UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA STREET, N.W.
ATLANTA, GEORGIA 30323

Report Nos.: 50-327/86-12 and 50-328/86-12

Licensee: Tennessee Valley Authority
6N 38A Lookout Place
1101 Market Street
Chattanooga, TN 37402-2801

Docket Nos.: 50-327 and 50-328 License Nos.: DPR-77 and DPR-79

Facility Name: Sequoyah 1 and 2

Inspection Conducted: February 10-14, 1986

Inspectors: G. A. Belisle — Date Signed: 4/21/86

S. A. McNeil — Date Signed: 4/21/86

M. F. Runyan — Date Signed: 4/21/86

C. G. Walenga — Date Signed: 4/21/86

Approved by: C. A. Julian, Branch Chief, Division of Reactor Safety — Date Signed: 4/21/86

SUMMARY

Scope: This special, unannounced inspection entailed 133 inspector-hours at corporate offices and on site in the area of quality assurance related commitments and goals delineated in the Corporate Nuclear Performance Plan, the Sequoyah Nuclear Performance Plan, and Division of Quality Assurance (DQA) personnel performance.

Results: One violation was identified - Inadequate Record Controls.

REPORT DETAILS

1. Persons Contacted

Licensee Employees

Corporate Offices in Chattanooga

W. Andrews, Operations Quality Assurance (QA) Branch Manager
P. Border, Head, Browns Ferry Plant Evaluation Group
C. Chmielewski, Nuclear Engineer, Nuclear Safety Staff
*J. Huston, Deputy Director, Division of Quality Assurance (DQA)
*R. Kelly, Director, DQA
G. Killian, Branch Chief, Quality Audit Branch
R. Large, Quality Analysts (Training)
D. McCloud, Supervisor, Licensing Support Group
L. McCloud, Head, Watts Bar Plant Evaluation Group
R. Moore, Head, Sequoyah Plant Evaluation Group
*R. Mullin, DQA
B. Roberts, Nuclear Engineer, Nuclear Safety Staff
C. Stinson, Supervisor, Quality Programs Training Unit

Sequoyah and Sequoyah Training Center

*H. Abercrombie, Sequoyah Site Director
*L. Alexander, Mechanical Supervisor, Modifications
J. Anderson, Quality Control (QC) Supervisor
W. Baker, Fire Protection Engineer
*R. Birchell, Compliance
*C. Brimer, Site Services Manager
D. Cowart, Supervisor, Quality Surveillance
M. Crane, Supervisor, Materials Unit
D. Craven, Supervisor, QA Staff
T. Frizzell, Supervisor, QA Training Section
M. Hall, Acting Support Services Supervisor
*J. Hamilton, Supervisor, Quality Engineering and Control Group
*G. Kirk, Compliance Supervisor
*S. Littrell, Environmental Qualification (EQ) Coordinator
R. Manley, Acting Supervisor, Planning and Scheduling
R. Merring, Acting Section Supervisor, Engineering Training
*R. Mooney, Supervisor, Systems Engineering Section
J. Naik, Supplemental Resources Manager, Modifications
*R. Olson, Modifications Manager
J. Owenby, Supervisor, Office of Engineering (OE)
*B. Patterson, Supervisor, Instrument Maintenance Section
M. Rinehart, Maintenance Planner
R. Rudman, Project Control Supervisor
L. Sain, Assistant Branch Chief, Training Branch

*M. Sedlacik, Modifications Supervisor
J. Staley, Power Stores Supervisor
C. Stutz, Quality Engineer, QA
J. Traffanstedt, General Foreman
J. Walker, Modifications Scheduling Supervisor, Planning and Scheduling
*P. Wallace, Plant Manager
J. Wheeler, Supervisor, Maintenance Scheduling
D. Widner, Modifications
A. Varner, Engineer, Quality Engineering and Control Group
J. Vineyard, Project Manager, OE

Other licensee employees contacted included technicians and office personnel.

NRC Resident Inspectors

K. Jenison, Senior Resident Inspector
L. Watson, Resident Inspector
P. Harmon, Resident Inspector

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on February 14, 1986, at the corporate offices and on site with those persons indicated in the paragraphs above. The inspector described the areas inspected and discussed in detail the inspection findings listed below. No dissenting comments were received from the licensee.

Violation - Inadequate Record Controls, paragraph 8.

The licensee did not identify as proprietary any of the materials provided to or reviewed by the inspectors during this inspection.

3. Licensee Action on Previous Enforcement Matters

This subject was not addressed in the inspection.

4. Unresolved Items

Unresolved items were not identified during the inspection.

5. Quality Assurance Review (General Background)

In correspondence dated September 17, 1985, the Executive Director of Operations for the NRC notified the Chairman of the Board of Directors of TVA that previous Systematic Assessment of Licensee Performance (SALP) indicated significant and continuing weaknesses in TVA performance. General areas of concern were also identified for which specific actions were required to be addressed by TVA in their response to this letter.

In correspondence dated December 1, 1985, TVA responded to the September 17, 1985, request. This information was submitted as two volumes, the Corporate Nuclear Performance Plan (Volume 1) and the Sequoyah Nuclear Performance Plan (Volume 2).

In correspondence dated December 23, 1985, TVA stated that Volume 1 and 2 would be revised to reflect TVA's decision not to decentralize the QA organization. TVA further stated that Volume 3, related to Browns Ferry, would be submitted by February 17, 1986, and a Watts Bar Volume was under consideration but a submittal date had not been established.

In correspondence dated February 4, 1986, TVA stated that Volume 1 was being reevaluated and based on this reevaluation Volume 1 was being rewritten . A newly revised Volume 1 would be submitted at a later date.

This inspection reviewed 13 QA related items from Volume 1, DQA personnel performance, and 24 QA related items from Volume 2. The inspection results are discussed in the following paragraphs.

6. Inspection Items from Volume 1, Corporate Nuclear Performance Plan

   a. Licensee and QA Functions were Elevated to a Direct Reporting Relationship to the Office of Manager, Power and Engineering (P&E), Paragraph 2.2.2.1(9)(1).

