

UNITED STATES GOVERNMENT

Memorandum

TENNESSEE VALLEY AUTHORITY

GNS '81 1112 050

TO : G. H. Kinmons, Manager of Engineering Design and Construction, W12A9 C-K

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

DATE : November 12, 1981

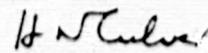
SUBJECT: DIFFERING STAFF OPINIONS - NUCLEAR SAFETY REVIEW STAFF INVESTIGATION
REPORT NO. I-80-14-NPS - CORRECTIVE ACTION FOLLOWUP REPORT R-81-26-NPS

Attached is the NSRS evaluation and followup report of OEDC proposed and, in several cases, completed corrective action to resolve recommendations resulting from our investigation into two OEDC EXPRESSIONS OF STAFF VIEWS involving matters related to OEDC QA Quality Assurance Evaluation Report QAE 80-1.

Our evaluation indicates that additional response and/or action is required for 11 of our previous 21 recommendations contained in section V of our I-80-14-NPS report (GNS 810202 002). We believe the need for additional response has resulted from an inadequate translation of the NSRS concerns during the evaluation process within OEDC. Specific recommendations requiring additional response are paragraphs V.2, .3, .6, .7, .10, .11, .14, .15, .17, .19, and .21. The 10 recommendations not identified were determined to have had adequate action taken to resolve those matters and no further OEDC response will be requested on them. It should be pointed out that the recommendations detailed in section V of the I-80-14-NPS report were intended to be general in nature and, as a set, would resolve all the specific NSRS open items identified in Table 6 even though they do not correspond to them on a one-to-one basis.

In addition to the 11 noted recommendation responses required, we are requesting response to an additional item (R-81-26-NPS-01) involving OEDC handling of action items requested by formal appraisal groups. This item, as well as our evaluation of each item addressed in the M80-11 reports, are presented in the attached report.

You are requested to inform NSRS of your plans and schedule in resolving these items by December 24, 1981. Any questions regarding this report should be directed to J. W. Mashburn at extension 6860 in Knoxville.



H. N. Culver

RCS:LML
Attachment
cc (Attachment):
MEDS, 100 UB-K

TABLE OF CONTENTS

	<u>Page</u>
I. Scope	1
II. Background	1
III. Conclusions and Recommendations	2
IV. Details	2
V. Documents Reviewed (References)	24
VI. Tables	28
1. Adequacy of OEDC Responses to Resolve NSRS Recommended Corrective Action	28

I. SCOPE

This was a followup review on action taken by OEDC in response to OEDC QA Management Audit M80-11 to resolve 21 recommendations identified in NSRS Investigation Report No. I-80-14-NPS (references A and B).

II. BACKGROUND

Early in 1980, OEDC QA conducted a quality assurance evaluation of EN DES procurement control activities involving EN DES Knoxville, the QEB Philadelphia and Chicago Regional Offices, and the Bristol Suboffice. The report, QAE 80-1 (reference C), was issued on April 21, 1980 identifying 33 items which required EN DES management review and action. Subsequently, a memorandum was issued by the OEDC QA Manager (reference D) to the Manager of Engineering Design identifying that four of the items in the report should be classified deficiencies. The other 29 findings were considered suggestive to improve EN DES efficiency since they were primarily concerned with management methods and procedures and only had a secondary impact on quality. Therefore no further response by EN DES or followup action by OEDC QA was anticipated on those 29 items.

Two OEDC employees who were involved in the preparation of the OEDC QA QAE 80-1 evaluation report disagreed with the OEDC QA Manager's memorandum and filed differing staff opinions with NSRS (references E and F). The NSRS review of the concerns raised by the two employees resulted in issuance of NSRS Investigation Report No. I-80-14-NPS on February 2, 1981. Twenty-one recommendations requiring OEDC action were identified in the report ranging from specific procedural corrections to OEDC QA reevaluation of certain QAE 80-1 findings as potential safety concerns.

The 21 recommendations were provided in order to resolve the findings discussed in the conclusions (section IV) stated by NSRS and in the investigation details discussed in Attachment B of the report. These items were tabulated (22 total) and summarized in Table 6 of the report to aid the responding organizations to the specifics of the NSRS concerns and as a means of tracking by NSRS that recommendation responses covered the basic elements of its concern.

Contrary to the NSRS request that OEDC respond to the recommendations identified in section V of the report, OEDC responded to the NSRS tracking items. This presented some difficulty in identifying resolution of the overall NSRS concern versus individual aspects of the concern the open items represented.

Table 1 has been added to summarize the conclusions drawn by NSRS of the OEDC responses, to correlate the NSRS open item number to the associated recommendations requested to resolve the concern, and to indicate the the present status of the open item number and associated recommendations as to whether each remains open or closed to further NSRS action or OEDC response.

III. CONCLUSIONS AND RECOMMENDATIONS

The followup review of OEDC action taken to resolve NSRS recommendations made in NSRS Investigation Report No. I-80-14-NPS resulted in the following conclusions and associated recommendation.

- A. NSRS has determined that 10 of the previous 21 recommendations contained in section V of the I-80-14-NPS report have had adequate action taken to resolve those concerns. The other 11 recommendations--V.2, .3, .6, .7, .10, .11, .14, .15, .17, .19, and .21--will require further evaluation and response by OEDC as indicated in the DETAILS section of this report.
- B. R-81-26-NPS-01, Inadequate OEDC Handling of Formal Appraisal Findings

The OEDC program for handling action items requested by formal appraisal groups as described in OEDC's procedure MO-QAP-3.4, "Reviews of Formal Appraisal Findings for Significance," is considered inadequate since it paraphrases appraisal concerns and does not direct the attention of the affected OEDC organization to the appraisal report details.

Recommendation

OEDC needs to devise a more appropriate system to communicate all relative information surrounding a stated deficiency or concern to its affected organizational body. This information is necessary so that the affected OEDC organizational unit can see how the reviewing agency drew its conclusion and how to respond to their recommended corrective action, if provided.

- C. Though not specifically responded to, NSRS recommendation paragraphs V.3 and V.4 of report I-80-14-NPS appear to have been utilized in QEB's response to resolve Yellow Creek Nonconformance Report YCNQAB8101 (references H and I) involving quality deficient material being received from vendor shops (draft issuance of the NSRS report had been made available to OEDC on December 12, 1980). The QEB usage of these recommendations is considered a positive factor in assuring that vendors comply with intended quality contract requirements (see paragraph IV.C.1 for additional details).

IV. DETAILS

NSRS investigation of two differing OEDC staff opinions involving matters related to OEDC QA Quality Assurance Evaluation Report QAE 80-1 resulted in 21 recommendations being identified to OEDC management for resolution. The recommendations made were intended to be of general nature to resolve specific NSRS concerns identified during conduct of the investigation and to afford OEDC management the opportunity to develop their own alternate, workable and responsible solutions.

OEDC QA, in compliance with the requirements specified in MO QAP-3.4, translated the NSRS investigation findings onto OEDC QA audit deficiency sheets and presented them to the affected OEDC organizations as OEDC QA Management Audit No. M80-11. Transcription of the NSRS concerns appears to have been an arduous task as identified in reference L which resulted in inaccurate and misleading information being injected into the deficiency sheet writeups. The NSRS open item tracking table, Table 6 of report I-80-14-NPS, was used as the basis for the audit deficiency sheet writeups, the reason being, to ensure consistency between the OEDC QA item and the NSRS item.

NSRS has reviewed the proposed and, in cases, completed corrective action taken to resolve the M80-11 audit deficiencies (references N and O). The following paragraphs detail the results of the review made and Summary Table 1 has been provided to identify whether NSRS considers the action taken or proposed was considered adequate to resolve the NSRS concern.

A. (Closed) I-80-14-NPS-01, Failure to Follow Procedure

This item involved failure of QEB field office supervisors to conduct and report office meetings required by procedure. The details of this item were provided in paragraph IV.A.1.b, Attachment B of reference A, with recommended corrective action provided by recommendation paragraph V.1.

NSRS has reviewed the proposed corrective action identified in audit deficiency No. 1, M80-11B (based on input provided from references P, Q, and R) and found it appropriate for resolution of this item and recommendation V.1.

No further response on this item or recommendation V.1 is required. This item is closed.

B. (Open) I-80-14-NPS-02, Identification Controls Needed on EN DES Procedures/Manuals

This item involved requesting EN DES to review its procedures/manuals to ensure the minimum identification information required by EN DES-EP 1.28 was being implemented. The basis for this request involved an inadequate resolution to an EN DES internal audit deficiency (deficiency No. 1 to Audit No. 80-4) related to a lack of minimum information detail being provided on certain inspection procedure headings contained in the QEB Inspector's Manual as detailed in paragraph IV.A.2.c, Attachment B of reference A. This minimum information detail is required to be provided to ensure EN DES personnel (in the case of the deficient inspector's manual-QEB field inspectors) participating in quality-related activities are aware of and use the proper and current instruction for performing their activities. The NSRS recommended corrective action to resolve this matter was provided in recommendation paragraph V.2 of reference A.

NSRS review of the proposed corrective action identified in audit deficiency No. 2, M80-11B (based on input provided by references P, Q, and R) found that:

- OEDC QA had inadvertently limited the EN DES review to only that of the QEB Inspection Manual,
- The QEB response failed to address revision of Section E, "Forms, Worksheets, and Reference Standards," also found deficient by NSRS, and
- The QEB justification for not revising Section D, "Sample Inspection Procedures," immediately because the necessary information was currently provided in the contents of the Inspection Manual is considered appropriate if the contents adequately reflected the proper revision of the section D procedures. However, NSRS review of the Inspection Manual contents revealed that the revision number associated with these procedures was 0, contrary to the actual incorporating revision, 8.

NSRS considers the recommended action specified in paragraph 5 and the proposed corrective action provided in paragraph 10 of the M80-11B deficiency sheet to be incomplete and considers this item and recommendation V.2 open pending:

1. EN DES organizational (QEB, NEB, EEB, etc.) review that current procedural methods established to assure associated manuals/procedures contain the necessary minimum information requirements of EN DES-EP 1.28 applied, and
2. QEB's revision of the Inspection Manual's contents and sections D and E documents to adequately reflect the proper revision number and revision dates.

C. (Open) I-80-14-NPS-03, Field Office Manpower Deficiency

This item involved failure of EN DES to adequately staff its QEB regional quality control field offices and to expand its vendor verifications activities when supplier quality performance had been shown questionable as detailed in paragraph IV.A.3, Attachment B of reference A. Recommended corrective action for this concern was provided in recommendation paragraph V.4. In addition, EN DES was to review the adequacy of its purchase requisition preparation procedure and/or contract enforcement language as requested by recommendation paragraph V.3.

1. NSRS has reviewed the reasoning for the "significant" condition downgrade determination provided in paragraph 6 of audit deficiency No. 3 to M80-11B and reference S and found it unjustified. Receiving inspection alone cannot adequately provide sufficient basis that the product being delivered is of acceptable quality as discovered with the contracts

involving ATLAS, IEW, Clark Steel, and others. This fact was also identified to NRC by CONST as described in paragraph 5.b to Yellow Creek NRC inspection report 50-566/81-01 (reference T).

In-process monitoring and fabrication witness points have been and always will be the necessary key ingredients in verifying any supplier's conformance to contract requirements. The major obstacles the inspector presently must cope with are vague contract specifications and nonenforceable contract provisions. Correction of these issues was sought by NSRS in I-8 14-NPS recommendation paragraph V.3 and they were both used by TVA to respond to Yellow Creek Nonconformance Report YCNQAB8101 (references H and I) as followup action to the NRC identified concern addressed previously.

In addition, it should also be pointed out that the significant issue actually raised by NSRS was not based on QEB's failure to perform required source inspections but on QEB's inability to take prompt and necessary corrective action to resolve the manpower and faulty equipment shipment problems being encountered. This inability to effect corrective action was shown to be, in part, due to cost and schedule pressures. This is contrary to Criterion 1, Appendix B, 10CFR50, which states that persons and organizations performing quality assurance functions shall have sufficient authority and organizational freedom to identify quality problems; to initiate, recommend, or provide solutions; and to verify implementation of solutions without the constraints of cost and schedule being imposed upon them.

OEDC QA is requested to consider this information when it reevaluates this item for significance as stated in paragraph 10 to audit deficiency No. 21, M80-11A (reference N).

2. NSRS reviewed the corrective action taken by QEB addressed in paragraph 10 to audit deficiency No. 3, M80-11B (based on information provided by references P, R, and U) and considered it an adequate first step in resolving this concern. In order to follow the progress of QAB's assessment of EN DES procurement process activities and any other additional corrective action which may be taken as denoted in reference V, this portion (recommendation paragraph V.4) of this item shall remain open for NSRS tracking purposes only.
3. NSRS searched for the EN DES response to the second half of its recommendation (recommendation paragraph V.3), that involving EN DES review of the adequacy of its purchase requisition preparation procedure and/or contract enforcement language, and found it partially discussed in OEDC QA audit deficiency No. 9. This portion of item 3 will remain open pending further EN DES response.

In summary, this item remains open pending further OEDC action in responding to recommendations V.3 and V.19.a. Action taken for recommendation V.4 is considered adequate and further formal OEDC response is not required.

D. (Closed) I-80-14-NPS-04, Audit Report Tracking System

This item involved requesting OEDC QA and EN DES QAB to establish/review their audit report tracking systems to ascertain if adequate controls are present for ensuring respective audit reports are issued, and audited organization responses are issued/received in a timely manner. The details of this item were provided in paragraph IV.A.4, Attachment B of reference A, with recommended corrective action provided in recommendation paragraph V.5.

NSRS has reviewed the reasoning for the "significant" condition downgrade determination provided in paragraph 6 of audit deficiency No. 4 to M80-11B and reference S and found it justifiable. Further, review of the OEDC QA and EN DES QAB evaluations presented in paragraph 10 of the audit deficiency (based on input provided from references N, R, and W) were also considered appropriate.

