

AUG 24 1987

Docket No. 50-483

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DWigginton

TAlexion

PKreutzer

Mr. Donald F. Schnell
Vice President - Nuclear
Union Electric Company
Post Office Box 149
St. Louis, Missouri 63166

Dear Mr. Schnell:

SUBJECT: QUALITY OF SPENT FUEL RACKS FABRICATED BY U. S. TOOL AND DIE AND ITS PREDECESSOR

The U. S. Nuclear Regulatory Commission conducted an inspection of the U. S. Tool and Die facilities in Allison Park and Glenshaw, Pennsylvania, on March 23-27, 1987. During this inspection, it was found that the implementation of the U. S. Tool and Die QA program failed to meet certain NRC requirements. The most serious of these appeared to be a breakdown in the QA/QC program concerning in-process examination and weld inspection. This breakdown resulted in cracked or missing welds. A copy of the inspection report (dated May 12, 1987) sent to U. S. Tool and Die, Inc., is enclosed (Enclosure 1). U. S. Tool and Die's corrective actions were described in a response dated June 9, 1987 (Enclosure 2). NRC's review of the corrective actions were detailed in a letter to U. S. Tool and Die dated July 28, 1987 (Enclosure 3).

Because the inspection findings raise questions concerning the fabrication of spent fuel pool racks and it is our understanding that U. S. Tool and Die (or its predecessor, believed to be Wachter Engineering) racks have been purchased for your facility, please provide the following information.

1. Please describe the extent to which the U. S. Tool and Die QA/QC program was relied upon to assure rack quality;
2. Please describe your in-factory and/or receipt inspection of the racks;
3. What findings were made during your receipt inspection of the racks; and
4. If your receipt inspections found deficiencies in the racks, what corrective actions were taken.
5. Please describe any additional actions or examinations you plan to undertake to assure that your racks meet the original design and regulatory requirements.

Please provide your response within 60 days of your receipt of this letter.

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PDR ADDCK 05000483
PDR

This request for information was approved by OMB under clearance number 3150-0011 which expires December 30, 1989. Comments on burden and duplication may be directed to the Office of Management and Budget, Reports Management, Room 3208, New Executive Office Building, Washington, D. C. 20503.

Sincerely,

led away for
David L. Wigginton, Acting Director
Project Directorate III-3
Division of Reactor Projects

Enclosures:
As stated

cc: See next page

Office: LA/PDIII-3
Surname: PKreutzer
Date: 08/20/87

ma for
PM/PDIII-3
TAlexion/tg
08/21/87

ma for
PD/PDIII-3
DWigginton
08/21/87

Mr. D. F. Schnell
Union Electric Company

Callaway Plant
Unit No. 1

cc:

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St. Louis Region
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University City, Missouri 63130

encl 1



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

May 12, 1987

Letter No. 99001082/87-01

U.S. Tool and Die, Incorporated
ATTN: Mr. Michael J. Rodgers
President
4030 Route 8
Allison Park, Pennsylvania 15101

Gentlemen:

This refers to the inspection conducted by Ms. C. Abbate and Messrs. J. Conway and K. Aspinwall of this office on March 23-27, 1987, of your facilities in Allison Park and Glenshaw, Pennsylvania and to the discussions of our findings with you and members of your staff at the conclusion of the inspection.

The purpose of this inspection was to observe the fabrication and testing processes of spent fuel storage racks at U.S. Tool and Die (UST&D). The areas which were covered included welding, nondestructive examination, personnel training, procurement, shop quality assurance (QA) implementation and quality records. Areas examined during the inspection and our findings are discussed in the enclosed report. Within these areas, the inspection consisted of an examination of procedures and representative records, interviews with personnel, and observations by the inspectors.

During the inspection, it was found that the implementation of your QA program failed to meet certain NRC requirements. The most serious of these appears to be the breakdown in the QA/QC program concerning in-process examination and weld inspection. No in-process examinations or weld inspections were being performed in the initial stages of fuel storage rack fabrication. Additionally, two undersize fillet welds were identified by the NRC inspector after the welds had been inspected and accepted by the UST&D inspector. Several other nonconformances were identified in the areas of measuring and test equipment, procurement, and training, while two violations were identified in the areas of specifying 10 CFR Part 21 on procurement documents and the posting requirements of 10 CFR Part 21. The specific findings and references to the pertinent requirements are identified in the enclosures to this letter.

The enclosed Notice of Violation is sent to you pursuant to the provisions of Section 206 of the Energy Reorganization Act of 1974. You are required to submit to this office within 30 days from the date of this letter a written statement containing: (1) a description of steps that have been or will be taken to correct these items; (2) a description of steps that have been or will be taken to prevent recurrence; and (3) the dates your corrective actions and preventive measures were or will be completed. Consideration may be given to extending your response for good cause shown.

8705180149 2pp.

May 12, 1987

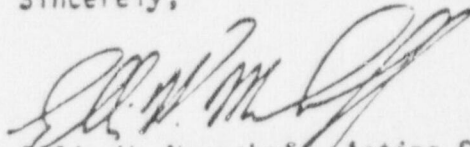
You are also requested to submit a similar written statement for each item which appears in the enclosed Notice of Nonconformance.

The responses requested by this letter are not subject to the clearance procedures of the Office of Management and Budget as required by the Paperwork Reduction Act of 1980, PL 96-511.

In accordance with 10 CFR 2.790 of the Commission's regulations, a copy of this letter and the enclosed inspection report will be placed in the NRC's Public Document Room.

Should you have any questions concerning this inspection, we will be pleased to discuss them with you.

Sincerely,



Ellis W. Merschoff, Acting Chief
Vendor Inspection Branch
Division of Reactor Inspection and Safeguards
Office of Nuclear Reactor Regulation

Enclosures:

1. Appendix A-Notice of Violation
2. Appendix B-Notice of Nonconformance
3. Appendix C-Inspection Report No. 99901082/87-01
4. Appendix D-Inspection Data Sheets (6 pages)

cc: Commonwealth Edison Company
ATTN: Mr. Cordell Reed
Vice President
Post Office Box 767
Chicago, Illinois 60690

Wisconsin Public Service Corporation
ATTN: Mr. D. C. Hintz
Manager, Nuclear Power
Post Office Box 19002
Green Bay, Wisconsin 54307

Vermont Yankee Nuclear Power Corporation
ATTN: Mr. Warren P. Murphy, Vice President
and Manager of Operations
RD 5, Box 169
Ferry Road
Brattleboro, Vermont 05301

APPENDIX A

U.S. Tool and Die, Incorporated
Docket No. 99901082/E7-01

NOTICE OF VIOLATION

As a result of the inspection conducted on March 23-27, 1987 and in accordance with Section 206 of the Energy Reorganization Act of 1974 and its implementing regulation, 10 CFR Part 21, the following violations were identified and categorized in accordance with the NRC Enforcement Policy, 10 CFR Part 2, Appendix C.

1. Section 21.31 of 10 CFR Part 21 requires, in part, that each corporation subject to the regulations in this part assure that each procurement document for a basic component specifies, when applicable, that the provisions of 10 CFR Part 21 apply.

Contrary to the above, a review of documentation packages for spent fuel storage racks fabricated under ASME Code Section III, Subsection NF revealed that while 10 CFR Part 21 was imposed on U.S. Tool and Die, Incorporated (UST&D) by their customers, UST&D did not specify that 10 CFR Part 21 requirements would apply on Purchase Orders (PO) 86-60208 to Columbia Electric Manufacturing; 84-1701 and -1679 to Do All Pittsburgh; 86-61228 to Cromie Machine and Tool; 82-1051 to Commercial Fasteners; 86-60802, -81208 and 87-70132 to West Penn Laco; 82-1032 to Allegheny Ludlum Steel; 86-60620 to Industrial Service Centers; 83-1387 to Sandvik; 87-70118 to Weld Star; 86-61112, -70103 and 87-70118 to Alloy-Oxygen Weld Supply; 86-61218 to Metal Goods; and 86-60921, 87-70130 and -70208 to Williams and Company. (87-01-01)

This is a Severity Level V violation (Supplement VII).

2. Section 21.6 of 10 CFR Part 21 requires, in part, that each corporation post current copies of the regulations of 10 CFR Part 21, Section 206 of the Energy Reorganization Act of 1974 and procedures adopted pursuant to the regulations of 10 CFR Part 21. If posting of the regulations or the procedures is not practical, the licensee may, in addition to posting Section 206, post a notice which describes the regulations/procedures.

Contrary to the above, UST&D failed to post Section 206 of the Energy Reorganization Act of 1974. (87-01-02)

This is a Severity Level V violation (Supplement VII).

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APPENDIX B

U.S. Tool and Die, Incorporated
Docket No. 99901082/87-01

NOTICE OF NONCONFORMANCE

During an inspection conducted March 23-27, 1987, the implementation of the Quality Assurance (QA) Program at the UST&D facilities in Allison Park and Glenshaw, Pennsylvania was reviewed with respect to the fabrication of spent fuel storage racks. The applicable QA Program requirements are 10 CFR Part 50, Appendix B, 10 CFR Part 21, and UST&D's QA Program Manual (QAPM), Revision 2, dated January 20, 1986. Based on the results of this inspection, it appears that certain activities at the UST&D facilities were not conducted in accordance with these commitments. These items are listed below.