      The licensee organization charts contained in the TVA Topical Report (TVA-TR75-1A), Quality Assurance Program Description for Design, Construction, and Operation of TVA Nuclear Power Plants, Revision 8, identifies that DQA reports to the Office of Nuclear Power (NUC-PR) which reports to the Manager of Power and Engineering. Revision 8 was submitted to the NRC on September 7, 1984, and approved after certain clarifications, on April 9, 1985. Since April 1985, several changes have occurred within DQA and NUC-PR. In correspondence dated December 9, 1985, TVA requested a delay in submitting TVA-TR75-1A, Revision 9, until May 1, 1986. This request was approved by the NRC on January 13, 1986. Since January 1986, additional organizational changes have been made within TVA. The inspectors reviewed draft organizational charts which delineated that the Director of Nuclear Quality Assurance reports to the Manager, Office of Nuclear Power. As previously stated, Volume 1 is undergoing revision and Revision 9 to TVA-TR75-1A has been delayed. Consequently, until these documents can be reviewed and TVA's organizational structure stabilizes, an assessment could not be made in this specific area.

   b. Manager QA Will Provide Corporate Oversight of QA Functions, Decentralize to the Sites, and Strengthen Corporate Management in Assurance of Quality, Paragraph 2.2.2.1.(9)(b).

      Due to organizational changes, Volume 1 resubmittal, and TVA-TR75-1A, Revision 9, transmittal delays, an assessment could not be made in this area.

c. Corporate Team Headed by Manager, P&E, Whose First Priority Will be to Establish Clear Duties, Responsibilities, and Authority for Each Organization. QA Manager is a Member of this Team, Paragraph 2.2.2.1(10).

In a memorandum (A02 860130 047) dated January 30, 1986, the Manager of Nuclear Power directed the Office of Nuclear Power Managers to prepare Responsibility and Accountability Profiles (RAPs). This is intended to establish and maintain clear lines of responsibility, authority, and accountability within TVA's nuclear organization. The RAPs are to be used as the basis for realizing the functions and reorganization, upgrading the job description system, and ultimately for evaluating the performance of employees assigned to these positions. These RAPs are scheduled to be completed for all management positions (M-1 to M-12) no later than February 27, 1986. The inspectors interviewed selected DQA as well as Office of Nuclear Power personnel and were informed that RAPs were being written as required by the memorandum.

d. QA Training for Managers and Other Employees, Paragraph 2.2.2.2.(13)(g).

The Quality Training Group is comprised of the QC Training Section and the QA Training Section. The QC Training Section has been functioning for several years. The QA Training Section consists of a Quality Programs Training Unit (QPTU), an Audit and Surveillance Training Unit (ASTU), and a Codes and Standards Training Unit (CSTU). The QA Training Section Supervisor position was filled on February 3, 1986. The QPTU and CSTU supervisors had been previously filled. Recruiting was underway for the ASTU Supervisor.

The inspector conducted discussions with the Supervisor, QA Training Section and the Quality Analyst (training). During these discussions, the inspector was informed that QA training had been incorporated into ongoing training for managers. This training involved a one week course in the following topics: plant specific codes and standards (for Watts Bar and Sequoyah), Nuclear Plant Reliability Data System (NPRDS), functions of the NRC, NRC regulations, identification and use of regulatory guides, and QA/QC. This course was conducted in November 1985, for four Sequoyah management personnel and was being integrated into the Managers and Engineers Certification training.

Personnel previously undergoing manager training are also required to participate in annual requalification. This is a two week course and is scheduled to begin in March 1986. Two days are scheduled for refresher courses in regulatory requirements. A total of ten Sequoyah personnel and four Watts Bar personnel are scheduled for this requalification training.

Additional QA training is being formulated to be included in General Employee Training and specific discipline training.

e. Indicators to Monitor Plant Performance. Quality Problem Isolation Timeliness. Each Plant's Performance Will be Monitored at Monthly Top Management (MTM) Meetings, Paragraph 2.2.2.5.

The inspectors reviewed MTM meeting agendas dated August 28, 1985; September 9, 1985; October 25, 1985; November 15, 1985; January 3, 1986; and January 24, 1986. Typical personnel attending these meetings included the DQA Director, Nuclear Unit Site Directors, Watts Bar Project Manager, Office of Construction and Engineering Managers, and the Nuclear Services Director. Each person was allotted time to present key performance indicator charts and top priority potentially significant safety issues. An attachment to the August 28 meeting agenda presents guidelines for performance indicator charts. These guidelines also state that presentations should include charts and focus on data related to Licensee Event Reports / 10 CFR 50.55(e) Reports, Corrective Action Reports (CARs), Conditions Adverse to Quality (CAQs), personnel errors, unplanned scrams, audit findings, NSRS recommendations, INPO recommendations, and NRC violations. Additional time was also allotted for special reports. The inspectors concluded that these meetings appear to be more information status oriented than performance oriented. During discussions with the Chief, Nuclear Safety Staff, the inspectors were informed that MTM meetings had been temporarily suspended by the Manager of Nuclear Power.

f. Integrated Commitment Tracking System, Escalation of QA Findings, Paragraph 3.1 (page 3-3).

The Verification and Improvement Administration System (VIAS), a computerized data base, will eventually provide TVA with an excellent tool to manage the tracking and closure of identified conditions adverse to quality. Currently, the information concerning QA deficiencies in VIAS is incomplete in that the VIAS data base could not be relied upon to provide all information relevant to deficiencies that were found in the deficiency document packages. Some comments were inserted without associated dates for the inputs. The use of internal comments, which would have been useful in maintaining a complete picture of closure activities, was very limited. All of the above resulted in a system that presently leaves the reviewer without an adequate picture of the chronological events leading up to the deficiency closure for many of the deficiencies.

g. Sequoyah Will Have Full Implementation of Tracking NRC Commitments, Paragraph 3.1 (page 3-5 and 3-6).

The Nuclear Licensing Staff (NLS) is tasked with the implementation of the Corporate Commitment Tracking System (CCTS). According to a NLS engineer in charge of the implementation of the CCTS, Sequoyah and Watts Bar have completed a review of all NRC commitments and have had the open commitments added to the CCTS. However, a procedure had not

been drafted for the implementation of the CCTS and the use of TVA's QA organization to conduct independent closure verification has not been finalized. According to a NLS engineer, any closure of an NRC commitment requires the NLS to receive written confirmation from the NRC of its closure before the CCTS will be changed to indicate the closure. Due to the planned revision to the TVA Corporate Performance Plan, plans to finalize the whole CCTS program are being delayed.

h. Escalation of QA Audit Findings, DQAI-104 Will Control Escalation Policy, Paragraph 3.3 (page 3-8).

