U.S. NUCLEAR REGULATORY COMMISSION
REGION I

Report No. 030-10963/88-001

Docket No. 030-10963

License No. 20-16401-01 Priority C Category 1

Licensee: Briggs Associates, Inc
400 Hingham Street
Rockland, Massachusetts 02370

Facility Name: Briggs Associates, Inc.

Inspection At: 400 Hingham Street, Rockland, Massachusetts

Inspection Conducted: January 21 and 22, 1988

Inspectors: John J. Miller, Senior Health Physicist — 11/15/89 date signed

John J. Jensen, Health Physicist — 11/15/89 date signed

Approved by: John R. White, Chief — 11/20/89 date signed
Nuclear Materials Safety Section C

Inspection Summary: Routine Safety Inspection Conducted January 21 and 22, 1988 (Report No. 030-10963/88-001).

Areas Inspected: Training and qualification of personnel, licensee internal audits, inspection and maintenance of equipment, personnel monitoring, utilization log and quarterly inventory, radiation surveys, radiation safety at licensee's permanent radiographic facility, transportation and posting.

Results: In the areas inspected seven apparent violations were identified: failure to post a high radiation area (Section 12); failure to survey the full circumference of a radiographic exposure device (Section 11); failure to equip a permanent radiographic installation with the required audible and visible alarms (Section 11); failure to maintain records of exposure of radiographers assistant (Section 5); failure to properly describe a package of radioactive material on a shipping paper during transport (Section 10); failure to post 10 CFR Parts 19 and 20 (Section 12); failure to maintain utilization logs (Section 6);

DETAILS

1. Persons Contacted

Paul Skorohod, Vice President and Radiation Safety Officer
Kevin Curran, Manager, Department of NDE

2. Scope Of Operations

Briggs Associates, Inc. is licensed by the NRC to perform industrial radiography (License No. 20-16401-01) and materials moisture/density testing (License No. 20-16401-02) at temporary job sites in non-agreement states. The licensee currently employs one radiographer and one radiographer's assistant.

3. Background

On the day of the inspection, the licensee representatives were unable to produce some of the records that were requested by the inspectors, including a training file for the principal radiographer, records of meter calibrations performed on June 15, 1987, and the log compiling the pencil dosimeter readings. The RSO and the Manager of Non-Destructive Examination (NDE) informed the inspectors that less than one week prior to the inspection, the Manager's office was relocated from one end of the licensee's facility to the other. Therefore, many of the records were in moving boxes and in disarray. In addition, the radiographer who had performed the majority of the radiography since the last inspection, was out of the office on the day of the inspection and he was not available to be interviewed. These circumstances limited the scope of the inspection.

4. Licensee Internal Audits

The inspectors reviewed records of audits performe. by the RSO of one radiographer. The inspectors determined that for the audits performed on August 18, 1987 and October 6, 1987, no utilization logs were completed for the radiographic operations that occurred during the audits on those dates (See Section 6). The RSO stated that if the audits are performed during radiographic operations in which the source is exposed, but no radiographs are made, the utilization log sheet is completed and then discarded.

The Manager of NDE stated that he had not been audited by the RSO since the last inspection and had performed radiographic operations approximately six times during November and December, 1987.

No violations were identified.

5. Personnel Monitoring

The inspectors reviewed the radiographic utilization records on which were recorded the daily pocket dosimeter readings for radiographic personnel. A log compiling the pencil dosimeter readings was not available to be reviewed by the inspectors, although the licensee stated that such a log is maintained. The inspectors also reviewed records of annual pocket dosimeter calibrations.

The inspectors reviewed records of film badge reports and determined that no record of film badge exposures had been maintained for a radiographer's assistant and a trainee. The radiographer's assistant had been involved in approximately 20 radiographic operations and the trainee had been involved in approximately three radiographic operations since May, 1987. 10 CFR 20.402 requires that records be maintained for all individuals for whom personnel monitoring is required.

The failure of the licensee to maintain exposure records for two individuals involved in radiographic operations is an apparent violation of 10 CFR 20.401.

6. Utilization Log and Quarterly Inventory

The inspectors reviewed records of quarterly inventories and of utilization log entries made for radiographic operations. The inspectors determined that utilization log entries were not made on August 18 and October 6, 1987 when a radiographer exposed a radiographic exposure device during two monthly personnel safety audits performed by the RSO at the licensee's permanent radiographic facility. The RSO stated that during personnel safety audits performed when contract radiographic operations were not in progress, utilization log entries were made by the radiographer on the appropriate form but it has been the RSO's practice to discard these records since they did not concern utilization of the radiographic exposure device for contract radiographic operations. 10 CFR 34.27 requires that utilization logs showing the required information be maintained for two years.

