since this was only a consideration, NSRS considers this item closed.

15. R-81-05-SQN-3, Data Availability

Details of this concern were presented in section V.C of reference F.

One NSRS recommendation involved ensuring that each pen of all two-pen strip chart recorders contained different colors of ink. According to the compliance staff supervisor, all strip chart recorders have been checked to ensure proper ink

colors. Also, the operators were instructed to ensure all charts are maintained correctly. NSRS considers this item closed.

NSRS also recommended that NUC PR investigate other data acquisition methods that are superior to strip chart recorders. NUC PR plans to depend on the equipment provided as part of the Technical Support Center design, which had not been finalized. Consequently, this item remains open.

16. R-81-05-SQN-4, Personnel Evacuation

This concern was discussed in section V.D of reference F.

NUC PR responded in reference Y that the evacuation alarm and associated response actions were discussed in the safety meetings for the construction workers immediately after the RHR spray event. NSRS considers this adequate.

This item is considered closed.

17. R-81-07-SQN-1, Employee Concern No. 79-12-01 - Required Material Not in Sequoyah FSAR - Safety Concern on ERCW Pumping Station

The details concerning this item were discussed in section V.A.5 of reference G.

EN DES replied to our recommendations in reference FF.

NSRS concurs with the response to our recommendations and with the draft FSAR sections. However, this item remains open pending issuance of amendments 68 and 69 for the SQN FSAR.

18. R-81-07-SQN-²~~2~~, Lack of Maintenance Instructions

This concern was discussed in section V.B.2 of reference G.

NUC PR's response to our recommendation as stated in reference GG is acceptable. NSRS plans to review the procedures (IMI-92-SRPC, IRIC, and PRIC) when they are received and the newly written SI-671 during a later review period.

This item remains open.

19. R-81-07-SQN-3, Lack of Management Control of Surveillance Program

This NSRS item, including recommendations, was discussed in section V.B.3 of reference G.

NUC PR's response (reference GG) to our recommendations did not address the problem we identified. We recommended that

NUC PR assign responsibility for maintaining SQA 41 as a current document. NUC PR responded that the QA staff periodically updated SQA 41.

During our initial review the QA supervisor stated that he did not have responsibility for updating or ensuring correctness of SQA 41 after the first review which followed issuance of the unit 1 license and Technical Specifications. Conversations with other section supervisors revealed that they felt no responsibility for ensuring correctness of the entire surveillance requirements listing in SQA 41. Consequently, NSRS does not feel that this item is resolved. Further discussions with the plant staff will be held during a later NSRS review. This item remains open.

NSRS also recommended that SQA 41 be reviewed and corrected to include all Technical Specification surveillance requirements. This has been done. The item is considered closed.

Finally, NSRS recommended that NUC PR should reconsider the appropriateness of using SQA 41, a document not reviewed by PORC, as the primary basis for scheduling surveillances. This recommendation still applies after conversations with plant staff during this review period. Presently the plant staff is using this document to schedule surveillance testing, as required in SI-1, and discussed in section V.B.3 of the NSRS report (reference G). NUC PR should realize the potential problems of using an unapproved document, especially one that is not controlled for revisions to the Technical Specifications surveillance requirements.

This item remains open.

20. R-81-07-SQN-4, Inaccurate Organization Representation

This item was discussed in reference G, section V.B.4. Reference GG stated NUC PR's responses to our recommendations.

This item remains open pending issuance of the revision to chapter 13 of the SQN FSAR and of the revised DPM No. N74A20.

21. R-81-07-SQN-5, Lack of Management Control in the Area of Nuclear Operator Training Program

NSRS detailed this concern in section V.B.5 of reference G.

NUC PR's response (reference GG) did not address the issue. NSRS had previously recommended immediate revision of the N-OQAM and DPM No. N78A13 to detail the operator training program.

These documents have been in the revision/review process for more than a year. NSRS has been told repeatedly that these documents are being revised. TVA also committed to the NRC

to detail the operator training program. Consequently, we must emphasize the need to complete these documents promptly to meet NRC commitments.

This item remains open.

22. R-80-07-SQN-6, Errors and Inconsistencies in Sequoyah Nuclear Plant Instructions

The details related to the concern were discussed in section V.B.6 of reference G.

NUC PR's response to our recommendations is found in reference GG.

In reference G, NSRS pointed out that if we could find so many problems with a few plant procedures in such a brief review period, then the plant staff should make an honest effort to review and revise all plant procedures in a timely fashion. NUC PR's response indicated that AI-14 should take care of our concern. NSRS is aware of the requirements for procedure preparation, review, and approval as stated in AI-14. However, we feel that it is not being adequately implemented. Consequently, our previous recommendations still apply. NSRS will discuss this with plant staff during a subsequent review.

This item remains open.

23. R-81-07-SQN-7, Unreviewed Temporary Alteration Control Forms

This concern was detailed in section V.B.7 of reference G.

Reference GG contains NUC PR's response to our recommendations.

As stated in reference G, AI-9 discusses temporary alteration control forms (TACF's). When NSRS originally reviewed AI-9, it had not been revised to comply with the November 1980 revision of DPM No. N73011. After receiving NUC PR's response to our recommendations, NSRS again reviewed AI-9 and found it to be adequate with one exception. In the scope of DPM No. N73011 it stated, "These requirements become applicable at the time of the tentative transfer of a system, structure, or component to NUC PR." AI-9 states that the TACF's for CSSC equipment will be PORC reviewed only for operable equipment with operable being defined according to the Technical Specifications. Consequently, AI-9 and/or DPM No. N73011 still need to be revised to indicate a consistent governing policy.

This item remains open.

B. New Item

R-S1-12-SQN-1, ERCW Flow and Suction Temperature Concerns

As a routine matter the NSRS reviewer evaluates individual safety concerns that tend to indicate potential weaknesses in a program. In recent weeks, preoperational testing of the unit 2 ERCW system revealed inadequate flow rates for accident conditions. In particular, ERCW flow to the main control room and the electrical board room's air conditioning were identified as inadequate. Both must be maintained for accident conditions. This was also a concern during unit 1 testing.

While reviewing the test data package for TVA-18C, "ERCW Flow Balance," unit 1, the NSRS reviewer noted the following statement:

"The flow deficiencies to the electrical board rooms and the main control room air conditioner are acceptable during the months of November 1979 to April 1980. During these months the cooler river water will permit satisfactory operation of the equipment. EN DES is currently reviewing design requirements and will have the problems resolved and necessary changes ready for implementation by January 18, 1980." The temperature limitation was stated to be 75 degrees Fahrenheit later in the test data package. This temperature limitation was to be imposed until the ERCW piping to the air conditioners could be changed out to a larger size. This was to be implemented by ECN L-5235.

After reading these statements in the preoperational test data package, a concern immediately arose regarding the designated maximum ERCW temperature for unit 1 operation after April 1980. After much research and several conversations with EN DES and preoperational test staff, it was discovered that later analyses discussed in NCR SQNSWP8011 (reference II) allowed operation of the plant as long as the auxiliary essential raw cooling water (AERCW) system was available to supply the needed cooling water to the air conditioners. After further analysis, EN DES stated that there was no longer a need to impose a 75 degree Fahrenheit temperature limitation on the ERCW (see reference JJ). There was an adequate margin of safety until ECN L-5235 could be implemented. Because all of this information is not readily available or obvious from reading the TVA-18C test data package, NSRS recommends that the resolution to the test deficiencies listed in the test data package for TVA-18C be clearly stated in the package. Discussions with the preoperational test staff revealed that they agreed with the need to do this.

