



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

SAFETY EVALUATION BY THE OFFICE OF SPECIAL PROJECTS  
NRC WELDING CATEGORY - WELDER QUALIFICATIONS/TRAINING  
TENNESSEE VALLEY AUTHORITY  
SEQUOYAH NUCLEAR PLANT, UNITS 1 AND 2  
DOCKET NOS. 50-327 AND 50-328

I. Subject: NRC Essential Element - "Welder Qualifications/Training"

TVA Category: WELDING

TVA Subcategories: WE 50103, IH-60300, WE-50107, WE-50124, WE-50199  
WE-50599

The employee concerns were evaluated by TVA as potentially safety-related and applicable to the Sequoyah site or as potentially applicable to the Sequoyah site on a generic basis. TVA established the Welding Project to formulate a program for each nuclear plant site to address the employee concerns related to TVA's welding program. Many of the concerns which originated at the Watts Bar Nuclear Plant were determined by TVA as possibly being generic, and therefore applicable to all of the TVA nuclear plant sites.

For the Sequoyah site, the TVA Welding Project is divided into two phases. Phase 1 is a review of the records to determine if there are any problem indicators. Most of the final element reports which are TVA's evaluation of employee concerns with a common issue(s) were written on the basis of the Phase 1 efforts. Phase 2 involved a review of ISI and LER Records, an audit by Bechtel of the welding program records, and a physical reinspection of specific weldment populations whose samples were selected on an engineering and logic basis.

The NRC staff formed a Welding Task Group with representatives from the Offices of Nuclear Reactor Regulation (NRR), Inspection and Enforcement (I&E), and Region II. The Task Group established an Expert Welding Team through an NRR Technical Assistance contract with Brookhaven National Laboratory (BNL). BNL provided a Technical Evaluation Report (TER) which summarized the opinions of the Expert Welding Team concerning the various welding issues and the actions taken by TVA as addressed in TVA's Element Report drafts of mid-1986. The NRC Welding Task Group also performed independent visual, surface and volumetric reinspections of weldments at the Sequoyah site with help of Region I personnel operating out of the NDE van. The TER and the Inspection Reports were incorporated in the initial

Welding SER issued to TVA on November 11, 1986. This SER is being provided to address, in more detail, the individual employee concerns and the changes made of the individual employee concerns declared generic to the Sequoyah facility since the initial staff Welding SER.

The staff believes that there are five essential elements which must be functioning for a welding program to be viable. The staff placed each of the individual employee concerns into one of these essential element categories. A miscellaneous category was established to cover those aspects which are not directly related to the welding program. These program essential element categories are as follows:

- Welding Procedures
- Welder Qualification/Training
- Welding Inspection
- Weld Design and Configuration
- Filler Material Control
- Miscellaneous/One of a Kind

The staff's approach has been to group similar employee concerns within an essential element to establish an "issue" or "issues". The staff reasons that the particular issue(s), if valid, and significant, would generate an adverse condition in the hardware. As part of the overall program for reassessing the TVA welding program implemented during plant construction and operations, TVA and the NRC staff conducted reinspections at the Sequoyah site to determine 1) that the licensee's corrective actions for resolving the issues raised by the employee concerns were being satisfactorily implemented, and 2) that the hardware was suitable for service. NRC staff inspections and evaluations were performed on TVA's record audits program, personnel performing TVA's audits and reinspections, and TVA's records.

The employee concerns considered in NRC Essential Element category, "Welder Qualifications/Training" are as follows:

<u>EMPLOYEE CONCERN NO.</u>	<u>TVA FINAL ELEMENT REPORT RESPONDING TO CONCERN</u>	<u>BRIEF DESCRIPTION OF CONCERN</u>
EX-85-021-002	WP-03-SQN	NO OBJECTIVE EVIDENCE TO VERIFY THAT A WELDER HAS USED A SPECIFIC PROCESS WHEN UPDATING WELDING CARDS BY QC.
IN-85-113-003	WP-03-SQN	WELDER CERTIFICATION UPDATE PROCESS IS INADEQUATE.
IN-85-346-003	WP-03-SQN	WELDER CERTIFICATIONS ARE UPDATED ON EVIDENCE OF ROD WITHDRAWAL.
IN-85-352-001	WP-03-SQN	CERTIFICATIONS UPDATED BY JUST BURNING A ROD OR STRIKING AN ARC.
IN-85-424-011	WP-03-SQN	WELDER CERTIFICATION UPDATING PROCESS IS INADEQUATE.
IN-85-426-002	WP-03-SQN	UPDATING OF WELDER'S CERTIFICATION IS INADEQUATE. UPDATING OF WELDING CERTIFICATION CARD IS ALSO INADEQUATE.

