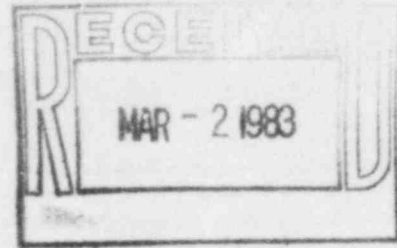




SOUTHWEST FABRICATING

& WELDING CO., INC.

February 25, 1983



U. S. Nuclear Regulatory Commission
Region IV
611 Ryan Plaza Drive, Suite 1000
Arlington, Texas 76011

Attention: Mr. Uldis Potapovs, Chief
Vendor Inspection Branch

Reference: QA Program Inspection Report
Inspection Conducted 11/29--12/2/82
Docket No. 99900025/82-01

Gentlemen:

This presents our response to the QA Program Inspection Report dated January 20, 1983, covering the subject inspection conducted by Mr. J. W. Hamilton of your office. Mr. McNeil authorized the response submittal date revised to March 1, 1983, at my request by telephone on February 17, 1983.

We are summarizing the actions taken in the three areas where the implementation of our QA Program failed to meet certain NRC requirements as outlined in your inspection report. The specific findings and references to the pertinent requirements are summarized, together with our action on the deficiencies. Our activities include corrective action and preventive measures that have been taken or will be taken to minimize recurrence. The action shall include the following:

- 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 corrective action and preventive measures were or will be completed.

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Appendix A - Finding (restated)

Notice of Violation

Severity Level V Violation (Supplement VII)

As a result of the inspection conducted during November 29-December 2, 1982, and in accordance with Section 206 of the Energy Reorganization Act of 1974 and its implementing regulations 10 CFR Part 21, the following violation was identified and categorized in accordance with the NRC Enforcement Policy (10 CFR Part 2, Appendix C), 47 FR 9987 (March 9, 1982):

Section 21.6 of Title 10, Part 21 of the Code of Federal Regulations dated December 18, 1981, states in part:

Each individual, partnership, corporation, or other entity subject to the regulations in this part, shall post current copies of the following documents in a conspicuous position on any premises, within the United States where activities subject to this part are conducted (1) the regulations in this part, (2) Section 206 of the Energy Reorganization Act of 1974, and (3) procedures adopted pursuant to the regulations in this part.

If posting of the regulations in this part or the procedures adopted . . . is not practicable, the firm subject to the regulations in this part may, in addition to posting Section 206, post a notice which describes the regulations/procedures, including the name of the individual to whom reports may be made, and states where they may be examined.

Contrary to the above, neither a current copy of 10 CFR Part 21 and a procedure pursuant to the regulations nor a notice describing the procedure was posted.

SF&W CORRECTIVE ACTION

Steps Taken to Correct Items:

Posting - completed February 24, 1983.

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It is impractical to post all documents required in 10 CFR Part 21 Section 21.6(a) in the shop operating areas due to exposure to the elements. Also, it is impractical to place the documents in the enclosed office bulletin boards due to the extensive bulletin board space required to post the documents in order to permit one to read the contents. Therefore, SF&W has posted the required text that describes the regulations, procedures, and reporting instructions in accordance with Section 21.6(b). This is implemented in the document titled "QA Notice" dated 2/15/83 and is described (in part) below. This QA Notice is located in conspicuous positions in the Manufacturing, Engineering, Administration, and QA Buildings, and the Warehouse. The text of the document follows (in part):

QA NOTICE

IMPLEMENTATION OF FEDERAL LAW

This document supersedes in its entirety the procedure posted on January 6, 1978 titled, "Federal Law and Regulations Regarding Defects and Compliance."

UNITED STATES NUCLEAR REGULATORY COMMISSION RULES AND REGULATIONS TITLE 10, CHAPTER 1, CODE OF FEDERAL REGULATIONS - ENERGY

Part 21: Reporting of Defects and Noncompliance (dated 9/1/82)

Section 21.1 - Purpose (in part) "The requirements in this part establish procedures and requirements for implementation of Section 206 of the Energy Reorganization Act of 1974." Section 206, as amended, reads as follows:

NONCOMPLIANCE

Sec. 206 (The QA Notice includes the entire text of Section 206 of Pub. L. 93-438, the Energy Reorganization Act of 1974, as amended.)