As a result of the test review, the NSRS reviewer became interested in the Technical Specifications limit for ERCW temperature. The Technical Specifications, section 4.7.5.b, state that the average temperature of water at the ERCW system suction should be less than or equal to 81 degrees Fahrenheit when the plant is in modes 1, 2, 3, or 4. The water temperature must be checked every 24

hours; SI-3, section 3.1.5, was written to implement this requirement (reference KK). This SI does not give specific guidance as to where or how to measure this temperature. Conversations with operations personnel revealed that the temperature was typically taken from two computer points (T2583A and T2584A) which provide the river temperature just a few feet under the water surface. If the temperature approaches the 81 degree Fahrenheit limit, then the condenser circulating water inlet temperature is used. NSRS understands that this yields conservative data; however, to ensure consistent, meaningful data, NSRS recommends that SI-3, section 3.1.5, be revised to specify where the reading will be taken.

This item remains open.

VI. Personnel Contacted

- L. D. Alexander, Mechanical Coordinator, Outage
- J. M. Anthony, Shift Engineer
- J. C. Barlock, Preoperational Test Engineer
- B. L. Bartlett, Jr., Preoperational Test Engineer
- D. R. Bucci, Preoperational Test Engineer
- M. L. Campbell, Mechanical Engineer, Outage
- *E. A. Condon, Supervisor, Preoperational Test Staff
- M. L. Cowan, Electrical Engineer, Electrical Equipment Group, Nuclear Maintenance Branch
- J. E. Englehardt, Shift Technical Advisor/Reactor Engineer
- M. E. Frye, Instrument Engineer, Instrument Maintenance Section
- J. Garner, Engineering Aide, Plant Services
- P. T. Garrett, Preoperational Test Engineer
- G. W. Gault, Shift Technical Advisor/Reactor Engineer
- R. R. Gibbs, Shift Technical Advisor/Reactor Engineer
- W. J. Glasser, Office of Power Quality Assurance Coordinator
- M. D. Gorman, Quality Assurance Engineer
- W. M. Halley, Supervisor, Preoperational Test Section
- *M. R. Harding, Supervisor, Compliance Staff
- P. R. Hitchcock, Mechanical Engineer, Mechanical Maintenance Section
- Z. M. Kabiri, Supervisor, Plant Services
- W. H. Kinsey, Supervisor, Power Plant Results Section
- L. B. Kuehn, Preoperational Test Engineer
- A. S. Lehr, Assistant Power Plant Maintenance Supervisor, Instrument Maintenance Section
- J. F. Lund, Mechanical Engineer, SQN/WBN Design Project, EN DES
- *J. M. McGriff, Jr., Assistant Plant Superintendent, Health and Safety Services
- J. A. McPherson, Supervisor, Mechanical Studies and Test Group
- R. L. Moore, Lead Auditor-SQN, OPQAA
- D. J. Mroz, Preoperational Test Engineer
- W. K. Nesmith, Preoperational Test Engineer
- T. L. Pitts, Preoperational Test Engineer
- W. R. Ramsey, Shift Engineer
- E. Saputa, Jr., Preoperational Test Engineer
- M. A. Skarzinski, Assistant Supervisor, Preoperational Test Section

- J. L. Taylor, Jr., Supervisor, Chemical Group, Power Plant Results Section
- A. W. Thomas, Electrical Coordinator, Outage
- N. R. Thomas, Preoperational Test Engineer
- G. E. Tiner, Instrument Engineer, Instrument Maintenance Section
- J. T. Tosh, Preoperational Test Engineer
- D. H. Tullis, Jr., Assistant Power Plant Maintenance Supervisor, Mechanical Maintenance Section
- J. R. Walker, Training Officer, Operation Section
- C. R. Winton, Engineer, Outage

*Attended exit meeting.

VII. Document Reviewed (References)

- A. Memorandum from H. N. Culver to J. R. Calhoun dated June 27, 1980, "Sequoyah Nuclear Plant Unit 1 - NSRS Review Report No. R-80-05-SQN," (GNS 800627 002)
- B. Memorandum from H. N. Culver to J. R. Calhoun dated August 25, 1980, "Sequoyah Nuclear Plant Unit 1 - NSRS Review Report No. R-80-11-SQN," (GNS 800826 002)
- C. Memorandum from H. N. Culver to H. J. Green dated November 20, 1980, "Sequoyah Nuclear Plant Unit 2 - Review of Preoperational Test Activities - NSRS Report No. R-80-19-SQN," (GNS 801125 001)
- D. Memorandum from H. N. Culver to H. J. Green dated January 14, 1981, "Sequoyah Nuclear Plant Units 1 and 2 - Nuclear Safety Review Staff Review Report No. R-80-20-SQN," (GNS 810115 154)
- E. Memorandum from H. N. Culver to A. W. Crevasse and H. J. Green dated February 18, 1981, "Sequoyah Nuclear Plant Units 1 and 2 - Nuclear Safety Review Staff Review Report No. R-81-01-SQN," (GNS 810218 002)
- F. Memorandum from H. N. Culver to H. J. Green dated March 26, 1981, "Sequoyah Nuclear Plant Unit 1 - Special Review of the Inadvertent Initiation of the Residual Heat Removal Containment Spray System on February 11, 1981 - NSRS Review Report No. R-81-05-SQN," (GNS 810328 001)
- G. Memorandum from H. N. Culver to H. J. Green and M. N. Sprouse dated May 5, 1981, "Sequoyah Nuclear Plant - Nuclear Safety Review Staff Review Report No. R-18-07-SQN," (GNS 810505 052)
- H. Engineering Change Notice L-5219, March 23, 1980 (SWP 800321 503)
- I. Surveillance Instruction, SI-157, "Testable Penetrations," revision 4, 6/10/81
- J. Surveillance Instruction, SI-599, "Periodic Calibration of the Electrical Penetration Nitrogen Pressure Instrumentation," revision 2, 3/20/81

- K. Surveillance Instruction, SI-658, "Electrical Penetration Nitrogen Supply Header Pressure Integrity Test," revision 2, 6/10/81
- L. Memorandum from F. W. Chandler to Those Listed dated January 25, 1981, "Sequoyah Nuclear Plant - Units 1 and 2 - Nonconformance Report (NCR) No. EEB 80-21," (EEB 800129 952)
- M. General Construction Specification, G-40, "Installing Electrical Conduit Systems and Conduit Boxes," revision 3
- N. General Construction Specification, G-43, "Support and Installation of Piping Systems in Category I Structures," revision 5
- O. EN DES Specification Revision Notice for General Construction Specification from M. N. Sprouse to H. H. Mull dated June 4, 1980, "General Construction Specifications No. G-40, "Installing Electrical Conduit Systems and Conduit Boxes," (EEB 800605 903)
- P. EN DES Specification Revision Notice for General Construction Specification from M. N. Sprouse to H. H. Mull dated September 23, 1980, "General Construction Specification G-43 - Support and Installation of Piping Systems in Category I Structures" (CEB 800916 004)
- Q. Modifications and Additions Instructions, M&AI-6, "Installation of Conduit and Junction Boxes," revision 0, 11/8/79
- R. TVA Drawing No. 10H242-3, -4, and -5
- S. U.S. NRC Office of Inspection and Enforcement, IE Bulletin 81-03, "Flow Blockage of Cooling Water to Safety System Components by Corbicula Sp. (Asiatic Clam) and Mytilus Sp. (Mussel)," April 10, 1981
- T. Letter from L. M. Mills to J. P. O'Reilly dated May 26, 1981, "Office of Inspection and Enforcement Bulletin 81-03 - RII:JPO 50-259, -260, -296 - Browns Ferry Nuclear Plant, 50-327, -328 - Sequoyah Nuclear Plant," (A27 810526 023)
- U. SQN Standard Practice, SQA 119, "Unreviewed Safety Question Determination," March 19, 1981
- V. Memorandum from A. W. Crevasse to H. N. Culver dated April 7, 1981, "Sequoyah Nuclear Plant Units 1 and 2 - Nuclear Safety Review Staff Review Report No. R-81-01-SQN," (GNS 810409 103) (A24 810407 002)
- W. SQN Standard Practice, SQA 14, "Sequoyah Nuclear Plant Preoperational Test Program," 11/25/80
- X. SQN Operational Quality Assurance Manual