The failure of the licensee to maintain utilization logs for radiographic operations performed on August 18 and October 6, 1987 is an apparent violation of 10 CFR 34.27.

7. Training and Qualification of Personnel

The inspectors reviewed the licensee's source utilization forms in an effort to compile the names of individuals who had been involved in radiographic operations at Briggs Associates Incorporated since the last inspection. The list compiled by the inspectors consisted of two radiographers, one assistant radiographer, and a trainee. The list was reviewed with the RSO and the Manager of NDE and both individuals confirmed that the individuals on the list were the only personnel involved in radiographic operations. The training files for one of the radiographers and the assistant radiographer indicated that both individuals had been tested and qualified in accordance with Condition 17 of License No. 20-16401-01 and 10 CFR 34.31. The training file for the second radiographer could not be located during the inspection.

No violations were identified.

8. Inspection and Maintenance of Equipment

Licensee records indicated that inspection of radiographic equipment was performed before each use of the exposure devices. Amersham/Tech Ops was contracted to implement the licensee's maintenance program for radiographic exposure devices. The records indicated that all exposure devices had been serviced by Amersham/Tech Ops in accordance with 10 CFR 34.28.

No violations were identified.

9. Radiation Surveys

According to the licensee's records, radiation surveys at field site restricted area boundaries were routinely performed and recorded by radiographers. Survey records indicated that the radiation levels in unrestricted areas were in accordance with 10 CFR 20.105.

No violations were identified.

10. Transportation

The inspectors reviewed a shipping paper that accompanied the shipment of an exposure device on January 21, 1988 containing approximately 55 curies of iridium-192. The shipping paper did not contain the following: proper shipping name (49 CFR 172.202(a)(1)); identification number (49 CFR 172.202(a)(3)); physical and chemical form (49 CFR 172.203(d)(1)(ii)), transport index assigned to the package (49 CFR 172.203(d)(1)(v)); and the packaging approval (49 CFR 172.203(d)(1)(vii)).

The finding that the licensee transported 55 curies of iridium-192 and the shipping paper did not contain all of the required information is an apparent violation of the aforementioned sections of 49 CFR.

The inspector asked the Manager of NDE if the licensee had ever shipped or transferred a radiography source to anyone other than the manufacturer. The Manager of NDE stated that the licensee had not transferred any of their sources to anyone other than the manufacturer.

11. Radiation Safety At The Licensee's Permanent Radiographic Facility

The inspectors observed that the licensee's permanent radiography cell was not equipped with either a visible or audible alarm. The RSO stated that the cell had never been equipped with an audible alarm and the visible alarm had been used only intermittently. The RSO estimated that the visible alarm was last used four to six weeks prior to the inspection. When asked why the visible alarm was removed from service the RSO stated that it was in the way. He explained to the inspectors that the visible alarm and associated detector were installed on top of a file cabinet directly outside the door of the permanent radiographic cell and it often interfered with individuals' access to the cell.

The licensee representatives reconstructed the configuration of the visible alarm and detector as it was previously employed. The inspectors noted that the visible alarm would not have been actuated by radiation, when the source was exposed, since the radiation would have been attenuated by the cell door, effectively shielding the detector. The visible alarm could only be actuated by opening the cell door with the source in the exposed position. Utilization logs indicated that the permanent radiography cell had been used for radiographic exposures on December 2, 11, 15, and 17, 1987 and January 6, 1988.

10 CFR 34.29(b) requires that each entrance used for access to the high radiation area in a permanent radiographic installation have both visible and audible warning signals to warn of the presence of radiation. The visible signal must be actuated by radiation whenever the source is exposed and the audible signal must be actuated when an attempt is made to enter the installation while the source is exposed. The finding that the licensee performed radiography in a permanent radiographic facility without an audible warning signal, and without a visible signal that was actuated by radiation whenever the source was exposed, is an apparent violation of 10 CFR 34.29(b).

Relative to the licensee's permanent radiography cell, a Notice of Violation (NOV) was issued February 17, 1987 citing the permanent radiographic installation at Rockland, Massachusetts for not having the required warning signals installed. In the licensee's response to the NOV dated March 19, 1987, the RSO stated that his radiographic cell is treated as a temporary job site and not a permanent radiographic installation. He did state in his response that audible and visible alarms were expected to be installed by April 15, 1987 at which time a license amendment would be requested to certify the facility as a permanent radiographic installation. When asked by the inspectors why such alarms had not been installed to date, the RSO stated that he had described his alarm system in a license renewal application and was not planning to install the system until the

license reviewer approved it. The licensee's current renewal application contains a letter dated October 1, 1987 in which the permanent cell with the audible and visible alarms are described and a statement is made that the alarms are being utilized.