<u>EMPLOYEE CONCERN NO.</u>	<u>TVA FINAL ELEMENT REPORT RESPONDING TO CONCERN</u>	<u>BRIEF DESCRIPTION OF CONCERN</u>
IN-85-480-004	WP-03-SQN	WELDER CERTIFICATION UPDATING IS INADEQUATE. AFTER 5-6 YEARS AND NO WELDING PERFORMED, CERTIFICATION IS FALSIFIED BY CONTINUALLY UPDATING CERTIFICATION.
IN-85-493-004	WP-03-SQN	WELDERS CERTIFICATION UPDATE IS INADEQUATE.
IN-85-532-005	WP-03-SQN	WELDERS ARE RECERTIFIED WITHOUT VERIFICATION THAT SPECIFIC TECHNIQUES HAVE BEEN PERFORMED.
IN-85-770-002	WP-03-SQN	UPDATING OF WELDER CERTIFICATION IS NOT PERFORMED IN ACCORDANCE WITH PROCEDURE (PROCESS USE NOT VERIFIED). WELDS HAVE BEEN MADE BY UNCERTIFIED WELDERS.
IN-85-778-001	WP-03-SQN	WELDER CERTIFICATION HAS BEEN IMPROPERLY UPDATED.
IN-85-815-001**	WP-03-SQN	RECERTIFICATION OF SOME WELDERS CONSISTS ONLY OF COMPLETING PAPERWORK; EMPLOYEES DO NOT HAVE TO PROVE WELDING ABILITY.
IN-85-835-002	WP-03-SQN	WELDERS RECERTIFICATION CAN BE ACCOMPLISHED BY SIMPLY HAVING ONES CARD STAMPED; NO PERFORMANCE TEST IS REQUIRED OR CONDUCTED IN THE PROCESS.
IN-85-940-X04	WP-03-SQN	UNTIL RECENTLY, A WELDER COULD HAVE WELDING CERTIFICATIONS UPDATED BY MERELY HAVING THE CERTIFICATION CARD INITIATED BY AN INSPECTOR.
PH-85-052-002	WP-03-SQN	WELDER RECERTIFICATIONS WERE BACK DATED.
XX-85-049-001	I-85-135-SQN	WELDER CERTIFICATIONS HAVE BEEN UPDATED FOR WELDER WHO DID NOT MEET UPDATE REQUIREMENTS OR BACKDATED TO GIVE APPEARANCE OF COMPLIANCE.

<u>EMPLOYEE CONCERN NO.</u>	<u>TVA FINAL ELEMENT REPORT RESPONDING TO CONCERN</u>	<u>BRIEF DESCRIPTION OF CONCERN</u>
IN-85-627-036	WP-03-SQN	WELDER CERTIFICATION CARDS HAVE BEEN FALSIFIED.
PH-85-052-X03	WP-03-SQN	WELDER CERTIFICATION CARDS HAVE BEEN FALSIFIED.
XX-85-049-X03	I-85-135-SQN	WELDER CERTIFICATION CARD FALSIFIED.
EX-85-008-001**	WP-07-SQN	SUBJOURNEYMEN CRAFT PERSONNEL ARE BEING USED TO PERFORM WORK FOR WHICH THEY ARE UNQUALIFIED.
IN-85-706-001	WP-07-SQN	TVA WELDER TRAINING PROGRAM IS DEFICIENT. INEXPERIENCED PEOPLE ARE TRAINED FOR 3 MONTHS AND LET PASS A WELDER CERTIFICATION TEST. THIS HAS CREATED A LOT OF REWORK.
IN-86-158-006	*WP-14-SQN	WELDERS HAD INSUFFICIENT EXPERIENCE AS APPRENTICES.
XX-85-045-001	WP-07-SQN	TVA POLICY ALLOWS WELDERS TO BE CERTIFIED IN A SHORT TIME AS AN ELECTRICAL WELDER. THE WELDERS DO PASS A STRICT TEST BUT THEY DO NOT HAVE THE ABILITY TO DEAL WITH ALL THE VARIABLES AN EXPERIENCED WELDER CAN. INSUFFICIENT TRAINING OF ELECTRICAL WELDERS.
SQM-6-005-001 (SPECIFIC WELDER)	I-86-115-SQN	CRAFT INDIVIDUAL PASSED WELDER PERFORMANCE QUALIFICATION TESTING BY AGREEMENT BETWEEN ENGINEERING AND GENERAL FOREMAN. WELDER HAS NOT MADE A GOOD WELD IN PRODUCTION, AND EVERY ONE HE HAS MADE HAS BEEN REDONE.
SQM-6-005-X02 (RECORD FALSIFICATION)	I-86-115-SQN	WELDER PERFORMANCE TEST RECORDS WERE POTENTIALLY FALSIFIED FOR A WELDER BY AGREEMENT.
EX-85-042-003	WP-03-SQN	WELDERS ARE BEING REQUALIFIED ON CARBON STEEL PLATE WITH BACKING STRIP. THE TEST PLATE IS SET AT 33 DEGREES. THIS ONE TEST IS USED TO RECERTIFY FOR ALL PROCESSES.
JLH-85-002**	WP-24-SQN	WELDERS FROM MUSCLE SHOALS NOT ADEQUATELY QUALIFIED.