The EN DES proposed corrective action of revising EP 5.34 and EP 1.29 to more clearly define their audit report tracking actions is considered satisfactory to resolve this concern. NSRS has reviewed 24 randomly selected OEDC and EN DES audit reports (listed below) to determine if the stated system tracking controls were effective in controlling late audit report transmittals. NSRS has noted that the number of late report issuances has decreased since its initial review and therefore considers positive action has been taken on this item. This item and recommendations V.5 and V.19.b are closed.

<u>OEDC</u> <u>Audit No.</u>	<u>EN DES</u> <u>Internal Audit No.</u>	<u>EN DES</u> <u>External Audit No.</u>
M80-7	80-11	80V-40
M80-8	80-13	80V-42
M80-10	80-15	80V-44
M81-1	SS-81-1	80V-49
M81-2	P-81-2	80V-53
M81-3	RO-81-3	81V-4
	SS-81-4	81V-7
	P-81-4	81V-15
	SS-81-5	81V-18

E. (Open) I-80-14-NPS-05, Qualification Procedure Required for Personnel Engaged in Special Processes

This item involved failure of EN DES to establish a written procedure for qualifying, certifying, and/or recertifying personnel engaged in special process activities other than NDE.

The details of this item were provided in paragraph IV.B.1, Attachment B of reference A, with recommended corrective action provided in recommendation paragraph V.6.

NSRS has reviewed the action taken by QEB in resolving this concern identified in paragraph 10 to audit deficiency No. 5, M80-11B (based on input provided from references P, Q, R, X, and Y) and its response to the "significant" determination of the item (provided in reference Z) and had the following two comments.

1. QEB had indicated in reference Z that it does have a qualification program through which its personnel are trained and certified in special process areas. The documents referenced to prove establishment of this program are EN DES-EP 1.31, "Nondestructive Certification," and QEB-AI 313.1, "Training and Certification of QEB/QC Personnel." As indicated in the NSRS report, these documents had been reviewed by NSRS and were found not consistent with the established OEDC QA program requirements detailed in the PRM to comply with 10CFR50, Appendix B, Criterion IX. The PRM responsibility requirements of Table 3 state that EN DES is to assure that its personnel have appropriate qualifications and certifications when engaged (involved) in special process activities. In addition, written procedures are to be established qualifying, certifying, and/or recertifying these personnel.

NSRS considers the provisions detailed in EN DES-EP 1.31 to be adequate for EN DES involvement in the NDE testing portion of special process activity controls. However, QEB-AI 313.1 is inadequate in providing the necessary qualifying, certifying, and/or recertifying information needed for the other special process activities, such as protective coatings, welding, heat treating, etc. The AI only outlines the categories of training QEB inspection personnel receive in the areas of formal training, on-the-job training, and procedural understanding. Specific methodology similar to that described in EN DES-EP 1.31 for NDE certification is not provided.

During the recent NSRS management review of OEDC activities, it became evident to the NSRS reviewers that many EN DES and CONST personnel were not aware of what constitutes a special process control activity. For information purposes, special process activities as intended by Criterion IX of Appendix B to 10CFR50 are all those manufacturing and installation activities that are used to alter the properties or characteristics or shape of the material or component; to inspect the resultant change from the altering process to ensure conformance to expected product requirements; or to preserve those required material or component properties or characteristics. These processes include welding, heat treating, nondestructive examination, cad welding, concrete and pipe protective coatings, cleaning and surface preparation,

forming and bending, plating and electrical insulation impregnation as related to manufacturing, construction, and testing operations. The results of any of these processes is highly dependent upon the control of the process or the skill of the operators, or both, since the resultant required qualities cannot be readily determined by inspection or testing of the product.

Thus, QEB inspectors need to be made fully aware of these process controls through qualification, certification, and/or recertification to ensure their surveillance function of vendor activities is effective. As a case in point, in January 1981 QEB committed to NRC (reference T) to send all of its vendor weld inspectors to visual inspection school and to certify them in visual inspection. Had a program initially been established to cover special process activities, all certification requirements per special process control would have been identified and this particular deficiency may have been averted.

NSRS considers QEB's training effort as indicated in the response made and demonstrably illustrated in reference AA to be quantitatively active. However, sending individuals to various schools for training and establishing goals does not resolve the basic premise that QEB needs to establish a "master" qualification program/procedure (similar to CONST-QAP 2.3) for special process activities other than NDE.

2. NEB has identified in reference BB that NSRS considered vendor auditing as part of the original NSRS finding. This fact was never specifically identified in the NSRS report and may have been construed as such by NEB based on the NSRS request to have the deficiency elevated to significant in light of a similar OEDC QA audit deficiency involving QA training for all of EN DES (audit deficiency No. 6 to M78-5). From discussions held with EN DES personnel during the recent NSRS management review of OEDC activities, there appears to be some unawareness of the reasoning behind the OEDC QA audit deficiency. Such a misunderstanding is the QEB response and conception that QA training is QA audit training. This is not correct. The OEDC QA audit deficiency involves failure of EN DES (in reply to causal note B of reference Y, QEB is part of EN DES) to establish a program for the indoctrination and training of its personnel engaged in quality-related activities as necessary to assure suitable proficiency is achieved, maintained, and documented as required by Appendix B, Criterion II of 10CFR50.

QA training, therefore, is not meant to signify only QA audit training or discussions on what the QA groups do. QA training is a compilation of orientation, procedural, and process awareness of activities required in order to perform/achieve the quality-related effect desired.

In addition, though it was not stated in the NSRS report that QEB field inspectors performed vendor audits (a point specifically refuted by QEB in reference Z), it should be pointed out that NCM section 1.4, paragraph 2.3.4.d, does provide a provision for the inspectors to do so:

"Inspectors in the QC regional offices are responsible for:

- (4) Auditing the implementation of Supplier's QA programs as part of the EN DES Vendor Audit Program."

It is NSRS' position that additional EN DES action is required on this item. This item and recommendations V.6 and V.19.c. will remain open pending additional EN DES response.

F. (Open) I-80-14-NPS-06, Inspection Report Content

This item involved failure of QEB field office inspection reports to contain details required by procedure. The details of this item were provided in paragraph IV.B.2.b, Attachment B of reference A, with recommended corrective action provided in recommendation paragraph V.7.

NSRS review of the action taken by QEB to resolve this concern identified as audit deficiency No. 6 to M80-11B (based on input provided from references P, R, V, and CC) and its response to the "significant" determination of the item provided in reference Z indicated that the NSRS report details were not used as background information to the OEDC QA paraphrased description of the concern as requested in paragraph III of M80-11 (reference M). The item, originally written up in the NSRS report as a potentially significant deficiency, was based on a compilation of deficiencies individually not considered significant. The complete basis for the NSRS determination of significant, as documented in the report, was for the following three reasons:

1. The EN DES response to inspection report content in the QAE 80-1 report was that inspection reports were only intended to be trip reports rather than detailed reports of inspection. This concept is contrary to the guidance provided in QEB-EP 24.56.
2. Inadequate inspection report content had been identified twice previously to the QAE 80-1 report by OEDC QA management audits M79-12 and QCS 78-2. Therefore, apparently corrective action taken for resolution of the previous concerns had failed.
3. The inspection reports are the basis for QAB to determine if a vendor QA breakdown is occurring or has occurred thereby warranting a more indepth audit of the particular vendor.

Inadequate or insufficient detail in critical item inspection reports could mask these apparent breakdown conditions.

The previous three items were not presented in the OEDC QA audit deficiency writeup and may have led to QEB's denial or lessening of the impact each of the five examples carried as to why the concern should not be considered significant. To the responses made by QEB and in the order presented in reference Z, NSRS has the following comments:

- a. The deficiency was that shipping release forms were found not attached to the QEB inspection reports that had made the releases as required by EN DES-EP 5.43, paragraph 5.3. The QEB response indicated these dissociated release forms were located in a separate folder due to the bulk of some of the attachments. This separation of documents does not meet the wording of the EP 5.43 requirement and the release packages should either be recombined with their associated authorizing inspection reports or the procedure revised.
- b. The one deficient case noted by QEB in its response identifying the missing "inspection activities required" portion of form TVA 10526B is correct as illustrated in Table 5 of the NSRS report. It should be pointed out, however, that though this one case may appear to be isolated, it was found at the time by NSRS among 15 randomly selected inspection reports involving a previously identified problem vendor. Other examples involving inadequate completion of "inspection activities required" can be found if pursued such as the one noted by QAB involving shipping release No. 39 to contract 78KA2-821119 as detailed in internal audit report 80-4 (reference DD). Additional examples were not considered necessary since this item, involving contract 78K61-86965, was being used to partially support the true concern identified in F.2 of the previously addressed three significant condition bases.
- c. As per the QEB discussion, the revision made to form TVA 10526B, which required the inspection report number authorizing the release to be included on the shipping release form was TVA 10526B (EN DES-2-78). Again, according to the QEB discussion, this revision would have been effective commencing around January 1980 in relation to QEB's identification of why the report numbers were found identified for releases No. 32 (dated January 7, 1980) and on for contract 76K61-86965 and all releases on contract 76K72-820117.

NSRS review of when form TVA 10526B (EN DES-2-78) was incorporated into EN DES-EP 5.43, "Release of QA Items from Supplier's Shops to Construction Site," indicates November 16, 1978 (references EE and FF). Therefore, it

appears the earlier releases on contract 76K61-86965 used the wrong revision to form TVA 10526R. QEB needs to reevaluate their discussion.

NOTE

Rereview of the releases identified in Table 1 of the NSRS report for contract 76K72-820117 indicated the year associated with the releases was typographically in error. The year should have been 1979 versus 1980. Further, the releases were also found to have used form TVA 10526B (EN DES-2-77) which is in conflict with the revised TVA 10526B (EN DES-2-78) form's effective implementation date.

- d. The QEB response that inspection reports are not acceptance documents is the understanding that NSRS had of the inspection report's intent. The OEDC QA process of transcribing the NSRS concern into an audit deficiency was only meant to paraphrase the NSRS concern, with the affected organization going to the NSRS report for specific background details as previously discussed. The "acceptance criteria" noted in the summarized NSRS concern was excerpted from the QEB-EP 24.56, section 2.0, wording:

"The report is to be prepared in a brief, factual manner covering all essential acceptance criteria established in the specifications for inspections, tests, witnessing, etc.; correlate the specification requirements in a logical manner; and include a statement of acceptability for each." (See IV.B.2.b, Attachment B, page 69 of report I-80-14-NPS.)

- e. The QEB response identifies that the inspection reports in question were written by the resident TVA inspector; therefore, a report issuance for each inspection is not warranted. NSRS review of QEB-EP 24.56 indicates the procedure does not differentiate between resident and nonresident TVA inspectors and states that an inspection report is to be prepared for each significant contact with a supplier, including each inspection visit and all hold point inspections. It appears QEB EP 24.56 and possibly other QEB EP's need to be revised to cover the TVA resident inspection program.

From this discussion, QEB should reevaluate its response to the "significant" condition portion of this item and complete the recommended NSRS action specified in recommendation paragraph V.7.

NSRS will also be monitoring the progress of actions discussed in reference V. This item and recommendations V.7 and V.19.d remain open pending further OEDC response.

G. (Closed) I-80-14-NPS-07, Addition of Hold Points

This item involved the TVA Inspection Manual's implication that the QEB inspector may add any additional purchaser hold points he considers necessary to the agreed upon QA contract between TVA and the vendor. The details of this item were provided in paragraph IV.B.2.c, Attachment B of reference A, with recommended corrective action provided in recommendation paragraph V.8.

NSRS has reviewed the proposed corrective action identified by QEB in audit deficiency No. 7, M80-11B (based on input provided from references P, Q, R, and GG) and found it appropriate for resolution of this item and recommendation V.8. No followup action by NSRS is planned on this item nor is additional response required of OEDC. This item is closed.

H. (Open) I-80-14-NPS-08, Waiver Release Controls

This item involved failure of EN DES to require contract waiver authorizations to undergo the same degree of control as was utilized in the preparation of the procurement document. The details of this item were provided in paragraph IV.B.2.c, Attachment B of reference A, with recommended corrective action provided in recommendation paragraphs V.9 and V.15.

NSRS has reviewed the proposed corrective action identified by QEB identified in paragraph 10 of audit deficiency No. 8, M80-11B (based on input provided from references P, Q, R, Y, and GG), and its response to the "significant" determination of the item, provided in reference Z, and found it appropriate for resolution. Implementation of the addressed action was found to be still in the processing stages.

This item shall remain open pending incorporation of the revision into EN DES-EP 5.43 as detailed in reference GG. No further OEDC response is required for this item or recommendations V.9, this items' portion of V.15, and V.19.e. See NSRS item I-80-14-NPS-17 for the additional action required by OEDC to resolve the remaining portion of recommendation V.15.

I. (Open) I-80-14-NPS-09, Interface Controls in Design Document Review

This item involved failure of EN DES to ensure purchase requisitions have been reviewed by all affected groups through squad checking procedures or other approved practices for interface controls prior to the designated reviewers' concurrence. The details of this item were provided in paragraph IV.B.3.a, Attachment B of reference A with recommended corrective action provided in recommendation paragraph V.3.a.

NSRS has reviewed the reasoning for the "significant" condition downgrade determination provided in paragraph 6 of audit deficiency No. 9, M80-11B and reference S and found it unjustified.

The basis for the NSRS request that OEDC QA evaluate this item for significance was not because QEB QC had not been afforded their opportunity to review procurement requisition drafts. The request was based on the lack of EN DES instruction to ensure all affected design groups review the procurement request for interface acceptability.

The current practice of the preparer independently avoiding a technical, QA, or interface review because a procurement request is on file from the design project, effectively negates the special expertise review specified by TVA FSAR QA commitments to NRC, e.g., BLN FSAR 17.1A.4. This special expertise review is necessary because, EN DES procurement branches are themselves specialized and therefore do not contain all the necessary expertise required for the equipment and systems they specify. Also, should the technical requirements for similar applications performed previously have been changed or if TVA policy, regulatory, or industry practices had changed since the last procurement request, only the appropriate specialized groups are responsible to be aware of the changes and the implications they would have on the particular commodity requested to be purchased.

For example, EEB has special expertise on motors, transformers, and controllers which may be on MEB or NEB requisitions, and CEB has special expertise on seismic requirements which may be applicable to commodities specified in EEB requisitions. Also, as stated in the NSRS report, special QEB field inspection requirements or needs may not be incorporated into the final requisition without their proper interface review.