The Southwest Fabricating & Welding Co., Inc. responsible officer to whom Part 21 Defect and Noncompliance Reports shall be directed is:

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N. H. Moerke, P.E.
Vice President-Engineering
Phone: (713) 928-3451, Ext. 423

Further (in part):

All reports shall be recorded, investigated, and evaluated . . . then the above named responsible officer will disposition if the evaluation warrants, notification of the Commission, or verification that the Commission has been adequately informed of such defects or failure to comply, all in accordance with this section.

As stated in 10 CFR Part 21, Section 21.2, Scope - "Nothing in these regulations should be deemed to preclude either an individual or a manufacturer/supplier of a commercial grade item from reporting to the Commission a known or suspected defect or failure to comply and the identity of anyone so reporting, will be withheld from disclosure."

NRC Regional Offices will accept collect telephone calls from individuals . . . concerning nuclear safety-related problems. The locations and telephone numbers . . . are listed below:

Region: I - Philadelphia (215) 337-5000
 II - Atlanta (404) 221-4503
 III - Chicago (312) 932-2500
 IV - Dallas (817) 465-8100
 V - San Francisco. (415) 943-3700

Interested individuals may review the referenced documents, listed below, in the office of N. H. Moerke during regular office hours In addition, copies of the documents will be furnished upon written request.

- 1) United States Nuclear Regulatory Commission Rules and Regulations Title 10, Chapter 1, Code of Federal Regulations - Energy
Part 21, Reporting of Defects and Noncompliance
pages 21-1 thru 21-4 dated September 1, 1982.

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2) Southwest Fabricating & Welding Co., Inc. documents:

- a) Quality Assurance Directive (QAD) #16, subject -
Implementation of NRC Rules and Regulations
(10 CFR Part 21) dated January 6, 1978 with
attached Procedure for Compliance with 10 CFR
Part 21, pages 1 thru 4, Rev. 0 dated 1/6/78.
- b) Distribution of Quality Assurance Directives

The above corrective action was completed and implemented by SF&W on February 21-23, 1983 by posting the QA Notice on bulletin boards located adjacent to the time clocks in the Engineering Building, Administration Building, the Quality Assurance office, the nuclear production area of the Alloy Bay, and the Fittings Warehouse; also, the bulletin board in the Resident Customer Inspectors office.

To augment our commitment, Ms. Doris Cooper, QA Secretary, maintains a file of documents for reference in accordance with the posted QA Notice.

SF&W PREVENTIVE MEASURES

Steps taken to prevent recurrence:

- a) The following reference documents have been received or are on order from the Superintendent of Documents, US Government Printing Office, Washington, DC:
 - 1. Code of Federal Regulations, List of CFR Sections Affected (LSA) December 1982 issue (received 2/21/83).
 - 2. Code of Federal Regulations Title 10 - Energy (Parts 0 to 199), Revised as of January 1, 1982 (ordered 2/23/83; anticipate receiving April 1983).
 - 3. Federal Register - 47 FR 57443 - 57560 dated 12/27/82 (ordered 2/23/83, anticipate receiving April 1983).
 - 4. Federal Register - 47 FR 41329 - 41508 dated 9/20/82. Not available - out of print. Other sources will be contacted.

- b) Each of the above sources of amended 10 CFR Part 21 issues shall be reviewed by the Vice President-Engineering and Secretary to assure that the posted QA Notice is revised to reflect 10 CFR Part 21 published amendatory actions that have appeared in the Federal Register.
- c) Posted QA Notice when revised shall reflect the referenced 10 CFR Part 21 document date reviewed as the basis for the revision. Also, this shall reflect the date of the Part 21 "Reporting of Defects and Noncompliance" document retained in the QA file and available for examination.
- d) All of the above shall be implemented during April 1983 or within one month after the publications are received from the Superintendent of Documents, except 47 FR 41329 - 41508.
- e) Internal QA audits shall include verification of 10 CFR Part 21 requirements for availability of current copies for examination.

