



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
612 EAST LAMAR BLVD, SUITE 400
ARLINGTON, TEXAS 76011-4125

May 20, 2008

EA-07-325

Alaska Industrial X-Ray, Inc.
ATTN: Peter A. Millar,
President
4047 Kingston Drive
Anchorage, Alaska 99504

SUBJECT: NRC INSPECTION REPORT 030-10346/07-01 AND INVESTIGATION REPORT
NO. 4-2007-036

Dear Mr. Millar:

This refers to the unannounced inspection conducted on June 4, 2007, and the subsequent investigation conducted by the NRC's Office of investigations (OI) of activities conducted at your Golovin site and at client sites in or near Anchorage, Alaska. This inspection and investigation examined activities conducted under the Alaska Industrial X-Ray, Inc. (AIX) license 50-16084-01 as they relate to safety and compliance with the Commission's rules and regulations and with the conditions in your license. Within these areas, the inspection and investigation consisted of a selected examination of procedures and representative records, observations of activities, and interviews with personnel.

Based on the preliminary information developed during the investigation, AIX radiographers, including your former radiation safety officer, and radiographer's assistants conducted radiographic activities in violation of 10 CFR 34.41(a) by performing industrial radiographic operations at a client's facility (temporary job site) with only one qualified individual present. As a result, the NRC issued an Order Suspending Licensed Activities (EA-07-261) on October 19, 2007, which, among other conditions, required that AIX suspend its radiography activities until adequate assurance could be provided by independent means that AIX would comply with NRC requirements when conducting licensed activities. On November 8, 2007, NRC relaxed the Order based on several actions your company took to provide the NRC with assurance by independent oversight that AIX will comply with the two-person rule during NRC-licensed radiographic operations. The Order was a temporary measure while the NRC reviewed the results of the investigation more thoroughly. In fact, additional interviews were conducted by OI in January 2008.

After conducting further in-office reviews of the information gathered during the OI investigation, the NRC conducted an exit briefing by telephone with you and other members of your staff on April 23, 2008. The enclosed report presents the results of this inspection and investigation.

Based on the results of the inspection and investigation, one apparent violation of NRC requirements has been identified and is being considered for escalated enforcement action in accordance with the NRC Enforcement Policy. The NRC Enforcement Policy can be found on

the NRC's Website at www.nrc.gov/about-nrc/regulatory/enforcement.html. The apparent violation of 10 CFR 34.41(a) commonly referred to as the two-person rule, involves a failure to perform radiographic operations at a temporary job site by a radiographer accompanied by at least one other qualified radiographer, radiographer's assistant, or individual who has met specified training requirements. This apparent violation occurred at AIX's Golovin site and at an AIX client's facility. The NRC considers this apparent violation significant because use of two qualified persons observing radiographic operations provides a high level of assurance that members of the public will be prevented from entering the restricted area during those operations and risk receiving radiation exposure in excess of regulatory limits. The requirement for two qualified persons observing radiographic operations can further protect against high doses to either of the two qualified individuals in circumstances whereby one of them becomes incapacitated during radiographic source exposure.

The apparent violation is of particular concern to the NRC because it may involve deliberate misconduct on the part of your three radiographers, your former radiation safety officer, and other senior licensee managers. The circumstances involved AIX's conduct of radiography at one of its client's facilities in which your radiographers performed industrial radiography in a structure, which was called a "vault." Your radiographers would start radiography with two individuals, but after a few radiographs were taken, one individual would take film back to AIX's Golovin site for developing leaving a single radiographer to conduct more radiographs by himself. AIX radiographers stated this was common practice over the past several years at the client facility, even though they were aware this was a violation.