A good example of what can actually happen without circulating a procurement request or purchase requisition draft is the case involving a miscategorization of seismic qualification requirements for Bellefonte main feedwater and containment isolation valves (references HH, II, and JJ). The MEB procurement request provided valve data sheets specifying seismic category I(L). Design criteria documents specified these valves were to be seismic category I (active). The discrepancy was not identified during purchase requisition processing and subsequent purchase. The discrepancy was later learned during receipt inspection at Bellefonte and documented in Quality Control Investigation Report QCIR-6603. To correct the problem the vendors have been requested to submit to TVA seismic and stress reports associated with the valves for cross-qualification to seismic category I (active) and requisitioners were instructed to pay closer attention to the design criteria when specifying valves.

No discussion was provided or required to ensure groups with special expertise (CEB for seismic requirements) reviewed the procurement request for technical or interface acceptability prior to sending the purchase requisition to PURCH for vendor bidding. Such a review might have prevented this particular problem.

Based on the above discussion, OEDC is again requested to evaluate this item for significance and as provided in NSRS recommendation V.3.a, EN DES should revise EP 5.01 to require squad checks or equal reviews of the complete requisition and not leave the overall burden of interface applicability to the preparer. The action proposed on revising EP 5.33 to cover inspection criteria guidance will be evaluated at a later time when response to OEDC QA audit deficiency No. 3 is complete and since it resolves only part of the more significant concern involving all of EN DES.

This item and recommendations V.3.a and V.19.f will remain open pending further evaluation and response by the affected OEDC organizations.

J. (Open) I-80-14-NPS-10, Preaward Activities

This item involved failure of EN DES to conduct supplier preaward activities in order to evaluate the supplier's performance or capability to meet contract requirements prior to contract award. The details of this item were provided in paragraph IV.B.3.b, Attachment B of reference A, with recommended corrective action provided in recommendation paragraph V.3.d and V.10.

NSRS review of proposed corrective action identified in paragraph 10 of audit deficiency No. 10, M80-11B (based on input provided by reference N, R, and Y) and reference KK indicates again the NSRS report was not being used as background information to support the OEDC QA paraphrased deficiency writeup.

Reference KK indicates that NSRS did not review QAB-EP 26.31, 26.32, 26.33, QEB-EP 24.33 and the QEB Inspection Manual. These documents were reviewed (though the QAB-EP's issued on November 24, 1980 were EN DES-EP's at the time NSRS reviewed the documents - documents review was terminated as identified in the NSRS report on November 5, 1980) but not documented since they were considered not germane to the issue: that TVA was not performing preaward activities to evaluate supplier performance. Apparently a misunderstanding exists as to what this activity involves. It involves establishing an understanding between the purchaser and supplier as to the planning, manufacturing techniques, tests, inspections, and processes to be employed by the supplier to meet procurement requirements in accordance with the provisions of ANSI N45.2.13-1976, section 6.2. Postaward activities, the second half of the section 6.2 requirements, were found being conducted by EN DES in the form of postaward meetings. Therefore, this subject was not an issue. The documents referenced by the QAB response are considered valid documents to support meeting other ANSI N45.2.13-1976 criteria (e.g., section 4.0) not being addressed by this concern.

To fulfill the intent of this ANSI requirement, NSRS concurred with the recommendation presented in paragraph IV.B.3.b of OEDC QA procurement activities evaluation report QAE 80-1, requiring

the supplier to submit with his bid proposal, a QC inspection and test plan for approval by TVA. The proposed corrective action identified in statement 5 of paragraph 20 to audit deficiency No. 10, M80-11B and reference KK are also consistent with this thinking. However, QAB went on to say in its reference KK writeup for NRC notification, that the corrective action proposed was being made to provide TVA with a more than adequate means for evaluating technical and quality capabilities. The response sidesteps completely the issue that TVA had failed to meet a commitment it made to NRC.

In addition, QAB stated that since NSRS had not provided any objective evidence that failure to acquire this information could have led to fabrication of equipment not meeting contract requirements, the item should therefore be downgraded to nonsignificant. It is quite conceivable, that had TVA requested a QC inspection and test plan for contracts awarded to Atlas, IEW, and others, the inability of these vendors to meet contract requirements would have been discovered at the outset. Objective evidence was not sought and therefore cannot be furnished by NSRS; however, the potential for quality deficient materials being fabricated contrary to contract requirements does exist as demonstrated by these vendors.

This item should remain significant and the proposed corrective action of reference KK taken. In addition, this corrective action should be provided in TVA's next response to NRC for resolving this deficiency.

This item is considered open pending further EN DES resolution.

K. (Open) I-80-14-NPS-11, Review of NRC Regulatory Guide Commitments

This item involved requesting OEDC to review its NRC Regulatory Guide commitments made in TVA QA Topical Report TVA-TR75-1A, paragraph 17.1A.2.1.1, by reference to Table 17.1A-4 to determine if current revisions of the regulatory documents can be implemented. The details of this item were provided in paragraph IV.B.4.a, Attachment B of Reference A, with recommended corrective action provided in recommendation paragraph V.11.

OEDC in their reponse to audit deficiency No. 11, M80-11A, identified that OEDC does review new or revised regulatory guides for safety, cost, and schedule impacts on each TVA plant with a construction permit and implements these guides when dictated by NRC or when it is more feasible to implement the new or revised guide as opposed to an alternate position.

NSRS considers that this statement would be correct and sufficient to resolve its concern if regulatory guide reviews were being accomplished as stated and in accordance with EN DES-EP 2.08, "NRC Regulatory Guides - Review, Comment, and Documentation of TVA Conformance." However, NSRS review of several controlled

copies of Division 1 Regulatory Guides and discussions with NEB personnel indicates that the TVA review for degree of conformance to new or revised regulatory guides has not occurred for several years (since early 1978). The only reviews regulatory guides presently undergo are when NRC specifically sends them out for review and comment prior to formally issuing them.

In addition, the NSRS concern was not to require "blanket commitment" to each new or revised regulatory guide and standard as stated in the OEDC response (reference N). The concern was for OEDC to review regulatory guides and standards for the OEDC stated reasons, to document this review in the form of non-committal degree of conformance sheets and to commit to those quality assuring regulatory recommended administrative guidelines that can be implemented quickly without major effort and are considered safety significant by NRC. Commitments should not be made until the program revisions are in effect. Technical guideline revisions obviously cannot be committed to as quickly; however, once the revised programs or controls have been established, the commitments should be made. This would be in keeping with the TVA Board's commitment to excellence in TVA nuclear plants and nuclear safety.

This item shall remain open pending OEDC reevaluation of their response. OEDC should include in its response: action it intends to take in documenting the "degree of conformance" reviews required by EN DES-EP 2.08, when its identification review of commitments will be completed, and to give a final implementation date for the revised commitments.

L. (Open) I-80-14-NPS-12, Response to Audit Reports

This item involved requesting EN DES to revise EN DES-EP 5.34 to identify to suppliers that failure to respond to audit findings within the timeframe requested by the audit report is an item of noncompliance with contract requirements. The details of this item were provided in paragraph IV.B.4.b.1, Attachment B of reference A, with recommended corrective action provided in recommendation paragraph V.12.

NSRS has reviewed the proposed corrective action identified by QAB in audit deficiencies 4 and 12, M80-11B (based on input provided from reference R) and found it appropriate for resolution of this item and recommendation V.12. Implementation of this action was found to be still in the processing stages.

This item will remain open until incorporation of the proposed revisions to EN DES-EP 5.34 and EP 1.29 as detailed in audit deficiency No. 4 of M80-11B have been made. No additional response is required of OEDC.

M. (Closed) I-80-14-NPS-13, QEB Inspection QA Responsibilities

This item involved failure of QEB to recognize that QC was a part of quality assurance and to revise the TVA Inspection Manual to

reflect that a plant survey is a quality assurance activity. The details of this item were provided in paragraph IV.B.5.a, Attachment B of reference A, with recommended corrective action provided in recommendation paragraph V.13.

NSRS has reviewed the corrective action taken by QEB addressed in audit deficiency No. 13, M80-11B (based on information provided in references P, Q, R, U, LL, and MM) and found it adequate to resolve this concern at this time. In a future revision of the Inspection Manual, QEB should identify the importance of performing a detailed and thorough capability plant survey, that is, to prevent the awarding of TVA contracts to likely nonperformers such as in the case involving Atlas.

No further response on this item or recommendation V.13 is required. This item is closed.

N. (Open) I-80-14-NPS-14, Regional Field Office Problem Resolution Notification

This item involved revising step 2.19 of QEB-EP 24.56 to comply with the requirements of QEB-AI 115, that of, the QEB QC Group to promptly and fully inform the branch field offices by providing necessary documents, correspondence, and verbal or written instructions and procedures in a timely manner. This item, though described as a single concern, was considered dependent upon the action taken for companion items 15 and 16 involving similarly related matters. The details of this item were provided in paragraph IV.C.1.c, Attachment B of reference A, with recommended corrective action provided in recommendation paragraph V.14.

As identified, this item is Part I to a three part recommendation (V.14). This part involved the Knoxville QC Group not informing the branch field offices on action taken to resolve problems the field inspectors have identified in their inspection reports. Part II was described in NSRS item 15 involving the Knoxville QC Group not informing the branch field offices of QAB vendor audit results, of meetings and decisions that were made in Knoxville and at the construction sites on contract-related matters, and of intended visits by TVA personnel or technical engineer representatives to vendor facilities within their regional area.

Because of the apparent breakdown in the QC Group's responsibility to inform the branch field offices of vendor/contract-related matters and of the apparent breakdown of the QC Engineering Staff to perform one of its responsibilities as described in NSRS item 16, it was generally requested in Part III of this concern that all EN DES personnel be specifically instructed either formally or informally as to what their group's responsibilities were, what their responsibilities were, and what was expected of them. Guidance for this instruction would be to the degree detailed in QEB-AI 115.

The QEB action described in paragraph 10 to audit deficiency No. 14, M80-11B (based on input provided from references P and R) is considered inadequate to resolve this particular issue. QEB-EP 24.56 should be revised to require a followup memorandum resolving the inspector identified concern. As identified in reference NN (response for item 15), QEB needs to alert its field inspection personnel of revisions, changes, etc., which would affect fabrication, testing, or inspection release to ensure QEB inspectors maintain their credibility with the vendor by demonstrating their awareness of TVA decisions and of other TVA activities related to the vendor's contract, performance or facility. Without a total, documented resolution of an inspector identified item, the inspector cannot maintain his credibility if he is left to defend his issue based solely on a verbal, uncommitted, subject-to-change response from Knoxville.

This item will remain open pending further QEB evaluation and response.

O. (Open) I-80-14-NPS-15, Breakdown of a QEB QC Group Responsibility

This item involved failure of QEB to ensure its QEB QC Group keeps the field offices fully and promptly informed of matters which concern them or the inspection program. This item, though described as a single concern, is considered part of a composite concern consisting also of NSRS items 14 and 16 involving similarly related matters. The details of this item were provided in paragraphs-IV.C.2, IV.C.3.a, and IV.C.3.b of Attachment B to reference A. Recommended corrective action to resolve this deficiency was provided in recommendation paragraph V.14.

As presented above, this item was of similar nature to items 14 and 16. The corrective action taken as detailed in audit deficiency No. 15, M80-11B (based on input provided from references P and R) is considered adequate with the exception that the referenced memorandum (QEB 800808 008 - reference NN) should also be sent to the technical engineers so that they may notify QEB of their intended plant visits or of meetings they are going to hold with contractor representatives which could affect fabrication, testing, or inspection releases.

This item will remain open pending issuance of a formal EN DES request for technical engineers to notify QEB of planned visits to vendor facilities or of meetings they intend to hold with contractor representatives.

P. (Open) I-80-14-NPS-16, Breakdown of a QEB-QC Engineering Staff Responsibility

This item involved failure of QEB's senior QC staff engineers to carry out necessary detailed investigations when problem situations arise from a vendor's inability or unwillingness to perform in accordance with procurement contract requirements. This item, though described as a single concern, is considered part of a

composite concern also consisting of NSRS items 14 and 15. The details of this item were provided in paragraph IV.C.5.b, Attachment B of reference A, with recommended corrective action provided in recommendation paragraph V.14.

NSRS review of the QEB response to this item, detailed in audit deficiency No. 16, M80-11B (based on input provided from references P, Q, and R) apparently is a matter of how one interprets the Lakeside letter. QEB indicates that at no time was Lakeside unwilling to perform RT inspection of buttered edges once they were told it was required by the technical engineer. NSRS review of Lakeside Letter No. 61-CLB-67 dated May 22, 1979 (reference OO) indicates somewhat the contrary. For example, the letter states: "We cannot accept the GLB-61 letter as calling this buttering weld repair. AWS specifications allows for this plate edge correction and does not require an RT examination of the completed edge. . . . The RT requirement of the vertical edge was imposed on us by TVA personnel at the April 12th meeting: . . . After a lengthy discussion we agreed to RT the vertical plate edges on the units in work. . . . The cost factor and who is responsible for this action was left undecided. . . . In order to keep this project moving we will RT this horizontal joint until there is a complete understanding of the CFB (C. F. Braun) specification and all parties agree on the proper action. We are recording and documenting the action of RT examination for a future claim that will be forwarded to TVA."

NSRS review of the dispute at the time of the investigation identified that a contradiction did exist between the contract specification and AWS Code. This was also pointed out by R. T. Hathcote (Project Manager, Hartsville Nuclear Plant CONST) and A. R. Eilmess (Supervisor, QEB Chicago Regional Office) in references PP and QQ respectively. NSRS, Hathcote, and Eilmess all agreed that Lakeside Bridge and Steel had a valid argument to contest the contract specification. However, since Lakeside failed to go to the technical engineer initially to check the possible inspection requirements before going on with the repairs, they were liable by contract for the full cost of inspection and repair which had to be accomplished by the Hartsville project. Had this initial contact been done, inspection requirements would probably have been specified by the technical engineer which would have detected the defects reported in references RR and SS and the problem avoided. In this regard, QEB is correct that this was a contractual matter.