1. Criterion X of Appendix B to 10 CFR Part 50 requires, in part, that a program for inspection be established and executed by or for the organization performing the activity to verify conformance with the documented instructions, procedures and drawings.

Section 14.3C of the UST&D QAPM, requires, in part, that in-process examination or surveillance be conducted by Quality Control personnel to verify dimensions and that fabrication methods used by production are in accordance with the contract documents and industry practice.

Section 3.3 of Procedure 14.1, "Production Work Routing and Inspection Plan," Revision D, requires, in part, that Quality Control perform all inspections, in-process examinations, testing verification, etc. noted on the flow chart (the "Production Work Routing and Inspection Plan") in accordance with the appropriate procedures and that no production activities progress past these points until Quality Control has performed their duties.

Contrary to the above, in-process examinations were not being performed at the south shop per the "Production Work Routing and Inspection Plan," Drawing 8601-D, Revision 1, for the spent fuel racks being manufactured for the LaSalle project. (87-01-03)

2. Criterion X of Appendix B to 10 CFR Part 50 requires, in part, that a program for inspection of activities affecting quality be established and executed to verify conformance with the documented instructions, procedures and drawings.

Section 10.2A of the UST&D QAPM requires, in part, that all shop inspections/examinations/monitoring are performed by qualified Quality Control personnel and in accordance with written procedures.

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Section 2.2.1 of Procedure 10.4, "Final Inspection," Revision 1, requires, in part, that verification of the physical dimensions of the shipping piece with the approved shop drawing dimensions be performed.

Contrary to the above, two undersize welds were identified by the NRC inspectors on a fuel rack which had been inspected and found acceptable by UST&D Quality Control. (87-01-04)

3. Criterion XII of Appendix B to 10 CFR Part 50 requires, in part, that measures be established to assure that tools, gages, instruments and other measuring and testing devices used in activities affecting quality are properly controlled, calibrated and adjusted at specified periods to maintain accuracy.

Section 12.2B, of the UST&D QAPM requires, in part, that the interval of calibration for each item be established in procedures.

Section 2.4 of UST&D Procedure 12.1, "Control of Inspection Measuring Equipment," Revision 2, requires, in part, that each piece of inspection equipment be assigned a permanent unique serial number which will be applied to the equipment by vibro-etching or with a durable label.

Section 2.6 of Procedure 12.1 requires, in part, that a "Cardex" system be used to log calibration information and this record card include among other criteria, the calibration interval.

Contrary to the above, a review of measuring and test equipment (M&TE) and calibration records revealed the following:

- a. Documented evidence was not available to verify that the calibration interval for M&TE was established in procedures.
- b. The four inner diameter (ID) box mandrels for the Kewaunee, Vermont Yankee, and LaSalle projects in the south fabrication shop were not identified with a permanent unique S/N applied by vibro-etching or with a durable label.
- c. A calibration interval was not established in the "Cardex" system for the modified ID box mandrel for the LaSalle project in the north fabrication shop. (87-01-05)

4. Criterion IV of Appendix B to 10 CFR Part 50 requires, in part, that to the extent necessary, procurement documents require subcontractors to provide a quality assurance program consistent with the pertinent provisions of this appendix.

Section 2.2A of the QAPM requires, in part, that the UST&D Quality Assurance Program be developed to comply with the requirements of ANSI N45.2 and ANSI/ASME NQA-1-Quality Assurance Program Basic Requirements.

The QA sections of the technical specifications for the Kewaunee, Vermont Yankee, and LaSalle projects impose the requirements of ANSI N45.2 and/or ANSI/ASME NQA-1 upon UST&D.

Section 5 of ANSI N45.2-1977 and Section 4 (Basic Requirements) of ANSI/ASME NQA-1-1983 indicate that POs shall require suppliers/vendors to have a QA program consistent with the applicable requirements of the standard.

Contrary to the above, a review of 43 POs for materials and services related to spent fuel racks fabricated under ASME Code Section III, Subsection NF indicated that quality requirements (e.g., QA Program) were not passed on to vendors for the following POs: 86-60746, -60813, -60814 and -61228 to Cromie Machine and Tool; 86-60208 to Columbia Electric Manufacturing; 84-1701 and -1679 to Do All Pittsburgh; 82-1068 to Capitol Pipe and Steel Products; 82-1051 to Commercial Fasteners; 86-60802, -01206, and 87-70132 to West Penn Loco; 82-1032 to Allegheny Ludlum Steel; 85-51023 to Techalloy; 82-1311 and 83-1387 to Sandvik; 87-70115 to Weldstar; 86-70103 to Alloy-Oxygen Weld Supply; and 86-61218 to Metal Goods. (87-01-06)

5. Criterion IV of Appendix B to 10 CFR Part 50 requires, in part, that measures be established to assure that applicable regulatory requirements, design bases, and other requirements which are necessary to assure quality are suitably included or referenced in the documents for procurement.

Section 4.2B of the QAPM requires, in part, that purchase orders for material delineate all applicable requirements of the contract documents.

Section 4.1 of Procedure 4.1, "Procurement Document Control," Revision 5, requires, in part, that procurement documents reference all design specification requirements applicable to the items being purchased.

Section 5.3 of NES Specification No. E3A2256, "Specification for the Fabrication and Inspection of the Vermont Yankee Nuclear Power Station Spent Fuel Storage Racks," Revision 0, requires that all weld filler metals meet the requirements of Section III, Subsection NF including delta ferrite determination.

Section 4.4B of the QAPM requires, in part, that the quality assurance manager or his designee review and approve purchase orders prior to issuance to the vendor.

Sections 3.2 and 4.1 of Procedure 4.1 require that all POs be reviewed and approved by QA.

Contrary to the above, a review of POs indicated that PO 87-70118 to Alloy-Oxygen Welding Supply for stainless steel weld filler metal did not contain a delta ferrite determination statement, and PO 86-60610 to WALCO Corporation for markers and tape was not signed/initialed and dated by QA personnel. (87-01-07)

6. Criterion V of Appendix B to 10 CFR Part 50 requires, in part, that activities affecting quality be prescribed by documented instructions, procedures or drawings.

Section 5.2B of the QAPM and Section 6.0 of ANSI N45.2-1977 requires, in part, that all activities affecting quality be prescribed and accomplished with appropriate documented procedures.

Contrary to the above, it was noted that a documented procedure/instruction did not exist to control tools (e.g., wire burshes, grinding wheels, hammers, etc.) that were designated for use only on stainless steel material. (87-01-08)

7. Criterion V of Appendix B to 10 CFR Part 50 requires, in part, that instructions, procedures or drawings shall include appropriate quantitative or qualitative acceptance criteria for determining that important activities have been satisfactorily accomplished.

Section 5.2B of the QAPM requires, in part, that, as applicable, procedures, instructions, and/or drawings will include quantitative and qualitative acceptance criteria.

Section 2.2 of Procedure 10.3, "Inprocess Examination," Revision 3, defines in-process examinations as periodic, random sampling type checks and or surveillance to determine that the shop is providing material, parts, subassemblies, pieces, and/or components which comply with UST&D QA/QC program and project requirements.

Contrary to the above, Procedure 10.3 does not provide the QC inspector appropriate guidance indicating the required random sample quantities or percentages needed to ensure a representative sample during in-process examinations. (87-01-09)

8. Criterion XIV of Appendix B to 10 CFR Part 50 requires, in part, that measures be established to indicate, by the use of marking, the status of inspections and tests performed upon individual items, and that these measures provide for identification of items which have satisfactorily passed required inspections and tests, where necessary, to preclude inadvertent bypassing of such inspections and tests.

Section 14.2A of the QAPM requires, in part, that record of in-process examination or surveillance be noted on the part/component/subassembly.

Section 2.3 of Procedure 10.3, "Inprocess Examination," Revision 3, requires, in part, that documentation is not required for in-process examinations; however, each part, subassembly, piece and/or component which is in-process examined be physically marked or documented as being examined by UST&D personnel performing the examination.

Section 3.2 of Procedure 10.3 requires, in part, that QA/QC personnel mark each piece in-process examined with a unique marking to indicate the piece, part, sub-assembly and/or component has been examined and by whom.

Contrary to the above, marking procedures used by the south shop QC inspector for in-process examination do not clearly identify items or components which have satisfactorily passed the required examinations or who examined the part. (87-01-10)

9. Criterion VII of Appendix B to 10 CFR Part 50 requires, in part, that measures be established to assure that purchased material, equipment and services conform to the procurement documents, and that the effectiveness of the control of quality by contractors and subcontractors be assessed at intervals consistent with the importance, complexity, and quantity of the product or services.

Section 7.2B of the QAPM requires, in part, that vendors be evaluated and approved based on their capability to provide material, equipment and/or services.

Section 1.1.1 of Procedure 7.2, "Evaluation of Vendors," Revision 1, requires, in part, that vendor evaluations be conducted to provide confidence in the vendor's QA Program for meeting the quality requirements.

Contrary to the above, vendor evaluations had not been performed on Do All Pittsburgh and Columbia Electric Manufacturing who provide calibration services for UST&D. (87-01-11)

10. Criterion II of Appendix B to 10 CFR Part 50 requires, in part, that the quality assurance program provide for indoctrination and training of personnel performing activities affecting quality as necessary to assure that suitable proficiency is achieved and maintained.

