U.S. NUCLEAR REGULATORY COMMISSION
REGION I

Report No. 30-08572/88-002

Docket No. 30-08572

License No. 20-15102-01 Priority C Category 1

Licensee: P. X. Engineering Company, Inc.
25 FID Kennedy Avenue
Boston, Massachusetts 02210

Facility Name: P. X. Engineering Company, Inc.

Inspection At: Boston, Massachusetts

Inspection Conducted: June 28-29, 1988

Inspectors: John T. Jensen for John J. Miller, Senior Health Physicist — 8/10/88 date signed

John T. Jensen, Health Physicist — 8/10/88 date signed

Approved by: for John R. White, Chief
Nuclear Materials Safety Section C — 8/10/88 date signed

Inspection Summary: Safety Inspection conducted on June 28-29, 1988, (Report No. 30-08572/88-002)

Areas Inspected: Training and qualification of personnel, use of materials and equipment, and personnel monitoring control.

Results: In the areas inspected two apparent violations were identified: Radiography performed by uncertified individuals (Section 3); and failure to record pocket dosimeter readings (Section 5).

DETAILS

1. Persons Contacted:

*Paul O'Neil Jr., General Manager
*George Scruton, Vice President of
Marketing and Radiation Safety Officer
*Peter O'Neil, Trainee
Yuri Czernow, Shop Foreman

*Present at Exit Interview

2. Scope of Operations

P. X. Engineering Company is licensed by the NRC to perform radiography at their facility located at 660 Sumner Street, Boston, Massachusetts. The licensee currently possesses one 32 curie iridium-192 source housed in a Tech Ops Model 660 radiographic exposure device and one 11 curie cobalt-60 source housed in a Tech Ops Model 680 radiographic exposure device.

3. Training and Qualification of Personnel

The RSO stated that only a trainee and he were presently performing radiography and that another trainee's employment was terminated June 24, 1988. The RSO is authorized in Condition 12 of License No. 20-15102-01 to use licensed material. The RSO also stated that other than himself, the licensee has not employed a fully qualified radiographer since October 1987.

The inspectors interviewed the trainee concerning his involvement with radiographic operations. The trainee informed the inspectors that he had attached the pigtail connector of the source to the drive cable, exposed and retracted the source, and performed surveys. He also stated that these activities were performed on two occasions in May and June, 1988. Source utilization records supported the trainee's statements. The trainee confirmed that the RSO was always present when he was performing radiography.

The trainee described the training and instruction he had received relative to radiography. He indicated that he successfully completed a 40 hour radiation safety training course at Amersham/Tech Ops in November 1987. A subsequent phone call to Amersham/Tech Ops confirmed that the trainee had completed the safety course on November 6, 1987 and he had scored 95% on the mid term, 97% on the final, and satisfactorily completed the laboratory portion of the examination. The trainee informed the inspectors that he had never taken the P. X. Engineering examination required to certify him as a radiographer's assistant.

The inspectors questioned the RSO with regard to the trainee's lack of certification. The RSO stated that his NRC license requires that trainees receive on the job training prior to taking the radiographer's assistant certification examination and that he believed that additional on the job training would enhance the safety of the assistant radiographer's performance.

The inspectors explained to the RSO that his license requires one month on the job training for trainees, but the training should be limited to observation only. The inspectors stated that 10 CFR 34.31 prohibits any individual from acting as a radiographer's assistant until that individual has successfully completed a written or oral test covering the licensee's operating and emergency procedures and a field examination. The RSO informed the inspectors that he had been physically present for all the exposures made by trainees. In a subsequent discussion, the shop foreman confirmed that he had never seen an exposure taken when the RSO was not present to oversee the activity.

The finding that a licensee employee performed work as a radiographer's assistant, without having been certified as a radiographer's assistant by examination, is an apparent violation of 10 CFR 34.31 and Condition 17 of License No. 20-15102-01.

4. Use of Materials and Equipment

The RSO and the trainee performed one radiographic exposure during the inspection. Both individuals wore film badges and pocket dosimeters. The pocket dosimeters were zeroed prior to commencing work. The two survey meters employed were operational and were calibrated. The exposure was made in the licensee's facility and a restricted area boundary was established with a rope and "Caution - Radiation Area" signs. Constant surveillance of the restricted area was maintained during the exposure by the RSO, trainee, and the shop foreman. Radiation levels measured by inspectors at the restricted area boundary were within regulatory limits.

In preparing for the exposure, the RSO appeared tentative and unfamiliar with the pigtail connector on the source. He struggled as he connected the source to the drive cable. The trainee guided the RSO in making the connection. The trainee was knowledgeable with the pigtail connector, the locking ring and locking mechanism, and the drive cable crank.

After completing the exposure and retracting the source, the RSO surveyed the full circumference of the exposure device and the entire length of the guide tube. The RSO's survey was adequate to verify that the source had been fully retracted. The RSO engaged the locking device, therefore securing the source in the shielded position after the exposure.

No violations were identified.

5. Personnel Monitoring Control

The inspectors inquired about the licensee's pocket dosimeter charger. Licensee representatives produced two pocket dosimeter chargers. One of the charges was inoperable. With the second pocket dosimeter charger, the inspectors charged and zeroed three pocket dosimeters.

The inspectors reviewed records of pocket dosimeter readings. The trainee stated he performed radiography on May 27 and June 13, 1988. The records indicated that no pocket dosimeter readings were recorded for the trainee on these dates. 10 CFR 34.33(b) requires that pocket dosimeters be read and exposures recorded daily.

The licensee's failure to record the pocket dosimeter readings on May 27 and June 13, 1988 is an apparent violation of 10 CFR 34.33(b).

6. Exit Interview

The inspectors met with the licensee representatives listed in Section 1 of this report at the conclusion of the inspection. The inspector summarized the purpose and scope of the inspection and the apparent violations identified.

The licensee's General Manager agreed to take the following actions in response to the inspectors findings:

1. Cease using trainees in the capacity of radiographer's assistants until the trainees demonstrate their competence by successfully completing the required examinations as specified by 10 CFR 34.31(b)(3), and are certified by the Radiation Safety Officer as radiographer's assistants in accordance with Condition 17 of License No. 20-15102-01.

2. Assure that the RSO, an individual who has not been actively performing radiography for several years, will attend retresher training in radiographic operations by July 8, 1988 to increase his effectiveness in this area.

These actions were documented in a Confirmatory Action Letter to the licensee dated July 1, 1988.