- Y. Memorandum from H. J. Green to H. N. Culver dated May 7, 1981, "Sequoyah Nuclear Plant Unit 1 - Special Review of the Inadvertent Initiation of the Residual Heat Removal Containment Spray System on February 11, 1981 - NSRS Review Report No. R-81-05-SQN," (GNS 810508 102) (L33 810504 804)
- Z. Memorandum from H. G. Parris to W. F. Willis dated March 5, 1981, "Response to Chairman Freeman's Request for Information on Inadvertent Spray Actuation at Sequoyah Nuclear Plant Unit 1 (Memorandum dated February 12, 1981 from Craven Crowell to W. F. Willis)," (GNS 810309 102) (L51 810304 828)
- AA. Emergency Operating Instruction, EOI-0, "Immediate Actions and Diagnostics," revision 7, 3/31/81
- BB. Abnormal Operating Instruction, AOI-6, "Small Reactor Coolant System Leak," revision 9, 12/23/80
- CC. System Operating Instruction, SOI-74.1, "Residual Heat Removal System," revision 15, 4/28/81
- DD. General Operating Instruction, GOI-3B, "Hot Standby to Cold Shutdown," revision 14
- EE. General Operating Instruction, GOI-3C, "Hot Standby to Cold Shutdown for Purpose of Opening the Primary Coolant System," revision 14
- FF. Memorandum from M. N. Sprouse to H. N. Culver dated May 21, 1981, "Sequoyah Nuclear Plant Unit 2 - Nuclear Safety Review Staff Review Report No. R-81-07-SQN," (NEB 810521 255)
- GG. Memorandum from H. J. Green to H. N. Culver dated June 22, 1981, "Sequoyah Nuclear Plant - Nuclear Safety Review Staff Review Report No. R-81-07-SQN," (GNS 810623 101) (L16 810619 858)
- HH. Preoperational Test Data Package, TVA-18C, "ERCW Flow Balance," Unit 1
- II. Nonconformance Report SQNSWP8011, July 21, 1980 (SWP 800723 038)
- JJ. Memorandum from R. W. Cantrell to J. M. Ballentine dated June 17, 1981, "Sequoyah Nuclear Plant Units 1 and 2 - Essential Raw Cooling Water (ERCW) System - Piping Changes from the Main Control Room A/C Units (ECN L-5235)," (SWP 810617 045)
- KK. Surveillance Instruction, SI-3, "Daily, Weekly, and Monthly Logs," revision 13, 6/19/81

UNITED STATES GOVERNMENT

Memorandum

TENNESSEE VALLEY AUTHORITY

GNS '81 0908 050

TO : Those listed

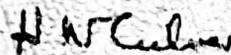
FROM : H. N. Culver, Director of Nuclear Safety Review Staff, 249A HBB-K

DATE : September 8, 1981

SUBJECT: NSRS SPECIAL REVIEW OF TVA'S NUCLEAR SECURITY PROGRAM - REPORT NO. R-81-13-NPS

The final report of the subject review is attached for your information and action. The review addressed the areas concerned with the development, coordination, and revision of TVA's nuclear security licensing documents and programs for implementation. The review reflected a need for management attention in the areas of: organizational responsibilities, program implementation, and personnel staffing. In addition, the review identified related areas which will require further NSRS reviews.

You are requested to provide us with your plans for addressing the recommendations of section IV within 30 days of the date of this memorandum. If you have any questions concerning this review, please contact D. L. Bailey at extension 6599 in Knoxville.



 H. N. Culver

C. Bouine, Jr., E3C76 C-K
 G. H. Kimmons, W12A9 C-K
 H. G. Parris, 500A CS12-C

KRM
 DLB:KRW

Attachment

CC (Attachment):

MEDS, 100 UB-K

READING FILE



TENNESSEE VALLEY AUTHORITY
NUCLEAR SAFETY REVIEW STAFF
REVIEW
NSRS REPORT NO. R-81-13-NPS

SUBJECT: SPECIAL REVIEW OF TVA'S NUCLEAR SECURITY PROGRAM

DATE OF REVIEW: June 16-19, June 24-25, July 1-2, and
July 8-9, 1981

Reviewer:

Dustin L. Bailey
Dustin L. Bailey

9.4.81
Date

Approved by:

K.W. Whitt
Kermit W. Whitt

9/4/81
Date

TABLE OF CONTENTS

	<u>Page</u>
I. SCOPE	1
II. BACKGROUND	1
III. CONCLUSIONS	1
IV. RECOMMENDATIONS	3
V. DETAILS	4
VI. PERSONS CONTACTED	20
VII. DOCUMENTS REVIEWED	21

I. SCOPE

The purpose of this review was to determine if programs had been established within TVA that met regulatory requirements and to establish if the programs were being implemented as required. This review also consisted of an examination of the commitments made by TVA in response to NRC identified security problems at operating units and by the General Accounting Office (GAO) in their report to TVA dated March 10, 1981 (EMD-81-60).

II. BACKGROUND

During the preceeding 12 months the NRC identified a number of problems associated with TVA's nuclear security program. These problems related to the following areas:

- Access control to nuclear facilities
- Security equipment and hardware procurement and installation
- Content of security licensing documents

During March 1981 GAO also indicated concern regarding TVA's security program. Their concern regarding TVA's nuclear program related to the following:

- Enforcement of security plans and policies
- Lines of authority and responsibility not clearly defined

In response to NRC and GAO concerns, TVA has committed to do the following:

- Revise security licensing documents
- Establish firm commitment dates for the installation of specific security hardware and facilities at Browns Ferry Nuclear Plant
- Establish responsibility for nuclear security
- Clarify lines of authority

III. CONCLUSIONS

A. General

- There have been significant steps taken toward the resolution of specific nuclear security concerns identified at the plants; however, little progress has been made toward the establishment of a unified security program and the assignment of responsibilities for implementation of the program. (See section V.F for details.)

- There was a general security personnel staffing deficiency at the corporate level within the principle organizations. (See sections V.A and V.C for details.)
- There was a lack of an official delegation of responsibility within POWER as to the various organizational responsibilities for security within the nuclear program. (See section V.A for details.)

B. Specific

1. Division of Nuclear Power (NUC PR) [See section V.A for details]

- Present programs will correct many of the NRC identified deficiencies through licensing revisions, security equipment, and facility modification.
- Coordination between OEDC, PSS, and NUC PR had increased and was functioning well.
- NUC PR had the predominate knowledge as to the scope of nuclear security concerns.
- Coordination between plant management and NUC PR had increased but was still deficient with regard to independent site security modifications.