Section 2.5 of the QAPM requires, in part, that all UST&D personnel performing quality activities be trained in the requirements of UST&D's QA Program as applicable to their activity and that their qualification, indoctrination, and training be controlled to obtain suitable proficiency.

Section 2.1 of Procedure 2.3, "Training," Revision 3, requires, in part, that all UST&D personnel performing quality related activities be trained in the requirements of UST&D's QA Program as applicable to their activity.

Contrary to the above, training records did not exist for two UST&D shop employees. (87-01-12)

11. Criterion VI of Appendix B to 10 CFR Part 50 requires, in part, that measures be established to assure that purchased material, equipment and services conform to the procurement documents.

Section 7.2B of the QAPM requires, in part, that vendors shall be evaluated and approved based on their capability to provide material, equipment and/or services.

Section 2.1 of Procedure 7.2, "Evaluation of Vendors," Revision 1, requires, in part, that an evaluation be made on proposed new vendors furnishing quality related materials and/or services prior to, or within 14 days of, issuance of a purchase order.

Contrary to the above, PO 86-60143, dated February 14, 1986, was placed with Industrial Service Center while the evaluation was performed March 12-13, 1986. (87-01-13)

ORGANIZATION: U.S. TOOL AND DIE
ALLISON PARK, PENNSYLVANIA

REPORT NO.: 99901082/87-01	INSPECTION DATES: 03/23-27/87	INSPECTION ON-SITE HOURS: 110
CORRESPONDENCE ADDRESS: U.S. Tool and Die ATTN: Mr. Michael T. Rodgers President 4030 Route 8 Allison Park, Pennsylvania 15101		
ORGANIZATIONAL CONTACT: Mr. Frank E. Witsch TELEPHONE NUMBER: 412-487-7030		
NUCLEAR INDUSTRY ACTIVITY: Fabricator of spent fuel storage racks.		
ASSIGNED INSPECTOR: <u>Claudia M. Abbate</u> <u>5/7/87</u> Claudia M. Abbate, Program Development and Reactive Date Inspection Section (PDRIS)		
OTHER INSPECTORS: James T. Conway, PDRIS Kenneth G. Aspinwall, Consultant		
APPROVED BY: <u>James C. Stone</u> <u>5/8/87</u> James C. Stone, Chief, PDRIS, Vendor Inspection Branch Date		
INSPECTION BASES AND SCOPE: A. <u>BASES</u> : 10 CFR Part 50 Appendix B, 10 CFR Part 21. B. <u>SCOPE</u> : Observe the fabrication and testing processes regarding the fabrication of spent fuel storage racks. Welding, nondestructive testing, personnel training, quality control inspection, procurement, shop QA implementation and quality records were reviewed.		
PLANT SITE APPLICABILITY: <u>Callaway</u> , <u>Ginna</u> , <u>Kewaunee</u> , <u>LaSalle 2</u> , <u>Nine Mile</u> <u>Point 2</u> , <u>Seabrook</u> , <u>Shoreham</u> , <u>Vermont Yankee</u> , <u>Wolf Creek</u>		

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ORGANIZATION: U.S. TOOL AND DIE
ALLISON PARK, PENNSYLVANIA

REPORT
NO.: 999C10E2/87-01

INSPECTION
RESULTS:

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A. VIOLATIONS:

1. Contrary to Section 21.31 of 10 CFR Part 21, a review of documentation packages for spent fuel storage racks fabricated under ASME Code Section III, Subsection NF revealed that while 10 CFR Part 21 was imposed on U.S. Tool & Die (UST&D) by their customers, UST&D did not specify that 10 CFR Part 21 requirements would apply on Purchase Orders (PO) 86-60208 to Columbia Electric Manufacturing; 84-1701 and -1679 to Do All Pittsburgh; 86-61228 to Cromie Machine & Tool; 82-1051 to Commercial Fasteners; 86-60802, -81208 and 87-70132 to West Penn Loco; 82-1032 to Allegheny Ludlum Steel; 86-60620 to Industrial Service Centers; 83-1387 to Sandvik; 87-70115 to Weld Star; 86-61112, -70103 and 87-70118 to Alloy-Oxygen Weld Supply; 86-61218 to Metal Goods; and 86-60921, 87-70130 and -70208 to Williams and Company. (87-01-01)

This is a Severity Level V violation (Supplement VII).

2. Contrary to Section 21.6 of 10 CFR Part 21, UST&D failed to post Section 206 of the Energy Reorganization Act of 1974. (87-01-02)

This is a Severity level V violation (Supplement VII).

B. NONCONFORMANCES:

1. Contrary to Criterion X of Appendix B to 10 CFR Part 50, Section 14.3C of the UST&D Quality Assurance Program Manual (QAPM), Revision 2, and Section 3.3 of Procedure 14.1, "Production Work Routing and Inspection Plan," Revision 0, no in-process examinations were being performed at the south shop per the "Production Work Routing and Inspection Plan," Drawing 8601-0, Revision 1, for spent fuel racks being fabricated for the LaSalle project. (87-01-03)
2. Contrary to Criterion X of Appendix B to 10 CFR Part 50, Section 10.2A of the UST&D QAPM, Revision 2, and Section 2.2.1 of Procedure 10.4, "Final Inspection," Revision 1, two undersize welds were identified by the NRC inspectors on a fuel rack which had been inspected and found acceptable by UST&D Quality Control. (87-01-04)
3. Contrary to Criterion XII of Appendix B to 10 CFR Part 50, Section 12.2B of the UST&D QAPM, Revision 2, and Sections 2.4 and 2.6 of Procedure 12.1, "Control of Measuring and Test Equipment," Revision 2, a review of measuring and test equipment (M&TE) and calibration records revealed the following:

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NO.: 99901002/87-01

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- a. Documented evidence was not available to verify that the calibration interval for M&TE was established in procedures.
 - b. The four inner diameter (ID) Box Mandrels for the Kewaunee, Vermont Yankee, and LaSalle projects in the south fabrication shop were not identified with a permanent unique S/N applied by vibro-etching or with a durable label.
 - c. A calibration interval was not established in the "Cardex" system for the modified ID Box Mandrel for the LaSalle project in the north fabrication shop. (87-01-05)
4. Contrary to Criterion IV of Appendix B to 10 CFR Part 50, Section 2.2A of the QAPM, Revision 2, Section 5 of ANSI N45.2 and Section 5 (Basic Requirements) of ANSI/ASME NQA-1, a review of 40 POs for materials and services related to spent fuel racks fabricated under ASME Code Section III, Subsection NF indicated that quality requirements (e.g., QA Program) were not passed on to vendors for the following POs: 86-60746, -60813, -60814, and -61228 to Cromie Machine and Tool; 86-6028 to Columbia Electric Manufacturing; 84-1701 and -1679 to Do All Pittsburgh; 82-1068 to Capitol Pipe & Steel Products; 82-1051 to Commercial Fasteners; 86-6082, -81208, and 87-70132 to West Penn Laco; 82-1032 to Allegheny Ludlum Steel; 85-51023 to Techalloy; 82-1311 and 83-1387 to Sandvik; 87-70115 to Weldstar; 86-70103 to Alloy-Oxygen Weld Supply; and 86-61218 to Metal Goods. (87-01-06)
5. Contrary to Criterion IV of Appendix B to 10 CFR Part 50, Sections 4.2B and 4.4B of the QAPM, Revision 2, Sections 2.2, 3.2 and 4.1 of Procedure 4.1, "Procurement Document Control," Revision 5, and Section 5.3 of NES Specification No. 83A2256, a review of POs indicated that PO 87-70118 to Alloy Oxygen Welding Supply for stainless steel weld filler metal did not contain a delta ferrite determination statement, and PO 86-60610 to WALCC Corporation for markers and tape was not signed/initialed and dated by QA personnel. (87-01-07)
6. Contrary to Criterion V of Appendix B to 10 CFR Part 50, Section 5.2B of the QAPM, Revision 2, and Section 6.0 of ANSI N45.2, it was noted that a documented procedure/instruction did not exist to control tools (e.g., wire brushes, grinding wheels, hammers, etc.) that were designated for use only on stainless steel material. (87-01-08)

REPORT
NO.: 99901082/87-01

INSPECTION
RESULTS:

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7. Contrary to Criterion V of Appendix B to 10 CFR Part 50, Section 5.2B of the UST&D QAPM, Revision 2, and Section 2.2 of Procedure 10.3, "Inprocess Inspection," Revision 3, Procedure 10.3 does not provide the QC inspector appropriate guidance indicating the required random sample quantities or percentages needed to ensure a representative sample during in-process examinations. (87-01-09)
8. Contrary to Criterion XIV of Appendix B to 10 CFR Part 50, Section 14.2A of the UST&D QAPM, Revision 2, and Sections 2.3 and 3.2 of Procedure 10.3, "Inprocess Inspection," Revision 3, marking procedures used by the south shop QC inspector for in-process examination do not clearly identify items or components which have satisfactorily passed the required examinations or who examined the part. (87-01-10)
9. Contrary to Criterion VII of Appendix B to 10 CFR Part 50, Section 7.2B of the UST&D QAPM, Revision 2, and Section 1.1.1 of Procedure 7.2, "Evaluation of Vendors," Revision 1, vendor evaluations had not been performed on Do All Pittsburgh and Columbia Electric Manufacturing who provide calibration services for UST&D. (87-01-11)
10. Contrary to Criterion II of Appendix B to 20 CFR Part 50, Section 2.5 of the UST&D QAPM, Revision 2, and Section 2.1 of Procedure 2.3, "Training," Revision 3, no training records existed for two UST&D shop employees. (87-01-12)
11. Contrary to Criterion VII of Appendix B to 10 CFR Part 50, Section 7.2B of the UST&D QAPM, Revision 2, and Section 2.1 of Procedure 7.2, "Evaluation of Vendors," Revision 1, PO 86-60143, dated February 14, 1986, was placed with Industrial Service Center prior to the vendor evaluation which was performed March 12-13, 1986. (87-01-13)

C. UNRESOLVED ITEMS:

None.