We also note that in 2001, the NRC issued an identical violation of 10 CFR 34.41(a) for AIX's failure to follow the 2-person rule at this same client location¹. At the time, your corrective actions included sending the NRC a letter dated February 25, 2001, that was signed by you and your radiographers and that re-iterated the requirement for the two-person rule. This violation was discussed during the March 2001 predecisional enforcement conference where the NRC representatives discussed with you that the "vault" built on the client's site was not an NRC approved permanent radiographic installation and, therefore, 10 CFR 34.41(a) applied. This point was emphasized to you in NRC's letter dated April 25, 2001, accompanying the Notice of Violation. Following the 2001 enforcement action, AIX did not make the required extensive modifications to the structure and, as a result, the "vault" was never listed on AIX's license as a permanent radiographic installation. It appears that your corrective actions to the violation were not effective and that senior AIX managers may have been aware that AIX radiographers elected to perform radiography in the "vault" with only a single radiographer.

Since the NRC has not made a final determination in this matter, no Notice of Violation is being issued for these inspection findings at this time. In addition, please be advised that the number and characterization of the apparent violation described in the enclosed inspection report may change as a result of further NRC review.

A closed predecisional enforcement conference to discuss these apparent violations has been scheduled for June 5, 2008, at 9:00 a.m. at the Captain Cook Hotel, in Anchorage Alaska. The decision to hold a predecisional enforcement conference does not mean that the NRC has determined that a violation has occurred or that enforcement action will be taken. This conference is being held to obtain information to assist the NRC in making an enforcement decision. This may include information to determine whether a violation occurred, information to

¹ On April 25, 2001, the NRC issued a Notice of Violation for a Severity Level III violation involving a failure to meet the requirements of 10 CFR 34.41(a) (EA-01-015).

determine the significance of a violation, information related to the identification of a violation, and information related to any corrective action taken or planned. The conference will provide an opportunity for you to provide your perspective on these matters and any other information that you believe the NRC should take into consideration in making an enforcement decision. In particular, you should be prepared to address why the NRC should have reasonable assurance that your company will conduct radiography operations in compliance with NRC regulations, in light of our prior enforcement action for the same violation at the same location and our concerns about the trustworthiness of AIX senior company officials and the trustworthiness of each AIX radiographer. In presenting your corrective action, you should be aware that the promptness and comprehensiveness of your actions will be considered in assessing any civil penalty for the apparent violations. The guidance in the enclosed excerpt from NRC Information Notice 96-28, "SUGGESTED GUIDANCE RELATING TO DEVELOPMENT AND IMPLEMENTATION OF CORRECTIVE ACTIONS," may be helpful.

You will be advised by separate correspondence of the results of our deliberations on this matter. No response regarding the apparent violations is required at this time.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosures, and your response, if you choose to provide one, will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (ADAMS), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/pdr.html> or <http://www.nrc.gov/reading-rm/adams.html>. To the extent possible, your response (should you choose to provide one) should not include any personal privacy, proprietary, or security-related information so that it can be made available to the Public without redaction.

If you have any questions concerning any information provided in this letter or the enclosed inspection report, please contact Mr. Rick Muñoz at (817) 860-8220 or Ms. Vivian Campbell at (817) 860-8287.

Sincerely,

/RA/

Charles L. Cain, Acting Director,
Division of Nuclear Material Safety

Docket No.: 030-10346
License No.: 50-16084-01

Enclosures:

1. NRC Inspection Report 030-10346/2007-001
2. Predecisional Enforcement Conference Agenda
3. Excerpt from NRC IN 96-28

cc w/enclosures 1-2:
Alaska Radiation Control Program Director

**U.S. NUCLEAR REGULATORY COMMISSION
REGION IV**

Docket No.: 030-10346
License No.: 50-16084-01
Report No.: 030-10346/2007-001
EA No.: 07-325
Licensee: Alaska Industrial X-Ray, Inc.
Location: Anchorage, Alaska
Dates: July 23, 2007 through April 23, 2008
Inspector: Rick Muñoz, Health Physicist
Nuclear Materials Safety Branch A
Approved By: Vivian H. Campbell, Chief
Nuclear Materials Safety Branch A
Attachment: Supplemental Inspection Information

EXECUTIVE SUMMARY

Alaska Industrial X-Ray, Inc.
NRC Inspection Report 030-10346/2007-001

This was an unannounced security and safety inspection of licensed activities involving the use of byproduct material for industrial radiography at temporary jobsites conducted under NRC License 50-16084-01. The scope of the inspection consisted of direct observations of licensed activities, review of selected records and procedures, interviews of radiography personnel, and in-office review of information obtained from an investigation conducted by the NRC's Office of Investigations (OI). This report describes the findings of the inspection and investigation.

