

SSER

Task: Allegations A-110, A-130, and A-148

Reference No.: 4-84-A-06-5, 4-84-A-06-25, and 4-84-A-06-43

Characterization: It is alleged that some inspectors did not meet all the requirements of ANSI N45.2.6, "Qualification of Inspection, Examination, and Testing Personnel for Nuclear Power Plants."

Assessment of Allegation: The NRC staff examined the qualifications of 17 inspectors at random: four from Ebasco Services Incorporated; five from J. A. Jones Construction Company; and eight from Fegles Power Services.

The qualifications of the four Ebasco inspectors were found to be in accordance with ANSI N45.2.6 and Ebasco Procedures WQC-121 and ASP-I-3.

The qualifications of only one of the five J. A. Jones inspectors were found to be in accordance with ANSI N45.2.6 and J. A. Jones procedures POP-N-505, POP-N-605, and POP-N-702. In its review of J. A. Jones inspector qualification files, the NRC staff discovered one Level I Cadwelding inspector who was certified on May 8, 1979, based on a high school education and only four of the twelve months experience required. Level I inspectors perform pre-weld and post-weld visual inspection of Cadweld splices. A staff review of daily Cadweld inspection reports indicated that the inspector performed pre-weld inspection only; final Cadweld inspections were performed by a qualified J. A. Jones inspector.

The Project Quality Assurance Manager (PQAM) also waived time and experience requirements to certify the same inspector for Level I inspection work for concrete, structural, and reinforcing steel because the inspector demonstrated proficiency in field work. The inspector was certified as Level I in a letter from the PQAM of November 7, 1979, based on a high school education and ten months experience, with the requirements for formal classroom training and

proficiency testing waived. ANSI N45.2.6 and the J. A. Jones QA program require one year of experience in quality assurance, including testing or inspection of the appropriate construction or installation, and the satisfactory passing of the Level I examination for the appropriate discipline. The same inspector was certified as a Level II Concrete Inspector on March 12, 1980, with only 15 months experience and as a Level II Structural and Reinforcing Steel Inspector on May 7, 1980, with only 17 months experience, which is in violation of the J. A. Jones procedure requiring two years of experience.

Moreover, the same inspector was delegated to act for the PQAM, with all the authority of the PQAM, when the original PQAM was absent from the project on August 15-17, 1980; November 18-20, 1980; and January 27-29, 1981, even though the inspector did not meet J. A. Jones requirements for a Level III inspector: a high school education and 10-years experience.

A second J. A. Jones inspector was certified as a Level I, QV Inspector (Structural Steel; Concrete-Visual inspection), by a letter of November 28, 1975, based on this person's attendance at J. A. Jones Corporate QA training classes and on an evaluation of previous education and experience. The education consisted of a high school education, plus one year of junior college, while the experience consisted of two years as a secretary/draftsperson prior to employment at Waterford 3 and approximately eleven months of the same experience since coming to Waterford 3. The experience reported did not meet the required one year of experience in construction quality assurance, including testing in the appropriate discipline or inspection of the appropriate construction or installation. No record was available to verify that the inspector had satisfactorily passed a Level I examination for the appropriate discipline, which is a J. A. Jones requirement. A discrepancy was also noted on the November 28, 1975 letter in that it showed that the inspector attended a training class (Earthwork - Level II) on June 14-16, 1976, even though the letter was signed and dated approximately six months prior to the class. Correction fluid (whiteout) was used on this document. Accordingly, this matter will be forwarded to the NRC Office of Investigations for its consideration.

A third inspector was improperly certified by J. A. Jones Company on November 24, 1975, as a Level II inspector (Structural/Concrete/Visual Inspection). This inspector has a college degree from a military academy and spent three years prior to coming to Waterford 3 as an Infantry Platoon Leader, a Maintenance Officer, and a Supply Officer. He did not meet the requirement of two years of experience in construction quality assurance, including testing in the appropriate discipline or inspection of the appropriate construction or installation. No record was available to verify that the inspector had satisfactorily passed a Level II examination for the appropriate discipline.

A fourth J. A. Jones inspector was certified in several areas as a trainee, but J. A. Jones procedures do not state the qualification requirements and duties of a trainee. He was certified as a Level I concrete inspector on September 8, 1978, with eight months experience. He was certified as a Level I Structural Steel Inspector on September 14, 1978, with 18 months experience, and he was certified as a Level I earthwork inspector on September 22, 1978 with ten months experience. In no case did he meet the requirement of one year experience in construction quality assurance, including testing in the appropriate discipline or inspection of the appropriate construction or installation.

The NRC staff was told by a person who served as a J. A. Jones supervisor in 1976 and 1977 that it was brought to his attention that some J. A. Jones inspectors did not meet the experience requirements. He then wrote letters waiving the experience requirements of those inspectors to satisfy the requirement that the discrepancy had been identified. The J. A. Jones QA program for the construction phase of nuclear power plants, Attachment F, "QA Personnel Training and Certification Program," allows the training and education requirements to "not be treated as absolute when other factors provide reasonable assurance that a person can competently perform a particular task."