2. Power Security Section (See section V.B for details)

- The nuclear employee screening program was adequate and problem areas were not a direct result of Power Security actions.
- TVA CODE XI, PROTECTION - SECURITY CLEARANCE provided adequate detail in procedures to implement a request for clearances.
- The role and responsibility of the Power Security Section within TVA's nuclear security program was not clearly understood within POWER or TVA.
- The General Security Requirement document was not adequate for nuclear security.
- Power Security did not possess the operational knowledge or technical expertise to address nuclear security concerns.
- Power Security expertise is oriented toward industrial security and civil defense.

3. Public Safety Service (PSS) [See section V.C for details]
- The preoperational program was achieving the desired objectives. The program was primarily implemented by PSS unit chiefs.
 - Additional programs which were in the administrative development phase addressed applicable implementing criteria, i.e., security plans, contingency plans, etc.
 - Organization lines of command and communications did not correlate with operational conditions, i.e., failure of unit chiefs at operating facilities to coordinate with Nuclear Operations Section (NOS) when dealing with other offices and divisions.
 - Coordination between NOS and NUC PR was evident, and there were indications of increased coordination with OEDC.
4. Office of Engineering Design and Construction (OEDC) [See section V.D for details]
- Architectural Design Branch (ADB) was the principle coordinator of the security program within OEDC.
 - OEDC administrative procedures for external coordination, responsibility, and authority with regard to nuclear security were evident and agreed with actual working conditions.
 - Security systems and facility tracking program (DCR/ECN) provided a composite source for security items and was an effective tool for interagency coordination.
 - Field operating units were not fully utilizing the services and expertise available in the OEDC security program.

IV. RECOMMENDATIONS

A. General

R-81-13-NPS-1 - The Office of Power (POWER) should develop the framework of a unified nuclear security program for TVA, including a definition of the key elements in the program and a recommendation to TVA management for the assignment of lead and support responsibility for the program.

Specific areas that should be addressed and resolved through the unified program include:

1. Assignment of responsibility for the development and revisions of security licensing documents, approval authority for all nuclear security programs, and implementing reviews and audit functions. (See section V.B for details.)
2. The adequacy of the NUC PR and PSS security staff to provide technical and security administrative expertise in relation to the scope of TVA's nuclear program. (See sections V.A and C for details.)
3. The proper organization to advise the Manager of Power on nuclear security matters. (See section V.A for details.)
4. The proper organization to advise the Manager of Power on industrial security matters. (See section V.B for details.)
5. A program of instruction, to include written material, for personnel from the principle organizations involved in requesting personnel clearances. (See section V.B for details.)
6. Administrative policies and procedures which define the lines of command and communication between sections, field units, and other offices and divisions. (See section V.E for details.)

V. DETAILS

Title 10, Code of Federal Regulations (CFR), Part 50.34(c) and Part 73, Appendix B requires licensed production or utilization facilities to develop Physical Security, Safeguards Contingency, and Training and Qualification Plans. The plans shall be designed to demonstrate how the licensee intends to comply with the requirements identified under 10CFR73, "Physical Protection of Plants and Materials." Specifically, 10CFR73.20, 40 through 55, and Appendixes A and B are applicable to TVA nuclear facilities.

TVA CODE XI NUCLEAR POWER PLANT SECURITY, states that TVA's nuclear security program will consist of (1) a management system to provide for the development, revision, implementation, enforcement, and audit of security procedures; (2) a physical protection system of barriers and intrusion detection systems; (3) an onsite security organization; and (4) liaison and communication with law enforcement and other supportive agencies.

The responsibility for the implementation of the nuclear security program has been delegated to POWER, Public Safety Service Branch, and OFDC. Specific responsibility for each organization is outlined below:

The Office of Power is responsible for the management of the security program for nuclear power plants. In cooperation with other involved offices and division, it develops, prepares,

coordinates, administers, and audits the security program and individual physical security plans to meet the United States Nuclear Regulatory Commission's requirements as established under Title 10, Chapter 1, Code of Federal Regulations, and other established requirements. It has the primary responsibility for meeting all security licensing requirements, interpreting safeguard regulations, providing contingency measures, and developing security requirements used in preparation of individual plant physical security plans. It reviews and coordinates security guides, requirements, designs, procedures, staffing levels, and training to assure that licensing and operating requirements are met. It approves expenditures proposed by other offices and divisions.

The Public Safety Service Branch participates in the planning of the security program for nuclear power plants. It provides, supervises, equips, and trains the security organization. It develops procedures, staffing levels, and training plans used to protect nuclear facilities. It also establishes and documents liaison with law enforcement and other supportive agencies to be called upon in the event assistance is necessary.

The Office of Engineering Design and Construction participates in the planning and provides the architectural and engineering design for security features of nuclear power plants. It designs, provides, and installs the appropriate security equipment to meet security requirements as developed for each nuclear plant.

Working jointly with the Office of Power and the Public Safety Service Branch, it develops a Joint Security Plan for TVA nuclear plants under construction. This plan will remain in effect until the Office of Power assumes full security responsibility as specified by the plan.

Individual offices and branches were responsible for developing internal policies and procedures for implementation of assigned responsibilities. Policies and procedures which assign specific organizational responsibility and authority were not clearly defined within POWER. The reviewer was unable to identify a particular document which defined interoffice organization or policy. The responsibilities of other offices were carried out through a single organization (Public Safety Service) or were clearly defined with all external coordination through a specific internal branch (OEDC). In addition, there was a lack of an interdivision agreement between the major offices which identified specified implementing responsibilities. The following details provide additional information with regard to the operational premise of the various organizations.

A. Division of Nuclear Power

The Division of Nuclear Power (NUC PR) is presently responsible for the development and revision of Physical Security and Safeguard Contingency Plans. In addition they also provide NRC

security regulation review and interpretation and coordination of Security Training and Qualification Plans. The basis for these functions was derived from H. J. Green's comments to NRC on January 7, 1981, (reference Nuclear Security Task Force Notebook) at which time NUC PR was identified as the responsible organization for the implementation of TVA's nuclear security program. However, these functions had not been formally assigned to NUC PR by an established POWER program or policy statement.

The NUC PR security program is directed toward achieving several major objectives and includes program elements to identify and address both short and long term concerns and recurring matters. Basic elements in the program related to the planning, design, procurement, installation, modification, and operation of security facilities required to meet NRC requirements. Of the several objectives reviewed all provided the mechanisms for change and revision, flow of information, identification of support requirements, assignment of implementing responsibilities, and a review process to assure proper implementation.

The first major objective of the NUC PR program was to assure that security operations were in accordance with security licensing commitments. This was achieved through changes in the Physical Security Plan. The changes were made under the provisions of 10CFR50.54(P), which allows revisions to security plans that do not degrade security. The Browns Ferry and Sequoyah Security Plans were modified to reflect changes in security facilities and structures and the resultant changes in security operations. The revisions were necessitated by increased NRC requirements identified in 10CFR73.55 and were an interim measure until major revisions were completed to all security plans. Review findings indicate that the objective was satisfied.

The next objective was to redesign and revise the content and format of all physical security plans to express more succinct commitments. The present physical security plans failed to adequately address increased NRC criteria in 10CFR73 or to follow the design format of NUREG 0220, "Interim Acceptance Criteria for a Physical Security Plan for Nuclear Power Plants." Revised plans consisted of two primary parts. Part one provided a generic commitment to the mandatory licensing prerequisites, e.g., searching of personnel packages and vehicles, test and inspection, etc. Part two was composed of site specific drawings of security facilities and hardware.