Inspection Findings

The licensee's failure to conduct radiographic operations at the Arctic Slope Regional Corporation's (ASRC) site and at the Golovin Street field station with two qualified individuals present was identified as an apparent violation of 10 CFR 34.41(a). (Section 2)

On October 19, 2007, an Order Suspending Licensed Activities (Effective Immediately) was issued to the licensee based on information obtained during the OI investigation that indicated that all Alaska Industrial X-Ray, Inc. (AIX) radiographers, including the radiation safety officer (RSO), and radiographer's assistants performed radiographic operations at a temporary job site with only one qualified individual present. The Order required, in part, that AIX suspend all radiographic operations authorized by its license until adequate assurance could be provided by independent means that AIX would comply with NRC requirements when conducting licensed activities.

Corrective Actions

On October 23, 2007, the licensee responded to NRC's October 19, 2007, Order Suspending Licensed Activities and proposed several actions to provide the NRC with assurance that AIX would comply with the two-person rule when conducting NRC-licensed radiographic operations. Specifically, the licensee agreed to use a third party independent consultant to perform unannounced audits of AIX's radiographic activities, with specific emphasis on complying with the two-person rule, and agreed to provide the results of the unannounced audits to the NRC on a monthly basis. The licensee also agreed to strengthen the controls over personnel access to the radiography location and to construct a dark room at the radiographic location (vault). The licensee agreed to communicate AIX's schedule for radiographic activities in advance of conducting industrial radiography to both the consultant and the NRC; and to designate a different RSO. In a letter dated October 31, 2007, the licensee requested approval of a new RSO, which was authorized on November 2, 2007, by the NRC in License Amendment No. 13. On November 8, 2007, the NRC relaxed the Order based on the licensee's proposal. Since the Relaxation of the Order was issued, the licensee has provided the NRC with their schedule for radiographic activities on a weekly basis, and the third party independent consultant has submitted on a monthly basis the results of the audits directly to the NRC.

Report Details

1 Program Overview (87121), (TI-2800/038-01)

1.1 Inspection Scope

The inspection consisted of interviews with AIX employees, review of documents and records maintained by the licensee pertaining to radiographic operations conducted at temporary job sites. Collectively, these documents described the licensee's industrial radiography activities and its radiation safety program. Interviews with licensee personnel involved specific radiography operations and activities at temporary job sites.

1.2 Observations and Findings

AIX is a radiography non-destructive testing company authorized under NRC License 50-16084-01 to use byproduct material for industrial radiography. Licensed material is authorized for use at AIX's corporate office and field station facility located on Golovin Street in Anchorage, Alaska, and at temporary jobsites in areas of NRC jurisdiction. The license does not authorize any permanent radiographic installations. AIX performed industrial radiography at fabrication facilities and other locations throughout the State of Alaska on a weekly basis. Specifically, AIX conducted industrial radiography on a routine basis at a temporary job site location at ASRC's facility located in Anchorage, Alaska. At the time of the inspection, the licensee employed approximately six personnel involved in radiographic operations. The licensee possessed two Industrial Nuclear Corporation Model IR100 and three Amersham Model 660-B exposure devices, each containing iridium-192 sealed sources.

2 Inspection Findings (87121), (TI-2800/038-01)

2.1 Inspection Scope

The inspection consisted of direct observations of AIX activities, material security, discussions with radiography personnel, and interviews with ASRC personnel. The inspector reviewed daily utilization log sheets and records of personnel radiation exposure, and conducted independent radiation surveys.