The NSRS identified concern was separate from this issue. When Lakeside initially disputed the contract specification ("unwilling at the time"), the senior QC staff engineer should have investigated the circumstances surrounding this situation, namely inadequate definition in contract specifications. NSRS recommendation paragraph V.3.C was written to help resolve the problem of inadequate contract specification detail. To eliminate possible future non-investigatory reviews of similar nature, recommendation paragraph V.14 was written, in part, for EN DES to

instruct its personnel in the responsibilities applicable to and expected of them. Response to this recommendation paragraph was intended to resolve this item.

This item is considered open pending EN DES review of this added material and response to recommendation paragraph V.14.

Q. (Open) I-80-14-NPS-17, Document Controls

This item involved failure of EN DES to ensure its QEB field personnel are made aware of changes made to procurement documents. The details of this item were provided in paragraph IV.C.5.c, Attachment B of reference A, with recommended corrective action provided in recommendation paragraph V.15.

NSRS review of the NEB NRC-OIE reportability determination for this item documented in reference BB indicates the NEB NLS engineer making the 10CFR50.55(e) determination may have been misled by the information contained in the referenced QEB memorandums addressed in the NSRS report. The referenced memorandums written by A. R. Eilmess, previous supervisor, Chicago Regional Quality Control Office (references SS and TT) address two primary concerns on this matter. The first involved GE and C. F. Braun (CFB) making changes unofficially to drawings approved with corrections as noted (the NSRS concern), and the second involving different revisions of drawings being at the vendor site each time the QEB inspectors arrive to inspect for shipment (the misleading concern).

The first concern is considered valid since the case presented involves H. Pratt Company's requesting and receiving authorization to change drawings from GE and CFB through channels other than official, i.e., Pratt was sending its representative to CFB for tacit approval of drawing changes without acquiring CFB's or GE's official written authorization for the change. This verbal acceptance practice of the technical engineer was being used as a quick fix by Pratt to resolve problems in an expedited manner, therefore enabling them to ship more of their product to TVA and thus receive a larger payment for total shipped commodity. A. R. Eilmess' solution to this problem and agreed upon by D. L. McLean (reference UU) was to require a formal TWX from GE as written confirmation that the changes were authorized. This practice or "policy" as QEB noted in their response to the NEB identified reportable item, had never been instituted into a QEB procedure or formally identified to the other regional offices and therefore became the subject of concern by NSRS.

The second concern is also considered valid but to a lesser degree than the first. When the inspector arrives at the vendor's facility, he may have revision 2 to a particular drawing necessary for shipping the commodity. The vendor may have revision 4 approved with comment. Since GE is the technical engineer for STRIDE purchased equipment, their approval is all that is

necessary for these drawings. TVA does not have to approve these drawing changes for shipment. The inspector therefore utilizes the vendor's revision 4 approved drawings and authorizes the release for shipment documenting revision 4 as the approval document.

A. R. Eilmess' concern was that each revision had undergone significant changes which caused valves to get to the project that shouldn't have. This situation should not be considered a reflection on QEB inspection since they did inspect to the latest approved drawings at the time. This problem is more reflective of GE not having a complete and adequate design which necessitated the additional changes. It should also be pointed out that procured components are installed per "approved for use" drawings separate to the "approved with corrections" drawings seen in this case by the QEB inspectors.

Field installation or construction of procured components contrary to the requirements of the latest design documents was not discovered or being addressed by the NSRS investigator but could conceivably be happening as inferred in the A. R. Eilmess memorandum.

NEB should reevaluate this item and correct their reportability statement if considered necessary. QEB should also revise its illusive statement to the NEB writeup that it is QEB policy that equipment changes are not honored unless QEB has received evidence of their approval (similar to that addressed in the Eilmess memorandum). This particular policy is only verbal and has not been documented. The NSRS corrective action specified in recommendation paragraph V.15 should be implemented.

This item and recommendation V.15 will remain open pending response by NEB and QEB in the results of this added material review and necessary document revisions.

R. (Closed) I-80-14-NPS-18, Differing Staff View Procedure

This item involved failure of OEDC to establish a procedure to handle differing staff views. The details of this item were provided in paragraph IV.D of reference A with recommended corrective action provided in recommendation paragraph V.16.

NSRS has reviewed the corrective action taken by OEDC addressed in audit deficiency No. 18, M80-11A and found it appropriate for resolution of this item and recommendation V.16. OEDC-QPM-80-1, CONST-QAP 16.4, CEP 16.04, and EN DES-AI 205.01 were also reviewed for consistency with the memorandum prepared by the General Manager on this subject (reference VV) and were considered adequate.

No further response is required on this item or recommendation V.16. This item is closed.

S. (Closed) I-80-14-NPS-19, Lack of Independent Review of Nonsignificant Audit Deficiencies

Open

This item involved failure of OEDC quality assurance organizations to have deficiencies they have considered nonsignificant reviewed by another designated QA or independent review organization for significance in accordance with OEDC-QAI 4. The details of this item were provided in paragraph IV.D of reference A with recommended corrective action provided in recommendation paragraph V.17.

NSRS has reviewed the corrective action taken by OEDC QA addressed in audit deficiency No. 19, M80-11A and found it appropriate to resolve only the OEDC QA audit portion of the concern. NSRS recommendation V.17 inadvertently did not provide for all of the intended corrective action considered in NSRS deficient item No. 17. The action item itself and report details discuss the issue that there is no objective evidence that a review was/is being conducted of nonsignificant conditions adverse to quality (CAQ). For example, QAB identifies a deficient item but it is considered nonsignificant. In accordance with OEDC-QAI 4, this item is to be reviewed by another organization independent of the reporting organization for significance. In this case, OEDC QA is that agency. If the item is found significant it is documented as such and the appropriate action defined by OEDC-QAI 4 taken. If the item is found nonsignificant, no further action is taken nor is the review documented. This action of not documenting reviews of nonsignificant division/branch nonconformance reports and audit deficiencies is considered contrary to QAI 4 and resolution is required.

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For documentation purposes based on requested action detailed in recommendation paragraph V.17, this item is closed. However, to complete the action intended for this item, OEDC is requested to respond to the lack of documentation in supporting their concurrence that a nonsignificant item was nonsignificant.

This item is open pending further OEDC response. OEDC QA should also reevaluate this item for significance.

T. (Closed) I-80-14-NPS-20, Revision of Significance Definition

This item involved requesting OEDC to revise its definition of "significant" in OEDC-QAI 4 because of its redundant use of the work significant and its appearance of cost value or manpower implications rather than operational safety. The details of this item were provided in paragraph IV.E of reference A with recommended corrective action provided in recommendation paragraph V.18.

NSRS has reviewed the corrective action taken by OEDC addressed in audit deficiency No. 20, M80-11A and revision 1 to OEDC-QAI 4 dated April 22, 1981 and found it appropriate for resolution of

this item and recommendation V.18. No followup action by NSRS is planned on this item nor is additional response required of OEDC. This item is closed.

U. (Open) I-80-14-NPS-21, Reevaluation of QAE 80-1 Items for Significance

This item involved NSRS requesting OEDC QA to evaluate nine NSRS determined deficiencies associated with its review of the employee concerns relating to the QAE 80-1 report. The evaluation for significance was to be made following revision of OEDC's definition of "significant" as described in NSRS item I-80-14-NPS-20. The details of this item were provided in paragraph IV.E of reference A with recommended corrective action provided in recommendation paragraph V.19.

NSRS has reviewed the corrective action taken by OEDC QA as addressed in audit deficiency No. 21, M80-11A and it is considered unresolved since OEDC QA has not reevaluated deficiencies 3-10, -20, and -21 as identified in their "dummy" audit response. OEDC QA agreed but failed to perform the reevaluation after OEDC-QAI 4 was revised on April 22, 1981.

This item is considered open pending the OEDC QA reevaluation and subsequent response. OEDC QA should also use the information provided in this report for deficiencies 3, 9, and 19 missed or not realized during their initial evaluation for significance.

V. (Closed) I-80-14-NPS-22, Establishment of A Procedure to Conduct Quality Assurance Evaluations

This item involved failure of OEDC QA to have a procedure established on the method of conducting quality assurance evaluations and handling associated deficiencies. The details of this item were provided in paragraph IV.F of reference A with recommended corrective action provided in recommendation paragraph V.20.

NSRS has reviewed the corrective action taken by OEDC QA in audit deficiency No. 22, M80-11A to disallow the use of "evaluations" or "reviews" as standard OEDC QA tools in the future and found it appropriate for resolution of this item and recommendation V.20.

No further response or action is required by OEDC. This item is closed.

W. Recommendation Without a Specified NSRS Open Item Number Provided

This item involved requesting OEDC QA to reevaluate the EN DES procurement control program by performing an indepth audit of the areas evaluated in the QAE 80-1 report and in more specific

detail those areas where NSRS identified significant concerns, i.e., recommendation paragraph V.19. No specific NSRS open item tracking number was identified for this concern. The concern was identified as NSRS recommendation paragraph V.21 and was written due to the number of problem areas found by both NSRS and the original QAE 80-1 evaluation team. NSRS believed reevaluation of this program warranted serious OEDC management attention.

This item will remain open pending formal OEDC response as to what its future course of action will be in regard to EN DES procurement control activities.

V. DOCUMENTS REVIEWED (REFERENCES)

- A. Memorandum from H. N. Culver to G. H. Kimmons, "Differing Staff Opinions - Nuclear Safety Review Staff Investigation Report No. I-80-14-NPS," dated January 27, 1981 (GNS 810202 002)
- B. Memorandum from H. N. Culver to G. H. Kimmons, "Differing Staff Opinions - Nuclear Safety Review Staff Investigation Report No. I-80-14-NPS," dated March 18, 1981 (GNS 810318 001)
- C. Memorandum from J. P. Knight to M. N. Sprouse, "Procurement Control Activities - Quality Assurance Evaluation QAE 80-1," dated April 21, 1980 (QAM 800421 001)
- D. Memorandum from E. G. Beasley to M. N. Sprouse, "Procurement Control Activities - Quality Assurance Evaluation QAE 80-1," dated August 28, 1980 (QAM 800829 001)
- E. Memorandum from R. F. Keck to S. Duhan, "Quality Assurance Evaluation QAE 80-1 - Procurement Control Activities (QAS 800421 001)," dated August 15, 1980 (HPP 800815 027)
- F. Memorandum from W. P. Kelleghan to S. Duhan, "Phipps Bend Nuclear Plant - Quality Assurance Evaluation QAE 80-1," dated September 24, 1980 (PBN 800923 024)
- G. Memorandum from G. H. Kimmons to H. H. Mull and M. N. Sprouse, "All Nuclear Plants - Admission or Denial of Alleged NRC Non-compliances," dated January 23, 1981 (EDC 810123 026)
- H. Yellow Creek Nonconformance Report, "YCNQAB8101," dated January 19, 1981 (QAS 810120 009)
- I. Memorandum from J. L. Parris to R. A. Costner, "Yellow Creek Nuclear Plant - Nonconformance Report YCNQAB8101 - Failure to Discover Visual Weld Defects," dated February 5, 1981 (QEB 810205 018)

- J. Memorandum from H. N. Culver to G. H. Kimmons, "Major Management Review of the Office of Engineering Design and Construction - Nuclear Safety Review Staff Report No. R-81-14-OEDC(BLN)," dated September 29, 1981 (GNS 810930 054)
- K. Memorandum from H. N. Culver to J. L. Williams, "Nuclear Safety Review Staff Major Management Review of the Division of Purchasing - Nuclear Safety Review Staff Report No. R-81-15-PURCH(BLN)," dated September 8, 1981 (GNS 810908 051)
- L. Memorandum from E. G. Beasley to M. N. Sprouse, "Differing Staff Opinions - Nuclear Safety Review Staff Investigation Report I-80-14-NPS," dated February 12, 1981 (QAM 810212 002)
- M. Memorandum from E. G. Beasley to H. N. Culver, "Differing Staff Opinions - NSRS Investigation Report No. I-80-14-NPS," dated March 11, 1981 (QAM 810311 002)
- N. OEDC QA Management Audit Report No. M80-11A from E. G. Beasley to H. N. Culver, "Procurement Control Activities," dated April 1, 1981 (QAM 810407 002)
- O. OEDC QA Management Audit Report No. M80-11B from E. G. Beasley to H. N. Culver, "Procurement Control Activities," dated April 14, 1981 (QAM 810415 002)
- P. Memorandum from J. L. Parris to R. A. Costner, "OEDC Audit M80-11 - Deficiencies Nos. 1-3, 5-8, and 13-17," dated April 6, 1981 (QEB 810406 014)
- Q. Memorandum from J. L. Parris to R. A. Costner, "OEDC Audit M80-11," dated April 8, 1981 (QEB 810408 004)
- R. Memorandum from R. A. Costner to E. G. Beasley, "OEDC QA Audit M80-11," dated April 10, 1981 (QAS 810410 002)
- S. Memorandum from E. G. Beasley to D. R. Patterson, "Differing Staff Opinions - NSRS Investigation Report I-80-14-NPS - Downgrading of Significant Items," dated March 12, 1981 (QAM 810312 001)
- T. NRC:OIE Inspection Report No. 50-566/81-01 and 50-567/81-01 from C. E. Murphy to H. G. Parris dated February 20, 1981
- U. Memorandum from J. L. Parris to R. A. Costner, "OEDC QA Evaluation 80-1 - Open QEB Actions," dated December 15, 1980 (QEB 801215 001)
- V. Memorandum from R. A. Costner to E. G. Beasley, "OEDC Audit M80-11, Deficiency Nos. 3 and 6," dated June 15, 1981 (QAS 810615 003)
- W. Memorandum from M. N. Sprouse to Those listed, "Internal Audit Response Time," dated January 30, 1981 (QAS 810130 006)