Fegles Power Services was responsible for reinforced concrete construction and inspection associated with the reactor containment shield building. The NRC staff review of qualifications for the eight Fegles Power Services inspectors found that six were in compliance with ANSI N45.2.6 and Fegles Procedure QAP-303-21.

The first inspector lacking in qualifications was certified as a Level III inspector, based on a high school education and one year of experience as a draftsman-estimator for Fegles. The Fegles' requirement is that a Level III inspector have four years experience in testing or inspection (or both) for power plants, nuclear plants, or similar heavy industrial equipment or facilities.

The second inspector found lacking in qualifications was certified as a Level II inspector, based on a college degree (BSME) and two years of quality assurance work. However, he was assigned the duties of the PQAM for Fegles at Waterford 3. Although he met the requirements of a Level II inspector, he did not meet requirements for a Level III, which are a college degree from a four year accredited engineering or science school, plus five years of experience in quality assurance, including testing or inspection (or both) of equivalent manufacturing, construction and installation activities.

Additionally, based on the review of Nonconformance Report (NCR) W3-6234 and J. A. Jones inspector personnel files, the staff found that there were J. A. Jones Cadweld inspectors who performed Cadweld inspections prior to formal certification. Cadwelds inspected by these J. A. Jones uncertified inspectors were installed prior to November 24, 1975. Most (approximately 90%) of these Cadwelds were located in the concrete basemat. During the initial construction stage, Ebasco had a qualified quality control inspector doing overview inspection of the Cadwelds performed by J. A. Jones qualified Cadwelders. NRC staff reviewed the recommended disposition of Attachment II to NCR W3-6234 and discovered that the Ebasco qualified control inspector, in fact, only inspected about 5% of the 1200 Cadwelds which were inspected by J. A. Jones uncertified Cadweld inspectors prior to that date.

Based on the sample reviewed, it appears that early in the project there was a lack of experienced subcontractor inspection personnel in the civil-structural discipline, but the overall effort in quality control appears to have been successful in achieving adequate construction quality. Cadwelds inspected by uncertified inspectors were also included in the random testing program and proved to be acceptable by tensile test results. The NRC staff ascertained that, based on the random test results (only 6 out of nearly 600 tests failed), the quality of the installed Cadwelds had not been impaired. Therefore, the NRC staff concludes that this issue has no significant impact on safety. This issue does have generic implications in that a pattern of waiving experience requirements was evident.

Potential Violations: There is a violation of ANSI N45.2.6 and J. A. Jones Procedure W-SITP-4. The contractors identified failure to regularly review the quality assurance program to assure suitable proficiency in education and experience, and in indoctrination and training, as required by 10 CFR 50, Appendix B, Criterion II.

Actions Required: LP&L shall review the qualifications of all inspectors from Fegles and J. A. Jones who performed inspections at Waterford 3 in accordance with ANSI N 45.2.6 and the contractors' procedures. LP&L shall also examine the waivers given on experience to soils, concrete and reinforcing steel inspectors. If inspectors are found who do not meet the requirements, then LP&L shall review what inspections were made by those individuals to determine what impact they have on the quality of the project.

These reviews shall be conducted prior to fuel loading.

References

1. Qualification/Certification files

Ebasco

Edward C. Madere, Jr.

Leon P. Cox

David E. Blankinship

John B. Perkins

J. A. Jones

Jane Ogea (1)

Sherry Vann (2)

Sam Horton

James A. Frick (3)

Carl Goldman (4)

Fegles

Richard J. Nordick (1)

Martin J. Myers, Jr. (2)

David R. Blinde

T. J. Driscoll

N. Radabaugh

O. Kulys

S. Lazorchak

L. Beck

2. ANSI N45.2.6 - 1974 "Qualification of Inspection, Examination, and Testing Personnel for Nuclear Power Plants.
3. ASP-I-3 "Indoctrination and Training (Ebasco).
4. WQC-121 "Qualification of Quality Control Personnel" (Ebasco).

5. POP-N-505 "Qualification and Certification of Personnel" (J. A. Jones).
6. POP-N-605 "Indoctrination and Training" (J. A. Jones).
7. POP-N-702 "Personnel Training, Qualification and Certification" (J. A. Jones).
8. J. A. Jones Construction Company QA Program (Attachment "E and F" only).
9. QAP-303-21 "Qualification of Inspection Personnel" (Fegles)
10. J. A. Jones Procedure No. W-SITP-4, Revision 0 "Reinforcing Steel - handling, storage, installing, cadwelding and modification inspection procedures" October 3, 1975.
11. Ebasco Specification No. LOU-1564.79, Revision 0 "Mechanical splicing of Concrete Reinforcing Steel" March 8, 1974.
12. NCR W3-6234 "Nonconformance Report on Cadwelds missing records, uncertified inspectors etc..." May 16, 1983.

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