D. STATUS OF PREVIOUS INSPECTION FINDINGS:

None. This was the first NRC/VIB inspection of this facility.

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E. INSPECTION FINDINGS AND OTHER COMMENTS:

1. Entrance and Exit Meetings

An entrance meeting was conducted on March 23, 1987 at the Allison Park, Pennsylvania office of UST&D. The purpose and scope of the inspection were discussed during this meeting. UST&D has two fabrication shops. The south shop, located in Glenshaw, Pennsylvania, receives the material and forms and welds the individual cells. The north shop, located in Allison Park, Pennsylvania, assembles and welds the cells into fuel storage racks and performs the final inspection. During the exit meeting conducted on March 27, 1987, the inspection findings and observations were discussed with UST&D personnel.

2. Spent Fuel Racks - Nuclear

Since 1982, UST&D has fabricated spent fuel racks for six commercial nuclear customers (see Table 1, page 15). Three projects are currently in progress: LaSalle 2, Kewaunee and Vermont Yankee. The customer's design is being used for the Vermont Yankee and Kewaunee projects, while UST&D's design is being used for the LaSalle project. To date, only five prototype cells have been fabricated for Vermont Yankee. A number of cells have been fabricated for Kewaunee, but they have not been assembled into a completed rack.

The NRC inspector reviewed the customer's procurement packages for the nine projects including a detailed review of the POs and/or the technical specifications for four projects: Nine Mile Point 2, Vermont Yankee, Kewaunee and LaSalle 2. For all four projects, it was noted that the requirements of 10 CFR Part 50, Appendix B and 10 CFR Part 21 were referenced in the POs and/or specifications. The Nuclear Energy Services (NES) specification for the Vermont Yankee project referenced the 1980 Edition of Sections II, III (Subsection NF), V and IX of the ASME Code, whereas the 1977 Edition of the same Sections were listed as applicable documents in the Stone and Webster (S&W) specification for the Nine Mile Point 2 project. NDE personnel were to be trained and qualified per SNT-TC-1A, and inspectors were to be qualified to ANSI N45.2.6. Weld filler metal was to be in accordance with Subsection NF of Section III and specification AWS A5.9. In general, the material specifications included ASTM A240, A276, and A564. Cleaning

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requirements were noted as Class B of ANSI N45.2.1; and handling, packaging, and shipping were to meet the Level C requirements of ANSI N45.2.2. Record retention was in accordance with ANSI N45.2.9 and typical documents shipped to the customer included: certified material test reports for stainless steel and weld material, heat treatment certifications (17-4 PH material), NDE reports, inspection reports, nonconformance reports, repair and rework reports, and a certificate of conformance from UST&D.

3. Plant Tour

The inspectors toured the north and south fabrication facilities at various times in the company of UST&D officials. Receipt inspection, press forming of stainless steel sheet and welding of cells were activities noted in the south shop. Items witnessed in the north shop included machining, installation of poison material (i.e., boraflex strips), welding of support plates, PT examination, welding of racks, in-process inspection, cleaning and final inspection.

During the plant tours, it was noted by the inspector that one hammer had a painted handle. UST&D personnel informed the inspector that the painted tools are used on projects which involve stainless steel while the unpainted tools are used on projects which involve carbon steel. There was no documented instruction/procedure to control the use of painted and unpainted tools.

Nonconformance 87-01-08 was identified in this area.

4. Production Work Routing & Inspection Plan (PWRIP)

A PWRIP, which is similar to a "shop traveler," is generated by the Project Manager for each nuclear job. The PWRIP is laid out as an E-size drawing and identifies, for both the north and south shops, each production operation, QC inspection/in-process examinations, and customer witness points and mandatory hold points. Several notes pertaining to the requirements of the customer's specification, inspections including documentation, and hold points are also included. Item No. 7 of the PWRIP states that "documentation is not always required" for in-process examinations. This does not agree with Section 14.2 of the QAPM which states, in part, "Inspection reports will document all inspections and testing delineated on the Production Work Routing & Inspection Plan." The

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PWRIP, including changes, is approved by the Engineering and QA departments. The PWRIP came into effect upon the generation of the QAPM in December 1981, and the document was used on all the nuclear projects beginning with Wolf Creek. The inspector reviewed and verified that a PWRIP existed for the nine nuclear projects since 1982.

During the inspection of shop activities, UST&D Drawing 8601-0, Revision 1, "Production Work Routing and Inspection Plan," for the LaSalle project was reviewed. After the individual cell is tack-welded and jetline welded together, an in-process examination and weld inspection were to be performed. These two activities are outlined in Procedures 10.3 and 10.5 respectively.

When documentation or inspection reports were requested for the in-process examinations and weld inspections, none existed. No in-process examinations were being performed on the fuel racks in the initial stages of fabrication at the south shop.

Nonconformance 87-01-03 was identified in this area.

Upon further review of the procedure, it was noted that in-process examinations were defined as periodic random sampling type checks to determine that the shop is providing material which complies with the UST&D QA/QC program requirements. The shop QC personnel were unable to define, quantitatively or with a percentage, the number of periodic random sampling type checks to be performed by the inspector. Procedure 10.3 is inadequate in that it does not give sufficient instructions to the QC inspector as to what quantity a random sample is and does not ensure a consistent number of in-process examinations among the different inspectors.

Nonconformance 87-01-09 was identified in this area.

In addition, Procedure 10.3 does not require documentation of the in-process examinations, however, each part may be physically marked after an in-process examination has been performed. The option of marking components to indicate completion of an in-process examination is used by the south shop QC inspector. However, the mark used is a check mark made on the component surface with a marking pen. Several similar marks are also made on the component surface during manufacturing. There is no instruction or guidance in Procedure 10.3 for the QC inspector or other shop personnel on how to distinguish the inspector's markings from other manufacturing markings.

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Nonconformance 67-01-10 was identified in this area.

5. Welding and Welding Machines

Welding being performed on spent fuel storage racks for the LaSalle and Vermont Yankee projects was observed. Three welders were performing production work at the time of the inspection. The following items were reviewed during the inspection: presence of Welding Procedure Specifications (WPS) at the work area, preheat and interpass temperature control, compatibility of WPSs to production work and compliance with WPS essential and nonessential variables.

Welding machines were identified with a unique identification number for verification of amperage and voltage requirements. Automatic welding equipment had attached documentation to alert the welding operators of amperage and voltage ranges and tolerances for the thickness of the material being used. In addition, each manual welding machine contained a controlled record showing each welder who used the machine, date of use, and WPS used. This record is used as a summary of weld performances for welder qualification records.

No items of nonconformance or unresolved items were identified in this area.

6. Weld Inspection

Final inspection of the completed spent fuel storage racks is outlined in Procedure 10.4, Revision 1, and includes a verification of the physical dimensions of the completed rack to the approved shop drawing dimensions.

During the inspection of completed fuel storage racks for the LaSalle project, visual and dimensional checks of fillet welds on fuel rack pedestal mounting pads were performed by the NRC inspector. Drawing 8601-30, Revision 4, was used for the inspection. During the inspection, two fillet welds on the mounting pad were found to be less than the one-quarter inch weld specified on the drawing. The rack was identified as UST&D rack number 11 (Commonwealth Edison rack number 2FC16C). A review of the final inspection checklist revealed that these welds had been inspected and found acceptable by the UST&D QC inspector.

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Prior to the exit meeting, the welds were repaired. The new welds were examined by UST&D QC personnel and found acceptable. The NRC inspector verified that the welds were acceptable per the drawing.

Nonconformance 87-01-04 was identified in this area.

7. Welder Qualifications and Training

The welder qualifications to applicable Welding Procedure Specifications (WPS), Procedure Qualification Records (PQR) and design specification requirements were reviewed. Each welder record included his unique welder identification number, the WPS to which he was qualified and the supporting PQRs. Training records for four welders were reviewed. The records documented which training session the welders attended and the date (see Section 16 of this report).

The UST&D QA program requires that all personnel qualified to WPS 53 for automatic spot/fusion welding be trained to the applicable WPS, have practical experience and perform two test samples prior to production welding. The records of eight welders qualified to WPS 53 were reviewed and found in compliance with the requirements mentioned above.

The review of welder qualifications and training resulted in no items of nonconformance or unresolved items; however, training was minimal in that welders are trained only to the WPSs and there is no evidence that welders are trained to new revisions of WPSs.

8. Weld Filler Material Control

A review of weld filler material control was performed using UST&D Procedure 9.2, Revision 4. The areas which were examined included: weld filler material storage areas, storage of filler material, marking of material (straight and spools), assignment of material inventory control (MIC) numbers and issuance/return records. These items were inspected at the weld filler material issuance stations at both the north and south shops. The review of weld filler material control indicated that Procedure 9.2 was being implemented.