- X. Memorandum from R. A. Costner to E. G. Beasley, "OEDC QA Audit M80-11," dated April 14, 1981 (QAS 810414 004)
- Y. Memorandum from R. A. Costner to E. G. Beasley, "OEDC QA Audit M80-11," dated May 12, 1981 (QAS 810512 011)
- Z. Memorandum from J. L. Parris to J. A. Raulston, "Procurement Control Activities - OEDC Audit M80-11 - Deficiency Nos. 5, 6, 8, and 17," dated June 30, 1981 (QEB 810630 006)
- AA. OEDC QA Management Audit Followup Report No. M78-5E from E. G. Beasley to M. N. Sprouse, "QA Training and Indoctrination," dated July 13, 1981 (QAM 810713 003)
- BB. NRC-OIE Reportability Information Report from J. A. Raulston to Those listed, "Procurement Control Activities," dated April 7, 1981 (NEB 810407 276)
- CC. 45D from E. G. Beasley to H. N. Culver, "OEDC Audit No. M80-11B (QAM 810415 002)," dated April 20, 1981 (QAM 810420 002)
- DD. Memorandum from J. L. Parris to M. N. Sprouse, "Quality Engineering Branch - Quality Control Section - EN DES Internal Audit 80-4," dated April 23, 1980 (QAS 800423 802)
- EE. Memorandum from R. H. Dunham to Those listed, "EN DES Engineering Procedure (EP) Distribution - Division Level - Transmittal Memo No. EP-38," dated November 16, 1978 (ESS 781116 204)
- FF. Memorandum from D. R. Patterson to J. L. Parris, "Review of Proposed Revision 1 to EN DES-EP 5.43," dated August 16, 1978 (NEB 780815 385)
- GG. Memorandum from J. L. Parris to R. A. Costner, "EN DES Internal Audit 80-4 - Finding No. 2 - Waiving Inspection," dated February 26, 1981 (QEB 810226 017)
- HH. Contract No. 77K38-86163-8, Schedule VII, N4M-17 from D. R. Patterson to Borg Warner Corporation, "Motor-Operated and Manual Valves," dated October 21, 1976 (MEB 761020 055)
- II. NRC-OIE Reportability Information Report from J. A. Raulston to Those listed, "Main Feedwater and Containment Isolation Valves Miscategorization," dated January 16, 1981 (NEB 810116 267)
- JJ. Memorandum from R. M. Hodges to Those listed, "Bellefonte Nuclear Plant - Nonconformance Report No. BLNBLP8015," dated January 2, 1981 (BLP 810102 044) including interim reports 1, 2, and 3
- KK. Memorandum from R. A. Costner to J. A. Raulston, "Procurement Control Activities - Audit M80-11 - Deficiency No. 10," dated May 6, 1981 (QAS 810506 002)

- LL. Memorandum from J. L. Parris to R. A. Costner, "OEDC QA Evaluation 80-1 - Open QEB Items," dated October 23, 1980 (QEB 801023 009)
- MM. Memorandum from M. N. Sprouse to J. P. Knight, "All Nuclear Plants - OEDC QA Evaluation 80-1," dated June 25, 1980 (QAS 800625 001)
- NN. Memorandum from M. N. Sprouse to Those listed, "Visits and Meetings with TVA Contractors," dated August 8, 1980 (QEB 800808 008)
- OO. Lakeside Bridge and Steel Company letter 61-CLB-67 from W. A. Eckhardt to J. G. Hannah (PURCH), "Drywell Vent Structure - TVA Contract 76K72-820119 - Radiographic Inspection of Buttered Plate Edges," dated May 25, 1979
- PP. Memorandum from R. T. Hathcote to J. G. Hannah, "Hartsville Nuclear Plant A - Contract 76K72-820119 - Drywell Vent Structure - Lakeside Bridge and Steel - Comments to Lakeside Bridge and Steel's Letter 61-CLB-62," dated June 6, 1979 (HTN 790606 102)
- QQ. Memorandum from A. R. Eilmess to D. L. McLean, "Quality Deficiency Material Received at Hartsville Nuclear Plant," dated June 7, 1979
- RR. Memorandum from R. T. Hathcote to H. H. Mull, "Hartsville Nuclear Plant A - Contract 75K61-86227-2 - Containment Vessel - Contract 76K61-86965 - RPV Pedestal - Contract 76K72-820119 - Drywell Vent Structure and RPV Shield Wall - Contract 76K72-820117 - Erection Problems," dated April 16, 1979 (HTN 790416 114)
- SS. Memorandum from A. R. Eilmess to D. L. McLean, "Meeting Notes - Chicago Regional QC Office Staff Meeting No. 18," dated February 4, 1980
- TT. Memorandum from A. R. Eilmess to D. L. McLean, "Inspection and Release of Equipment," dated February 11, 1980
- UU. Memorandum from D. L. McLean to A. R. Eilmess, "Answers to Office Meeting No. 18," dated February 28, 1980
- VV. Memorandum from W. F. Willis to Those listed, "Differing Staff Opinions," dated August 15, 1980 (GNS 800812 050)

TABLE 1

ADEQUACY OF OEDC RESPONSES TO RESOLVE NSRS
RECOMMENDED CORRECTIVE ACTION

<u>Action Item Identified in Table 6</u>	<u>Associated Recommendation(s)</u>	<u>M80-11 Response Considered Adequate</u>	<u>Status of NSRS Item</u>	<u>Comments</u>
1	V.1	Yes	Closed	- - -
2	V.2	No	Open	Additional response required.
3	V.3.b,c	No	Open	Additional response required.
	V.4	Yes	Open	Open to follow QAB assessment of procurement activities.
	V.19.a	No	Open	Inadequate basis for downgrade determination. Additional response required. See item 21.
4	V.5	Yes	Closed	- - -
	V.19.b	Yes	Closed	- - -
5	V.6	No	Open	Additional response required.
	V.19.c	No	Open	Training program for QEB personnel still not established. Additional response required. See item 21.
6	V.7	No	Open	Additional response required.
	V.19.d	No	Open	Inadequate response to significant condition. Additional response required. See item 21.
7	V.8	Yes	Closed	- - -
8	V.9	Yes	Open	Open to follow EP 5.43 implementation of proposed corrective action.
	V.15	Yes	Closed	- - -
	V.19.e	Yes	Closed	- - -
9	V.3.a	No	Open	Additional response required.
	V.19.f	No	Open	Inadequate basis for downgrade determination. Additional response required. See item 21.

TABLE 1 (continued)

ADEQUACY OF OEDC RESPONSES TO RESOLVE NSRS
RECOMMENDED CORRECTIVE ACTION

<u>Action Item Identified in Table 6</u>	<u>Associated Recommendation(s)</u>	<u>M80-11 Response Considered Adequate</u>	<u>Status of NSRS Item</u>	<u>Comments</u>
10	V.3.d	No	Open	Additional response required.
	V.10	No	Open	Additional response required.
	V.19.g	No	Open	Additional response required. See item 21.
11	V.11	No	Open	Controls noted in response considered inadequate. Additional response required.
12	V.12	Yes	Open	Open to follow EP 5.34 and EP 1.29 implementation of proposed corrective action.
13	V.13	Yes	Closed	- - -
14	V.14	No	Open	Additional response required.
15	V.14	Partially	Open	Memo to technical engineers also required. Additional response required.
16	V.14	No	Open	Additional response required.
17	V.15	No	Open	Additional response required.
	V.19.h	No	Open	No positive action to resolve discrepancy taken. Additional response required. See item 21.
18	V.16	Yes	Closed	- - -
19	V.17	*Yes	Open	*Part of intended recommendation inadvertently deleted. Additional response required.
20	V.19	No	Open	Action required by OEDC after QAI-4 revised never completed. Additional response required.
22	V.20	Yes	Closed	- - -
---	V.21	No	Open	Additional response required.

Memorandum

TENNESSEE VALLEY AUTHORITY

TO : H. J. Green, Acting Director of Nuclear Power, 1750 CST2-C
 FROM : H. N. Culver, Director of Nuclear Safety Review Staff, 249A HBB-K
 DATE : DEC 29 1981
 SUBJECT: SEQUOYAH NUCLEAR PLANT UNITS 1 AND 2 - NUCLEAR SAFETY REVIEW STAFF
 REVIEW REPORT NO. R-81-27-SQN

Attached is the NSRS report of a routine review conducted at SQN during the period December 16-18, 1981 regarding review of activities related to the unit 2 startup test program. The report is the result of a planned site visit described in my memorandum to you dated November 13, 1981 (LNS 811116 051).

Our review resulted in closure of one previously identified item, R-80-20-SQN-02, and identification of three new concerns, R-81-27-SQN-01, -02, and -03, requiring NUC PR resolution. You are requested to inform NSRS in writing of your evaluation toward concern R-81-27-SQN-01 since it involves the possibility whereby records could unintentionally appear to be falsified. The other two concerns should be scheduled for corrective action consistent with your prioritizing system. NSRS will follow the scheduling and resolution of these latter two items during subsequent reviews.

The details for all items raised or closed out are provided in section III of the attached report and correspond to applicable recommendations in section II.

If you have any questions regarding this report, contact R. C. Sauer at extension 4815 in Knoxville.

H. N. Culver
 H. N. Culver

RCS:DJS

Attachment

cc (Attachment):

A. W. Crevasse, 401 UBB-C

MEDS, 100 UB-K

F. A. Szczepanski, 417 UBB-C

NSRS FILE



TENNESSEE VALLEY AUTHORITY
NUCLEAR SAFETY REVIEW STAFF
REVIEW
NSRS REPORT NO. R-81-27-SQN

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

DATES OF
ONSITE REVIEW: December 16-18, 1981

Reviewer:

Ronald W. Sauer
for Robert C. Sauer 12/29/81
Date

Approved by:

Kermit W. Whitt
for Kermit W. Whitt 12/29/81
Date

TABLE OF CONTENTS

	<u>Page</u>
I.- SCOPE	1
II. CONCLUSIONS AND RECOMMENDATIONS	1
III. STATUS OF SELECTED PREVIOUSLY IDENTIFIED ITEMS	2
IV. DETAILS	2
V. PERSONNEL CONTACTED	11
VI. DOCUMENTS REVIEWED (REFERENCES)	11

I. SCOPE

This was a routine review of site activities to review the results of selected Unit 2 startup tests completed at HZP and to review corrective action taken on previously identified NSRS items.

II. CONCLUSIONS AND RECOMMENDATIONS

The following paragraphs contain the conclusions followed by recommendations if applicable. An E or R in brackets has been placed at the end of each recommendation. The [R] indicates that NSRS has concluded the recommendation is based on a regulatory requirement or a TVA commitment. The [E] indicates NSRS has determined that the recommendation has no regulatory basis. It is considered an enhancement and is based on subjective judgment.

- A. R-81-27-SQN⁰¹, Need to Identify at Affected Procedural Points that a Test Deficiency Had Been Written Against It

Completed procedural steps or data sheets are not identified with a unique test deficiency number to indicate a test deficiency had been written against thereby closing what appears to be an open loop.

Recommendation

NUC PR should evaluate establishing a policy to annotate test data sheets and procedural steps with the unique test deficiency number at the point a discrepant condition is identified. (See section IV.B.2.a for details.) [E]

- B. R-81-27-SQN-02, Need for Identifying a Data Reviewer When Completing Supportive Data Sheets Used For Acceptance Testing or For Operational Limitation

Calculations, hand-plotted data, etc., used to support acceptance tests or to provide operational limitation, such as generation of rod withdrawal curves when the moderator temperature coefficient has been determined to be positive, do not reflect directly that the data was reviewed by an independent source.

Recommendation

The SQN plant staff should evaluate requiring supportive data that aids in meeting acceptance criteria or provides operational limitations to undergo the same program and reviewer signature requirements as normal test instruction data sheets. (See section IV.B.2.b for details.) [E]

C. R-81-27-SQN-03, Revision of SQN FSAR Section 14 to Reflect Accurately the Unit 1-Unit 2 Startup Programs

NRC apparently had mistakenly amended the SQN FSAR prior to Licensing's approval of TVA's recommended FSAR revisions.

Recommendation

Revise the SQN FSAR to accurately reflect the unit 1-unit 2 Startup Test Programs as described in section IV.B.2.c of this report. [E]

- D. The SQN plant staff has taken positive measures through added controls, policy changes, and training to ensure startup test packages are complete, understandable, and traceable.

III. STATUS OF SELECTED PREVIOUSLY IDENTIFIED ITEMS

The following paragraphs contain summarized statements of action taken by Nuclear Power (NUC PR) in resolving previously identified NSRS items. The items presented do not represent the total of our concerns but only those reviewed during this report period.

A. (closed) R-80-20-SQN-02, Inadequate Documentation of Startup Test Deficiencies and Procedural Conflicts Encountered

Corrective action taken by NUC PR to resolve the administrative inadequacies noted during the Unit 1 startup test program was considered sufficiently responsive to close this item out. (See section IV.A.1 for details.)

B. (open) R-81-24-SQN-01, Inadequate Procedural Controls in Installing the Unit 2 On-line Reactivity Computer

Though a Reportable Occurrence Report was issued on this item, necessary corrective action to resolve the item has not yet been taken. This item remains open until the specific corrective action to be taken is identified and evaluated by NSRS. (See section IV.A.2 for details.)

IV. DETAILS

A. Previously Identified Open Items

1. R-80-20-SQN-02, Inadequate Documentation of Startup Test Deficiencies and Procedural Conflicts Encountered

This item involved identifying to NUC PR that additional measures needed to be taken to ensure that test deficiencies were documented and temporary changes were made as they occur during the Unit 1 startup test program. The details of this item were provided in paragraph IV.B.2.b of NSRS Report No. R-80-20-SQN dated January 14, 1981 with recommended corrective action provided in recommendation paragraph IV.C.