SUMMARY AND COMMENTS ON THE VIOLATION CITED

- 1. The Notice of Violation refers to Section 21.6 of Title 10, Part 21 of the Code of Federal Regulations dated December 18, 1981. During the exit interview I requested your representative to furnish a current copy of 10 CFR Part 21. In response to my request, I received from your office on January 15, 1983, a copy of Title 10, Chapter 1, Part 21 dated September 1, 1982, which has been referenced in the corrective action. Further, upon examining the Code of Federal Regulations "List of CFR Sections Affected (LSA) December 1982," which summarizes changes January 4 through December 30, 1982, I note the following additional changes that have not been addressed at this time, but shall be recognized when copies of Federal Register issues are available as follows:
 - a) Section 21.1, Footnote 1, amended in 47 FR 41338, issue date September 20, 1982; amended eff. 1-26-83 in 47 FR 57480, issue date December 27, 1982.
 - b) Section 21.3(a)(2), (a-1)(1) and (2), and (k) amended; eff. 1-26-83, issue date December 27, 1982 - 47 FR 57480, issue date December 27, 1982.

- c) Section 21.21(b)(1)(i) and (ii) amended; eff. 1-26-83 in 47 FR 57480 issue date December 27, 1982.
2. In order to be certain that the most current published amendment to 10 CFR Part 21 is addressed, the above documents (when received) shall be maintained in our file and available for inspection in accordance with our QA Notice. Also, our posted QA Notice shall be revised to reflect the current amendments to meet our commitment for appropriate preventive measures in this matter. We are making every effort to secure documents listed above under SF&W Preventive Measures, as outlined in the paragraph above.
 3. During the inspection the most significant impact of the violation, due to lack of posted current copies of 10 CFR Part 21, specifically addressed Note 1. This lists the telephone numbers of NRC Regional Offices that will accept collect telephone calls from individuals who wish to speak to NRC representatives concerning nuclear safety-related problems. The telephone numbers for all Regions, except Region II in Atlanta, were changed by amendatory actions published in the Federal Register to show the revised information affecting 10 CFR Part 21, subsequent to the effective date of January 6, 1978, as set forth in Sec. 21.6 posting requirements.
 4. Amendments, in addition to the above, primarily addressed the "Manufacturer/Supplier of a commercial grade item" in Section 21.2 and Sec. 21.3(4) or Part 72 for storage of spent fuel. SF&W activities subject to 10 CFR Part 21 have been confined to manufacturing in accordance with the minimum requirements of ASME Boiler and Pressure Vessel Code Section III for Nuclear Power Plant Components. Piping subassemblies or pressure vessels or materials have been supplied with the appropriate N or NPT Code Symbol Stamp or documentation has been furnished certifying compliance with ASME III Code requirements, as applicable, for items furnished as a material manufacturer or supplier. Therefore, references to commercial grade items, also requirements under 10 CFR Part 72 of Chapter 1, are not included in the SF&W scope of activities or contractual obligations.

APPENDIX B - NONCONFORMANCES

Finding A (restated)

QA Manual Section 6, paragraph 6.1.5 states, "If the contents of the containers are removed, the coated electrode and flux not issued to production shall be placed in properly identified containers in heated ovens or heated rooms. The open containers shall be identified by heat, lot and/or batch number of the materials."

Contrary to the above, observation of the contents of an oven in the welding material issue room revealed 1/8" Inconel electrodes mixed in with 1/8" type E-9018 electrodes. The container in which these two different types of electrodes were found was identified with the heat number of the type E-9018 electrodes.

Revised Finding

The last sentence of the above paragraph is incorrect. Change to read as follows:

The container in which these two different types of electrodes were found was identified with the heat number of the 1/8" Inconel electrode (Arcos Standard 8N12). The container was identified as Lot No. 0A10B Mix 13.

Corrective Action - Revised Finding (completed 12/1/82)

When the violation of QA Manual Section 6 was noted, as stated in the Revised Finding above, the 1/8" E-9018 electrode (Chemetron Atom Arc E-9018-B3) was removed from the container marked Lot No. 0A10B Mix 13 and placed in the proper container marked Heat No. 422H4031, Lot No. 03-2-E389D.