No items of nonconformance or unresolved items were identified in this area.

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9. Nondestructive Examination (NDE) Personnel Qualifications

The NDE qualification records were reviewed using UST&D Procedure 2.5, Revision 1. Certifications and qualifications of the UST&D Level III NDE consultant, the QC Manager and two QC inspectors were reviewed. Prior training hours; general, practical, and specific tests, including the amount of questions per discipline and test results; and a verification of annual eye examinations received by the personnel were reviewed. Records of training and indoctrination of personnel to the NDE procedures and program were also reviewed.

The review of documentation for NDE personnel qualifications resulted in no items of nonconformance or unresolved items; however, documented evidence of training of NDE personnel was minimal.

10. Control of Measuring and Test Equipment (MT&E)

The NRC inspector reviewed applicable sections of the QAPM, one procedure and calibration records to determine whether M&TE was properly identified, controlled and calibrated at specified intervals. Inspection areas in the north and south fabrication shops were inspected to review the calibration status of gages and measuring instruments found in these areas.

With the exception of four ID box mandrels, the inspected equipment contained a vibro-etched S/N. The four mandrels were for the Kewaunee, LaSalle and Vermont Yankee projects and were located in the south shop. A Cardex system, which is maintained by the QC Manager, is used to record calibration information. Each card identifies the type of equipment including S/N, calibration date, calibration frequency, the standard used, and the identity of the individual performing the calibration.

Equipment examined at the south shop included a vernier caliper, two micrometers, one thickness gage, one width gage, one tong test ammeter, and four ID box mandrels. At the north shop, one tong test ammeter, three micrometers, one dial thickness gage, one vernier caliper, one bore gage, one radius gage set, one inside micrometer set, one optical comparator, one box mandrel (LaSalle project) and three micrometer standards were examined. In addition, the calibration status of the eight welding machines in the north shop was checked. The information contained on the calibration stickers on the items was in agreement with the applicable card.

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The two AC-DC tong test ammeters (S/N AX-48975 and -58261) are sent to Columbia Electric Manufacturing (CEM) for calibration every two years. Test reports from CEM indicated that the equipment was calibrated in February 1986 with standards traceable to the National Bureau of Standards (NBS). A Certificate of Calibration from Do All Pittsburgh indicated that a master gage block set (S/N C-4) was calibrated in October 1984 with standards traceable to NBS. It was noted that a document did not exist to identify the specific equipment covered by the calibration program including the calibration frequency of such equipment.

Nonconformance 87-01-05 was identified in this area.

11. Procurement Document Control

Forty-three POs to 15 material manufacturers/suppliers, four POs to a machining vendor, three POs to two vendors for calibration services, and one PO to a plating vendor were reviewed to assure that applicable technical and QA program requirements were included or referenced in the POs. With the exception of one order, all the POs were initialed and dated by a QA individual. The PO in question was No. 86-60610, dated June 6, 1986, to WALCO Corporation for felt tip markers and nuclear grade cloth tape. Nineteen POs did not invoke the requirements of 10 CFR Part 21 upon vendors - eight POs to four manufacturers/suppliers of weld wire, three POs to two calibration service vendors, one PO to a machining vendor, one PO to a supplier of fasteners, and six POs to manufacturers/suppliers of stainless steel. In addition, the requirement that a vendor have a QA program which was approved by UST&D was not included in nineteen POs to vendors - four POs to Cromie Machine and Tool, one PO to Columbia Electric Manufacturing, two POs to Do All Pittsburgh, one PO to Capitol Pipe & Steel Products, one PO to Commercial Fasteners, three POs to West Penn Laco, one PO to Allegheny Ludlum, one PO to Techalloy, two POs to Sandvik, one PO to Weldstar, one PO to Alloy-Oxygen Weld Supply and one PO to Metal Goods. It was also noted that for PO 87-70118, dated January 16, 1987, to Alloy-Oxygen Welding Supply for 200# ASME Section II SFA 5.9 Type 312 filler metal did not contain a "delta ferrite determination" statement.

Violation 87-01-01 and Nonconformances 87-01-06 and 87-01-07 were identified in this area.

12. Documentation Packages (DP)

A DP did not exist for the Vermont Yankee and Kewaunee projects as finished racks were not yet completed for these projects. The

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inspector reviewed three DPs for Rack M120-24 for Wolf Creek and Racks No. 5 and 9 for LaSalle. For Wolf Creek, the DP consisted of a Bechtel Engineering and Quality Verification Document; Material Certification Data Sheet; CMTRs from Eastern Stainless Steel, Allegheny Ludlum Steel, and Colt Crucible for stainless steel products; a CMTR from Sandvik, who is a certificate holder, for ER 308 L weld wire; and a certificate of conformance (C of C) from Commercial Fasteners for fasteners. Several forms for box identification/inspection, bottom plate identification/inspection, lead-in guide assembly to rack, and visual weld inspection reports were included. A Bechtel Supplier Deviation Disposition Request and a UST&D Nonconformance Report and Verticality Test Report were also part of the package. In addition, a UST&D C of C noted that all materials used in the fabrication of the reference rack assembly conformed to Bechtel specification 10466-C-175.

The DPs for the two LaSalle racks consisted of the following: Documentation Checklist, Shop Bill of Material (SBM), CMTRs, UST&D C of C, Weld Examination Records, Final Inspection Checklists (FIC), Deviation/Variance Requests, Qualified Welders List, and a C of C for the boraflex. The SBM listed the material inventory control (MIC) number as well as the material specification and supplier for each item (e.g., box half, bottom plate, pedestal body, etc.). The FIC verified that the following activities were accomplished on a finished rack: dimensional verification, MIC No. verification, visual weld inspection, cleaning, marking, boraflex verification, and the mandrel insertion test.

No items of nonconformance or unresolved items were identified in this area.

13. Vendor Evaluations

The NRC inspector reviewed the evaluations UST&D performed on its vendors and how approved vendors remain on the Approved Vendors List. This process is outlined in Procedure 7.2, "Evaluation of Vendors," Revision 1, dated March 12, 1987.

Eleven vendor evaluation packages were reviewed. The packages contained the original survey or audit checklist of the vendor and reevaluations of the vendor. The reevaluations consisted of a Vendor Evaluation Questionnaire and a historical quality performance data review.

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During the review, it was noted that both All Pittsburgh and Columbia Manufacturing Electric, who supply calibration services, have not been evaluated by UST&D, nor has a historical quality performance data record been maintained on either vendor. Also during the review, it was noted that Industrial Service Center had been audited by UST&D March 12-13, 1986, while PO 86-60143 to Industrial Service Center had been placed February 14, 1986. This evaluation was not performed within the specified 14 days of issuance of the PO as required by Section 2.1 of Procedure 7.2.

Nonconformances 87-01-11 and 87-01-13 were identified in this area.

14. 10 CFR Part 21

During the inspection, the NRC inspectors examined areas for the posting of 10 CFR Part 21 at both fabrication shops. It was noted that 10 CFR Part 21, UST&D Procedure 16.2 and Public Law 96-295 Act of June 30, 1980, Section 223 were posted, but Section 206 of the Energy Reorganization Act of 1974 was not posted at the south shop. Section 21.6 of 10 CFR Part 21 and UST&D Procedure 16.2, "Reportable Defects and Noncompliances (Nuclear Projects) 10 CFR 21," Revision 2, dated March 12, 1987, require Section 206 to be posted. Prior to the exit meeting, Section 206 and other applicable documents were posted at both shops.

Violation 87-01-02 was identified in this area.

15. Training

The NRC inspector reviewed UST&D Procedure 2.3, "Training," Revision 3, dated March 23, 1986. The procedure requires all UST&D personnel performing quality related activities to be trained as applicable to their activity. The procedure also requires that training records be maintained.

The NRC inspector reviewed 13 employee training records and training session records. The employee training records identify what training the employee has received while the training session records identify who attended the training, the date and an outline of the subjects which were covered during the training.

During this review it was noted that two machinists employed in the shop had training record files, but had not received any training. Also noted were the facts that a training record, with no documented training, was present for a retired employee; several training

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ALLISON PARK, PENNSYLVANIA

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records were incomplete in that hire dates and training session subjects were missing; and two employees were trained outside the 45 day limit for new employees. In addition, UST&D only trains its personnel to the quality control procedure which the employee will be using without an overall QA/QC program training session. The personnel are not trained to new revisions of the procedures nor is there any type of refresher training given to current employees after the initial training course and after they have been employed for a lengthy amount of time.

Nonconformance 87-01-12 was identified in this area.

16. Audits

The NRC inspectors reviewed four internal audits. The Internal Project Management Audit, dated May 29, 1986, the Production Audit, dated August 13, 1986, the QA/QC Audit, dated November 12, 1986, and the Engineering Department Audit, dated March 4, 1987, were reviewed. Each audit included a checklist, an audit report (summary of results), and was performed by a qualified auditor. The audits which were reviewed were performed and documented in accordance with Procedure 18.1, "Audits," Revision 5, dated March 12, 1987.

No items of nonconformance or unresolved items were identified in this area.