A review was conducted of TVA's QA corporate program to escalate the closure of QA audit deviations in accordance with DQAI-104, Escalation of Responsibility for Deviation Corrective Action, Revision 0, dated 9/25/85. Procedure DQAI-104 appears administratively adequate and is being implemented. The effectiveness of the escalation program based on the audit deviations reviewed appears to be weak for the following reasons:

(1) QA verification followup, after scheduled commitment dates are reached, is not timely in some instances, thus allowing further delays before the failure to complete the corrective action is identified.

Examples for 1:

QBF-A-84-0013-02 Commitment Date 12/31/85; Verification 1/28/86

QBF-A-84-0014-02 Commitment Date 12/31/85; Verification 1/24/86

QSQ-A-85-0001-01 Commitment Date 12/27/85; Verification 1/22/86

(2) The Director, DQA, does not have to act immediately to obtain appropriate corrective action to escalated deviations if, in his consideration, the deviation is not severe or important to the QA program, licensee commitments, or safe operation. (Reference: Section 6.5 of DQAI-104). The Director is permitted to delay discussion on the item with line management until the next scheduled quarterly meeting. Based on the items reviewed, Section 6.5 of DQAI-104 produces another delay factor in obtaining corrective action resolution from line management.

Examples for 2:

QBF-A-85-0015-01 Escalated 12/13/85; no further action noted.

QBL-A-85-0002-01 Escalated 11/22/85; no further action noted.

QBF-A-85-0008-01 Escalated 11/22/85; no further action noted.

QBF-A-83-0207-04 Draft memo written on 6/11/85 but as of 1/9/86 memo never sent. Finally 2/6/86 an escalation memo released.

QSQ-A-84-0014-02 Issued 11/2/84, escalated 10/9/85, finally on 1/29/86 a commitment date of 4/15/86 was accepted through escalation process.

By allowing these delays, it implies that commitment dates are not important. The last deficiency has been delayed to the point that allowing two or three additional months appears inappropriate.

(3) The use of the terms immediately, timely, and promptly are not well defined and, as such, add confusion in reaching the resolution of deficiencies by allowing individual interpretation of the terms.

Examples for 3:

QBF-A-84-0013-2 Section 6.6 of DQAI-104 apparently applies as of 1/29/86 but no memo to the Manager of Nuclear Power has been found to have been drafted.

QBF-A-85-0004-02, -03, -06, -07 Section 6.6 of DQAI-104 apparently applies due to the changing of scheduled completion dates since the Director, QA can only accept one completion date due to an escalation. No memo to Manager of Nuclear Power has been considered though apparently required as late as 12/31/85.

QBF-A-85-0009-01 Escalation memo issued 1/21/86 but QA engineer initiated the escalation process on 12/18/85.

QSS-A-84-0018-01 Per VIAS, a second escalation to the Director, QA had been done, the first, 8/21/85 and, the second, 11/1/85. The second escalation apparently should have been to the Manager of Nuclear Power.

QSS-A-84-0016-03 Escalation memo issued on 2/7/86, yet on 1/17/86 escalation action was initiated.

QSS-A-84-0020-01 Records show that an undated memo to escalate the deviation to the Manager of Nuclear Power was drafted but never issued. However, there now exists another escalation to the Director, QA. New escalation memo dated 2/11/86 but 1/14/86 was date when verification was completed.

Conclusion

DQAI-104 appears adequate if QA management and line management would require and take prompt action on item resolution. Prompt action should imply that action is completed within a short period of time such as within one week of initiation. When entering the escalation phase, the Director, DQA needs to ensure that actions required by DQA are completed in a timely manner.

List of QA Deviations Reviewed

Deviation No.	Date	Escalation Date(s)
QSS-A-81-0006-01	1/28/82	2/21/85
QBF-A-84-0013-02	7/13/84	6/6/85
QBF-A-84-0014-02	8/24/84	2/11/86
QBF-A-85-0004-02 -03 -06 -07	4/5/85	5/31/85
QBF-A-85-0009-01	7/3/85	1/21/86
QBF-A-85-0014-04	8/15/85	1/16/86
QBF-A-85-0015-01	8/23/85	12/13/85
QSS-A-84-0018-01	10/5/84	11/1/85
QBL-A-85-0002-01	5/22/85	11/22/85
QBF-A-85-0008-01	4/1/85	11/22/85
QSS-A-85-0015-07	9/13/85	10/31/85
QBF-A-85-0016-02	10/18/85	2/11/86
QSS-A-84-0016-03	8/24/84	11/26/85
QSS-A-84-0020-01	10/16/84	2/11/86
QBF-A-83-0207-04	6/23/84	2/6/86
QSS-A-85-0003-16	11/23/84	1/21/86

Deviation No.	Date	Escalation Date(s)
QSQ-A-84-0014-02	11/2/84	10/9/85
QSQ-A-84-0014-03	11/2/84	10/9/85
QSQ-A-85-0001-01	1/16/85	9/11/85
QSQ-A-85-0008-01	6/27/85	1/29/86
QSS-A-84-0011-02	8/9/84	2/11/86
QSS-A-85-0006-03	3/22/85	1/17/86
QWB-A-85-0014-05	6/27/85	2/11/86

i. Office of Engineering (OE) and Office of Construction (OC) Procedures to Formalize Escalation Process, Paragraph 3.3 (page 3-9) and Uniform and Cohesive Method Needed throughout P&E for Escalating Unresolved QA Problems. Policy Directive By December 31, 1985, Paragraph 3.3 (page 3-11).

In a memorandum (L20 851224 986) dated December 27, 1985, from the Manager of Power and Engineering to those listed, a policy regarding escalation of responsibility for resolving Conditions Adverse to Quality (CAQs) was discussed. Basically this memorandum requires the Nuclear Safety Board, OE, OC, all sites, and DQA to submit implementing procedures for resolving CAQs to DQA for review by January 31, 1986. (DQA's procedure, DQAI-104 was issued September 25, 1985). The DQA review of these procedures was scheduled to be completed by February 14, 1986. The inspectors reviewed these draft procedures and noted that DQA had made some substantive comments.