<u>EMPLOYEE CONCERN NO.</u>	<u>TVA FINAL ELEMENT REPORT RESPONDING TO CONCERN</u>	<u>BRIEF DESCRIPTION OF CONCERN</u>
XX-85-088-003	XX-85-088-003	WELDING CERTIFICATES WERE ALTERED BY THE USE OF CORRECTION FLUID BEFORE THEY WERE PHOTOGRAPHED IN KNOXVILLE.
XX-85-101-006	XX-85-101-006	A WELDER PERFORMED WELDS AT SEQUOYAH WITHOUT HAVING THE PROPER CERTIFICATION.

\*This TVA final element report also covered employee concern IN-86-047-001 which is about filler material control. This concern is addressed in NRC Welding Category, "Filler Material Control".

#The initial TVA Element Report XX-088-003 addressed two other concerns as being applicable to Sequoyah (XX-85-088-001 and XX-85-088-X04). The final Element Report did not list or address them.

\*\*These concerns were made known to the NRC as being generically applicable to Sequoyah by TVA after the writing of the Welding SER by TVA's Employee Concern Program. Subsequently, TVA's Welding Project judged some of these concerns (and others originally listed as being generically applicable to Sequoyah) as being Watts Bar unique because of reference to WBN or its features, locations, etc.

The following employee concerns which were originally listed as being applicable to Sequoyah were subsequently judged by TVA's Welding Project as not being applicable to Sequoyah. The staff has reviewed these concerns and have determined that these concerns are duplicates of other concerns already applicable to Sequoyah, and that their removal does not significantly change the distribution of concerns/issues within the five NRC essential element categories. These concerns are further discussed in the NRC Miscellaneous/One-of-a-Kind category.

EX-85-008-001	IN-85-021-X05	IN-85-021-003	IN-85-335-002	WI-85-003-X02
IN-85-424-X13	IN-85-503-001	IN-85-540-001	IN-85-543-002	WI-85-084-001
IN-85-612-X07	IN-85-612-006	IN-85-725-X15	IN-85-725-X14	WI-85-003-001
IN-85-770-X07	IN-85-770-003	IN-85-778-X07	IN-85-815-001	WI-85-055-001
IN-85-965-001	IN-86-143-002	IN-86-167-X06	IN-86-167-005	WI-85-056-001

## II. Summary of Issues

The issues involved with the 18 employee concerns covered in WP-03-SQN are summarized as follows:

- Welder performance qualification continuity records have been backdated.
- Welder performance qualification records have been falsified.
- Welder performance qualification continuity records are inadequate because there is no objective evidence of actual process usage when the records are stamped by QC.
- Welder performance qualification continuity program is inadequate because continuity may be maintained by running one weld bead.
- A one-position test plate is not sufficient to reinstate all welder performance qualification tests.

The issues involved with the two concerns covered in WP-07-SQN are summarized as follows:

- The TVA Welder Training Program is inadequate for nuclear construction.
- Welder performance tests do not test a welder's overall ability.

The issues involved with the concern JLH-85-002 as covered in WP-24-SQN are summarized as follows:

- Welder was qualified without the required number of bend tests.
- Welder performance certification continuity at the Sequoyah site questioned.

The issues involved with concerns XX-85-049-001 and XX-85-049-X03 as covered in I-85-135-SQN are summarized as follows:

- Welder performance certifications have had their dates changed to meet code requirements.
- Welder performance certification cards have been falsified.