F. PERSONS CONTACTED:

P. Brinks, QC Manager, South Shop
F. DeSimmons, Foreman, North Shop
W. Dickson, Director of Manufacturing
E. Jablonsky, QC Inspector, North Shop
L. Karenboyer, Welder
*R. Linder, Manager of Engineering
*E. March, Vice Chairman of the Board, Chief Executive Officer
E. Reinhart, QC Manager, North Shop
J. Rhoden, Project Manager
F. Rhodes, Vice President, Manufacturing
R. Rudisill, Welder
*M. Rodgers, President
R. Stewart, Machinist
*B. Wachter, Vice President, Engineering and Research
K. Weber, Assistant Project Manager
*F. Witsch, QA Manager

*Attended Exit Meeting

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TABLE 1

<u>Utility/AE</u>	<u>Project</u>	<u>Type</u>	<u>Number of Racks/Positions</u>	<u>Date Completed</u>
SNUPPS Kansas Gas & Electric/Bechtel	Wolf Creek	PWR-MDR Non-Poison	12/1328	1982
SNUPPS Union Electric/ Bechtel	Callaway	PWR-MDR Non-Poison	12/1328	1982
Long Island Lighting/Stone & Webster	Shoreham	BWR-Non Poison Water Flux Trap Control Rods	15/1700 8/751 2/144	1983
Public Services Company	Seabrook	New Fuel Storage Racks	3/90	1983
Niagara Mohawk Stone & Webster	Nine Mile II	BWR-MDR Poison	17/2530 10/1519	1984
Rochester Gas & Electric	Genoa	Modified PWR Checker- board to Poison Racks	6/420	1984
Commonwealth Edison	LaSalle II	BWR Poison	20/4073	In Progress
Wisconsin Public Service Corp.	Kewaunee	PWR Poison	4/360	In Progress
Nuclear Energy Services	Vermont Yankee	BWR Poison	10/2820	In Progress

DOCUMENTS EXAMINED

DOCKET NO. 91-1052

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INSPECTOR. C Abate

scope:

ITEM NO.	*TYPE OF DOCUMENT	DOCUMENT NO.	REV.	DATE	DOCUMENT TITLE/SUBJECT
1.	QAM	—	2	1/30/86	Quality Assurance Program Manual for U.S. Tobacco
2.	PRO	QCP 16.2.	2	3/12/87	Reportable Defects and Nonconformance 16 CFR
3.	PRO	QCP 18.1	5	3/12/87	Audits
4.	PRO	QCP 19.1	0	3/11/86	Production Work Packaging & Inspection Plans
5.	PRO	QCP 10.3	3	9/11/86	In-Process Examinations
6.	AVC	—	—	3/11/87	Approved Vendor List
7.	—	—	—	—	Training Records
8.	—	—	—	—	Internal Audit (1986-1987)
9.	—	—	—	—	Vendor Evaluation Packages
10.	PRO	—	4	5/19/86	Control of Nonconformances
11.	PRO	QCP 7.3	1	3/12/87	Receiving Inspection
12.	PRO	QCP 8.2	3	3/11/86	Material Certification and Release
13.	PRO	QCP 2.3	3	3/21/86	Training
14.	PRO	QCP 7.2	1	4/12/87	Evaluation of Vendors

TYPE OF DOCUMENT

- DRAWING
- SPECIFICATION
- PROCEDURE
- QA MANUAL
- PURCHASE ORDER

INM - INTERNAL MEMO
LTR - LETTER

PAGE OF

DOCKET NO. 9961082

REPORT NO. 87-01

PAGE OF

INSPECTOR. C Abbate

1305

DOCUMENT TITLE/SUBJECT

[illegible]

*TYPE OF DOCUMENT

THE - DRAWING

SPEC - SPECIFICATION

PROCEDURE

QAM - QA MANUAL

INTERNAL MEMO

IVB - LETTER

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INSPECTOR Jim Conway
SCOPE _____

DOCUMENTS EXAMINED

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ITEM NO.	TYPE OF DOCUMENT	DOCUMENT NO.	REV.	DATE	TITLE / SUBJECT
1	QA/M		2	1/20/86	"Quality Assurance Program Manual"
2	PRO	12.1	2	3/21/86	"Control of Inspection Measuring Equipment"
3	OTH				Calibration Records for MATS (23 items)
4	PO				SI Purchase Order to vendor
5	OTH				Material log / Material Release Forms for stainless steel plate/skaps
6	OTH				Production Work Routing & Inspection Plans for seven under projects
7	OTH				Material log / MRFs for weld material
8	OTH				Customer Packages (Pos / Tech Specs) for eight projects
9	OTH				Documentation packages for three projects
10	OTH				Certified Material Test Reports (18)

TYPE OF DOC:

DWG - DRAWING
SPEC - SPECIFICATION
PRO - PROCEDURE
QA/M - QA MANUAL
PO - PO DOCUMENT

ITR - LETTER
OTH - OTHER

DOCKET NO 99901082
REPORT NO. _____

INSPECTOR Rene H. Aspinwall
SCOPE U.S. Tool & Die, Inc.
Documentation Review

DOCUMENTS EXAMINED

ITEM NO.	TYPE OF DOCUMENT	DOCUMENT NO.	REV.	DATE	TITLE/SUBJECT
1	QAM	Sections I-19	2	4/20/86	Quality Assurance Manual
2	SPEC	T-3758	0	8/11/86	LA Sella Design Spec.
3	SPEC	B3A2256	0	11/22/85	Vermont Yankee Specification
4	SPEC	5122-M-200	4	—	Renaissance Design Specification
5	QCD	2.3	3	—	Training
6	QCD	2.4	0	—	Procedure of Qual. of Examining Testing & Inspection Personnel
7	QCD	2.5	1	—	Nondestructive Testing Personnel Qual. Based on the Norm. SNT-TC-1A
8	QCD	9.1	2	3/21/86	General Welding Control
9	QCD	9.2	4	3/21/86	Control of Assurance of Base Weld Filler Metal
10	QCD	9.3	2	3/21/86	Control of Welder's Qualifications
11	QCD	9.6	4	3/21/87	Liquid Penetrant Testing & Personnel Qual. Procedure
12	QCD	9.7	1	3/21/86	Qualification of Automatic Fusion Spot Welding Equip Operator
13	QCD	9.8	2	3/12/87	Control of Welding Equipment
14	QCD	10.3	3	4/21/86	In-Process Examinations

TYPE OF DOCUMENT:

LTR - Letter

DWG - Drawing
SPEC - Specification
PRO - Procedure
QAM - QA Manual
QCD - QC Document
P.O. - Purchase Order
Internal Memo

DOCKET NO 99901082

REPORT NO. _____

INSPECTOR Kenneth Aspinwall
 SCOPE Documentation Review
U.S. TOOL DIE, Inc.

DOCUMENTS EXAMINED

ITEM NO.	TYPE OF DOCUMENT	DOCUMENT NO.	REV.	DATE	TITLE/SUBJECT
15	QCD	10.4	1	3/21/86	Final Inspection
16	QCD	10.5	4	3/12/87	Visual Weld Examination Procedure
17	QCD	6.1	2	—	Document Control
18	QCD	6.2	3	3/12/87	Shop Drawing Control and distribution
19	QCD	14.0	2	1/20/86	Inspection, Test and Operating Status
20	QCD	14.1	0	3/21/86	Production Weld Contouring Inspection Plan
21	PLO	WPS-31	0	2/21/88	GTAW/manual S.S. Weld Procedure Specification
22	PLO	WPS-52	2	—	GTAW/Automatic S.S. " "
23	PLO	WPS-19	0	—	GTAW/manual S.S. " "
24	PLO	PQR-5D	0	2/21/83	GTAW/Automatic S.S. Procedure Qualification Report
25	PLO	PQR-18	0	—	GTAW/Manual " "
26	PLO	PQR-28	0	—	GTAW/Manual " "
27	PLO	PQR-38	0	—	GTAW/Manual " "
28	DWG	8811-0	4	—	Production Weld Contouring

TYPE OF DOCUMENT:

DWG - Drawing
 SPEC - Specification
 PRO - Procedure
 QAM - QA Manual
 QCD - QC Document
 P.O. - Purchase Order
 Internal Memo

LTR - Letter

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**U. S. TOOL & DIE, INC.**

4030 ROUTE B • ALLISON PARK, PENNSYLVANIA 15101

June 9, 1987

United States Nuclear Regulatory Commission
Vendor Inspection Branch
Division of Reactor Inspection & Safeguards
Office of Nuclear Reactor Regulation
Washington, DC 20555

Attn: Mr. Ellis W. Merschoff, Acting Chief

Re: Docket #9901082/87-01

Gentlemen:

In response to the inspection report referenced above and submitted to U.S. Tool & Die, Incorporated on May 12, 1987, we submit the following:

APPENDIX A

VIOLATION #1 -

"... a review of documentation packages for spent fuel storage racks fabricated under ASME Code Section III, Subsection NF revealed that while 10 CFR Part 21 was imposed on U.S. Tool & Die, Incorporated (UST&D) by their customers, UST&D did not specify that 10 CFR Part 21 requirements would apply on Purchase Orders ..."

UST&D COMMENT

- a) The applicability of the reporting requirements of 10CFR21 has been placed on UST&D by its various Clients who recognize these requirements do not pertain to material purchased as a commercial product (as defined in 10CFR21). Only after receipt of commercial products at UST&D and dedication to the specific basic component by UST&D are the reporting requirements in effect. (Letters from the various Client's and the Atomic Industrial Forum's Committee Position Paper expanding on this position were presented to the NRC inspectors during the inspection).