With NUC PR serving as the central coordinator and assisted by other offices and branches, a revised Browns Ferry security plan was submitted to the NRC on June 1, 1981. Approval date by NRC is unknown at this time. Provisions have been made to address similar changes in Sequoyah and Watts Bar Security Plans upon resolution of NRC comments and approval of the BFN Physical Security Plan.

The principle difference noted between the two objectives was that the 10CFR50.54(P) modification was initiated by TVA to correct specific security problems, while the total revision of security plans was requested by NRC to update and clarify TVA commitment to the provisions of 10CFR73.

Review findings indicated that the revised BFN Physical Security Plan did adequately address 10CFR73 and NUREG-0220 requirements. Further, NSRS believes this approach will provide the necessary flexibility to address site specifics and facilitate consistent implementation of basic requirements between operating sites.

A parallel program objective was to increase coordination between the primary offices and divisions directly responsible for the implementation of security. Personnel interviews and document reviews reflected increased verbal and written coordination between NUC PR, OEDC, and PSS. Only limited coordination existed between NUC PR and Power Security. The principle cause of this low level of coordination was attributed to the lack of involvement by Power Security in developing revised licensing documents and coordinating facility design and modifications.

An NSRS concern dealt with the lack of coordination and communication between NUC PR and operating field units. The concern specifically addressed independent site modification to security equipment and facilities by operating plants without proper coordination. A related NSRS concern dealt with the commitments made to the NRC by site security chiefs concerning interpretive (apparent) items of noncompliance. Both of these concerns resulted in various security facility and operational modifications. Due to the lack of coordination between NUC PR and field units, the modifications were not being incorporated in physical security plans. The end result was a dichotomy between security licensing documents and site security operations. The primary purpose of security licensing documents was to identify security facilities, equipment, and basic operations. When modifications were made to either of the preceding elements, security plans should have been revised to reflect the change in TVA's basic commitment. This was not the case at Browns Ferry and Sequoyah and was a contributing factor in NRC's request for a total revision of TVA's physical security plans.

Both of the above concerns had been identified and were being addressed by NUC PR. Security facility modifications were being addressed through a Design Change Request (DCR) tracking system. The system assures that all security related design changes were forwarded to the NUC PR security section for review and coordination prior to being sent to OEDC. Onsite security modifications required NUC PR approval before work was performed. Commitments to the NRC by site security chiefs were being addressed jointly by NUC PR, Public Safety, and plant management. Public Safety

and NUC PR were providing staff personnel to advise the plant and unit chiefs of security licensing commitments during NRC inspection. Plant management had assigned an assistant plant superintendent security overview responsibilities to assure that all security concerns are adequately addressed.

Another program objective was to develop a NUC PR document controls system to assure adequate control of security safeguards information. The principle objective was to provide standard instructions for developing, handling, processing, and securing safeguards material within the division. Implementing procedures were not available for review; an outline of the program was reviewed and subsequent conversations indicate that management personnel were cognizant of applicable criteria.

A proposed badging program was reviewed which would standardize the issuance of badges between operating units. Presently there is a marked difference in the procedures utilized by Browns Ferry and Sequoyah Nuclear Plants in granting access to the protected area and issuing photo identification badges. The purpose of the proposed program is to assure that all TVA personnel requiring access to nuclear facilities are properly badged and to eliminate any interpretive items of noncompliance as a result of conflicting badging procedures between sites.

To assure adequate support functions by NUC PR and complete implementation of all program objectives, a review process had been developed. The review process addresses the functional areas associated with detail implementation (i.e., access control, searching, etc.). There were also provisions for addressing concerns generated by NRC, QA, and inhouse audits, as well as feedback from field units. Segments of the program which were in effect at the time of this review reflected positive response to existing and previous NRC identified concerns. The review process, in conjunction with the DCR tracking system, provided NUC PR with the greatest insight and overall understanding of the multiple concerns associated with nuclear security. In addition the system has contributed, to a large extent, to the success which that section had in initially organizing and directing a unified TVA nuclear security program.

During the course of the review a number of administrative deficiencies were identified; however, collectively they were of minor significance and for the most part were nonprogram related. One major deficiency which was considered to exist dealt with the adequacy of the security staff. The NUC PR Security Section was composed of a supervisor and two staff positions. Both positions had just recently been approved and filled. However, due to the volume of present concerns generated by NRC and POWER QA, the section was placed in the precarious position of operating in a "catch up" mode. The section was only able to provide staff support to address major concerns associated with licensing

revisions, security backfitting to meet NRC requirements, and equipment and facility modifications. All of the section's manpower resources were being directed toward operational facilities. An overview of Bellefonte and Watts Bar security status by NSRS indicated a need for response to concerns in the following major areas:

- Security facility design and modification
- Procurement and installation of security hardware
- Security personnel staffing levels
- Revision of security licensing documents
- Physical security operations for fuel receipt

A comparison of the TVA staffing level to private utility staffs performing similar functions provides an insight as to the adequacy of the existing staff level. The comparison was based on four major southeastern utilities with which the reviewer was familiar and had a comparable security operation. The private utilities averaged a 10 person staff to accomplish the same basic functions as the NUC PR security staff. Collectively OEDC, PSS, and POWER represent six personnel working in the nuclear security area.

In summary, review findings indicate that a number of positive steps have been instituted and that the NUC PR security program provided the necessary mechanism to adequately address NRC concerns. The NUC PR Security Section had the greatest insight of present and future nuclear security requirements within POWER.

B. Power Security

The Power Security Section is functionally responsible for two aspects of the Nuclear Security Program, the development of a Safeguards Document Control Program and the maintenance of a Nuclear Employee Screening Program. Additionally, the section has been assigned the administrative responsibility as security advisor to the Manager of Power. This latter role was primarily being fulfilled through reviews of security licensing documents, NRC security inspection reports, and security design drawings. These responsibilities were derived from the January 6, 1981 memorandum from E. F. Thomas to J. G. Holmes titled "Responsibility of Nuclear Plant Security Within The Office of Power (A05 810106 002)". This memorandum was considered by Power Security as the present basis for that section's authority. There were two memorandums and a summary of statements by H. J. Green in affect at the time of the review which delineate security responsibilities within POWER. These were:

1. H. G. Parris to Those listed dated August 29, 1980, "Responsibility for Security of Power Facilities"

2. E. Floyd Thomas to J. G. Holmes dated January 1981, "Responsibility for Nuclear Plant Security Within the Office of Power"
3. H. J. Green's comments to NRC-Atlanta, January 7, 1981.

The resolution of these memorandums into a POWER policy statement had not been achieved at the time of this review. This conclusion was supported by a memorandum from H. M. Crine to H. J. Green dated April 29, 1981 "Nuclear Plant Security - Nuclear Security Task Force," which solicited further clarification of security responsibilities and the development of an official POWER policy. Review findings indicated that the above memorandums had failed to clarify the perceived relationship between NUC PR and Power Security. Further, the memorandums were respectively viewed by both organizations as an administrative process and of minor relevance with regard to identifying an organization within POWER to manage and control the nuclear security program and to advise the Manager of Power in nuclear security matters.

Employee screening is a major element within TVA's nuclear security program. The screening process is presently undergoing a review by personnel from NUC PR and the Power Security Section to determine more efficient means of administering the program. The study was not complete at the time of this review. Preliminary findings of the study had resulted in minor program changes, e.g., the documentation of inquiries by Personnel Security were further defined. Revisions to the TVA CODE XI, PROTECTION, were made which provide for interim clearances of personnel to nuclear facilities. This was an area of particular concern by NSRS and was a potential NRC item of noncompliance. Under the present revision the problem appeared resolved.