The issues involved with concerns SQM-6-005-001 and SQM-6-005-X02 as covered in I-86-115-SQN are summarized as follows:

- Welder passed performance qualification tests but was not able to make a satisfactory weld in the field.
- Welder certification test records were potentially falsified for an individual by agreement between Engineering and the General Foreman.

The issue involved with concern XX-85-088-003 as covered in WP Report XX-85-088-003 is summarized as follows:

- Sequoyah welder performance certification records were altered in Knoxville by correction fluid for photocopying.

The issue involved with concern XX-85-101-006 as covered in WP Report XX-85-101-006 is summarized as follows:

- Welder made welds without having the proper certification.

### III. Evaluation

The purpose of establishing categories and issues was to group the employee concerns of similar subject matter so that they could be uniformly addressed. We found that TVA occasionally did not group all of the employee concerns of a given issue in one final element report. For instance, the issue of welder certifications being falsified are present in both WP-03-SQN and I-85-135-SQN. The number of employee concerns relating to a given issue was regarded as an indication of how much effort

should be applied to the issue; the more concerns, the more attention was given to the issue. A review of the employee concerns determined that the majority of the employee concerns applicable to Sequoyah involved record and paperwork aspects of the welding program and very few had to do with actual welds.

An assessment of TVA's final Element Reports addressing the employee concerns was made by the staff. Generally, the staff agreed that TVA had adequately addressed the concerns. However, the emphasis on our efforts in evaluating the employee concerns has been the hardware, i.e., did the hardware conform to standards to which TVA committed to, and if not, were the welds satisfactory for service. In addition, the staff assessed the programmatic corrective actions taken by TVA to assure the welding program was adequate for future work.

The issues related to qualification/certifications were generally covered by TVA in their Phase I effort, the record review. TVA's Welding Project, as a Phase II effort, had the Bechtel Corporation perform an audit of Sequoyah's welding program records that included welder performance qualification records. TVA had also conducted internal audits of the welder performance qualifications records and their continuity.

Fifteen of the 18 concerns in WP-03-SQN (including the added concern IN-85-815-001) and XX-85-049-001 in I-85-135-SQN are about the programmatic aspects of the renewal of welder certifications (updating of certs). The concerns relate to dating irregularities, or to the renewal of welder certification(s) (also called updating) not being based upon actual welding. Some of the concerns about renewal requirements not being met (process not used) were substantiated. Some irregularities in dating were found, but the majority were found to be clerical errors.

Three concerns, IN-85-627-C36 and PH-85-052-X03 of WP-03-SQN and XX-85-049-X03 of I-85-135-SQN have direct statements that welder certs were falsified. (The numerous employee concerns about updating of certifications could also be characterized as a falsification.) The staff believes the term "falsification of certs" refers to the maintenance of certification (renewal of qualification), not the original qualification test; and/or that the certifications were not maintained in accordance with procedures. The procedures could be the applicable fabrication code (ASME or AWS), TVA's internal fabrication documents (G-29C, etc.), TVA's QA/QC documents, etc.

The codes require that the certification for the use of the specific welding process by the welder be renewed every three or six months (depending upon the particular code) in order to maintain the qualifications. An employee concern raised the issue that this requirement could be met by a welder welding only a stringer bead rather than welding a full butt joint. TVA found that production welders maintained their qualifications by many different methods at Sequoyah. TVA also stated that there were isolated cases where some inactive welders, e.g., welding foremen, maintained qualifications by minimal use of the welding process. The staff believes that although this practice of minimal usage may not be specifically prohibited by the codes, it is not a good welding practice. However, from a safety standpoint, the reinspections by TVA and NRC showed the weldments at Sequoyah to be suitable for service. TVA and Bechtel in their audits found no evidence that indicated falsification of records had occurred.

Some concerns stated that the evidence of use of the process was by a record of the withdrawal of filler materials from the rod shack, or the quality control inspector, by verifying on the welder's certification card with a QC mark that the welder had used the process in completing a joint. All of these methods are used by TVA as a means of showing that a welder had used the process he was certified for, and thereby provide a basis for renewal of welder performance qualifications. The Welding Project's response to CATD J-85-135-SQN-03-008 states that welder continuity will be maintained by toolroom personnel, indicating rod issue slips as being a basis for renewal of welder qualifications. The staff does not object to the initialing of a welder's certification card by a qualified QC inspector as proof that the welder used the process. We understand that the rod withdrawal slips are not initialled by a QC inspector or welder foreman currently at Sequayah as they are at Watts Bar and Bellafonte. The staff requests that this practice be instituted at Sequoyah since it provides added assurance that the welder was actually used in the welding process to maintain his certification.