Based on these documents the imposition of 10CFR21 is not applicable to the following Purchase Orders: #86-60802, -81208, and #87-70132 to West Penn Laco; #87-70115 to Weld Star; #86-61112, -70103, and #87-70118 to Alloy-Oxygen Weld Supply; #86-61218 to Metal Goods; and #86-60921, #87-70130, and -70208 to Williams & Company.

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- b) Per project specifications, 10CFR21 was not applicable to: P.O.#82-1051 to Commercial Fasteners; #82-1032 to Allegheny Ludlum; #86-60620 to Industrial Service Center and therefore not imposed on the vendors.
- c) On both the original and revision #1 of P.O.#83-1387 to Sandvik, the applicability of 10CFR21 is noted on Page 2 of 2.
- d) P.O.#86-60208 to Columbia Electric and #84-1701 and #84-1679 to Do All Pittsburgh were for service to commercial type tools.

P.O.#86-61228 to Cromie Machine and Tool was for subcontracting machining of UST&D supplied material. 10CFR21 should have been noted on this Purchase Order.

CORRECTIVE ACTION for Item (d)

A revision to the Purchase Orders #86-60208 to Columbia Electric; #84-1701 and #84-1679 to Do All Pittsburgh; and #86-61228 to Cromie Machine & Tool will be issued and include the reporting requirements of 10CFR21.

A review of 10CFR21 and UST&D's procurement procedures will be made with all personnel processing purchase orders to prevent recurrence. This Corrective Action will be completed by June 30, 1987.

Internal audit activities will prevent recurrence.

VIOLATION #2 -

"... UST&D failed to post Section 206 of the Energy Reorganization Act of 1974. (87-01-02)"

UST&D COMMENT

Section 206 of the Energy Reorganization Act of 1974 was posted during the inspection as confirmed by Item 14 (page 13) of the NRC Inspection Report.

CORRECTIVE ACTION

Corrective Action has been completed.

Internal audit activities will prevent recurrence.

APPENDIX B

NONCONFORMANCE #1

"... in-process examinations were not being performed at the South Shop per the "Production Work Routing and Inspection Plan," Drawing 8601-0, Revision 1, for the spent fuel racks being manufactured for the LaSalle project. (87-01-03)"

UST&D COMMENT

In-process examinations not performed at the South Shop were performed at the North Shop prior to installation of the cells into the final rack assembly.

CORRECTIVE ACTION

A change has been made in Production supervisory personnel at the South Shop.

Complete in-process examination records have been started as of March 25, 1987 at the South Shop.

To prevent recurrence, a training session will be held with all Quality Control personnel to review the requirements of the in-process examination and Production Work Routing & Inspection Plan procedures. This review will be complete by June 30, 1987.

NONCONFORMANCE #2

"... two undersize welds were identified by the NRC inspectors on a fuel rack which had been inspected and found acceptable by UST&D Quality Control. (87-01-04)"

UST&D COMMENT

Upon discovery, a weld pass was added to the undersize welds found by the NRC inspector. The balance of the welds on the respective subassembly were checked by the Quality Control Manager and found to be of the proper size.

CORRECTIVE ACTION

A review of the use of weld gauges and weld acceptance criteria will be made with Quality Control personnel by June 30, 1987 to prevent recurrence.

NONCONFORMANCE #3

"... a review of measuring and test equipment (M&TE) and calibration records revealed the following:

- a) Documented evidence was not available to verify that the calibration interval for M&TE was established in procedures.
- b) The four inner diameter (ID) box mandrels for the Kewaunee, Vermont Yankee, and LaSalle projects in the South fabrication shop were not identified with a permanent unique S/N applied by vibro-etching or with a durable label.
- c) A calibration interval was not established in the "Cardex" system for the modified ID box mandrel for the LaSalle project in the North fabrication shop. (87-01-05)"

UST&D COMMENT

Corrective Action has been or will be taken as follows:

- a) As delineated in UST&D's calibration procedure, the calibration intervals are established in the "Cardex" system but will be incorporated into an Appendix to Procedure 12.1. This addition to the procedure will be made by June 30, 1987.
- b) Although the box gauges were identified with the project name painted on and the sizes of the various gauges precludes use on other than what they were made, each box gauge has been given a unique serial number. A durable label with this serial number on it has been attached to the appropriate box gauge.
- c) The calibration interval for all box gauges has been established. This modified box gauge for the LaSalle project is being checked prior to and after use on each rack.

CORRECTIVE ACTION

To prevent recurrence, Quality Control personnel will participate in a training session to review UST&D's calibration procedure. This training session will be conducted by June 30, 1987.

NONCONFORMANCE #4

"... a review of 43 purchase orders for materials and services related to spent fuel racks fabricated under ASME Code Section III, Subsection NF indicated that quality requirements (e.g., Quality Assurance Program) were not passed on to vendors..."

UST&D COMMENT

- a) P.O.#86-60746, -60813, -60814 and -61228 to Cromie Machine & Tool were for machining UST&D supplied material. Material traceability has been maintained and 100% receipt inspection performed by UST&D of the machined parts. Cromie Machine follows UST&D Quality Assurance/Quality Control Program and is on our Approved Vendor List based on these criteria.
- b) P.O.#86-61218 to Metal Goods was for material ordered for handling equipment and therefore not subject to Quality Assurance/Quality Control requirements.
- c) P.O.#82-1051 to Commercial Fasteners and P.O.#82-1032 to Allegheny Ludlum was for material for a DOE project. The project specifications did not require imposition of the 10CFR50 Appendix K requirements.
- d) P.O.#86-60802, -81208, and #87-70132 to West Penn Laco, P.O.#82-1311 and #83-1387 to Sandvik, P.O.#87-70115 to Weld Star and P.O.#85-51023 to Techalloy does not include furnishing material to their Quality Assurance/Quality Control Program. However, a review of the Material Test Reports for the material ordered shows the material has been furnished by ASME Certificate Holders and in accordance with their appropriate Quality Assurance/Quality Control Program.
- e) P.O.#86-70103 to Alloy Oxygen does impose furnishing material in accordance with their Quality Assurance/Quality Control Program by the notation of "Q" material. This notation is Alloy-Oxygen's terminology for their Quality Assurance/Quality Control Program.
- f) Columbia Electric Manufacturing and Do All Pittsburgh are manufacturers of commercial grade tools with certificates of conformance for calibration of said tools traceable to the National Bureau of Standards.

CORRECTIVE ACTION

Revised P.O.#86-60802, and #87-70132 to West Penn Laco; #82-1311 and #83-1387 to Sandvik; #87-70115 to Weld Star; and #85-51023 to Techalloy will be issued and include the requirement to furnish material per their Quality Assurance/Quality Control Program.

To prevent any question of imposing a quality program requirement, personnel involved in the purchasing policy will receive training by June 30, 1987 on the procurement requirements of UST&D's Quality Assurance Program.

NONCONFORMANCE #5

"... a review of purchase orders indicated that P.O.#87-70118 to Alloy Oxygen Welding Supply for stainless steel weld filler metal did not contain a delta-ferrite determination statement, and P.O.#86-60610 to WALCO Corporation for markers and tape was not signed/initiated and dated by Quality Assurance personnel. (87-01-07)"

UST&D COMMENT

The weld wire ordered from Alloy-Oxygen Welding Supply is of a composition that by its nature far exceeds the delta-ferrite minimum requirements of ASME Section III, Subsection NF.

The purchase order to WALCO did get through the Quality Assurance/Quality Control system without the proper signature.

CORRECTIVE ACTION

Revised purchase orders will be issued with the proper requirements and signatures.

These actions will be covered in the training session for purchasing personnel to be conducted by June 30, 1987 to prevent recurrence.

NONCONFORMANCE #6

"... it was noted that a documented procedure/instruction did not exist to control tools (e.g., wire brushes, grinding wheels, hammers, etc.) that were designated for use only on stainless steel material. (87-01-08)"

UST&D COMMENT

The vast majority of work done at UST&D is with stainless steel, however, some carbon steel work has been done. It has been UST&D's standard operating procedure over the years to paint tools used on carbon steel. This procedure has never been put into writing.

CORRECTIVE ACTION

Instructions will be written to the Production Department to paint tools used on carbon projects and a training session will be held with Production personnel to assure painted tools will not be permitted for use on stainless steel. This Corrective Action will be completed by June 30, 1987.

NONCONFORMANCE #7

"... Procedure 10.3 does not provide the Quality Control Inspector appropriate guidance indicating the required random sample quantities or percentages needed to ensure a representative sample during in-process examinations. (87-01-09)"

UST&D COMMENT

As part of the in-process inspection, material traceability is maintained on a 100% basis; all cells are gaged to assure proper dimensions are maintained; and as a minimum, machined parts with critical dimensions are "first piece" inspected, and spot checked on a 10% random sampling basis.

If any discrepancy is revealed by this inspection, a minimum of 10 previously fabricated pieces are checked. Any discrepancy found in these 10 pieces will require a 100% inspection of all pieces.

CORRECTIVE ACTION

Procedure 10.3 will be revised to include the above quantitative acceptance criteria and training will be conducted with Quality Control personnel by June 30, 1987 to review this change.