2.2 Observations and Findings

10 CFR 34.41(a) requires, in part, that whenever industrial radiography is performed at a location other than a permanent radiographic installation, the radiographer must be accompanied by at least one other qualified radiographer or individual who has met the minimum training requirements specified in 10 CFR 34.43(c). This requirement is also known as the two-person rule.

During the interviews, all AIX personnel, with the exception of the AIX president, stated that the licensee had conducted industrial radiography on numerous occasions over the past several years with only one qualified individual present at both the ASRC facility and at AIX's Golovin Street field station. When interviewed, AIX personnel stated that the employees had decided it was acceptable for one man to conduct industrial radiography at the ASRC temporary job site while the second person returned to the Golovin site to develop film on their automatic processor and to complete the required

paperwork. Based on interviews with individual AIX employees, the inspector and investigator learned that it had become common practice for radiographers to conduct industrial radiography alone for as long as one hour at a time at the ASRC facility, while the second qualified individual developed film at the Golovin site. Specifically, AIX would usually start conducting radiography with two individuals. However, after taking several radiographs, one individual would take exposed film from the ASRC site back to the Golovin site for developing, leaving one radiographer to continue performing radiography by himself. When questioned, AIX personnel indicated that this practice was conducted for the purposes of efficiency.

Two radiographers and the former radiation safety officer (RSO) stated that there was no verbal or written communication between the AIX employees and management authorizing violation of the two-person rule. One radiographer stated that another senior licensee manager also participated in this practice when the senior manager was the second person at the ASRC site and took film back to the Golovin site leaving the radiographer to continue radiography by himself. All the AIX radiographers and radiographer's assistants admitted that they were knowledgeable of the two-person rule, and were aware that this practice violated NRC requirements. AIX radiographers and assistants stated that all licensee managers were aware of this practice and participated in it.

The radiographers believed that AIX had spent a lot of time and money constructing a structure termed a "vault," to improve safety during its radiographic operations. If it had been approved as a permanent radiographic installation, AIX could conduct radiography operations with only one individual. AIX attempted to have this structure approved by the NRC as a permanent radiographic installation in 2001-2002. However, the structure never met NRC's requirements for a permanent radiographic installation and the structure was never approved by the NRC. Despite this fact, AIX radiographers stated they thought it was safe to perform one-person radiographic operations.

AIX personnel indicated that radiographic operations were also performed at the Golovin Street location with only one radiographer. These activities involved taking radiographs of test welds and quality control shots for AIX's customers. The two radiographers that stated they conducted radiography by themselves stated that they thought this was acceptable because the Golovin Street site had a vault and it was contained within a secured building. Based on interviews, AIX's radiography personnel, including the individual who was the AIX RSO at the time, were under the assumption that the Golovin Street facility was a permanent radiographic installation and, therefore, they thought that one-person industrial radiography operations was permitted at that site. After the inspector pointed out that the AIX license did not list the Golovin site as a permanent radiographic installation the individuals acknowledged their error.

The failure to conduct industrial radiography at the ASRC site and at the Golovin Street field station with two qualified individuals present was identified as an apparent violation of 10 CFR 34.41(a). (030-10346/007-01)

On October 19, 2007, the NRC issued an Order Suspending Licensed Activities (Effective Immediately) to the licensee based on information developed during the investigation that indicated that all AIX radiographers, including the radiation safety officer, and radiographer's assistants performed industrial radiography at a temporary job site with only one qualified individual present. The Order required, in part, that AIX

suspend all radiographic operations authorized by its license until adequate assurance could be provided by independent means that AIX would comply with NRC requirements when conducting licensed activities.

2.3 Conclusions

At various times over the past several years, AIX employees had conducted industrial radiography without the presence of a second qualified individual, at a temporary job site located at the ASRC facility in Anchorage, Alaska, and at AIX's Golovin Street field station. Neither location was authorized by the NRC as a permanent radiographic installation. This was identified as an apparent violation of 10 CFR 34.41(a).