Preventive Measure (completed 2/17/83)

Contents of the oven in the welding material issue room are maintained under continuing surveillance by the QA Welding Technician and the Rod Room Attendant, although the above violation was a obvious result of human error, as discussed in the following Summary and Comments on Finding A. As stated below, the practice employed in the actual issue of welding material by the Rod Room Attendant, together with the

demonstrated "burning" characteristics of 1/8" Inconel (Arcos 8N12) as compared to 1/8" E-9018 (Atom Arc E9018B3), completely precludes any generic implication of performing welding with the incorrect 1/8" electrode E-9018 versus Inconel.

Summary And Comments On Finding A

Finding A, described in the Revised Finding, has been investigated. The circumstances surrounding the material mixup cannot be factually established. Incorrect material was neither issued by the Rod Room Attendant nor could have been issued due to the SF&W QA Program that is fully implemented. The specific provisions of our program that prevent any incorrect welding material issuance are described below. Therefore, the circumstances must be relegated to "human error."

Our QA System and Program would have prevented usage of the incorrect material, as described in the Quality Assurance Manual Paragraph 6.1.7 which states as follows: "Control is provided by the Quality Control Inspector who shall verify that proper welding materials have been issued for the piece to be welded. Visible evidence of verification is the QC Inspector's sign-off of the Weld Material Issue Form (see Exhibit 6-1) and his verification of the type of filler metal to be used for each weld on the Detail Sheet."

Further, as stated in Paragraph 6.1.7.1, "The Weld Material Issue Form shall be issued by the Rod Room Attendant upon request from the welder, welding operator, or Welding Foreman. An original and one copy are to be prepared and it shall not be acceptable until all the information required by the form, except the welder's symbol or signature, has been entered." Also, as stated in Paragraph 6.1.7.2, "When the Weld Material Issue Form has been completed, the Rod Room Attendant shall issue the materials, sign the form, and retain a copy for his records. The QC Inspector shall approve the welding materials by signing and dating the welder's copy of the completed form."

At this point it should be recognized that each individual electrode to be acceptable per specification is stamped with the appropriate identification in accordance with the requirements set forth in ASME Section II Part C, 1980 Edition: Inconel - SFA-5.11 Paragraph 2.9 - Electrode Identification which states in subparagraph 2.9.1, "At least one legible imprint of the electrode classification shall be applied to the electrode covering as near as practical to the grip end of the electrode and within 65 mm (2-1/2 in.) of that grip end." E-9018-B3: SFA 5.5 Paragraph 2.7

Electrode Identification which states in subparagraph 2.7.1, "At least one legible imprint of the applicable AWS classification shall be applied to the electrode covering as near as practical to the grip end of the core wire, but not more than 2-1/2" (65 mm) from that grip end."

At each stage of the physical transfer of the material by removal of the material from the storage containers by the Rod Room Attendant, approval by the QC Inspector and received by the welder, the material is visually verified to be the material that was listed on the Weld Material Issue Form. This visual verification includes the physical dimensions as well as the stamping on the grip end of the electrode as stated in the specifications; this includes the classification stamping that shall appear on the electrode to satisfy specification requirements.

In the interest of visually and physically demonstrating weld deposits with Inconel in direct comparison with E-9018 with a machine set for the E-9018, a sample was welded and closely observed by QA Management and the Manager of Welding. This conclusively demonstrated that in no case could a qualified welder or QC Inspector make weld deposits that cannot be readily recognized during deposition and physical appearance in both geometry and color of the deposited metal:

- a) The voltage and amperage settings required for proper weld deposition using 1/8" E-9018 filler metal are not compatible with those required for Inconel (Class E-Ni Cr Fe-3).
- b) The arc characteristics of the two filler metals is distinctly recognizable even to a layman.
- c) The appearance of the completed welds differ in that the deposit made with E-9018 has a dull cast as found on mild steel welds while the cast of E-Ni Cr Fe-3 has the silvery appearance of stainless steel.

