ENFORCEMENT ACTION WORKSHEET
REGION III

EA
Date of Enforcement Panel: July 22, 1999
Licensee: Professional Service Industries, Inc.
Facility: temporary job site, (Pocatello, ID)
License Type (non-reactor): Radiography
Docket No(s): 030-33792
License No(s): 12-16941-03
Inspection/OI Report No(s): 4-1999-016
Date of Identification: July 7, 1999 (Date RIV, OI Report was received in RIII)
Date of Exit Meeting/OI Report Date: June 22, 1999
Panel Chairman (SES Sponsor): Roy Caniano
Responsible Branch Chief/Lead Inspector: Geoffrey Wright/Thomas Young
Enforcement Representative: T. Simmons
Other regional attendees:
Headquarters attendees:

1. **Brief Summary of Issues/Potential Violations:** The licensee's radiographer and radiographer's assistant used a device that contained a sealed source of cobalt-60 (about 60 curies) to complete panoramic radiographic testing (RT) of a large steel tank. There were 4 welded seams that each required about 36 pieces of film. Each of the 4 RT shots was about 1-hour duration. The individuals were accompanied to the temporary job site by the (b)(7)(C) from Salt Lake City, UT, who was at the job for the 1st and 2nd shots, to ensure that there were no problems with the set up and film quality. The (b)(7)(C) left the job site after the 2nd shot. The two individuals completed the 3rd and 4th shots, during which the radiographer, who was the licensee's senior representative at the time, (b)(5) of the job site and 3 violations of NRC requirements occurred after the 4th shot. The violations were associated with the 2-person rule (34.41), supervision of the assistant (34.46), and control of access to licensed material (20.1802). The DRAFT Notice of Violation is attached to this worksheet. Following is the sequence of events.

   - The (b)(7)(C) and two individuals observed together the 1st shot. After the setting up the 2nd shot, the radiographer entered the dark room and processed several films from the 1st shot while the (b)(7)(C) and assistant maintained surveillance during the 2nd shot. The (b)(7)(C) was satisfied with the quality of the film, the set up, etc., and left the job site after the 2nd shot.
   - The radiographer and assistant set up the 3rd shot. The radiographer projected the source from the device for the 3rd shot, and promptly returned to the dark room to develop film, leaving the assistant alone to maintain constant surveillance of the barricaded area. After 1 hour, the radiographer came out of the dark room and retracted the source into the device.

- The individuals set up the 4th shot and the radiographer projected the source and returned to the dark room, as before, leaving the assistant to maintain constant surveillance of the barricaded area.
- After 1 hour, the radiographer lost track of time and did not emerge from the dark room, so the assistant retracted the source, completed surveys of the device and guide tube, and locked the device and removed the key. The assistant went directly to the dark room door and attempted to notify the radiographer that the assistant had terminated the 4th shot and that the assistant was going to lie down in the cab of the truck because he was experiencing severe back pain.
- Within about 15 minutes, several client welders passed through the unattended area, stopped at the truck and observed the assistant was asleep in the cab, the welders knocked on the dark room door to ask the radiographer if they could pass through the barricaded area. They mistook the radiographer's reply as permission to pass through the barricaded area.
- The radiographer came out of the dark room, escorted the welders out of the barricaded area, and completed confirmatory radiation area surveys that indicated the source was shielded safely in the device.

The radiographer and assistant were generally aware of the 2-person rule (34.41), the supervision rule (34.46) and the security rule (20.1802). However, the (b)(7)(C) was not certain that he had specifically trained and instructed the radiographer about the 2-person rule, e.g., that 2 qualified individuals must observe the shots. Neither the written qualification exam completed by the radiographer nor the test for the assistant specifically addressed the 2-person rule, but included constant surveillance of the shots. Each of these requirements was willfully violated, and each is categorized at Severity Level III.

2. **Regional Recommended Enforcement Strategy:** RIII recommends (b)(5) (b)(5) a Severity Level III problem, based on common cause (b)(5) (b)(5) and based on willfulness of the radiographer, escalate to a Severity Level II problem.

A. Is a predecisional enforcement conference necessary? YES, based on the severity of the violations noted above, the licensee will be given opportunity to present additional information to RIII managers before the enforcement decision is finalized.

B. Is action warranted against any individual? YES, because of the willful nature of the violations, both individuals are culpable (b)(5) (b)(5) (b)(5) The individuals were both recently qualified for their positions in March and June of 1998, prior to the incident in September 1998. The training included the PSI radiation safety operations and procedures manual, instructions from the (b)(7)(C) and written exams

These individuals were generally aware of the NRC requirements. (b)(5)

(b)(5)

(b)(5) They knew that at least 2-persons were required at the temporary job site, but may not have been specifically trained that both individuals had to observe the shots.

