

DEC 03 1984

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

THROUGH: Jacque P. Durr, Chief, Materials and Processes Section,  
EPB, DETP

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

SUBJECT: IIT/GRINNELL 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 IIT/Grinnell 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

During the last two years the average number of welders for IIT/Grinnell has been between 300 and 350. The welders are obtained from Union Local 273 (Pipefitters and Steamfitters). It is estimated that over 85% of the welders are Journeymen, however, some may be third year Apprentices. The union supplies referral card to the welder who presents the card upon arrival to the Time Office. The Senior General Foreman or Shop Steward contacts the union hall and confirms that the welder who arrived was the welder sent by the union hall. The Time Office records the welders name, social security number and badge number. The welder receives a picture badge which is required by security for entrance into the plant. The Foreman or Shop Steward escorts the welder to the "Test Booth". The Test Booth Clerk checks for prior qualification history of the welder at the site and if applicable checks the reason for previous termination.

The welder receives a two hour indoctrination program which is recorded as documented training. During this training the welder reviews the applicable WPS and mandatory hold points specified in the Welder Qualification Manual (WQM). The welders receive an information copy of the WPS.

The welder is assigned to a specific test booth and instructed that "no visitors are permitted in test booths and being in the wrong test booth may result in immediate dismissal."

The welders receive constant supervision by the Test Booth Supervisor and the clerk during qualification.

Prior to welding on the test assembly, the welder stamps the assembly at 12 o'clock, stamps his first and last initials at the top and "RT".

The test booth only conducts qualification. No training is conducted except for upgrading of previously qualified welders.

The Field Quality Control Manager (FWCM) has responsibilities for welder testing and examination as described in FWC 5.2-2-6 which has been approved by SWEC and the licensee.

Upon completion of welding the test assembly is visually inspected, and if acceptable, each test assembly receives a unique number which is stamped on the test assembly. If there is a visual inspection rejection, the inspection record is kept with the files on "failed welders". Radiography is conducted by JIT/Grinnell Quality Control NDE personnel. The radiographic disposition sheets are attached to the qualification test record.

The ANI conducts surveillance checks approximately once a week and reviews all WPQ records which are issued from Providence (Corp. QA) following qualification. The WPQ records are also checked by SWEC and the licensee.

Upon completion of welding and examination of the test assembly, the welder receives a site welding indoctrination program, is issued a blue card for personal identification of qualifications completed, and is issued a unique stencil.

The qualification is authenticated by the Corporate Welding Engineer.

The Test Booth keeps a daily updated log of welder qualifications. A Key Sheet is issued monthly indicating welders qualification limits.

Welders who lose qualifications by the 90 or 180 day rules are retested in accordance with the original test assembly rules.

#### ANSWERS TO SPECIFIC MODULE PARAGRAPHS

- 2.1 Photo badge is assigned.
- 2.2 Test assembly is stencil marked with welders initials. Unique stencil identification is assigned upon completion of testing along with a special blue card indicating qualification tests made by the welder.
- 2.3 There is no training function other than that required for upgrading of previously qualified welders.
- 2.4.1 Qualification of welders is conducted by the qualification test supervisor, however, QC determines disposition of radiographs of completed test assemblies.

ANSWERS TO SPECIFIC MODULE PARAGRAPHS (Continued)

- 2.4.2 The WQM establishes the test requirements in accordance with SCIX.
- 2.4.3 Discussions with those in charge of the Test Booth indicated they were knowledgeable of IIT/Grinnell and SCIX qualification systems.
- 2.4.4 Each test piece is identified with stencil marking.
- 2.4.5 Completed test assemblies are held for a short time then scrapped. The pieces are identified in a way that can not be confused for the RT operations.
- 2.4.6 Overchecks by the ANI, SWEC, and the licensee are conducted.
- 2.4.7 ANI conducts surveillance check on a weekly basis and reviews all completed qualification records submitted by the Corporate Welding Engineer.
- 2.4.8 Approximately 60% of the welders tested fail the qualification test. Of these  $\frac{1}{2}$  are "looked out" or fail the visual inspection and  $\frac{1}{2}$  fail the RT.
- 2.4.9 Welders were not interviewed during qualification.
- 2.4.10 The quality of field welding is below that desired, however, the qualification system is similar in most all respects to other construction sites.
- 2.4.11 The qualification system provides adequate safeguards to prevent improprieties. The quality of welding is less than desired requiring more than the usual repair activities. The completed weld quality levels for field welding are determined by inspection of the welds per se.
- 2.5.1 RT is conducted by Quality Control NDE personnel.
- 2.5.2 The disposition of RT is by Quality Control NDE. The ANI provides surveillance checks. There is independence between the qualifiers and those who interpret the results. Corporate Welding Engineer officially reviews and signs all qualification records.
- SWEC and the licensee conduct surveillance checks on the IIT/Grinnell system.

*David W. Reynolds*

Purpose - To supplement Inspection Modules #55157B and #55177B for review/inspection of Welder Qualification System.

Subjects

- 2.1 Sign up for employment - Is photo badge assigned or what other method is used so as to uniquely identify each welder.
- 2.2 How is identification of employee maintained thru qualification testing and subsequent welding on plant components.
- 2.3 Training
  - 2.3.1 How much time prior to qualification?
  - 2.3.2 Who runs the training activity?
- 2.4 Qualification
  - 2.4.1 Who conducts welder qualification testing?
  - 2.4.2 What test requirements are established?
  - 2.4.3 Experience and Qualification of those in control and responsible for welder qualification test program.
  - 2.4.4 How is each test piece identified?
  - 2.4.5 What is disposition of good and N.G. test pieces.
  - 2.4.6 Does an overcheck system exist for control of those taking tests, test pieces and during NDE/destructive testing.
  - 2.4.7 Does ANI (Authorized Inspector) observe welder qualification testing or program?
  - 2.4.8 Percentage of Pass/Fail on welder tests?
  - 2.4.9 Interview welders during or after testing to confirm identification and determine their comments on fairness of testing program and other related topics.
  - 2.4.10 Overall - Is qualification testing system and method managed and controlled adequately to provide qualified welders to the job site?
- 2.5 Non Destructive Examination (NDE) and Destructive Testing of Welder Qualification Test Welds.
  - 2.5.1 Who performs these functions?
  - 2.5.2 Who and How are acceptable/rejectable test results recorded?

2.6 Welder Qualification Records (WQR)

2.6.1 Review by who and how are WQR prepared and controlled?

2.6.2 How are supervisors at site informed of welders qualifications?

2.7 Follow Up

2.7.1 Are site supervisors getting weldors who are trained and qualified adequately to do the required work?

2.7.2 How often have weldors been required to retest as a result of unacceptable job welding?

2.7.3 What is the percentage of acceptable site welding based on NDE result (mainly RT). Is the percentage of acceptable site welding high enough to indicate that the weldor training and qualification program is successful?