Other preliminary findings by NSRS indicate that delays in getting personnel cleared were due to administrative errors, such as incomplete or wrong forms and a general lack of understanding by requesting organizations as to the proper procedures to utilize. The breakdown in coordination between plant outage, NUC PR, and Power Security was exemplified by the recent Browns Ferry outage. Failure to adequately coordinate outage schedules and to follow specific procedures, as outlined in TVA CODE XI, PROTECTION - SECURITY CLEARANCES, resulted in a significantly large number of personnel requiring escort at Browns Ferry. (Reference draft memorandum from Forrest Bugher to H. M. Crine dated June 12, 1981, "Status of BFNP Personnel Requesting Unescorted Clearance.")

The nuclear employee screening program will require further NSRS review upon completion of the POWER study. The program, as designed, fulfilled TVA's licensing commitment. The major concern identified by NSRS was the need to clarify procedures for requesting access authorization and explore administrative means of expediting the transfer of information between organizations.

A Security Safeguards Document Control Program was in the development phase at the time of review. In essence the program required organizations handling safeguards information to assign a responsible individual as a Controls Officer; establish an administrative system for accountability, issuance, and destruction of material; and to procure or modify document repositories to meet regulatory requirements. Two drafts had been published with initial comments resolved. A meeting was held in Chattanooga on July 10, 1981 to resolve comments and prepare a document for final review with implementation scheduled in August 1982.

Presently security safeguard information (proprietary information) is handled in accordance with the procedures identified in the front of security licensing documents. These procedures represent TVA's commitment for the handling of such information and were acceptable to the NRC. The NRC is currently evaluating the classification, transmitting, and storage of security safeguard information and have promulgated a proposed rule for review by the nuclear industry. The final rule identifying regulatory requirements had not been passed at the time of this review. The proposed POWER program was based upon NRC proposed rules and addressed much of the criteria which was still undecided with regard to regulatory requirements. Until the final rule is adopted by NRC, the adequacy of the proposed POWER program cannot be evaluated.

The Power Security Section is also responsible for establishing the General Security Requirements (GSR) for POWER. The original object of the GSR was to provide guidelines for security requirements at hydro, fossil, and nuclear facilities. The value of GSR with regard to nuclear security was limited. Due to changing NRC regulations, the document required constant revisions and updating.

The majority of the nuclear criteria contained in the GSR simply reflected previous NRC regulations and guidance from ANSI standards. This information was often in conflict with commitments made by TVA in security documents. Subsequently the GSR became a conflicting source of requirements each time revisions were made to security documents, facilities, or regulations. This situation presently was evident from review of the existing GSR.

The practical value of the GSR was to provide the TVA requirements for industrial security to division and branch managers. The same type of requirements were provided to nuclear facility managers through security licensing documents. The same information placed in the GSR only adds duplication and quickly becomes outdated. The original objectives of the GSR with regard to nuclear security were no longer achievable. The complexity of nuclear security programs and licensing commitments necessitates the use of Physical Security, Contingency and Training and Qualification Plans. These documents contain official TVA commitments, which in effect, make them the only creditable references. The

GSR at the time of this review was being revised. The revised draft failed to adequately address 10CFR73.55 requirements or reflect revised security licensing commitments to NRC.

During interviews with Power Security personnel, there were expressed concerns as to that section's ability to provide qualitative review and recommendations relative to nuclear security to the Manager of Power. The concern was centered around the lack of coordination between the principle organizations involved in the nuclear security program and the Power Security Section. Review findings revealed that the majority of information received within Power Security was either "post facto" and did not require any working coordination or was general information providing the status of other organizations within the nuclear program.

There did not appear to be a deliberate attempt to isolate Power Security. The apparent cause of the problem was the lack of understanding by other organizations as to the role of Power Security within POWER and TVA with regard to nuclear security. Under existing memorandum policy the role of Power Security in the nuclear program is minimal. The basic organizational structure was centered around civil defense and industrial security at hydro, fossil, construction, and TVA office complexes. The administrative and technical capabilities of the staff in those areas were readily apparent; however, in relation to nuclear security the staff did not possess the personnel or expertise to cope with expanded nuclear concerns. This deficiency was primarily attributed to the lack of Power Security's involvement, over the past year, in the development of licensing documents, security modifications to facilities and equipment, and a working knowledge of site security operations. Consequently, the ability of that section to provide the Manager of Power with a comprehensive and cognizant review of the nuclear security program had been adversely affected. The extent of this deficiency was most noticeable, not in the programs assigned to that section, but in the section knowledge and perception of the total scope of TVA's nuclear security program and present concerns. The predominate aspect of the Power Security Section was clearly industrial security oriented.

C. Public Safety Service

As a service organization Public Safety is responsible for the development and implementation of the Security Training and Qualification Plan. They provide, equip, and administratively supervise the onsite security force. In coordination with other offices and divisions they recommend staffing levels and develop site specific implementing procedures for TVA's nuclear security program. The programs, goals, and objectives required to fulfill the above responsibilities originate from the branch level. Specific implementing and control responsibility was assigned to

the supervisor of the Nuclear Operations Section (NOS). Training and administrative support were provided by the Management Services Staff within the branch.

The review of Public Safety primarily concentrated on the programs and controls utilized by the NOS with a general overview of training and administrative support. At the time of the review the Security Training and Qualification (T&Q) plan had recently been approved by NRC. The entire Public Safety training program was undergoing an internal review for T&Q plan impact. Subsequently, policy statements were being evaluated to assure adequate support and direction in implementing new or expanded requirements. The potential impact of training requirements were such that it will require specific NSRS review. Total implementation had not evolved to a point which would facilitate a review. The basic requirements identified in the T&Q plan satisfactorily addressed NRC requirements.

The NOS had, in effect, two standard programs--one to address present operations and one to address preoperational facilities. Additional programs were being developed as a result of security licensing modifications. Most programs were administratively complete with implementation scheduled upon approval of licensing documents by NRC.

The preoperational program was designed to allow site security organizations to develop along a parallel course with plant operations. The program was composed of a number of modules, each with specific objectives. Modules addressed specific requirements, such as equipment testing, post operational procedures, patrols/inspections, etc. Collectively, objectives identified the applicable administrative, procedural, personnel, equipment, and facility requirements for each module. The preoperational program had been in operation since January 1980 at Watts Bar and Bellefonte nuclear facilities. Both plants had experienced favorable results and were continuing to utilize the program.

The operating facility program was constructed to provide an information flow from field units to the NOS. Security operational reports were submitted for review on a daily basis. Program procedures provided for notification of branch personnel during security emergencies. Further, staff specialist were available to assist unit chiefs during NRC inspections. Security compliance with licensing requirements was provided through a review of implementing instructions. Security procedures were reviewed by the staff specialist and comments were resolved with respective chiefs prior to implementation. Facility modifications and basic design for new facilities were reviewed and coordinated between OEDC, NUC PR, and PSS field units. The program also addressed interim security requirements for interface barriers between reactor units and backfitting projects.

A recently developed program, which corresponded to the above, was designed to assure that all new or expanded requirements in revised licensing documents were identified. An example operational program was reviewed which denoted existing requirements, documentation, and NRC acceptable compensatory measures for failure of personnel or equipment. The new program, which affects both operational and preoperational facilities was similar and specifically addresses requirement changes. Implementation of this program was contingent upon NRC approval of submitted plans.