NONCONFORMANCE #8

"... marking procedures used by the South shop Quality Control inspector for in-process examination do not clearly identify items or components which have satisfactorily passed the required examinations or who examined the part. (87-01-10)"

UST&D COMMENT

Corrective Action will be taken in the form of training of Quality Control personnel to indicate performance of inspection by initialing the pieces inspected when other records will not be generated. This training will occur by June 30, 1987.

NONCONFORMANCE #9

"... vendor evaluations had not been performed on Do All Pittsburgh and Columbia Electric Manufacturing who provide calibration services for UST&D. (87-01-11)"

UST&D COMMENT

These pieces of equipment were purchased under the Quality Assurance/Quality Control Program of the prior ownership of UST&D.

Historic data records for Columbia Electric Manufacturing and Do All Pittsburgh were available at the time of the NRC inspection.

UST&D's Procedure 12.1 (Para 2.7.1) states that a manufacturer of measuring/test equipment can be considered pre-qualified to calibrate their equipment.

Certification has been provided by these manufacturers that the calibration methods and equipment used is traceable to the National Bureau of Standards.

CORRECTIVE ACTION

A re-evaluation will be conducted on these two vendors by August 15, 1987.

NONCONFORMANCE #10

"... training records did not exist for two UST&D shop employees. (87-01-12)"

UST&D COMMENT

The two machinists have been employed by UST&D for over 15 and 20 years and training had not been documented.

CORRECTIVE ACTION

Corrective Action will include training of employees to their activities and documentation will be completed by June 30, 1987.

UST&D COMMENT

This purchase order was issued to Industrial Service Center with a provision that no material be shipped until Industrial Service Center was audited by UST&D. The first shipment of material ordered by this purchase order was received by UST&D on April 8, 1986.

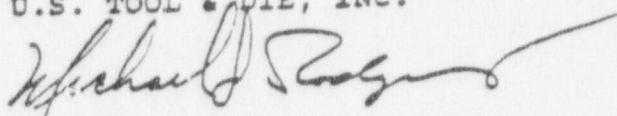
CORRECTIVE ACTION

A training session will be conducted with procurement personnel by June 30, 1987 to review purchasing activities.

U.S. Tool & Die, Incorporated feels that the above Corrective Action will satisfy the Violations and Nonconformances uncovered by this NRC inspection.

Sincerely,

U.S. TOOL & DIE, INC.



Michael Rodgers
President

MJR:gb



Commonwealth Edison Company
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Wisconsin Public Service Corporation
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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

July 28, 1987

Docket No. 99901082/87-01

U.S. Tool and Die, Incorporated
ATTN: Mr. Michael J. Rodgers
President
4030 Route 8
Allison Park, Pennsylvania 15101

Gentlemen:

Thank you for your letter dated June 9, 1987, which described the corrective action U.S. Tool and Die, Incorporated (UST&D) has and will implement in response to the Notice of Violation and Items of Nonconformance identified in Inspection Report No. 99901082/87-01, dated May 12, 1987. Your response and corrective action for Notice of Violation 87-01-02, and Items of Nonconformance 87-01-04, 87-01-05, 87-01-07, 87-01-08, 87-01-09, 87-01-10, and 87-01-12 appear to be adequate and no additional information is requested. The following items, however, require additional information to determine the adequacy of the UST&D response and corrective action.

Part a) of the response to Notice of Violation 87-01-01 states that after receipt of commercial grade material at UST&D and dedication to the specific basic component by UST&D, the reporting requirements of 10 CFR 21 are in effect. This is in accordance with 10 CFR 21.3(c-1). Please provide a description of UST&D's dedication process that is used to upgrade commercial grade products for use as basic components and a sample of the documentation implementing the dedication process for POs 86-60802, -81208, -61112, -70103, -61218, -60921, 87-70132, -70115, -70118, -70130, and -70208. For part b) of that response, please provide pertinent sections of the project specifications which address the applicability of 10 CFR 21 to POs 82-1051, -1032, and 86-6020. Part c) states that 10 CFR 21 is imposed on page 2 of PO 83-1387 to Sandvik. Please provide a copy of PO 83-1387.

It should be noted that the NRC has not taken a position on the Atomic Industrial Forum's Committee Position Paper, "Recommended Practices for Procurement of Replacement/Spare Parts for Nuclear Power Plants." Also, in addition to imposing 10 CFR 21 on UST&D, customers impose ASME Code Section III, Subsection NF and 10 CFR 50, Appendix B in their POs and specifications. UST&D must comply with 10 CFR 21 whenever a specification unique to the nuclear industry (e.g., ASME Section III; 10 CFR 50, Appendix B; 10 CFR 21; etc.) is invoked in the customer's PO.

The response to Item of Nonconformance 87-01-03 states that in-process examinations not performed at the South Shop were performed at the North Shop prior to installation of the cells into the final rack assembly. Please provide assurance that the types of in-process exams performed at the North Shop met the requirements of "Production Work Routing and Inspection Plan," Drawing 8601-D, and Procedure 14.1.

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July 28, 1987

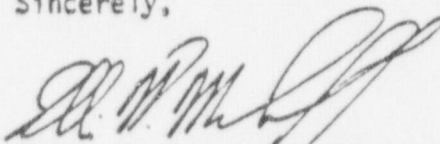
The response to Item of Nonconformance 87-01-06 is incomplete in that PO 82-1068 to Capitol Pipe and Steel and PO 86-81208 to West Penn Laco were not addressed in the response. It was stated in part a) of the response that Cromie Machine follows UST&D's QA/QC program. Please provide assurance of this and what controls are implemented to ensure the UST&D QA/QC program is being followed at Cromie Machine. Part e) of the response states that "Q" on POs to Alloy Oxygen implies imposition of their QA/QC program on that PO. Please provide assurance that the individual issuing the PO acknowledges what special notations are required on certain POs which impose QA/QC programs. C of Cs and CMTRs document the final products acceptability, however, this type of documentation does not ensure the implementation of a QA/QC program. For part f), please provide assurance that QA/QC programs were implemented at Columbia Electric Manufacturing and Do All Pittsburgh and these types of manufacturers have QA/QC programs in place.

The response to Item of Nonconformance 87-01-11 stated that Historic Data Records are available for Columbia Electric Manufacturing and Do All Pittsburgh; please provide these reports. A copy of the NRC position regarding audits of suppliers who offer calibration services for measuring and test equipment that they manufacture is enclosed for your information.

One final note on the response to Item of Nonconformance 87-01-13, the training given to procurement personnel should include measures to ensure that the "no shipping until audit is performed" clause is added to the PO as needed.

If you have any questions concerning these requests for additional information, please contact Ms. Claudia Abbate at (301) 492-4776 or Mr. James Stone at (301) 492-9661.

Sincerely,



Ellis W. Merschoff, Acting Chief
Vendor Inspection Branch
Division of Reactor Inspection and Safeguards
Office of Nuclear Reactor Regulation

Enclosure:
As stated

AUG 24 1983

Bingham-Willamette Company
ATTN: Mr. J. L. Wood
Quality Assurance Supervisor
P. O. Box 10247
Portland, OR 97210

Gentlemen:

SUBJECT: QA PROGRAM REQUIREMENTS FOR SUPPLIERS OF CALIBRATION SERVICES

The Wood/Potapovs letter dated July 25, 1983, requested the Commission's concurrence with Bingham-Willamette Company's (BWC) position (ref. Rove/Barnes letter dated January 11, 1982) on the audit requirements of suppliers of calibration services.

The Division of Quality Assurance, Safeguards, and Inspection Programs (QASIP) in the Office of Inspection and Enforcement was contacted to obtain an official NRC position on the above subject. The following information states the NRC position received from QASIP, and the position addresses the following three types of suppliers of calibration services:

1. Suppliers who offer calibration services for measuring and test equipment not manufactured by them.
2. Suppliers who offer calibration services for measuring and test equipment that they manufacture.
3. National Bureau of Standards.

With regard to whether a quality assurance program satisfying the provisions of ANSI N45.2 is required of these three types of suppliers, our position is as follows:

The suppliers noted in types 1 and 2 above are required to have a quality assurance program to the extent necessary to assure the quality of the safety-related service and product provided. This means that the appropriate QA criteria of Appendix B to 10 CFR Part 50 and the appropriate provisions of the implementing standard, ANSI N45.2, should be applied consistent with the activities undertaken in the generation of the service and product; e.g., design, procurement, manufacturing, testing, etc. In the case of the type 3 supplier, the National Bureau of Standards, it is not necessary for the purchaser to assure that this organization have a quality assurance program that meets the applicable requirements of Appendix B to 10 CFR Part 50 and ANSI N45.2 since it is a nationally recognized laboratory with proven abilities and disciplines.

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With regard for the need of preaward evaluation and postaward audits for these three types of suppliers, our position is as follows:

A preaward evaluation and postaward audits are required for the types 1 and 2 suppliers. It should be noted that the results of preaward evaluations that have been performed on the same supplier by another purchaser working to a QA program that satisfies Appendix B to 10 CFR Part 50 may be shared among purchasers; e.g., utilization of the CASE register.

A preaward evaluation and postaward audits are not required for work performed at the National Bureau of Standards.

Please accept my apology for the delay in responding to BWC's 1982 letter. If you have any questions on the above comments, please contact Jim Conway (817) 860-8236 or Ian Barnes (817) 860-9176.

Sincerely,

-Original signed by
C. J. MALE

Uldis Potapovs, Chief
Vendor Program Branch