FINDING B - NONCONFORMANCE (restated)

Heat Input Guide No. 10-124, a part by reference of Welding Procedure Specification (WPS) No. 0808905, Revision 4, requires that a travel speed of 12-20 inches per minute and a voltage range of 28-31 be used when performing submerged arc welding (SAW) at an amperage range of 290-300.

Contrary to the above, SAW welding (for which WPS No. 0808905, Revision 4 was applicable) was observed being performed using 290 amperes on

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Weld 7 in piping subassembly Sales Order (SO) Q7068-SF, Sheet 5, and a travel speed of 24 inches per minute and arc voltage of 32.

SF&W CORRECTIVE ACTION (completed 2/25/83)

1. The piping subassembly being Submerged Arc Welded (SAW) during the inspection was in accordance with drawing S. O. Q7068-SF, Sheet 5. The materials were SA-312 Type 304-SS pipe being welded to SA-403 Type 304 welding fittings. ASME Section IX, 1980 Edition, QW-254 does not include QW-409 Electrical Characteristics (QW-409.1) as an "Essential Variable," unless notch toughness requirements are imposed. Since notch toughness requirements do not apply, the non-conformance reported is not a violation of ASME Sections III or IX, but a violation of the SF&W QA Program and implementation which has been addressed as follows:
 - a) The welder was instructed during a QA Meeting on 12/1/82, and the QA Meeting Notes were signed to indicate understanding and assurance that the welder had full knowledge and appreciation of the mandatory requirement for adherence to the specified Heat Input Guide welding parameters.
 - b) To assure continuous reference to the check list of the Heat Input Guide welding parameters, a copy has been posted in a conspicuous location on each SAW unit to provide a constant reminder of the requirement of the Heat Input Guide.
 - c) Per ASME Section IX Paragraph QW-409, Electrical Characteristics, subparagraph QW-409.1, the heat input (low side) per the Heat Input Guide parameters required:

$$\text{Joules/in} = \frac{(28)(290)(60)}{20} = \underline{24,360}$$

However, during the inspection the observed parameters resulted in the following:

$$\text{Joules/in} = \frac{(32)(290)(60)}{24} = \underline{23,200}$$

Since this value was at variance with the SF&W procedure, although not a violation of ASME Code, the welds in question were radiographed and determined to be satisfactory on 12/16/82 to provide a record of the disposition.

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FINDING C - NONCONFORMANCE (restated)

Paragraphs NB/NC-4231.2 in Section III of the ASME Code require that the immediate area around a temporary attachment be marked in a suitable manner, so that after removal of the attachment the area can be identified until after it has been examined by either magnetic particle or liquid penetrant methods.

Contrary to the above, the NRC inspector observed that the immediate area around temporary attachments on two piping subassemblies had not been marked prior to attachment removal, in order to provide for identification until after performance of the required surface nondestructive examination. The applicable subassemblies were SO Q8113-PLA, Sheet 3 (ASME Section III Code Class 1, Westinghouse 31-inch primary piping) and SO Q3301-CA, Sheet 13 (ASME Section III Code Class 2, Service Water System, Shearon Harris, Unit 1).

CORRECTIVE ACTION (completed 11/30/82)

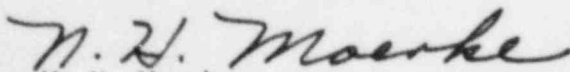
Immediately after the nonconformance was observed by the inspector, the nonconformance was corrected by marking the immediate area around all temporary attachments with certified marking pens.

PREVENTIVE MEASURE (completed 2/17/83)

QA Meeting Notes, covering a training and indoctrination session with shop personnel, included a presentation of all duties and responsibilities associated with the SF&W Nuclear QA Program for ASME III Code compliance. Personnel included welders, fabricators, inspectors, checkers, and shop management. This included a question and answer session to assure full understanding. The meeting notes were signed by all attendees to indicate understanding and acceptance of responsibilities that were reviewed during the 1-1/2 hour training session.

If you require any additional information in order to evaluate our response, please contact us at your convenience.

Yours very truly,



N. H. Moerke
Vice President-Engineering

NHM:dc