All groups were scheduled to implement these procedures by March 15, 1986, and they were to be fully implemented (effective) by April 1, 1986.

TVA has not yet implemented improved escalation programs for most organizations within TVA. However, draft procedures have been written and reviewed. The finalization and subsequent implementation has been scheduled for March 15 and April 1, 1985, respectively. Administratively the procedures appear adequate. The effectiveness of implementation cannot be determined at this time.

Documents reviewed:

QMS-P 65.07, OE Procedure for Escalation of QA Program Deficiencies

OC QABP 3.2, Deviation Reports, Management Requests, and Stop Work Orders, Revision 1

OESP 7.6, Reporting and Disposition of Deviations, Revision 0

Memo R. J. Mullin to K. W. Whitt, February 4, 1986, Subject: Applicability of the Office of Nuclear Power (OP) Policy on the Escalation of Conditions Adverse to Quality.

Policy Statement of H. G. Parris, Manager of P&E, dated December 27, 1985, Policy Regarding Escalation of Responsibility for Resolving Conditions Adverse to Quality

TVA Nuclear Performance Plan Volume 1 Corporate (November 1, 1985)

j. Revision of Topical Report, Revision 9, Will Define QA Program

This revision is not scheduled to be submitted for NRC review and approval until May 1, 1986. Discussions with DQA personnel identified that TVA may request an extension to this date.

k. Managers, P&E Will Issue Directions and Monitor (Through DQA) the Site Program Through Overview Audits of OE and OC, Paragraph 3.3 (page 3-10).

The DQA reorganization and overview of the site program through overview audits of OE and OC was cancelled.

l. Assign QA Site Representatives to Site Director and Submit Organizational Changes to the NRC, Paragraph 5 (page 5-2 Items 12 & 14)

This reorganization of QA to put audit personnel on site has been cancelled.

m. Readiness Review of QA Will be Conducted Prior to Restart and Quarterly Meetings Between Site Director and QA Manager, Paragraph 6.1 (page 6.1 - 38).

A memorandum (A02 851113 016) from the Site Director, Watts Bar, to the Manager of Power and Engineering (Nuclear) dated November 14, 1985, states the results of an operational readiness review conducted at Sequoyah Nuclear Plant during the week of October 28, 1985. As stated in the memorandum, the object was to perform an independent assessment of the self-evaluation and the resulting efforts initiated by Sequoyah site management in preparation for returning the units to service. The review concentrated on the following six primary areas; management goals and objectives, management structure, quality assurance and management control, radiological emergency planning, regulatory performance operation activities, and maintenance. This review

identified areas requiring improvement, areas having significant strengths, and two items requiring correction prior to restart. These two items involved training for the Shift Technical Advisor in the Safety Parameter Display System and review of outstanding preoperational test open items and a determination made that their status does not constitute an unreviewed safety question.

Quarterly meetings between the Site Director and the QA Manager have been ongoing. This was determined by direct questioning of QA personnel.

7. DQA Personnel Performance

The inspector conducted interviews with Sequoyah QA personnel and corporate DQA personnel relative to problem identification and closure. All personnel interviewed stated that once an item has been identified by the various established mechanisms (site personnel identify items by Discrepancy Reports (DRs) or Corrective Action Reports (CARs) and audit personnel identify items by audit findings), then the item can only be closed by verification of corrective action. All personnel interviewed stated that they could not recollect where items were closed without verification of corrective actions. Corporate DQA personnel perform audits of corrective actions as required by DQA procedures. Audit findings have been identified where site QA personnel misclassified findings as DRs when by procedure they should have been CARs. One example was identified at Browns Ferry. Examples of misclassification were not identified at Watts Bar. Corrective actions have been taken by site personnel to prevent recurrence of this problem.

Site management has set goals to reduce the number of findings identified by site QA personnel and DQA personnel. These goals indicate that site management hopes to improve site operations; however, neither site QA personnel nor DQA personnel feel restricted by these goals and categorically stated that problems, if found, would be identified.

8. Inspector Items From Volume 2, Sequoyah Nuclear Performance Plan (SNPP)

a. Five Goals: Management Controls/QA, Introduction (page 4)

The five goals delineated in the introduction pertaining to management controls and quality assurance are general statements which encompass all of the remaining items inspected and, as such, were not individually verified. These goals remain as long term objectives toward which, based on the specific inspection items described below, some progress has been made, but for which, additional work remains to be completed.

b. EQ Binders Subjected to Management or QC Review, Section 1 (page 3)

The quality review of EQ binders was conducted at TVA-Knoxville as a combined effort of TVA and its EQ consultant, Westec, prior to delivery of the binders to Sequoyah. A member of the TVA QA staff participated in the review. No further assessment could be made in this area.

c. Timely Responses for Deficiencies, Section 3-1.1.5 (page 4)

The goal of assigning responsibility to a specific supervisor for responses to deficiencies has not yet been realized, though some progress has been made. A January 30, 1986, letter (LP 6N 38A-C) from S. A. White, Manager of Nuclear Power, to the Office of Nuclear Managers delineated a formal system for generating responsibility and accountability profiles for each manager. This general action may be perceived as a first step to solving a long term problem at TVA of a lack of accountability for internal deficiencies.

d. Additional Staffing, Section 3-2.4.2(a) (page 12)

The licensee states in section 3-2.4.2(a), 3-4.11.1, and 3-4.11.2(c) that the root cause of poor performance of modifications and the outstanding modifications backlog was due to use of too many craftsmen of limited experience in the performance of the modifications. This overload of craftsmen constrained the ability of personnel to properly and cohesively perform modifications, especially in the constricted work areas found in the plant. The licensee decided that the quality and control of modification work being performed could be significantly improved by reducing the total number of craftsmen working on a modification, by improving the ratio of supervisors to craftsmen, and by closing, consolidating, or cancelling over 30 percent of the proposed workplans (those apparently lacking any safety significance).