3 **Corrective Actions (87121)**

On October 23, 2007, the licensee responded to NRC's October 19, 2007, Order Suspending Licensed Activities and proposed several actions to provide assurance to the NRC that AIX would comply with the two-person rule when conducting industrial radiography. Specifically, the licensee agreed to use a third party independent consultant to perform unannounced audits of AIX's radiographic activities, with specific emphasis on complying with the two-person rule, and agreed to provide the results of the unannounced audits to NRC on a monthly basis. The licensee also agreed to strengthen the controls over personnel access to the radiography location and the construction of a dark room at the radiographic location (vault). The licensee agreed to communicate AIX's schedule for conducting industrial radiography in advance of conducting any radiographic operations to both the consultant and the NRC and to designate a different RSO to administer the licensee's radiation safety program.

In a letter dated October 31, 2007, the licensee requested approval of a new RSO, which was authorized by the NRC on November 2, 2007, in License Amendment No. 13. On November 8, 2007, the NRC relaxed the Order based on the licensee's proposal. Since the Relaxation of the Order was issued, the licensee has provided the NRC their schedule for radiographic activities on a weekly basis, and the third party independent consultant has submitted the results of the audits on a monthly basis.

4 **Exit Meeting Summary**

A preliminary exit briefing was conducted with the president/owner of AIX at the conclusion of the on-site inspection on July 24, 2007. A final telephonic exit briefing was conducted with AIX's president on April 23, 2008, to present the preliminary findings from the inspection and OI investigation. Licensee representatives acknowledged the inspector's findings. No proprietary information was identified.

ATTACHMENT
SUPPLEMENTAL INSPECTION INFORMATION

PARTIAL LIST OF PERSONS CONTACTED

Licensee

Peter Millar, President
Kenneth Vandiver, RSO/Radiographer and Vice President
Donald Millar, RSO and Radiographer
Patrick Kelly, Radiographer
Sean Kelly, Radiographer
Joseph Krivenko, Radiographer's Assistant
Jeremiah Christian, Radiographer's Assistant

INSPECTION PROCEDURES USED

87120	Industrial Radiography
86740	Transportation
TI-2800/038-01	Inspection of the Implementation of Increased Controls for Licensees Authorized to Possess Radioactive Material in Quantities of Concern

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

030-10346/007-01	APV	An apparent violation involving the performance of industrial radiography operations at a temporary jobsite by a radiographer without being accompanied by at least one other qualified radiographer or radiographer's assistant was identified.
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Closed

None

Discussed

None

LIST OF ACRONYMS USED

APV	Apparent Violation
ASRC	Arctic Slope Regional Corporation
AIX	Alaska Industrial X-Ray, Inc.
CFR	Code of Federal Regulations
NRC	Nuclear Regulatory Commission
OI	Office of Investigations R-IV Field Office
RSO	Radiation Safety Officer

PREDECISIONAL ENFORCEMENT CONFERENCE AGENDA

ALASKA INDUSTRIAL X-RAY, INC.

June 5, 2008

9:00 A.M.

The Hotel Captain Cook

ANCHORAGE, ALASKA

1. INTRODUCTIONS/OPENING REMARKS –
ARTHUR HOWELL, DEPUTY REGIONAL ADMINISTRATOR
2. ENFORCEMENT PROCESS –
MICHAEL VASQUEZ, SENIOR ENFORCEMENT SPECIALIST
3. APPARENT VIOLATIONS & REGULATORY CONCERNS –
VIVIAN CAMPBELL, CHIEF, NUCLEAR MATERIALS SAFETY-A
4. LICENSEE PRESENTATION ALASKA INDUSTRIAL X-RAY, INC. MANAGEMENT
5. BREAK - 10 MINUTES
6. RESUMPTION OF CONFERENCE
7. CLOSING REMARKS - ALASKA INDUSTRIAL X-RAY, INC. MANAGEMENT
8. CLOSING REMARKS –
ARTHUR HOWELL, DEPUTY REGIONAL ADMINISTRATOR