NSRS Review Report R-81-12-SQN dated July 14, 1981 looked into NUC PR's resolution of the NSRS concerns and closed out four of the nine items identified (see paragraph V.A.9 of reference I.) NSRS review of the remaining five items left open are discussed below:

- a. Test deficiency number 1-7.6-1 had been written and PORC approved against SU-7.6 to account for the failure to take rod worth data during the rod withdrawal sequence portion of the test. The test deficiency was added to the SU-7.6 test package by amendment number 1. This item is closed.
- b. The additional copies of data sheet C1 used in SU-8.5.3 still had not been initialed to indicate they had been verified to the controlled copy revision as required by SQA-44. Though an independent review of the data sheets verified that the data sheets were one and the same in format, the data-taker's initials could not be added since the completed procedure had already gone through PORC. Amending the completed document did not appear to be justified. SQN has provided additional training in ensuring that additional copies of data sheets are verified to be the same as the original, controlled revision and that each data sheet is initialed to reflect the verification had been made. Review of several completed unit 2 startup tests indicates the training was effective. This item is closed.
- c. The revision level of procedure instruction sheet, page 5 (revision 1) of completed startup test SU-7.4, had been verified to ensure that its contents had not changed when the procedure underwent a general revision (revision 2). The verification indicated that only the revision level was affected. This item is closed.
- d. The 0003 run of Data Sheet 1 taken on July 8, 1980 used to compile temperature distribution data on the reactor vessel's upper head could not be located and therefore could not be added to the completed SU-8.5.7 test package. Since the test was used only for data compilation and not for acceptance testing, NSRS considers the additional controls now in effect for data sheets as described in c. above are sufficient to preclude a recurrence of this problem. This item is closed.
- e. Unit 1 completed startup test recorder traces still lack the necessary information required to be identified by the startup tests. The effort made to back-retrieve this information was gallant but an almost impossibility. NSRS considers that though not all information for the unit 1 startup tests can be retrieved, the effort presently being undertaken in identifying the

unit 2 recorder trace has been exceptional. NSRS therefore concludes that the overall concern, that of traceability of test data, has been resolved. This item is closed.

Overall, this item is closed and no additional NUC PR action is required.

2. R-81-24-SQN-01, Inadequate Procedural Controls in Installing the Unit 2 On-Line Reactivity Computer

This item involved identifying to NUC PR that other causes, contrary to that identified by SQN, may have resulted in the bistables of the power range channel used to input the reactor flux level to the reactivity computer for unit 2 startup testing, to not have been placed in their tripped condition when the channel was removed from service. The details of this item were provided in paragraph IV.C.2.a of NSRS Report No. R-81-24-SQN dated December 4, 1981 with recommended corrective action provided in recommendation paragraph II.A.

Sequoyah Nuclear Plant Unit 2 - Reportable Occurrence Report SQRO-50-328/81126 (reference 0) was issued to provide details concerning the inoperability of the nuclear instrumentation power range channel III N-43. NSRS concurs with the corrective action noted in the report but intends to leave the item open until the specific corrective action to be taken is identified in a SQN Corrective Action Report (CAR) and evaluated by NSRS.

B. Low Power Physics Test Results Review

1. Results Review

Two completed startup test procedures and the hot zero power (H2P) portion of the controlling document SU-7.1 were reviewed by the NSRS reviewer to ascertain whether uniform criteria are being applied for evaluation of completed startup tests to assure their technical and administrative adequacy. Each procedure was reviewed to verify:

- a. That each test had been completed and performed at the power level described in section 14 of the Sequoyah Final Safety Analysis Report (FSAR) as required by unit 2 operating license conditions 2.C.(3).a, c, and d.
- b. That each procedure change was approved and implemented as required by SQA-44, section 5.0 and AI-4, sections VI, VII, and XII.

- c. That each test change had been completed if it entailed specific action.
- d. That procedure changes made did not change the basic objectives of the test or other test conditions specified in section 14 of the Sequoyah FSAR as required by unit 2 operating license condition 2.C.(3).b.
- *e. That all test deficiencies had been identified and resolved and that resolution had been accepted by appropriate management as required by section 9.0 of SQA-44.
- f. That all outstanding test exceptions had been evaluated for safety and design significance prior to continuation of the startup program.
- *g. That retest requirements had been completed if required for resolution of the test deficiency.
- *h. Management review and evaluation of the test results and acknowledgement that the testing accomplished had demonstrated system design requirements.
- i. That the measured test results were compared with established acceptance criteria.
- j. That data sheets had been completed and reviewed and that all data recorded, where required, were within the criteria set by the test or limits specified by the technical specifications.
- *k. That those personnel charged with the responsibility for review and acceptance of the tests results had documented their review and acceptance of the test package as required by SQA-44, section 10.0.

*These items may not have been verified if the startup test package was still in the review stage or awaiting retests or vendor responses for test deficiency resolution. They will be reverified after the startup tests have received final management review and approval.

The following startup tests were reviewed:

- SU-7.1 NSSS Startup Sequence, Rev 8, approved for use 6/24/81, controlling document--results are ongoing.
- SU-7.2 Initial Criticality, Rev 8, approved for use 11/2/81, results still in review.

SU-7.3.1 Nuclear Design Check Test: Boron Endpoint Determination and Isothermal Temperature Coefficient Measurement, approved for use 11/2/81, results still in review.

2. Problems and Concerns

The comments resulting from the NSRS review were provided to the Power Plant Results Supervisor as the reviews were completed. Corrections and actions taken by the Results staff on the comments were also reviewed during this period. The more significant areas of concern are discussed below.

a. R-81-27-SQN-01, Need to Identify at Affected Procedural Points that a Test Deficiency had been Written Against It

During review of the completed startup tests, NSRS observed that several test deficiencies had been written against completed procedural steps or data sheets because of the inability to complete the step, or to document that the acquired data failed to meet or exceeded acceptance/technical specification criteria, or for other types of discrepant conditions discovered. To complete the loop for traceability to the test deficiency, NSRS found in no case was the affected procedural step or data sheet identified to indicate that a test deficiency had been written against it. In fact, affected steps (e.g., step 5.12, data sheet 5 of SU-7.2) and data sheet (data sheet 4 of SU-7.3.1) in question had the appearance that the data obtained or step performed was acceptable.

To preclude any appearance of potential falsification of records should a test deficiency sheet be misplaced from a completed test package (preop, startup, surveillance, etc.) and the completed step or data sheet not appropriately linked to the test deficiency written to document that the action signed for was not acceptable, NSRS considers a NUC PR policy statement on the subject worthy of consideration. As part of NUC PR's evaluation, the following practices should also be considered:

- (1) A unique test deficiency number should be identified in place of a signature if identified at the time of performance.
- (2) A unique test deficiency number should be identified in the margin of the respective step or data sheet should either have been completed and the deficiency discovered subsequent to the testing.

- (3) The identification policies of (1) and (2) should be made applicable to all testing including surveillance, maintenance, and modification tests.

This item shall remain open pending NUC PR's response to this item.

b. R-81-27-SQN-02, Need for Identifying a Data Reviewer when Completing Supportive Data Sheets Used for Acceptance Testing or for Operational Limitations

Test deficiency 2-7.3.1-2 identified that the beginning of cycle life, hot zero thermal power, moderator temperature coefficient (MTC) as determined for the all rods out configuration and computed by Data Sheet 5 of SU-7.3.1, was found to be +0.65 pcm/°F which was greater than the operational limit of less than 0.0 pcm/°F as dictated by LCO 3.1.1.3 of SQN technical specifications. The ACTION statement associated with this LCO allows STARTUP and POWER operations to continue if rod withdrawal limits are established which will ensure that the reactor will be operated with a negative MTC.

The rod withdrawal limits were established using startup physics data and TI-42, "Negative Moderator Temperature Coefficient Maintenance Calculation." Review of the hand-plot generated by TI-42 depicting the rod withdrawal and boron concentration limits for continued operation at power revealed that only the signature of the preparer was presented. Though test packages and completed procedures contain a provision that the section supervisor or his designated representative review the contents of the document prior to PORC submittal for acceptability of the results and data, NSRS considers this review as basically an overview.

To adequately ensure that limitation, performance, operational, or acceptance data was calculated properly and plotted (if necessary) accurately, a reviewer signoff should be considered a mandatory addition for these types of data acquisition. Though no requirement exists for a provision to include a reviewer signoff except for data sheets to approved test instructions (paragraph 4.2.6 of SQA-44), NSRS considers SQN should evaluate paragraph 7.4.C of SQA-44 to include reviewer signoff provisions for the types of acquired supportive data described above. This modification in plant policy should also be considered plant wide and not just restricted to startup testing. This item is considered open pending the SQN review.

c. R-81-27-SQN-03, Revision of SQN FSAR Section 14 to Reflect Accurately the Unit 1-Unit 2 Startup Programs

As required by item 2.c.(3).a of the Sequoyah Nuclear unit 2 operating license, TVA must have NRC approval before making a "major modification" to the initial test program described in section 14 of the SQN FSAR.

On April 13, 1981 (reference K) TVA submitted to NRC a proposal an amendment 68 to revise FSAR Table 14.1-2a to reflect the following modifications:

1. Delete the following startup tests:
 - SU-1.1 Loss of Offsite Power
 - SU-1.2 Shutdown from Outside Control Room
 - SU-7.6 Rod Control Cluster Assembly (RCCA) Pseudo Ejection at Zero Power
 - SU-7.7 Minimum Shutdown Verification and Stuck Rod Worth Measurement
 - SU-8.1 Power Coefficient and Integral Power Defect Measurement
 - SU-8.2 RCCA Pseudo Ejection and RCCA Above Bank Position Measurement
 - SU-9.4, Generator Trip from 100 Percent Power Part B
2. Revise the following startup tests:
 - SU-7.4 Rod and Boron Worth Measurements During Boron Dilution
 - SU-7.5 Rod and Boron Worth Measurements During Boron Addition
3. Add the following startup test:
 - SU-1.3 Rod Worth Using Rod Swap Measurement

As a result of the TVA letter and subsequent discussions TVA had with NRC, TVA revised (reference L) their initial request and NRC concurred (reference M) to make the following changes to item 1 above:

- SU-1.2B Shutdown from outside Control Room (cooldown portion) will not be performed but SU-1.2A (actual shutdown from outside the control room) will be performed

- SU-7.7 Will be performed
- SU-8.1 This measurement will be performed at two of the previously identified four power level plateaus
- SU-8.2 will be performed if specified HZP acceptance criteria were not met

NSRS review of amendment 68 to determine if the final changes made to section 14 of the SQN FSAR met the communications undergone, indicated that a breakdown had occurred at NRC:NRR whereby the initial revision request change was made without question. In addition, other discrepancies were noted during the review, including with the program depicting unit 1 startup tests. SQN should take action to resolve the following conflicts:

- (a) Unit 1 Startup Test Program (Figure 14.1-3, Table 14.1-2, Amendment 64)
 - ° The 75% power plateau does not show (Figure 14.1-3) or discuss (Table 14.1-2) performance of SU-8.6B "Axial Xenon Oscillation."
- (b) Unit 2 Startup Test Program (Figure 14.1-3a, Table 14.1-2a, Amendment 68)
 - ° Low Power Physics Test Plateau
 - SU-7.7 is not discussed on page 14.1-121k of Table 14.1-2a or illustrated to be performed in Figure 14.1-3a.
 - SU-1.3 was not approved for performance as presently illustrated in Figure 14.1-3a and discussed on page 14.1-121 of Table 14.1-2a. Similarly the test objectives, summary of testing, and acceptance criteria for SU-7.4 and SU-7.5 should also be revised to reflect the original wording described in Table 14.1-2.
 - ° 30% Power Plateau
 - SU-8.1 and 1.2A are not discussed in Table 14.1-2a or illustrated to be performed in Figure 14.1-3a.
 - ° 50% Power Plateau
 - Performance of SU-8.1 is not illustrated in Figure 14.1-3a.

◦ 75% Power Plateau

- Performance of SU-8.6B is not discussed in Table 14.1-2a or illustrated in Figure 14.1-3a.
- Table 14.1-2a, page 14.1-1211 depicts performance of SU-8.2 in the discussion presented for SU-8.3. SU-8.2 has been determined as a result of satisfactory low power physics testing will not be performed and therefore this reference to SU-8.2 should be deleted.
- Reference N and other proposed revisions to the unit 2 startup test program should also be considered for incorporation should NRC:NRR approve the recommended TVA action.

This item shall remain open pending SQN revision of the SQN FSAR.

d. Administrative Concerns

The following administrative concerns were identified by the NSRS reviewer to the lead startup test results engineer and will be followed up during a subsequent visit to the plant to determine their resolution:

- (1) The instruction change and unreviewed safety question determination required by SQA-119 were found missing from a SU-7.2 temporary change (TC 81-1845). These attachments are required to be placed in the test package by paragraph VII.A of AI-4.
- (2) Not all recorder traces had the initials of the preparer as required by paragraph 4.2.A and 12.3.1 of AI-7. For example: SU-7.2 recorder trace taken on 11/5/81 depicting pressurizer level and Tave.
- (3) Completion of data sheet 2 to SU-7.3.1 did not reflect the initial position of the controlling bank prior to the start of each run as required by step 5.5.9/5.5.10. This may have resulted from a lack of provision on the form for the data. The information can be readily acquired from the recorder traces and therefore its provision is not really necessary, except that it is required by procedure to be identified on the form. The reactor engineer indicated that other problems exist with the form and it will be evaluated before the startup of unit 1 following its first refueling outage.

- (4) The narrative log maintained by the startup test engineers to record pertinent information required by SQA-44, paragraph 7.5, relative to each startup test conducted, was found, in cases, to lack detail on the time and date of "major evolutions." Major evolutions are not defined in the standard practice; however, commencing and ending a boron endpoint determination for a particular rod configuration is considered by NSRS as a major evolution. The reactor engineer concurred and would discuss this concern in more detail with the test engineers.

V. PERSONNEL CONTACTED

R. W. Fortenberry, Reactor Engineer
*R. L. Hamilton, Supervisor, Quality Assurance
*W. H. Kinsey, Supervisor, Power Plant Results Section
+*G. B. Kirk, Sequoyah Compliance Staff
J. M. McGriff, Assistant Plant Superintendent, H&S Group

* Present at exit meeting December 18, 1981.

+ Acting Senior Station representative at exit meeting.