The inspector identified that the licensee had indeed reduced the number of craftsmen from a total of 1150 to less than 250 permanent employees during nonoutage periods and had made provisions to augment the staff to approximately 400 craftsmen during outages. The additional personnel were generally hired for the duration of the outage. Also, the inspector verified that the licensee had reduced the total number of work plans by over 30 percent.

Due to the large scope and limited time provided for this inspection, the safety significance of the cancelled workplans and the effects of the staff reductions on the quality and control of plant modifications could not be evaluated.

e. Plant Modifications, Section 3-2.4.2.(b) (page 13)

The licensee stated that to improve planning modifications, a goal would be set to hire six implementation estimators by January 1986. These estimators would be used to improve front-end decision making and

planning for major modifications. Additionally, the scheduling of major modifications would be based on an improved estimate of implementation requirements resulting in a more realistic modification schedule.

The inspector determined that only three out of six of the implementation estimator positions were filled (two permanent employees and one contract employee). The other three positions were not scheduled to be filled due to changes being made to the job selection criteria. Additionally, the licensee had not issued the procedure for performing modification estimates though it had been drafted in August 1985 and distributed for comment in September 1985.

The scheduling of modifications did not appear to be currently based on these "improved estimates" as the licensee was undergoing severe scheduling perturbations, generally subjugating all previously planned modifications to upcoming environmental qualifications work.

f. SRO Assigned to QC, Section 3-2.4.5(a) (page 16)

The licensee stated that an SRO would be assigned to the QA Staff. The inspector determined that an SRO was assigned to the plant Quality Surveillance Section on August 19, 1985. Additionally, adequate provisions had been made to periodically rotate this SRO into line operations positions for short periods to permit the maintenance of an active license. However, official plans have not been developed to permit the continuation of this program past the initial one year assignment.

g. QA Staff Hiring Expertise, Section 3-2.4.5(b) (page 16)

The inspector identified that the licensee's past QA surveillance staff hiring practices were consistent with 3-2.4.5(b) in that they did place some emphasis on previous experience and expertise in hiring personnel. Additional personnel have not been hired for the surveillance section since that time.

h. QA Training for QC, Attachment ES-1.3

A document entitled Quality Control and Nondestructive Examination On-the-Job Training Manual was issued June 17, 1985, based on the guidelines of INPO TQ-501, Development and Implementation of On-the-Job Training. The training manual divides QC inspectors into three groups - electrical, and instrumentation and control; mechanical-nondestructive examination; and mechanical-civil. The format of the manual is question/answer and signoffs of performance factors. Sequoyah has started this program informally but is awaiting confirmation from the corporate staff prior to formal implementation.

i. Training Managers and Engineers, Attachment 2.3.2

The Managers and Engineers Pressurized Water Reactor (PWR) Certification Training Program was started in 1981 and to date four classes have been completed. A fifth class comprising eight students is in progress. The inspector reviewed the revised training manual entitled Managers and Engineers Certification Training Program, Revision 1, dated November 30, 1985, and interviewed several personnel who had completed at least some portion of the training. All evidence suggested that this has been a high quality training program.

j. Training QA/QC Personnel, Attachment 2.4.3

This statement of the training status of selected key personnel is still accurate. Continued training will be provided on a priority and availability basis.

k. Reduce Tiering of Procedures (QA/QC Procedures), Section 3-3.2.3 (page 22)

The inspector determined that the reduction of tiering in plant QA/QC procedures as described in 3- 3.2.3(c) has been negligible. The licensee asserts that a large-scale revision project is being considered, though start or completion dates have not apparently been established.

l. Management Appraisal System, Section 3-3.3.3 (page 25)

This statement that the rating and pay of managers will depend on performance against plant objectives beginning in 1986 is slightly misleading in that this rating system had been in place prior to 1986. However, it has been reemphasized and formalized for use this year. SQA-129, Objectives in Plant Operation, Revision 5, dated January 2, 1986, expands and upgrades the annual statement of goals for each management level position. The rating and pay of managers will now be affected to a larger extent by performance against factors delineated in SQA-129.

m. Plant QA Goals - Monthly Report, Section 3-3.4.1 (page 27)

The inspector verified that the Monthly Report is being developed and disseminated by the licensee in order to formally trend plant goals against the performance of each plant organizational unit.

n. Increased Surveillance Activity, Section 3-3.4.2 (page 27)

In November 1984, the QA staff employed three surveillance inspectors. Since then two have left and five have been hired, making a total of six. Of the new hirees, three were selected from line organizations (Operations, Chemistry, Instrument and Control) and two from QC.

The inspector reviewed the training manual for the new observation training program. Introduction to Observation Training, Revision 1, issued October 24, 1985, was written by the corporate staff and contains a twelve page lesson plan plus appendices. Training is scheduled to begin in the near future.

Only one management review guideline has been written since the issuance of the SNPP. The guideline for post maintenance testing was issued December 26, 1985. Thirty-five guidelines have been developed to date with fifty-one scheduled for future development.

o. Corrective Action, Section 3-3.5 (page 27)

Daily staff meetings are held each workday at 8:15 a.m. The Plant Manager meets with key plant managers each Wednesday at 11:00 a.m. The plant QA Supervisor meets with the Site Director on a monthly basis as stated.

The Nuclear Safety Monthly Top Management (MTM) meetings for February and March have been cancelled apparently due to the perception that they have not been productive. This is also discussed in paragraph 6.e. A letter (LP 6N 37A-C) from C. C. Mason, Deputy Manager of Nuclear Power, dated February 4, 1986, states that further direction regarding periodic reporting of performance indicators will be included in the Policy and Directives Manual.

Quarterly corrective action meetings were held June 18, 1985, September 19, 1985, and January 28, 1986, the latter meeting delayed presumably due to the holiday vacation season. Minutes from these meetings describe what appears to be a serious appraisal of the status of Corrective Action Reports (CAR) and other tracking vehicles.

A new procedure was developed which requires the automatic escalation of deviations to higher levels of management when timeliness is inadequate. The inspector reviewed DQAI-104, Escalation of Responsibility for Deviation Corrective Action, Revision 0, issued September 25, 1985. This procedure is discussed in paragraph 6.h.