At the time of the incident in September 1998, the individuals did not specifically think about their training when the violations occurred. The morning after the incident, while the individuals drove back to Salt Lake City they discussed the incident and they were concerned about loss of their jobs. In retrospect, they realized that they had erred by not maintaining constant surveillance of the shot (20.1802), by the assistant operating the equipment without supervision of the radiographer (34.46), and by not observing the 3rd and 4th shots together (34.41).

(b)(5) the (b)(7)(C) who focused only on the trespass issue. The (b)(7)(C) counseled the individuals as to increased vigilance to prevent trespassing into the barricaded area. The (b)(7)(C) emphasized to the client management and staff that they may not enter the barricaded area under any circumstance, without approval of the radiographer.

Although, both individuals realized their wrongdoing, they contended that they did not deliberately violate NRC requirements. Rather, they were focused on the large amount of film processing that accompanied the job assignment.

C. **Regulatory message?** Focus the licensee to be vigilant to explore incidents and events thoroughly and to fully understand the actions of their workers. An opportunity was missed to identify the violations earlier when the (b)(7)(C) (b)(7)(C) failed to expand their evaluation of the circumstances and develop the root cause analysis (b)(5) (b)(5) The licensee received an NOV (NCP) for 2 Severity Level III violations and 5 Severity Level IV violations that were identified by NRC during a routine inspection in July 1997.

D. **How does this action fit into the overall strategy for the licensee?** Region III recommends a civil penalty for these violations. For the previous escalated enforcement in 1997, there was no civil penalty (b)(5) (b)(5)

3. **Analysis of Root Cause/Significance:**

A. **Root Causes (if known):** The radiographer wanted to develop and interpret the film during the shots, in order to save time. There were about 150 pieces of film produced on this job (b)(5) (b)(5) (b)(5)

B. **Safety Significance (actual or potential consequences):** The actual safety was not significantly compromised because of the actions of the licensee's workers who failed to follow their training and the NRC requirements. The

licensee was not placed in a position of undue risk. (b)(5) (b)(5) (b)(5) For section 34.41, the assistant was positioned at a location where he could observe the entire area bounded by the barriers during the 3rd and 4th shots. The client workers were aware of RT operations in the area. Based on this information, it was not likely that client workers could enter the restricted area and receive radiation exposures in excess of the NRC limits for the public

For section 34.46, the assistant was qualified in March, 1998, and had operated radiographic equipment under the direct supervision of licensee radiographers during the previous five months, e.g. from April - September 1999. No problems were recorded for the RSO audits of the assistant's performance of actual RT operations during that period. The actions of the assistant to retract the source into the device, complete the radiation survey of the device and guide tube, and to lock the device a remove the key, were not problematic. In this case, the equipment operated as designed and the survey instrument was fully functional. In this condition, a client worker could not project the source from the shielded device.

For section 20.1802, the device was a wagon-type unit that weighed about 300 pounds. The equipment was set up for use, e.g., the guide tube and drive cable were attached to the device (b)(5) (b)(5)

C. **Risk Significance (qualitative or quantitative):** For sections 34.41 and 34.46, if an unforseen hazard existed,, then the potential safety consequences could have included radiation exposures in excess of NRC occupational limits and public limits, e.g., for a disconnected source assembly or a source that was locked outside of the shield due to a faulty automatic locking mechanism and inoperable survey instrument. It was fortuitous that the assistant was not confronted by equipment that failed to function as designed

(b)(5)

D. **Regulatory Significance**: There is significant regulatory concern for a Severity Level II problem. The regulatory significance is escalated based on the willfulness and repetitiveness of the violations. The OI investigation determined that the violations were willful. The previous escalated enforcement in 1997 included unauthorized use of licensed material by an assistant or trainee.

4. **Apparent Severity Level(s) and Basis:** Following are examples of Severity Level III violations from the Enforcement Policy: Supplement VI, example C.8 cites failure during radiographic operations to have present at least two qualified individuals, as

required by section 34.41. Also, example C.4 cites conduct of licensed activities by a technically unqualified or uncertified person. As required by section 34.46, the radiographer's assistant was not qualified or certified to operate the radiographic device without the direct, physical observation of the radiographer.

Supplement IV, Example C.12, cites a significant failure to control licensed material, e.g. maintain constant surveillance of a device containing 60 curies of cobalt-60, as required by section 20.1802.

(b)(5)

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5. **Application of Enforcement Policy:**
A. Enforcement History Last 2 years/2 inspections: In July 1997, during an inspection of the Pittsburgh facility, NRC identified 7 violations that resulted in a CAL and NOV (no CP) for 2, Severity Level III violations and 5, Severity Level IV violations.