VI. DOCUMENTS REVIEWED (REFERENCES)

- A. Facility Operating License DPR-79, Sequoyah Nuclear Plant.
B. Sequoyah Nuclear Plant - Standard Practice SQA-44, "Plant Startup Test Program"
C. Sequoyah Nuclear Plant - Standard Practice SQA-119, "Unreviewed Safety Question Determination"
D. Sequoyah Nuclear Plant, "Operational Quality Assurance Manual"
E. Sequoyah Nuclear Plant, "Final Safety Analysis Report"
F. US NRC Regulatory Guide 1.68, "Preoperational and Initial Startup Test Programs for Water-Cooled Power Reactors," November 1973.
G. US NRC Regulatory Guide 1.70, "Standard Format and Content of Safety Analysis Reports for Nuclear Power Plants LWR Edition," September 1975.
H. Memorandum from H. N. Culver to H. J. Green dated January 14, 1981, "Sequoyah Nuclear Plants Units 1 and 2 - Nuclear Safety Review Staff Review Report R-80-20-SQN," (GNS 810115 154).
I. Memorandum from H. N. Culver to Those listed, "Sequoyah Nuclear Plant - Nuclear Safety Review Staff Review Report No. R-81-23-SQN," (GNS 810717 051).

- J. Memorandum from H. N. Culver to H. G. Parris dated December 4, 1981, "Sequoyah Nuclear Plant Units 1 and 2 - Nuclear Safety Review Staff Report No. R-81-24-SQN," (GNS 81204 051).
- K. Letter from L. M. Mills (TVA) to A. Schwencer (NRC:NRR) dated April 13, 1981, "Revisions to the Sequoyah Nuclear Plant (SNP) Unit 2 Startup Test Program," (NEB 810415 584).
- L. Letter from L. M. Mills (TVA) to E. Adensam (NRC:NRR) dated June 30, 1981, "Deletion of Startup Tests to the Sequoyah Nuclear Plant Unit 2 Startup Test Program," (NEB 810701 654).
- M. Letter from R. L. Tedesco (NRC:NRR) to H. G. Parris (TVA) dated July 14, 1981, "Startup Test Revisions for Sequoyah Unit 2," (NEB 810720 642).
- N. Letter from L. M. Mills (TVA) to E. Adensam (NRC:NRK) dated December 9, 1981, "Deletion of Startup Test SU-9.5 from the Sequoyah Nuclear Plant Unit 2 Startup Test Program."
- O. Letter from H. J. Green (TVA) to J. P. O'Reilly (NRC:OIE:RII) dated December 4, 1981, "Tennessee Valley Authority - Sequoyah Nuclear Plant Unit 2 - Docket No. 50-328 - Facility Operating License DPR-79 - Reportable Occurrence Report SQRO-50-328/81126."
- P. Sequoyah Nuclear Plant - Administrative Instruction AI-4, "Plant Instructions Document Control."
- Q. Sequoyah Nuclear Plant - Administrative Instruction AI-7, "Recorder Charts and Quality Assurance Records."
- R. Sequoyah Nuclear Plant - Technical Instruction TI-42, "Negative Moderator Temperature Coefficient Maintenance Calculation."

UNITED STATES GOVERNMENT

Memorandum

TENNESSEE VALLEY AUTHORITY

GNS '82 0120 050

TO : G. H. Kimmons, Manager of Engineering Design and Construction, W12A9 C-K

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

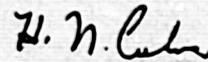
DATE : January 20, 1982

SUBJECT: WATTS BAR NUCLEAR PLANT - NSRS REPORT ON MINI-MANAGEMENT REVIEW -
REPORT NO. R-81-28-WBN

The final report of the review is attached for your information and action. The report indicates both areas where NSRS believes programs need improvement and situations where programs appear to be adequate but improved implementation is required.

The report contains 22 recommendations in 8 functional areas. TVA has committed to transmit the report, including planned corrective actions, to the NRC by February 1, 1982. To meet this commitment, you should send your plans and schedule for corrective action to the report recommendations to NSRS by January 25, 1982.

If you have any questions concerning the report, please contact Marvin Sinkule at extension 6620.



 H. N. Culver

CMK:LML

Attachment

cc (Attachment):

E. G. Beasley, W12B26 C-K
 R. W. Dibeler, E5C60 C-K
 MEDS, 100 UB-K
 H. H. Mull, E7B24 C-K
 R. M. Pierce, W4D244 C-K
 J. E. Wilkins, Watts Bar Nuclear Plant CONST

NSRS FILE



TENNESSEE VALLEY AUTHORITY
NUCLEAR SAFETY REVIEW STAFF
REVIEW
NSRS REPORT NO. R-81-28-WBN

Subject: Mini-Management Review of Watts Bar Nuclear Plant

Dates of Review: November 16 through December 4, 1981

Team Leader: James A. Crittenden 1-20-82
James A. Crittenden Date

Reviewer: James C. Jones 1-20-82
James C. Jones Date

Reviewer: Claude M. Key 1-20-82
Claude M. Key Date

Reviewer: Ronald W. Travis 1-20-82
Ronald W. Travis Date

Approved by: M V Sinkule 1-20-82
Marvin V. Sinkule Date

TABLE OF CONTENTS

	<u>Page</u>
I. Background	1
II. Scope	1
III. Conclusions and Recommendations	1
A. Program Improvements	2
B. Training and Qualification of Personnel	2
C. Quality Control	4
D. System Transfer	6
E. Construction Test and Preoperational Test	6
F. System Cleanliness	6
G. Corrective Action	7
H. Quality Assurance Audits	9
IV. Details	11
A. Program Improvements	11
B. Training and Qualification of Personnel	12
C. Quality Control	15
D. System Transfer	19
E. Construction Test and Preoperational Test	20
F. System Cleanliness	21
G. Corrective Action	21
H. Quality Assurance Audits	26
V. Personnel Contacted	29
VI. Documents Reviewed	35

I. BACKGROUND

Included with the letter dated November 5, 1981, from James P. O'Reilly, Director of Region II NRC-OIE, to H. G. Parris, Manager of TVA Office of Power was a copy of a NRC-OIE Inspection Report (50-390/81-14 and 50-391/81-14). This report pertained to the damage to a charging pump during flushing operations at Watts Bar Nuclear Plant (WBN). Mr. O'Reilly stated in the letter that damage to the charging pump, in itself, was not a significant safety concern but several failures in the WBN quality assurance program which permitted the pump to be damaged was of concern to the NRC. This concern, in addition to previous problems at WBN, indicated inadequacies in the quality assurance program and its implementation. The NRC considered proposing escalated enforcement action for these inadequacies, but based on discussions with TVA personnel on August 19, 1981, and commitments made by L. M. Mills, Manager of Nuclear Regulation and Safety in the TVA Office of Power, the NRC concluded escalated enforcement action was not warranted at that time. The NRC requested that TVA perform an independent review of the quality assurance program at Watts Bar and other facilities covering specific areas of concern to the NRC. This report presents the findings of the review made by the Nuclear Safety Review Staff.

II. SCOPE

The following areas were reviewed to verify the adequacy and effectiveness of management controls over portions of the established WBN quality assurance program.

- Program Improvements
- Training and Qualification of Personnel*
- Quality Control
- System Transfer
- Construction Test and Preoperational Test
- System Cleanliness
- Corrective Action
- Quality Assurance Audits

*Craft training not included

The review included interviews with WBN personnel, reviews of procedures, and reviews of records. Conclusions are contained in section III and details of the review findings are contained in section IV of this report.

III. CONCLUSIONS AND RECOMMENDATIONS

The following paragraphs contain the conclusions followed by recommendations, if applicable. An R or E in parentheses has been placed at the end of each recommendation. The (R) indicates that

NSRS has concluded the recommendation is based on a regulatory requirement or a TVA commitment. The (E) indicates NSRS has determined that the recommendation has no regulatory basis, but is considered an enhancement to the nuclear safety program and is based on subjective judgment.

A. Program Improvements

The WBN program for improvements is adequate to meet requirements and commitments. The recent improvements appear to be adequate; however, in some cases it is too early to evaluate their effectiveness. No recommendations resulted from review of these program improvements; however, further review of this area will continue during future NSRS reviews. Refer to paragraph IV.A. for details.

B. Training and Qualification of Personnel

The training and qualification program and its implementation for inspection and engineering personnel are not sufficiently adequate to ensure site management that inspectors and engineers will be qualified to perform their quality-related functions. Specific problems observed in the program and its implementation were as follows:

1. R-81-28-WBN-1, Training and Qualification of Personnel

A training program had not been developed for QC inspectors and engineering personnel in practical application of inspection and test activities as required by procedures.

Recommendation

Develop a program (modules) to train inspectors and engineering unit personnel in practical application of inspection and test activities. Refer to section IV.B.1 for details. (R)

2. R-81-28-WBN-2, Inspector Demonstration of Practical Knowledge

Inspectors had not been required to demonstrate to the examiner their knowledge of practical application of Quality Control Procedures (QCPs) and Quality Control Test Procedures (QCTs) with the exception of visual weld inspection as required by site procedure.

Recommendation

Implement the requirements of site procedure. Refer to paragraph IV.B.2 for details. (R)

3. R-81-28-WBN-3, Engineering Unit Personnel Demonstration of Practical Knowledge

Site procedure requires engineering unit personnel to receive practical training but does not require them to demonstrate their knowledge of the training they received.

Recommendation

Develop a method for engineering unit personnel to demonstrate their practical knowledge. Document both the method and the results of tests of individual's proficiency. Refer to paragraph IV.B.3 for details. (E)

4. R-81-28-WBN-4, Procedural Comprehension

Inspectors were not certified in Quality Control Instructions (QCIs) as required by site procedure. In addition, engineering unit personnel were not certified in QCIs, QCTs, and QCPs as required by site procedure.

Recommendation

Implement the requirements of the procedure. Refer to paragraph IV.B.4 for details. (R)

5. R-81-28-WBN-5, Inadequate Training System

Site (WBNP-QCI-1.11) and division (QAP 2.2) procedures do not clearly establish training requirements for all persons (i.e., inspectors, engineers, crafts, clerks, etc.) who perform quality-related activities. The training program established by the procedures does not assure upper management that suitable proficiency is achieved and maintained by persons performing quality-related activities.

Recommendation

Review and revise the procedures as necessary to clearly establish training requirements for all persons performing quality-related activities. Establish a system to assure management that suitable proficiency will be achieved and maintained. Refer to paragraph IV.B.5 for details. (R)

6. R-81-28-WBN-6, Inadequate Documentation of Training

Training had not been documented as specified in CONST-QAP 2.2 on Personnel Certification Records (PCRs) in the Quality Control and Records Unit (QCRU).

Recommendation

Document required training on PCRs if records are available that demonstrate training of individuals had been accomplished. In cases where records of training do not exist, perform retraining of personnel and document as required. Refer to paragraph IV.B.6 for details. (R)

7. R-81-28-WBN-7 Job Performance Evaluation

Records of job performance evaluations for inspection, examination, and testing personnel had not been filed in the Quality Control and Records Unit (QCRU) as required by CONST-QAP 2.2.

Recommendation

Implement the requirements of the procedure. Refer to paragraph IV.B.7 for details. (R)

8. R-81-28-WBN-8, Personnel Qualification Summary

Qualification sheets were not in the inspectors' files in the QCRU as required by WBNP-QCI-1.41.

Recommendation

Implement the requirements of the procedure. Refer to paragraph IV.B.8 for details. (R)

9. R-81-28-WBN-9, Quality Assurance Orientation/Indoctrination

Records did not indicate that all personnel performing safety-related activities had received orientation/indoctrination in basic quality assurance policies, requirements, and responsibilities as required by WBNP-QCI-1.11.

Recommendation

Provide the required orientation/indoctrination to appropriate personnel and document the training. Refer to paragraph IV.B.9 for details. (R)

C. Quality Control

The WBN QC program as written and its implementation do not assure management that all safety-related inspection activities will be adequately performed. Specific problems in the program and its implementation revealed by reviewing the program and observing implementation are as follows:

1. R-81-28-WBN-10, Quality Control Procedure Inadequacies

A number of procedures and instructions cover the same area, contain conflicts with regards to the requirements, contain an inordinate number of addendums, do not contain documentation requirements, and are not consistent in the guidance for inspection.

Recommendations

- a. Perform an indepth review of all WBN QC procedures and instructions to assure they contain all regulatory and programmatic requirements, to identify conflicting requirements, to determine inspections where more than one procedure applies, to identify procedures which contain an inordinate number of addendums, and to assure the procedures are consistent in the guidance for inspections. Revise the procedures and instructions as necessary.
- b. After the procedures have been revised, retrain and certify all personnel as necessary in the programmatic procedural requirements.

Refer to paragraph IV.C.1 for details. (R)

2. R-81-28-WBN-11, Inadequate Document Control of Procedures

The QA/QC program does not require controlled copies of inspection and test procedures to be distributed and used at the work location of the prescribed activity.

Recommendation

WBN management should establish procedural requirements for and provide a controlled copy of all inspection and test procedures at the location of the prescribed activity, or a controlled copy of the appropriate procedures should be provided to the inspector for use at the location of the prescribed activity. Refer to paragraph IV.C.2 for details. (R)

3. R-81-28-WBN-12, Responsibility for Inspection

WBNP-QCP-4.13 states that all NDE inspections shall be done by the Welding Engineering Unit (WEU). WEU inspectors are not performing all these inspections.

Recommendation

Implement the requirements of the procedure or revise the procedure to reflect current site practice. Refer to paragraph IV.C.3 for details. (R)

4. R-81-28-WBN-13, Unqualified NDE Procedures

Documents (records) were not readily available to provide evidence that the NDE procedures had been successfully demonstrated (qualified) to the Authorized Nuclear Inspector (ANI) as required by Construction Specification G-29.

Recommendation

WBN management should ensure that all NDE procedures are demonstrated to the satisfaction of the ANI and the demonstration is documented. Refer to paragraph IV.C.4 for details. (R)

5. R-81-28-WBN-14, Inadequate Procedure Review

An adequate system had been established to ensure site generated procedures/instructions contained all applicable requirements but the system was not fully implemented.

Recommendation

Provide the site QA unit with qualified personnel and the documents necessary to perform an in-depth review of all site generated procedures/instructions as required by QASP 4.2. Review present and future procedures/instructions to ensure all applicable requirements are included. Refer to paragraph IV.H.3 for details. (R)

D. System Transfer

CONST and NUC PR management are aware of the problems associated with system transfers and scheduling and they appear to be attempting to solve these problems. NSRS does not have recommendations for improvements at this time. Refer to paragraph IV.D. for details.