Managers have been instructed on an informal basis to become more involved in working level activities of their organization. Implementation of this goal was not assessed during this inspection. The Site Manager's goals for management's corrective action performance is delineated in procedure SQA-129 as discussed in paragraph 8.1. The policy goal of arranging meetings between the Site Manager and/or the Plant Manager with employees responsible for NRC violations is familiar to the Compliance Supervisor but such a meeting has not as yet been arranged.

As a result of the general actions described, TVA claimed that the average age of CARs is trending downward. However, this can be a misleading statistic. If several new CARs are opened in a short period

of time, the average age decreases without an accompanying effort to close out old CARs. QA staff personnel indicated that a different performance factor may be considered.

Sequoyah has encountered problems with the handling of nonconformance reports (NCR) involving multiple organizations. SQA-118, Handling of Nonconformance Reports or Conditions Adverse to Quality Received from Office of Engineering, Revision 6, was issued October 7, 1985. Attachment 1 to this procedure was revised to include an immediate assessment of the safety significance of the deficiency to ensure that it is properly prioritized. Another procedure change was made to OE Procedure OEP-17, Corrective Action, Revision 2, to require interface coordination between the OE and the site. Revisions were made to OEP-17 as stated in the SNPP to require prompt notification of either the Site Director or plant operations management for NCRs which involve an immediate operability problem. Attachment 5 to OEP-17 was revised to require a generic condition elicited by NRC to be translated into a Problem Identification Report (PIR) or Significant Condition Report (SCR) in two weeks. This effort should improve the timeliness of the review of NCRs for applicability to other TVA nuclear plants.

A recent site QA survey was conducted to assess compliance with the new NCR procedural controls. Survey 21-85-P-014, Compliance Visits, Audits, and Inspections, was issued October 7, 1985, and did not identify deficiencies in this area.

Training was conducted for OE personnel and others affected on the proper disposition of SCRs. The inspector reviewed attendance sheets which indicated that three 1½ hour training sessions were held October 17, 1985, at Sequoyah. This date met the commitment made in the SNPP to complete this training no later than November 27, 1985. Likewise, training for OE personnel on the revised OEP-17 procedure was concluded by November 1985 as committed.

The inspector verified that the OE Quality Management Staff has increased the depth and frequency of verification activities to monitor OE compliance with procedural requirements regarding Condition Adverse to Quality (CAQ) reports.

p. Plant QA Staff, Section 3-3.6 (page 32)

The inspector determined that the following statements from the SNPP were representative of the facts:

3-3.6.2 Involvement

The plant QA Staff is integrally involved in all aspects of nuclear safety-related operations. For example:

(a) The QA Supervisor is a member of the Plant Operations Review Committee (PORC).

(b) All safety-related instructions, modification work plans, and MRs receive a prework Plant QA Staff Review.

(c) The Plant QA Staff has free access to all records and participates in meetings relevant to its activities.

Further inspector review of plant QA staffing identified that the licensee was employing the number of QA staff personnel as described in section 3-3.6.3 of the SNPP. The staff appears to possess the knowledge and experience to adequately conduct the performance of it's functions. Though licensee asserts in this section that additional inspectors may be borrowed from other plants during outages, evidence was not provided by the licensee regarding the use of additional inspectors from other TVA plants, though the licensee was in an extended outage and was performing extensive environmental qualifications modifications.

An inspection of the licensee was performed regarding the following QA/QC qualification goals provided in the SNPP:

3-3.6.4 Qualifications

(a) The qualifications of the staff continue to be upgraded. Whenever possible, highly qualified line personnel are considered for positions with the QA Staff to take advantage of their valuable technical expertise. For example, over the last year, the Surveillance Section has hired experienced maintenance and chemistry personnel, and an SRO has been assigned to the section on long-term loan.

(b) QC inspectors are required to successfully complete a rigorous and formal training program involving classroom lectures, structured laboratory exercises, and on-the-job (OJT) training. The OJT portion of this training is being restructured to meet INPO recommendations. TVA plans to seek accreditation for the QC inspector training program if INPO provides for such accreditation.

(c) Consideration is being given to the rotation of key managers into line positions during the refueling outages to increase their knowledge of plant systems and of plant maintenance/modification activities.

The inspector identified the following:

(1) The QA Staff qualification upgrade program through hiring individuals with expertise was stagnant. Qualified line personnel had not been placed in QA positions since the issuance of the SNPP though there have been 3 QA Staff positions that have been vacant the entire time. Additionally, no program exists to improve or maintain the qualifications of current QA Staff members for example, through refresher training.

(2) The formal training program consists of coursework at the licensee's training center, followed by selected OJT exercises. The qualifying inspector is not normally required to perform all of the OJT qualification factors as the licensee usually gives the inspector credit for previous work experience. The OJT training program was issued on June 17, 1985, prior to the issuance of the performance plan.

(3) INPO accreditation for this training program apparently has not been actively pursued as the licensee is currently unaware whether INPO can provide such accreditation.

(4) QA/QC managers have not been placed in line positions during outages. The licensee stated that this was due to the additional QA/QC work load imposed.

The inspector identified that the licensee's description of the QA organization in section 3-3.6.5 was accurate at the time of the inspection.

q. Missed Surveillance, Section 3-4.6.3 (page 42)

The inspector verified that special performance of surveillance instructions (SI) are stamped as stated in the text. A computer program is used to schedule future surveillance tests and to compute the next required date independent of performance dates unless the previous performance was early. Unit 2 SI folders are color coded green; Unit 1, red. The inspector reviewed several checksheets involved in the review of less frequent SIs. All SIs of periodicity one year or greater were reviewed. The checksheets implied a comprehensive review.

r. Modification Program, Section 3-4 (page 50)

The licensee asserted in section 3-4.11.1(c) that the Superintendent of Operations and Engineering and the Superintendent of Maintenance were each reviewing, approving, and prioritizing every proposed plant change. The inspector reviewed the licensee's procedure governing modifications approval AI-19 (Part III), Plant Modifications: Modification Requests, Revision 12. The procedure did not require the approval of both superintendents but either one. Additionally, the inspector determined that these superintendents were assigning blocks

of days during which they desired the modifications to be performed, whereas the engineers of the Planning and Scheduling Section were actually assigning the priority (i.e., priority 1 through 9) to the modifications proposed for each block.