The Welding Expert Team requested TVA to provide additional information on the status of corrective action implementation of item I-85-135-SQN-02 from the NSRS Report. Item I-85-135-SQN-02 is a recommendation which states; "TVA formal corrective action processes such as corrective action reports, non-conformance reports, etc., should be evaluated to include a backfit evaluation provision to determine if the identified deficiency requires such action to provide substantial, additional protection for the public health and safety or the common defense and security." As a response to the recommendation, Revision 1, Attachment 7 to the NSRS Report (dated after the Expert Welding Team wrote their TER) provides a proposed Corrective Action Plan from the Director/Manager at Sequoyah. The answer to the recommendation was, "As part of the evaluation of corrective actions of identified deficiencies on Corrective Action Reports (CARs), the SQN QA Organization now requires that corrective actions not only address the listed deficiency, but also actions to identify and correct similar adverse conditions. These additional actions will dictate on a case-by-case basis as to whether a backfit (historical) evaluation is appropriate and to what extent." In addition, TVA added a welding engineer to the Site Services staff for performing surveillance of the welding program on a periodic basis. The corrective action plan was adequate to address the concerns of the Expert Welding Team. The staff considers the results of the Bechtel audit as closing these concerns, verification of accomplishment of the Corrective Action Plan, and that welder certification records are adequate.

Also, the Expert Welding Team requested TVA to provide additional information about the eight welders mentioned in I-85-135-SQN who were required to be requalified by test because of inadequate documentation. The information provided in Revision 3 to WP-03-SQN is a sufficient response to close the Expert Welding Team's concern.

Concern XX-85-088-003 and its report of the same number address the issue that Sequoyah welding certifications were altered by the use of correction fluid before they were photographed in Knoxville. Process marking such as file indexes and page counts, as well as any marks, notations, or any data that did not look like engineering data on the back of the document were deleted with correction fluid. In the QTC ERT report, dated December 18, 1985, a search of Sequoyah welder certification records sent to Knoxville for microfilming showed that the records had not yet been prepared for microfilming, and therefore, the



concern could not be substantiated. The Expert Welding Team considered the review as being limited. Subsequent to the writing of the TER, the TVA Employee Concerns Special Program issued their report wherein the Bechtel audit is cited as the reason for closing out these concerns. However, in the TVA Employee Concerns Special Program, final Element Report 80504-SQN, Revision 3, Quality Assurance Records, an examination of microfilm and hard copy records of weld performance qualification found that correction fluid had been used to make changes of relevant information which could be significant to the quality information applicable to welders' qualifications. Changes were made to dates, results of bend tests, position and specimen numbers, electrode filler metal type and size, backing ring or strip and diameter and/or thickness, etc. These changes were considered corrections, and they had been made incorrectly in the QA records. The corrections should have been marked by a single line through the item to be changed, and then making the new entry with the dated initials of the person making the change/correction. As the corrections found could be significant to the quality information applicable to welder qualifications, Corrective Action Report SQ-CAR-85-09-014 was initiated. All SQN active welders' files were reviewed and welders re-qualified/certified to current requirements. The Bechtel audit results close out this concern.

There are four concerns (the three in WP-07-SQN and IN-85-158-006 in WP-14-SQN) about welders not having enough experience or training to be properly qualified. These concerns are judgmental in nature. The code requirements for initial welder performance qualifications were met. As stated by the Expert Welding Team in the TER, ". . . the welder performance test was never intended as a gauge of a welder's overall ability; it is merely a method of determining the particular welder's ability to produce a "sound weld" with a specified procedure." There are no requirements for welder training programs. Further, the reinspections by TVA and NRC did not find evidence of a generic problem related to the welder skill at Sequoyah. There are no violations of the fabrication codes or regulations in this situation.

The two concerns addressed in TVA Element Report I-86-115-SQN related to a welder who had passed the performance qualification tests but could not weld in the field. It is alleged by the concerned employee that there was collusion between Engineering and the General Foreman to qualify the welder. The staff concurs with TVA's conclusions and recommendations regarding these concerns. Closure of the Corrective Action Plan was satisfactory.