The final program was an internal review by the NOS of all security operational requirements. The review process covered three separate areas; implementing procedures, security operations, and security equipment. Each area was dealt with independently. The major scope of the program was to assure implementation of all security requirements and determine adequacy of management support in administrative and logistical functions.

All programs which were reviewed possessed the administrative and structural mechanisms for implementation; however, success of implementation was somewhat dubious. The NOS consisted of one supervisor and one staff specialist. A comparison between the implementing man-hours required for each program and the existing staff clearly indicated a personnel deficiency.

Based upon the premise that Public Safety was responsible for developing security implementing procedures, field units felt they were not receiving adequate technical or administrative assistance from the PSS. Consequently, the NUC PR Security Section had been providing the necessary expertise. This resulted in an additional strain on an already understaffed organization. The PSS deficiency in this area becomes increasingly critical in light of security implementing schedules at Browns Ferry (BFN), major revisions to security licensing documents, and continued development of security programs for Watts Bar and Bellefonte Nuclear Plants. The exit critique with Public Safety management indicated that this was an area of concern and that they were not fully aware of the activity between field units and other offices and divisions. Review findings reflected that field units were operating from an autonomous mode and provided limited information to the NOS concerning both interbranch activities and field operations.

A residual affect of the autonomous mode was a number of breakdowns in communication between field units and the NOS, specifically, in security modifications and operations. The reviewer found increased coordination between NUC PR, OEDC, and PSS at the corporate level. On the other hand, coordination between field units and Public Safety management was not as clearly defined or evident.

D. Office of Engineering Design and Construction

OEDC has the primary responsibility for the design and construction of TVA nuclear facilities. The Architectural Design Branch (ADB) serves as the principle coordinator for all security related matters within OEDC.

The main thrust of the NSRS review was to evaluate the extent of coordination between OEDC and the principle organization in the Nuclear Security program. Interdivisional coordination between OEDC, NUC PR, and Public Safety was evident. Field coordination was examined in two categories: original design and construction and security modifications. Both areas were being coordinated through ADB which in turn coordinated with other offices and divisions.

The security review and approval process was one of the strongest aspects of the OEDC security program. The process addressed security concerns during the design, construction, and operational phase. Each security project was reviewed under the various NRC and industrial criteria. The project was then placed in a tracking system and followed until completion. Technical reviews were provided for all systems and facilities. Administrative support was provided in the form of noncritical tests, review summaries, and equipment operational manuals and procedures. In addition a wide range of engineering specialists were available during all phases of project development. The OEDC administrative organization contained a number of symbiotic program elements which facilitated both interagency and interoffice coordination.

The first program element was a tracking system for "critical" security items. Each concern was addressed independently and noted by facility and system. Progress information was divided into several categories. The project or system was identified on the program with the initiation of a design change request (DCR) and followed until operational. The completion date and development status was depicted on a bargraph for each project.

The second program element was a site specific DCR and engineering change number (ECN) tracking system. The program assured that all concerned organizations within OEDC were involved in each project and provide the administrative and logistical status of security DCR's and subsequent ECN's. This information was then condensed and placed in the critical items report for interagency coordination. The DCR/ECN program was periodically being reviewed and revised. The critical items system was revised and updated as projects reached various stages of development and distributed to concerned parties.

During the course of the review a number of examples were observed which demonstrated that functional responsibilities correlated with policy statements. There were no deficiencies identified in

the area of review. Particularly noteworthy were the coordination efforts of OEDC in relation to the physical facilities and security hardware at BFN.

E. Plant Specifics

A paramount concern of the NRC has been the backfitting of security hardware at BFN to meet the requirements of 10CFR73.35. The requirements became effective on February 24, 1977 with full implementation required by February 23, 1979. TVA failed to meet the February 1979 deadline at BFN and has continued to request, and receive, extensions for implementation of the 10CFR73.55 provisions.

Based on commitments made by TVA to NRC on July 21, 1981 at Silver Springs, Maryland, the following dates were established for the completion of the BFN project listed below.

<u>PROJECT</u>	<u>NRC CMMT DATE</u>
1. Water Intake Structure Intrusion Detection System to Supplement Existing Microwave System	1-1-82
2. PERM - Alert II Controls in the Secondary Alarm Station to Obtain Redundant Controls	1-1-82
3. Provide Separate Tamper Annunciation for the Rusco Access Control System. (Cardreader)	1-1-82
4. Provide 24-Hr Battery Backup Capability for the PERM-ALERT II Intrusion Detection System	1-1-82
5. Provide 24-Hr Battery Backup Capability for the Wells Fargo Intrusion Detection System	1-1-82
6. Provide the Six Entrances to Residual Heat Removal Service Water Cable Tunnel with Balanced Magnetic Switch	4-1-82
7. Add an Additional Entrance Barrier Equipped With Balanced Magnetic Switch & Cardreader at the Intake Structure	4-1-82
8. Install an Intrusion Detection System Over the East Access Portal	1-1-82
9. Provide the Wells Fargo Detection System with Separate Tamper Annunciation	2-28-82
10. Provide the Entire Protected Area With Illumination (Minimum 0.2 Foot-Candles)	4-1-82

- | | | |
|-----|---|----------|
| 11. | Provide Certain Vital Area Openings With Grilles (Ducts) | 1-1-82 |
| 12. | Add a Balanced Magnetic Switch to the Cable Tunnel Gate Connecting the Turbine Building to Water Intake Structure | Complete |
| 13. | Improve Reliability of E-Field Intrusion Detection System | 1-1-82 |
| 14. | Redesign and Modify Portions of the Rusco Access Control System for Redundant Programming and Control | 1-1-82 |
| 15. | Render the Intrusion Detection System at the Main Vehicle Gate More Effective | 1-1-82 |

The NRC placed particular emphasis on the completion of projects 1, 2, 6, 10 and 11. These items were considered critical in the overall performance of the security program. However, it was emphasized that this did not diminish the necessity for TVA to meet all commitment dates.

The status of each project was discussed with the OEDC security coordinator and the supervisor of the NUC PR Security Section. Both organizations concurred that the projects would be completed, provided the present schedules are adhered to.

The NSRS review determined:

- o Project 12, addition of a balanced magnetic switch (BMS) to cable tunnel at BFN had been completed.
- o DCR's had been issued for all projects except 13 and were in various stages of approval. Project 13 tentatively did not require a DCR per OEDC recommendation that the work could be performed by plant maintenance.
- o ECN's had been issued for all projects except 13 and 14. Project 13 did not require an ECN based on OEDC recommendations. Project 14 was undergoing OEDC review.
- o Construction was progressing in various areas. The reviewer divided construction into two categories--preliminary and scheduled. Preliminary construction was based on the availability of materials at the site and various approval stages of DCR/ECN's, i.e., electrical aspects of a particular DCR may be performed while the same DCR is undergoing a mechanical review. This procedure is not applicable to all DCR's, however, it was being utilized where possible to expedite work to assure project completion by committal date.

Scheduled construction was identified on the OEDC "critical" items tracking system and denoted plant outage starting and completion date for each project. At the time of the review, project 12 had been completed and scheduled work on project 13 was being performed. Remaining projects were scheduled by plant outage but had not begun. Preliminary construction was being performed on different aspects of the various projects identified.