E. Construction Test and Preoperational Test

The construction and preoperational testing controls are adequate if followed in detail by qualified personnel. There are no recommendations for change in this area. Other sections of this report address the qualifications of personnel (reference paragraph III.B) and following procedures (reference paragraph III.C.2.). Refer to paragraph IV.E. for details.

F. System Cleanliness

The written program for the cleaning and flushing of systems does not appear adequate as described below:

1. R-81-28-WBN-15, Inadequate Requirements in Cleaning and Flushing Procedures

The flushing procedure (WBNP-QCT-3.14) for instrument lines does not address velocity of the flush or presence of foreign or particulate matter during the flush. WBNP-QCT-4.36 does not provide guidance for layup of systems other than those which are chemically cleaned.

Recommendation

- a. Review WBNP-QCT-3.14 to determine if a requirement for velocity is necessary and if a check for foreign or particulate matter should be required.
- b. Review WBNP-QCT-4.36 to determine if layup requirements for systems other than those which are chemically cleaned should be provided.

Refer to paragraph IV.F.1 for details. (E)

G. Corrective Action Program

Adequate methods have been established at WBN to identify failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances. The present system does not ensure that the root cause of the deficiency, deviation, etc., is determined and that corrective action is taken to preclude repetition.

1. R-81-28-WBN-16, Determining Root Cause of Deficiencies

WBN had not developed an effective system to determine the root cause of deficiencies, deviations, etc., and in some cases the corrective actions taken did not preclude repetition.

Recommendation

Revise WBNP-QCI-1.2 and other related procedures to require each issued significant Nonconformance Report (NCR) and each significant audit deficiency to be reviewed to determine the root cause of the deficiency and to implement corrective action to prevent recurrence. Document the root cause on the NCR or audit deficiency sheet. Delineate responsibility in the procedures for performing the review to determine root cause. Refer to paragraph IV.G.1 for details. (R)

2. R-81-28-WBN-17, Inadequacies in WBNP-QCI-1.2

WBNP-QCI-1.2 does not adequately delineate the duties and responsibilities of persons responsible for initiating and reviewing Nonconformance Reports (NCRs) and Inspection Rejection Notices (IRNs).

Recommendation

- a. Since quality control unit representatives may initiate an NCR, revise section 5.2 of the procedure to delineate this responsibility.
- b. Revise section 6.10 of the procedure to provide more detailed instructions to the quality control inspector in the following areas: (1) when an IRN must be sent to the engineering unit to be dispositioned and when an IRN may be dispositioned by quality control unit personnel, (2) deficiencies, deviations, etc., which must be documented on an NCR rather than an IRN, (3) deficiencies, deviations, etc., which may be documented on an IRN rather than an NCR, (4) recording IRN numbers and a description of the deficiency in a master log, and (5) the system used to close an IRN.
- c. Revise section 6.10 of the procedure to provide more detailed instructions to the quality control unit supervisors in the following areas: (1) the method to be used to identify and document IRN trends and (2) the method to be used to inform higher level management of developing IRN trends.
- d. Establish and document a system to ensure trends are identified for IRNs which may affect more than one engineering/quality control unit.
- e. Revise the procedure to provide more detailed instructions to engineering unit personnel on the method to be used to process IRNs.

Refer to paragraph IV.G.2 for details. (R)

3. R-81-28-WBN-18, Review of the Quarterly Trend Analysis Report

No requirement exists for the CONST QA Manager and OEDC QA Manager to review the report to determine if the root cause of the problem is generic to other TVA plants or if the root cause is related to a deficiency in the OEDC QA Program.

Recommendation

Issue procedures or revise appropriate procedures to include a requirement for the CONST QA Manager to review the Quarterly Trend Analysis Report for generic implications of deficiencies to other TVA nuclear plants and for the OEDC QA Manager to review this report for programmatic problems. These reviews should be documented. Refer to paragraph IV.G.3 for details. (R)

4. R-81-28-WBN-19, Review of the QA Trend Analysis Master Status Report

WBNP-QCI-1.2 requires the Construction Engineer or his designated assistant to review the QA Trend Analysis Master Status Report on a monthly basis but does not require the review to be documented. In addition, the procedure does not establish minimum acceptable levels for trends.

Recommendation

WBN management should revise WBNP-QCI-1.2 to require the review by the Construction Engineer to be documented and establish minimum acceptable levels for trends. When the maximum acceptable level is exceeded, the Construction Engineer should investigate to determine the root cause of the problem. Refer to paragraph IV.G.4 for details. (R)

H. Quality Assurance Audits

The audits conducted by the site QA unit appear to be in sufficient depth, and results of the audits are documented and distributed to appropriate levels of management. Weaknesses in the QA audit program are as follows: (1) the site QA unit had not audited all aspects of the quality assurance program to determine the effectiveness of the program, (2) the site QA unit also experienced some difficulty in obtaining resolution on audit deficiencies and on procedure review comments which appeared to be caused by communication problems between site QA and EN DES, and (3) the site QA unit did not appear to be adequately staffed to perform all assigned responsibilities.

1. R-81-28-WBN-20, All Aspects of QA Program Not Audited

The site QA unit had not performed audits as follows: (1) Inspection Rejection Notice (IRN) system to determine the effectiveness of the system and (2) the transfer of systems from CONST to NUC PR.

Recommendation

Site QA should: (1) schedule and perform audits of the IRN system and the transfer of systems from CONST to NUC

PR and (2) review all aspects of the QA program to ensure audits have been conducted or are scheduled to be conducted. Refer to paragraph IV.H.1 for details.(R)

2. R-81-28-WBN-21, Interface Between the Site QA Unit and the CONST QA Manager's Office

The site QA unit had experienced problems in obtaining information from EN DES necessary to close audit deficiencies or perform procedure reviews. Interviews with the QA supervisor and several members of the QA unit revealed they had problems in locating the person in EN DES who had knowledge and authority to provide answers to questions. No mechanism (i.e., administrative control, procedure, etc.) exists which directs the site QA supervisor to contact the CONST QA Manager on audit deficiencies which cannot be resolved at the site or to obtain an official response from EN DES on questions which arise during procedure reviews. This lack of guidance could result in untimely resolution of audit deficiencies and procedural requirements.

Recommendation

Develop and issue a procedure which delineates the responsibilities of the site QA unit supervisor for interfacing with the CONST QA Manager's office. The procedure should specifically address how the supervisor notifies the CONST QA Manager's office of audit deficiencies which cannot be resolved at the site and the QA Manager's role in obtaining resolution. The procedure should also address how the site QA unit interfaces with the CONST QA Manager's office to obtain official responses from EN DES on questions raised by the site QA unit during their procedural reviews. Refer to paragraph IV.H.2 for details.(R)

3. R-81-28-WBN-22, Inadequate Resources for the Site QA Unit

A review of the current audit schedule and discussions with members of the site QA unit revealed the schedule had slipped several weeks due to the unit's involvement in several other areas. The site QA unit had not performed procedure reviews in the depth required. These weaknesses are a direct result of inadequate resources (manpower and materials).

Recommendations

Increase the site QA unit staff size with qualified personnel to the level required to carry out their assigned responsibilities. Obtain the documents (Design Guides, Design Standards, drawings, IEEE Standards, ASME Code, etc.) necessary to perform the procedural reviews required

by QASP 4.2. Review present and future procedures to ensure all applicable requirements were included. Refer to paragraph IV.H.3 for details.(R)

IV. DETAILS

A. Program Improvements

Criterion II to 10CFR50, Appendix B, requires that the status and adequacy of the quality assurance program be regularly reviewed. This requirement is also contained in ANSI N45.2-1971. The Quality Assurance Program Requirements Manual (PRM) commits WBN to this standard. WBNP-QCI-1.10 designates the Procedures and Training Staff to maintain cognizance of requirements which need to be incorporated into the construction quality control (QC) procedures.

NSRS observed the following recent program improvements.

1. QC procedures have been divided into Quality Control Instructions (QCIs), Quality Control Procedures (QCPs), and Quality Control Test Procedures (QCTs).
2. An organization change has split the quality control (QC) groups out of the engineering groups.
3. Procedures are being revised to:
 - a. Put them in standard format.
 - b. Include acceptance criteria.
 - c. Make procedures more logical.
4. A system for tracking of NRC inspection reports, NRC 50.55(e) items, and audit deficiencies has been implemented.
5. A new position, OEDC Project Manager, has been created and filled.
6. As a result of the report on Diagnostic Evaluation of Morale and Productivity at the Watts Bar Nuclear Plant, a new system for employee appraisal and feedback has been developed. The system has not been fully implemented.

The WBN program for improvements is adequately meeting requirements and commitments. The recent improvements appear to be adequate; however, in three cases--the organizational split, procedure revisions, and the employee appraisal and feedback system--it is too early to evaluate their effectiveness. No adverse findings or recommendations resulted from review of these program improvements, but further review of these areas will be conducted during future NSRS reviews.

B. Training and Qualification of Personnel

Criterion 11 of Appendix B to 10CFR50 states the quality assurance program "shall provide for indoctrination and training of personnel performing activities affecting quality as necessary to assure that suitable proficiency is achieved and maintained." CONST QAP 2.2 gives general instructions for the process required for the selection, qualification, and certification of personnel who perform inspection, examination, and testing activities. WBNP-QCP-1.11 is the site procedure which implements CONST QAP 2.2. WBNP-QCP-1.11 also delineates responsibilities for development, presentation, certification, and documentation of the quality assurance training program. Specific problems in the program and its implementation were as follows:

1. K-81-28-WBN-1, Training and Qualification of Personnel

CONST QAP 2.2 requires responsible supervision to provide a training program corresponding to an individual's job assignment and capabilities. CONST-QAP 2.2 requires the training program to address:

- a. Applicable codes, standards, and specifications.
- b. Applicable elements of the Quality Assurance/Quality Control (QA/QC) Program.
- c. Familiarization with appropriate inspection, examination, and testing tools and equipment.
- d. On-the-job participation.

Site procedure WBNP-QCI-1.11 states, "The Quality Assurance Program Training Plan shall identify training modules and appropriate responsibilities as generally outlined in attachment E. The plan shall be used by line supervisors to provide appropriate training in QCIs, QCPs, and QCTs for their employees." Attachment E of this procedure requires that modules include technical requirements and practical training. Discussions and interviews with site personnel revealed the following information.

- a. Most units have not developed training modules as required by procedures.
- b. Engineering unit personnel are not tested in knowledge of QCPs and QCTs, although they perform functional tests and assign appropriate QCPs and QCTs in work packages. Also, engineers serve as test directors during construction testing.

c. Most inspectors felt they were not sufficiently trained prior to performing inspections.

2. R-81-28-WBN-2, Inspector Demonstration of Practical Knowledge

WBNP-QCI-1.11, paragraph 6.4.2.3, states that in addition to passing a written examination, inspectors must demonstrate their knowledge of practical application to the satisfaction of the examiner on each QCP/QCT they use in inspection, examination, and testing activities. Written examinations are being administered to inspectors; but the inspectors, with the exception of visual weld inspectors, are not required to demonstrate their practical knowledge.

3. R-81-28-WBN-3, Engineering Unit Personnel Demonstration of Practical Knowledge

Site procedure WBNP-QCI-1.11 requires, "Personnel performing and/or verifying activities affecting quality are trained and certified in the principles, techniques, and requirements of the activity being performed." Paragraph 6.4.2.3 states that personnel shall demonstrate their practical knowledge on each QCP/QCT.

Contrary to this requirements, engineering unit personnel are performing quality-related activities (i.e., testing) and are not required to demonstrate their knowledge of practical application for each QCP/QCT.

4. R-81-28-WBN-4, Procedural Comprehension

Site procedure WBNP-QCI-1.11 requires, "Personnel performing and/or verifying activities affecting quality are trained and certified in the principles, techniques, and requirements of the activity being performed." Paragraph 6.4.2.3 of the procedure states the quality assurance unit will administer examinations/certifications. For the individual to be certified, a written examination must be passed (70 percent).

Contrary to these requirements, inspectors were not certified in QCIs, and engineering unit personnel were not certified in QCIs, QCPs, and QCTs. In addition, NSRS noted that in many site QA audits conducted this year deficiencies had been written for failure to follow instructions contained in QCIs.

NSRS also noted that the only evidence available to prove an individual had passed an examination was the examiner's name on the PCRs because test results were not being maintained.

5. R-81-28-WBN-5, Inadequate Training Program

CONST-QAP 2.2 addresses qualification/certification of inspection, examination, and testing personnel. Since engineering unit personnel (engineers, engineering aides/associates) perform safety-related qualification tests, the requirements of this procedure should apply. It appears site management considers the requirements of the procedure applicable to only quality control inspectors because none of the required training has been documented on the Personnel Certification Records for current engineering unit personnel. The procedure delegates to the supervisor responsibility for training in applicable codes and standards, applicable elements of the QA/QC program, use of testing tools and equipment, applicable inspection and testing procedures, and on-the-job participation. The procedure does not require upper management to review the training program established by each supervisor to determine if the program is adequate. Without this review, upper management is not assured that an adequate program has been established.

WBNP-QCI-1.11 established requirements for the site Quality Assurance Training Program but does not address all the requirements established by the upper tier division procedure (QAP 2.2). Specifically, WBNP-QCI-1.11 does not address training in use of tools and equipment, applicable codes and standards, and on-the-job participation. The procedure is ambiguous in the training required for QC inspectors and engineering unit personnel. It requires QC inspectors to be tested to demonstrate their procedural comprehension but does not establish the same requirement for engineering unit personnel. The procedure requires QC inspectors to demonstrate their knowledge of practical application to the examiner but does not establish the same requirement for engineering unit personnel. The procedure describes a QCI as a document which defines the requirements for the performance of activities affecting quality other than inspections and tests, but does not require QC inspectors or engineering unit personnel to become certified in the QCI. Exhibit E of the procedure requires modules to be developed to conduct training in areas, such as procedures, technical requirements, and practical training. However, interviews with site management indicated they did not believe written modules were required. In summary, WBNP-QCI-1.11 does not clearly establish requirements for training and, without a well-defined program, management cannot be assured that persons performing quality-related activities will be adequately trained.