The inspectors observed a radiographic exposure made in the licensee's permanent radiographic facility performed by the Manager of NDE. The Manager of NDE was unable to charge a pocket dosimeter because the dosimeter charger was not operable. The inspectors supplied the licensee with appropriate direct reading dosimetry.

The Manager of NDE exposed a 50 curie iridium-192 source and the inspectors made measurements of radiation levels around the permanent radiographic facility. Radiation levels were within 10 CFR 20.105 limits during the exposure. The NDE manager retracted the source and entered the permanent facility. The inspectors observed the NDE manager approach the exposure device, pass a survey instrument near the device and then place the survey instrument approximately one foot from the front of the exposure device.

10 CFR 34.43 requires that the entire circumference of the radiographic exposure device be surveyed after each exposure. The failure of the licensee to survey the full circumference of the radiographic exposure device is an apparent violation of 10 CFR 34.43.

12. Posting

The inspectors observed that the door of the permanent radiographic facility was posted with a sign bearing the radiation caution symbol and the words, "Caution - Radiation Area". The inspectors did not observe any radiation caution postings on the interior of the permanent facility. The inspectors determined that, based on the activity of the sources used by the licensee, a high radiation area existed within the permanent radiographic facility whenever radiographic activities are performed.

10 CFR 20.203 requires that each high radiation area be conspicuously posted with a sign bearing the radiation caution symbol and the words; "Caution - High Radiation Area." The failure of the licensee to post the permanent radiographic facility with the appropriate sign is an apparent violation of 10 CFR 20.203.

The inspectors asked a licensee representative where 10 CFR Parts 19 and 20 were posted. The representative informed the inspectors that these regulations were not posted, but they had been posted prior to the office move one week ago.

The licensee's failure to post copies of 10 CFR 19 and 20 is an apparent violation of 10 CFR 19.11.

13. Exit Interview

The scope and results of the inspection were discussed with the individuals listed in Section 1.

EDITED SYNOPSIS

This investigation was initiated upon receipt of a written request, dated February 19, 1988, from the Regional Administrator, U.S. Nuclear Regulatory Commission (NRC), Region I. The Office of Investigations (OI) was requested to investigate the following allegations relating to Briggs Associates, Inc. (BA), an NRC materials licensee, and determine if BA: (1) allowed untrained and/or uncertified personnel to perform radiographic operations; (2) made false statements in both a 1987 BA license renewal application and a response to an NRC Notice of Violation concerning a visible and audible alarm system; (3) permitted BA personnel to conduct radiographic operations without appropriate dosimetry; (4) failed to record radiography activity in the required utilization log; (5) transported radiography source material without appropriate placards and shipping documents. The allegations were based on information provided by a former BA employee and a subsequent January 21-22, 1988, NRC inspection.

BA is licensed by the NRC to perform industrial radiography, (NRC License 20-164-01), and materials moisture/density testing, (NRC License 20-16401-02), at temporary job sites in non-agreement states. The licensee employs one radiographer and one radiographer's assistant.

OI's investigation included the examination of pertinent records and interviews of involved personnel. Allegations (1), (3), (4), and (5), supra, were not substantiated during the course of this investigation.

With regard to allegation no. (2), interviews and document reviews indicated that the NRC notified the BA Radiation Safety Officer (RSO) in a letter dated August 14, 1987, that the radiography cell met the definition of permanent installation and therefore is required to have audible and visible warning signals. The RSO responded by letter dated October 1, 1987, acknowledging the status of the radiography cell and provided a diagram depicting the locations of the warning signals that were being utilized. By letter dated November 5, 1987, the NRC requested that the RSO confirm that BA would check the alarms when the cell was utilized. The RSO responded to the NRC on December 10, 1987, confirming that the alarm would be checked. During an NRC inspection on January 21-22, 1988, it was noted that the cell had never been equipped with an audible warning signal and that the visible signal was used intermittently.

During an NRC OI interview in July 1988, the RSO said that the alarm system was a matter of dispute between BA and the NRC, but that the alarms were made operable following the January NRC inspection. He indicated that it was his contention that BA was operating under their previous NRC license in 1987-88 which did not describe the current alarm system. During a subsequent interview by OI, the RSO was confronted with his exchange of letters with the NRC wherein he acknowledged that the cell was subject to NRC regulations. The RSO then admitted that he did operate the radiographic cell without the required warning signals and that he violated NRC regulations. However, the RSO denied willfully

misleading the NRC in his October 1, 1987, letter to the NRC which stated that both the audible and visible radiography cell alarms "are being utilized." The RSO said that the statement was intended to inform the NRC how and where the alarms would be utilized when installed at a future date.

Investigation concluded that the BA, RSO, acted with careless disregard for requirements in written responses to the NRC during the 1987 license renewal process concerning the audible alarm system for their radiographic cell (Allegation No. 2).