

OCT 10 1984

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MEMORANDUM FOR: Stewart D. Ebner, Chief, Engineering Programs Branch,
Division of Engineering and Technical Programs

THROUGH: Jacque P. Durr, Chief, Materials and Processes Section, *SM for SD*
EPB, DETP

FROM: Samuel D. Reynolds, Jr., Lead Reactor Engineer, M&PS

SUBJECT: SWEC WELDER PERFORMANCE QUALIFICATION TESTING AT NINE MILE
POINT 2

During a routine inspection (August 20 - 24, 1984), a special effort was made to obtain specific details concerning welder qualification conducted by Stone and Webster Engineering Corporation (SWEC) for the licensee. The supplement to Inspection Modules 55157B and 55177B proposed by Mr. E. H. Gray (attached) was used and the responses to each item (where applicable) are indicated.

General Information

This information concerns the "hiring in" welder qualification testing by SWEC.

Construction identifies the need for a welder. The appropriate Union Hall (Local) is contacted. (SWEC hires welders from the iron workers, carpenters, electricians, pipe fitters, and boiler maker trades). The cognizant local sends specific welders who may be journeymen from the local or from other locals ("Boomers"). It is also possible to have apprentices from the local. All welders tested are temporary employees and receive pay while they are being tested. They are issued photo badges prior to reporting to the Welder Qualification Test Booth (WQTB) and receive a general site orientation training (not training in welding techniques) which includes training in the meaning of 10 CFR 50 Appendix B.

The SWEC Chief Welding Supervisor conducts an informal interview to determine background and experience. He compares the welder with this photo badge and initiates a form for the WQTB indicating the appropriate test assembly to be welded. The test assemblies are indicated on the SWEC PQM.

The WQTB Welding Supervisor (Construction) explains the WQTB job rules, PQM test assembly details, how to tack, and he explains the WPS which is to be used (which is included in the PQM). He inspects the fitup prior to the QC check and also later inspects root pass (and hat pass if utilized).

QC inspects per N2WELDERSFA001.

The name, SS#, PWM, position, xray or sidebend and date are vibrapencil stenciled in the test assembly.

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The QC inspector assigned to the WQTB witnesses and signs off the bend test results. When RT is utilized the radiography is conducted by QC and interpreted by a SNT TC 1A Level II RT qualified inspector. The RT reader form (if RT is utilized) and QC inspection checklist form is maintained with the welder qualification records.

QC prepares the performance qualification record and signs them for QC.

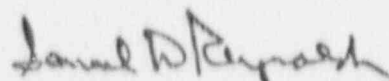
The welder is assigned a personal card indicating the PQM tests passed by the welder.

W. Kidd, a qualified welder, who assists in the WQTM program and two welders in the process of being qualified were interviewed. Both welders being qualified (experienced nuclear welders) believed the program by SWEC was conducted in an effective and very fair manner with adequate pre-testing indoctrination.

Answers to Specific Module Paragraphs

- 2.1 The welder's photo badge, his signature and his Social Security No. is used for identification. The welder is assigned to a specially identified welding booth and instructed "that a welder going into a booth other than assigned may be subject to disciplinary action". QC checks the welders physical features against photo badge.
- 2.2 Once the test assembly is attached to the fixture, it is welded to completion. Immediately upon completion of welding, the test assembly it is checked for proper vibrapencil marking (name, Social Security No., PQM, position, etc.) before it is machined to produce guided sidebends or sent for RT examinations.
- 2.3 Training - No training is conducted for welders seeking employment at this time. The function of the WQTB is to test hire-in welders not to train welders. In up-grading tests training may be conducted.
- 2.4.1 The SWEC Supervisor of the WQTB is a Construction Welding Specialist. The SWEC WQTB Supervisor conducts the welding indoctrination, supervises fitup and welding of the test assembly, supervises preparation of the guided bends, supervises bending of the guided bends and reviews the results. The SWEC FQC inspector assigned to the WQTB signs off a detailed check list (T-382) which is attachment 1 for N2 Welder FA001-00-00. The ANI does not review and inspect each individual welder's test assembly results.
- 2.4.2 Test requirements are those established by SWEC PQM which meets ASME Code SCIX
- 2.4.3 The SWEC WQTB Supervision has adequate technical qualifications in the welding areas, however, he is not site qualified in the QC area. The FQC inspector interviewed by the NRC inspector and his supervisor are AWS QC-1 Certified Welding Inspectors. However, this is not a documented requirement for FQC inspectors.

- 2.4.4 Test assemblies are vibrapenciled with the information indicated in 2.2 Stenciling was noted by the inspector.
- 2.4.5 Following visual examination, the guided bends or test pipes which have been RT'd are scrapped. In some cases the pipe weld is cut to reuse the ends for other test assemblies.
- 2.4.6 SWEC QA conducts surveillance inspection of WQTB activities.
- 2.4.7 No, other than on a surveillance basis.
- 2.4.8 It was stated by the SWEC WQTB Supervisor that approximately 5% initially flunk on visual appearance or by observation of unacceptable welding technique (Looked out). Of those that weld the acceptance test, 70% pass the tests.
- 2.4.9 Interviews, including those with experienced welders being tested who flunked, indicated the system was fair and that adequate information on techniques and parameters was given prior to welding of the test assemblies.
- 2.4.10 Based on the defect rate on radiographic examination, the total qualification system is considered marginal at this time.
- 2.5.1 The FQC assigned to WQTB interprets bend test results and QC SNI TC1A Level II inspector for KI examinations interprets RT examinations.
- 2.5.2 The FQC determines acceptability of tests and records the results.
- 2.6.1 The WPQ documents are prepared and signed by WQTB FQC. The original goes to QC.
- 2.6.2 By the update list.
- 2.7.2 Information was not requested of SWEC.



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