An additional commitment not identified in the OEDC tracking system was the construction of a new interim access control facility at BFN. TVA's initial commitment for completion of the project was July 1, 1981. The date was not met and TVA had requested an extension to September 1, 1981. The extension was granted by NRC. The facility became fully operational on September 1, 1981.

Sequoyah Nuclear Plant had met the basic provision of 10CFR73.55. The primary NRC concern related to the tamper indicating alarm requirements. This problem will be addressed upon institution of an NRC approved solution for the identical problem at BFN. Other regulatory concerns were of minor significance and were identified in inspection report No. 50-327/81-18 as inspector followup items (IF). All IF items had been addressed by DCR's, maintenance requests (MR), and revisions to security licensing documents.

Overall review findings indicate that TVA will meet the current commitment dates, if all schedules are followed. The two critical points which would affect existing commitments are hardware procurement (to include delivery) and construction starting dates. An appreciable delay in either of these areas would obviate present commitments. NSRS will continue to monitor the progress of both facilities until projects are completed.

F. Summary

In light of existing and future program commitments, there has been substantial steps taken toward resolution of security problems. However, there are still a number of fundamental problems that must be corrected if the various programs are to achieve a measurable level of success. The credibility of TVA's nuclear security had been greatly diminished by the lack of the Agency's ability to develop and implement a unified program. The problems which created this inability were interrelated to the extent that no one organization was directly responsible.

The state of TVA's security program at the time of this review was directly attributed to the lack of a central managing authority. This particular aspect was evident by the absence of a POWER policy which clearly defined the responsibilities and authority

of the internal organizations. Further, there was a lack of an interdivisional agreement which established organizational responsibility and procedures for program coordination.

There were a number of interoffice and divisional memorandums which identified various organizational responsibilities, none of which represent a unified program, nor did they correlate to functional responsibilities.

The managing of the nuclear security program was diffused between three principle organizations and was further subdivided within one of those organizations. The net effect of the diffusion was a paucity of administrative control in the implementation of the various programs.

In regard to the GAO concern for the clarification of lines of authority, review findings substantiate the establishment of authority at the office and division level. What remained unclear at the time of the review was the delegation of responsibility and authority within POWER and between the major offices involved in the nuclear security program. The magnitude of this deficiency has been demonstrated in the Browns Ferry security program where various security compensatory measures have been in effect since 1978. TVA's ability to provide a timely response to NRC regulations and identified concerns was the primary cause for the erosion of the security programs credibility with the NRC.

Details in section V of this report identify a number of programs to be implemented by NUC PR, OEDC, and Public Safety. These programs represented respective organizational responsibilities and were either specific event or situation related, e.g., security hardware backfitting program to address February 23, 1979 10CFR73.55 requirements. This particular example was the impetus for the revision of security licensing documents and the development of subsequent programs for implementation. In relation to the GAO concern for the enforcement of security plans and policies, TVA is in a transitional phase. The previous physical security plans (1977 revisions to comply with 10CFR73.55) had been identified by NRC as deficient. In response to NRC concerns, TVA modified existing security plans under the provisions of 10CFR50.54(P) as an interim measure. Preceding this review a revised BFN physical security plan was submitted to NRC for approval. The revised plan addressed the provisions of 10CFR73.55. The plan had not been approved by NRC at the time of this review, consequently, programs to implement plan revisions had not been enacted. Administrative provisions for the enforcement of various organization programs were evident, i.e., schedules for implementation, procedure outlines, etc. However, those programs will not be instituted until approved by NRC of submittal security plans.

The NSRS review identified three compendium TVA-NRC objectives.

- ° Revision to security licensing documents.

- Implementation of the February 23, 1979 10CFR73.55 requirements, specifically at BFN.
- Programs to implement the preceding two objectives.

Of the three, revisions to security plans was the only objective to be fully substantiated. The implementation of the 10CFR73.55 requirement, addressed in section V of this report, had not been achieved. Indicators, such as construction schedules, hardware availability, and present work status, indicate that TVA will meet its latest commitment dates to NRC. Programs which implemented security plan revisions and 10CFR73.55 requirements could not be substantiated.

The most predominate concern expressed by the majority of managers interviewed was not with the ability of individual organizations to perform their particular function. Their concern was with the lack of a central managing authority to coordinate, prioritize, direct, and manage the multiple programs to a productive end. Historically, there was no evidence to indicate that such an authority ever existed. There were only fragmented programs which dealt with specific concerns at individual sites. Individual site coordination was virtually nonexistent. This particular point can be related through the multibadging and access control procedures utilized at the different nuclear facilities to implement the same requirement.

A centralized managing authority was and still is a fundamental problem which has plagued TVA's efforts to develop a unified nuclear security program. This authority has been delegated to POWER by TVA CODE XI. If TVA is to aspire to a position of credibility within the nuclear security aspects of the industry, authority should be assumed and the concern officially addressed, in an expeditious manner.

The material in this review was presented in the past tense to reflect observations and conversations at that time. However it should be understood that many of the past tense items are, in effect, continuing present concerns.

VI. PERSONNEL CONTACTED

K. H. Besecker, Supervisor, NUC PR Security Section
 F. R. Bugher, Jr., Supervisor, Power Security Section
 D. T. Churchwell, Jr., Assistant Chief, Public Safety Service
 S. E. Griffen, Public Safety Officer
 J. W. Hufham, Assistant Director (Operations) NUC PR
 R. S. Kaplan, PSS Unit Chief, Sequoyah Nuclear Plant
 W. K. Lancaster, Specialist in Property Protection
 N. Lee, Specialist in Property Protection
 J. M. McGriff, Assistant Plant Superintendent (Operations)
 J. S. Rozek, Chief, Public Safety Service
 D. W. Tilson, Specialist in Property Protection

VII. DOCUMENTS REVIEWED

- A. BFN Revised Physical Security Plan
- B. SQN Physical Security Plan and Contingency Plan
- C. BLN Training and Qualification Plan
- D. American National Standard, Security for Nuclear Power Plants ANSI 18.17 1973 and 1980 draft
- E. American National Standard for Administrative Controls for Nuclear Power Plants, N18.7-1972
- F. Title 10 Code of Federal Regulation, Part 73, Section 55, Appendix B and C
- G. Proposed Interdivisional Agreement, September 25, 1980
- H. TVA Code XI Nuclear Power Plant Security
- I. Nuclear Security Task Force Notebook
- J. March 10, 1981 GAO report - TVA Needs to Improve Security and Inventory Controls at Power Sites
- K. Miscellaneous Memorandums
 - 1. M. N. Sprouse to Those listed dated April 8, 1981, "Security" (ADB 810508 001)
 - 2. Forrest Bugher to H. M. Crine dated June 12, 1981, draft response to clarification of personnel clearance
 - 3. H. M. Crine to H. J. Green, April 29, 1981 (A22 810429 001)
 - 4. H. M. Crine to H. J. Green, April 24, 1981 (L45 810417 841) with attached draft
 - 5. E. F. Thomas to J. G. Holmes, January 5 and 6, 1981 (A05 810105 004 and A05 810106 002)
 - 6. P. R. Wallace to Those listed, no date, Proposed Badging Program and Access to Nuclear Plants
 - 7. H. G. Parris to Those listed dated August 29, 1980 (A19 800829 008)
 - 8. J. S. Rozek to J. G. Dewease dated April 29, 1981, "Browns Ferry Nuclear Plant Security"

L. NRC Inspection Report 50-259/81-15, 50-260/81-15, and 50-296/
81-15

M. NRC Inspection Report 50-327/81-18