One of the Severity Level III violations involved unauthorized use of licensed material by an assistant who operated RT equipment in a permanent radiographic facility without direct supervision by a radiographer (section 34.44, was cited at the time of enforcement action, rather than section 34.46 that applies in the current case under consideration). There were no violations of 20.1802 or 34.41.

The letter to the licensee dated February 2, 1998, acknowledged the NOV reply from the licensee dated December 4, 1997, and discussed 10 CFR 30.10 "Deliberate Misconduct" because the licensee's reply indicated that in 1997 the radiographer and assistant "knowingly" violated the licensee's policies and procedures to allow the assistant to operate

All violations were subsequently closed during the follow up inspection. The most recent routine inspection was completed in May, 1999, and resulted in a clear Form 591.

B. Is Credit Warranted for Identification?: No credit is warranted, because NRC identified the violations through the incident investigation process. Actually, the licensee was aware of the incident when it occurred in September, 1998, and missed an opportunity to explore all the details leading to the root cause and the violations of the 2-person rule (34.41), supervision rule (34.46), security rule (20.1802). In September 1998, the (b)(7)(C) focused only on the "trespass" issue and agreed that it was satisfactorily managed with their client.

C. Is Credit Warranted for Corrective Actions?:Yes, after learning about the violations in May 1999, the licensee's corrective actions were prompt and

comprehensive. Since the OI investigation, the licensee has trained the Salt Lake City RT staff, and distributed training materials to other of their field offices. Refresher training of all RT staff on the incident was completed.

D. Should Discretion Be Exercised to Mitigate or Escalate Sanction? NO.

6. **Is action being considered against individuals?** YES, the individuals willfully violated NRC requirements. The licensee had trained the individuals for the 2-person rule, supervision, and security. (b)(5) (b)(5)

7. **Non-Routine Issues/Additional Information/Lessons Learned:**
   A. Is generic communication (IN, GL, etc.) needed for this issue? NO
   B. Is inspection or enforcement guidance needed? NO
   C. Is there a need for NRR or NMSS programmatic guidance or interpretation of requirements? NO
   D. Are there any other lessons learned? NO
   E. Are these issues related to an allegation? YES
   F Is there any other information about this case that should be considered and is important to note? NO

8. **Panel Decision: TBD**

9. **Consistency with Previous Actions/Enforcement Guidance:** YES

DRAFT
NOTICE OF VIOLATION

1. 10 CFR 34.41(a) requires that whenever radiography is performed at a location other than a permanent radiographic installation, e.g., a temporary job site, the radiographer must be accompanied by at least one other qualified radiographer or radiographer's assistant. The additional qualified individual shall observe the operations and be capable of providing immediate assistance to prevent unauthorized entry. Radiography may not be performed if only one qualified individual is present.

   Contrary to the above, on September 15, 1998, radiography was performed at a temporary job site at Eaton Metal Products, Pocatello, Idaho, a location other than a permanent radiographic installation, with only one qualified individual present.

2. 10 CFR 34.46 requires that whenever a radiographer's assistant uses radiographic exposure devices, associated equipment or sealed sources or conducts radiation surveys required by section 34.49(b) to determine that the sealed source has returned to the shielded position after an exposure, the assistant shall be under the personal supervision of a radiographer. The personal supervision must include: (a) the

radiographer's physical presence at the site where the sealed sources are being used, (b) the availability of the radiographer to give immediate assistance if required, and (c) the radiographer's direct observation of the assistant's performance of the operations referred to in this section.

Contrary to the above, on September 15, 1998, the licensee radiographer's assistant operated a radiographic exposure device and conducted radiation surveys without the personal supervision of the licensee's radiographer at Eaton Metal Products, Pocatello, Idaho, in that the licensee's radiographer was not available to give immediate assistance if required and did not directly observe the assistant's performance of operations referred to in this section.

3. 10 CFR 20.1801 requires that the licensee secure from unauthorized removal or access licensed materials that are stored in unrestricted areas. 10 CFR 20.1802 requires that the licensee shall control and maintain constant surveillance of licensed material that is in a controlled or unrestricted area and that is not in storage. As defined in 10 CFR 20.1003, *unrestricted area* means an area, access to which is neither limited nor controlled by the licensee.

Contrary to the above, on September 15, 1998, the license did not secure from unauthorized removal or access a locked Amersham Model 680 exposure device that contained a sealed source of about 60 curies of cobalt-60 that was located in a large bay area at Eaton Metal Products, Pocatello, Idaho, an unrestricted area. Nor did the licensee maintain constant surveillance of this material to prevent access by unauthorized personnel.

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