The inspector determined that an engineering change notice (ECN) task force (3-4.11.2(b)) was manned in August 1985 and assigned the function of closing out the backlog of completed, but not closed ECNs. A procedure MODL-A23 was issued on March 29, 1985 to provide guidance for conducting tne closeout process. In October 1985 the task force was redirected to initially close only aspects of each ECN that were safety related. This process is still continuing. After all safety significant aspects are complete, the task force is directed to complete the closures of the backlogged ECNs.

Though the task force was assigned to close only the ECN backlog, all ECNs that have been subsequently completed have also been assigned to this group for closure rather than to the engineer responsible for the ECN performing the closure. Consequently, the backlog of ECNs requiring closure is increasing steadily, whereas very few ECNs have been entirely closed by the task force as demonstrated below:

	August 1985	December 1985	January 1986
Complete Modifications	785	834	886
Closed Modifications	206	224	224

The licensee asserts that the current backlog of ECNs should be entirely closed out approximately 38 weeks to one year after unit startup.

The inspector verified that the licensee's Project Engineering Group was reviewing all major design changes and that the design engineers had been relocated to the site to assist in correcting problems noted with the pre-implementation review of design packages (§ 4.11.3(a) and (b)).

s. Post Modification Testing, Sections 3-4.12 and 3-4.14.3 (pages 51, 57)

The inspector reviewed the following licensee procedures to verify the incorporation of planned improvements to the post modification functional test program.

AI-7 Recorder Charts and Quality Assurance Records, Revision 37
AI-19 (Part IV), Plant Modifications: After Licensing, Revision 13.

These procedures were found to have been appropriately revised to clearly and succinctly reflect the desired guidance. However, these procedures were revised to incorporate this guidance prior to the issuance of the SNPP; AI-7 on April 19, 1985, and AI-9 on June 7, 1985.

In 3-4.12 the licensee also took credit for self-appraised, significant improvement in the adequacy of the post-modification functional tests during the period of 1979 through 1985. The licensee especially noted the improved adequacy of the functional test instructions for the motor-operated valves (MOVs). But in inspection report 50-327/85-14 the NRC noted that "during the conduct of ... testing, the limitorque motor tripped on overload as opposed to the torque switch as specified in the procedure. Investigation ... determined that a jumper was installed ... which prevented the torque switch from operating. This jumper should have been removed during the performance of the work plan ... prior to turning the valve over ... for testing." This incident necessitated the licensee's revision of the functional tests in order to verify the correct wiring in the valves yet to be tested.

t. QC Training, Section 3-4.13.3(d) (page 55)

System orientation training was conducted for 21 QC inspectors between June and August, 1985. This training is now part of the QC inspector certification process. The inspector reviewed the course manual, Plant Systems Training Module 1 SQN PWR Introduction, which appeared adequate.

u. QA/QC Training, Section 3-4.13.6 (page 56)

A schedule had been generated describing a four week technical training program for newly hired technical staff personnel. This training program was scheduled to begin January 27, 1986, but was delayed when the site could not release the scheduled personnel. The long term goal is to hold ten classes within the next 18 months with approximately 20 students per class. The course is designed for personnel with a college degree but will probably include non-degreed personnel from time to time. A course manual has not been developed; however, the inspector reviewed lesson plans which appeared adequate in scope.

v. Procurement, Section 3-4.20 (page 63)

With respect to the six specific statements made in the text, the following was identified:

> 4.20.1 - A long range procurement training plan scheduled training sessions from February through October 1985, covering the QA procurement program, preparation of specifications, and Public Law 98-72. For various reasons, the schedule could not be met. To date, two of the scheduled training sessions, for Modifications and Plant Engineers have not been completed. The inspector reviewed attendance records for various completed training sessions.

4.20.2 - Actions to streamline the procurement approval cycle have included increasing the dollar amount certain supervisors can approve without upper management concurrence and the elimination of selected procurement document review requirements.

4.20.3 - Increasing the use of indefinite quantity term (IQT) contracts has been an informal effort only; however, based on lists of current IQT contracts provided to the inspector, it appears that the use of IQT contracts is heavily emphasized.

4.20.4 - The most recent figures show that over the last six months, emergency procurement requests comprised between 7 and 14 percent of the total procurement requests. A year ago, emergency procurement requests comprised between 25 and 51 percent of the total procurement requests.

4.20.5 - According to a Procurement Group Schedule and Plan, various specific actions should take place by March 3, 1986. The first major step will be the transfer of OE procurement engineers to the site, which is now scheduled to occur on February 17, 1986. Other actions include various training sessions for the new procurement engineers and the revision of affected procedures.

4.20.6 - The Central Office revised the Nuclear Quality Assurance Manual (NQAM) Section 2.1, Procurement of Materials, Components, Spare Parts, and Services, on December 23, 1985. Sequoyah is therefore committed to implement this change by March 23, 1986, and will do so by revising SQA-45, Quality Control of Materials and Parts and Services, and AI-11, Receipt Inspection, Nonconforming Items, QA Level/Description Changes and Substitutions. These two revisions are currently in typing and the commitment date should be met.

w. Measuring and Test Equipment (M&TE) Out of Tolerance, Section 3-6.1.1 (page 75)

The inspector reviewed the latest Monthly Progress Report on M&TE Program letter dated January 16, 1986, which indicated that the average time to complete evaluations of out-of-tolerance M&TE had decreased to 22.4 days. This letter and statistics provide positive evidence that the licensee continued to address this problem after the initial six-month reporting period expired in November 1985.