One concern (EX-85-042-003) in WP-03-SQN objects to welders being requalified for all positions and other aspects of a full range of qualifications of a welder in a given process with only one weld in the 2G position. This is permitted by code.

Concern JLH-85-002 in WP-24-SQN was about a performance qualification test being performed with too few bend tests (not in accordance with the code) and, therefore, the qualification was not valid. TVA's investigation of one welder was adequate to show that this particular welder had the necessary skills. There is a secondary issue of other welders who were qualified in the same

way (transfer of qualification from another TVA organization to Sequoyah) for whom TVA had not investigated to demonstrate adequacy. This item was identified for corrective action in the final Element Report but was not closed by TVA. The staff requests that this issue be brought to closure.

Employee concern XX-85-101-006 relates to a welder performing welds without having the proper certification. The Quality Technology Company (QTC) wrote an Employee Response Team (ERT) Investigation Report of the same number which documented a review of a particular welder's qualification records for continuity of renewal of qualifications. It was found that record keeping procedures had not been followed, back dating may have occurred on one renewal, that the entries could not be substantiated by other means, that no particular ASME Code Edition and Addenda was applicable to qualify welders, that FSAR commitments had been modified by site construction specifications (such as G-29C), and backup records for welder renewal of qualification were inaccurate.

The Nuclear Safety Review Staff (NSRS) Investigation Report XX-85-101-006 had four recommendations: (1) the particular ASME Code Year and Addenda applicable to qualification of welders be determined, (2) after the applicable ASME Code was determined, a review of welders qualification records be performed to determine if welder continuity requirements had been met, (3) for welders who had periods of discontinuity, evaluate the welds made during those periods for acceptability, and (4) the site construction specifications be revised to be consistent with the FSAR commitments. In the Welding Project Phase I Review Report, it was recommended that the NSRS recommendations be closed out but no reasoning was provided. The Expert Welding Team had only the QTC report and the Welding Project Phase I Review Report and did not perform an evaluation because adequate information was not provided at that time.

The Welding Project's Final Element Report XX-85-101-006, R3 provides the needed information. The Welding Project, as documented in a memorandum dated March 31, 1986, Domer to Whitt, recommended the closeout of the NSRS recommendations because the Bechtel audit essentially performed the functions of NSRS recommendations one through three, and the Welding Project's Phase I Review answered the fourth NSRS recommendation. The Bechtel audit found that TVA welders were qualified, maintained qualifications by demonstrating welding within certification expiration dates, and were requalified in accordance with TVA programs and procedures. The staff has no objections at this time to the proposed Corrective Action Plan.

The Bechtel audit stated that the number of documents that TVA had regarding the welder performance qualification testing caused some confusion and opportunities for error. The staff believes that the system was working, but was very complex, with contradicting and changing requirements due to revisions to various upper tier TVA documents. Paperwork errors did occur, but the quality of workmanship in the field was not affected by the record keeping of renewal of welder performance qualifications as demonstrated by the field reinspections. The results of the reinspections by TVA and the separate NRC staff reinspections support the thesis that the welders had the necessary skills and were accordingly qualified, and had adequate training.

#### IV. CONCLUSIONS

The staff conclusion stated in the Welding SER dated October 30, 1986 was that the welder qualification/training aspect of the TVA welding program at the Sequoyah facility was functioning, and that there was no effect on hardware. The original welder qualifications/ training procedures were effective in providing welders with skills meeting code requirements, and those welders working as welders were maintaining their skill level. However, there were instances of improper renewal of welder qualifications. These represented paperwork errors, or the improper renewal of qualifications of "welders" who were no longer doing production welding. The NRC and TVA reinspections determined that the instances of improper and incomplete renewal of welders' qualifications were programmatic problems, however, these instances of programmatic deficiencies did not seem to have effected the quality of the hardware.

The staff requests that the practices at Watts Bar and Bellafonte regarding renewal of certification by the QC/Welding Foreman verifying the use of the process by the welder on the rod issue slip be instituted at Sequoyah.

There is one open item in which the licensee should establish that all welders transferring from other TVA facilities to Sequoyah did meet code requirements for welding performance qualifications. This item should not affect restart of Sequoyah.

#### V. Addendum

TVA has responded to the staff's request that the practices at Watts Bar and Bellefonte regarding renewal of certification by the QC/Welding Foreman discussed above. The staff endorses TVA's proposed changes to standardize the process of maintaining welder's certification by having the QC inspector or welder foreman initial the rod issue slip indicating that the specific welder has used the process.