Within the SNPP review, one violation was identified. During the modification and post modification testing review, the inspector also selected the following preoperational tests for review:

Test	Unit	Title
W-6.1B	2	SIS Accumulators and Related System Performance Test

W-6.1D	2	SIS Safety Injection Pump and Related Injection System Performance Test
W-6.1A3	2	SIS Integrated Check Valve Flow and Integrity
W-6.1F	2	Integrated Engineering Safeguards Actuation
W-6.2	2	Upper Head Injection System
W-8.1B	2	Reactor Protection System Operational Time Response Test
W-8.5	2	Reactor Plant System Setpoint Verification
W-9.1	2	Control Rod Drive Mechanism Timing
W-10.1	2	Automatic Reactor Control Systems
W-10.2	2	Automatic Steam Generator Level Control System
W-10.4	2	Initial Turbine Roll
W-10.5	1	Dynamic Automatic Steam Pump Control System
W-11.1	2	Nuclear Instrumentation System
W-11.3	2	Incore Thermocouples and RTO Cross Calibration
W-11.7	2	Calibration of Steam and Feed Water Flow Instrumentation at Power
W-11.10	2	Reactor Startup Adjustments
W-11.10	1	Reactor Startup Adjustments
W-10.1	1	Automatic Reactor Control Systems
W-10.1	1	Automatic Steam Level Generator Level Control System

During the onsite inspection and in telephone conversations conducted with licensee personnel on February 25, 26, and 27, 1986, the inspector was informed that all preoperational tests had been signed by the test director,

several had been signed off by the NSSS supplier, Westinghouse, most had been signed off by OE, and none were signed by the plant superintendent. The lack of preoperational test review completion was identified by the licensee as described in paragraph 6.m. above. Completion of the review and approval of all preoperational tests was identified by the licensee as an item requiring resolution prior to restart. NRC will follow up this item as Inspector Follow-up Item 327, 328/86-12-02. Results of the inspection and subsequent conversations is tabulated in the following:

Test	Test Dir. Signoff	Westinghouse Signoff	OE Signoff
W-6.1B (2)	12/17/80	12/19/80*	09/03/81
W-6.1D (2)	10/30/80	11/11/80*	08/03/81
W-6.1A3 (2)	05/08/81	05/08/81*	01/13/86
W-6.1F (2)	07/10/81	07/09/81*	09/21/81
W-6.2 (2)	10/31/80	10/31/80*	12/12/83
W-8.1B (2)	06/05/81	06/11/81*	08/24/81
W-8.5 (2)	04/22/82	08/10/83	01/09/86
W-9.1 (2)	09/14/81	09/17/81*	02/26/82
W-10.1 (2)	03/02/82	03/09/82*	01/08/86
W-10.2 (2)	03/26/82	08/16/83	01/13/86
W-10.4 (2)	12/30/81	12/31/81*	10/24/83
W-10.5 (1)	10/31/80	12/08/80*	02/05/81
W-11.1 (2)	05/15/81	05/28/81*	07/27/81
W-11.3 (2)	05/08/81	05/11/81*	09/10/81
W-11.7 (2)	07/08/82	08/16/83	01/24/86
W-11.10 (2)	02/17/84		
W-11.10 (1)	09/22/81	09/16/82	01/22/86
W-10.1 (1)	11/12/80	01/07/81*	02/12/81
W-10.2 (1)	12/24/80	02/31/81*	01/22/86

*Indicates that document was forwarded to Westinghouse for review and approval. As of the date of this inspection, no response has been received.

10 CFR 50, Appendix B, Criterion XVII, requires that sufficient records shall be maintained to furnish evidence of activities affecting quality, including the results of reviews, inspections and tests. Additionally, records shall be identifiable and retrievable. The licensee shall establish requirements for record retention including location.

TVA Topical Report, Table 17D-3 states that the licensee commits to maintaining and controlling quality assurance records in accordance with Regulatory Guide 1.88, (Revision 2), October 1976, Collection, Storage and Maintenance of Nuclear Power Plant Quality Assurance Records. One exception is stated in that the licensee is permitted to follow the fire protection guidance of NFPA 232-1975 for Class 1 records or ANSI N45.2.9. When NFPA 232 is used, he must perform an annual worst case fire load surveys to confirm the validity of the licensee's initial fire load analysis.

The inspectors performed a review of the licensee procedure AI-7, Recorder Charts and Quality Assurance Records, Revision 37, the Nuclear Operations Quality Assurance Manual, the previous completed fire load survey, and an examination of one storage area located outside of the vault in which preoperational test records were stored. This evaluation resulted in the following:

The inspectors identified that the preoperational test records used to verify the operability of various Unit 1 and Unit 2 reactor safety systems (including safety injection, rod control, reactor protection, nuclear instrumentation, and engineered safety feature actuation systems) were not being controlled or stored in accordance with the commitments of the licensee's Topical Report or with 10 CFR 50, Appendix B, Criterion XVII. The following were noted in the control of these preoperational tests:

(1) The records were not being stored in an predetermined, approved storage location as required by ANSI N45.2.9, Section 5.2.

(2) The records were not stored in accordance with the guidance provided by Sections 5.3 or 5.5 of ANSI N45.2.9 as there was no filing system for these records, no access control to the records including any methods to prevent unauthorized personnel access to guard against theft or vandalism, no control of or accountability for the records removed from the storage location, and no method to verify that the records were the actual original records.

(3) The records did not meet the fire protection requirements of either ANSI N45.2.9 or NFPA 232 as they were being stored in a non-fireproof cabinet, there were no dual official record copies kept at any other location, either on or off site, and no fire load analysis of this storage location had ever been conducted.

(4) The licensee had not specified any predetermined storage locations for quality assurance records.

The failure to adequately control quality assurance records is identified as Violation 327, 328/86-12-01.

Three additional problems were identified with the preoperational test records previously referenced and are described below:

Results of the Unit 2 preoperational test W-11.7, Calibration of Steam and Feedwater Flow Instrumentation at Power were out of the allowable acceptance criteria and the zero power portion of the test had been performed utilizing test equipment that had not been properly backfilled or calibrated. The licensee acknowledged in the test summary that the results did not meet the acceptance criteria and even could not be made to do so by manipulating the test data through time averaging. The licensee did not repeat the test but rather accepted the test results as did Westinghouse in their post-testing review. The senior resident inspector is evaluating this problem.

The following tests had deficiencies noted in the interim review and approval report that were required to be closed prior to unit startup after the first refueling outage. These deficiencies are just now being closed.

Units 1 and 2: W-10.1, Automatic Reactor Control System

Fifteen of these 19 preoperational test results have not as yet been reviewed by Westinghouse as required by Section 14.2.1.2 of the Sequoyah Final Safety Analysis Report (FSAR). Though four of these test results had received Westinghouse review by 1983, they still had not undergone review by the Sequoyah plant manager.

These last two preoperational test problems were discussed with the licensee by NRC management during conversations conducted on February 20 and 21, 1986.