UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
1600 EAST LAMAR BOULEVARD
ARLINGTON, TEXAS 76011-4511

January 13, 2022

EA-21-100

Mr. Mike Haley, President and
Chief Executive Officer
Kakivik Asset Management, LLC
5020 Fairbanks Street,
Anchorage, Alaska 99503

SUBJECT: NRC INSPECTION REPORT 030-35371/2020-001 AND INVESTIGATION REPORT 4-2020-022

Dear Mr. Haley:

This letter refers to the investigation completed on July 9, 2021, by the U.S. Nuclear Regulatory Commission (NRC) Office of Investigations concerning licensed activities at a Kakivik Asset Management, LLC (Kakivik or licensee) temporary jobsite on the North Slope of Alaska. The investigation was conducted to determine whether a radiographer's assistant willfully conducted industrial radiography without the required personal monitoring equipment and willfully falsified a licensee daily radiation report record. The NRC's investigation results were discussed with you and members of your staff during a telephone conversation on December 17, 2021. A factual summary of the investigation is provided as Enclosure 1. The inspection report, which documents our in-office review of the issue and includes a timeline of the issue, the apparent violations, and our understanding of your corrective actions, is provided as Enclosure 2. This issue was identified by Kakivik on February 28, 2020, and communicated to the NRC on March 17, 2020. You followed up the initial telephone communication with a written report describing Kakivik's internal investigation on March 24, 2020 (Agencywide Documents Access and Management System (ADAMS) Accession Number ML21351A224).

Based on the information acquired during the investigation and in-office review, two apparent violations were identified and are being considered for escalated enforcement action in accordance with the NRC Enforcement Policy. The current Enforcement Policy is included on the NRC's website at http://www.nrc.gov/about-nrc/regulatory/enforcement/enforce-pol.html. The apparent violations involved the failure to ensure that an individual wore personnel monitoring equipment during radiographic operations, as required by Title 10 of the *Code of Federal Regulations* (10 CFR) 34.47(a), and the failure to read and record the exposure of a direct reading dosimeter at the start of a shift, in accordance with 10 CFR 34.37(b). The circumstances surrounding these apparent violations, the significance of the issues, and the need for lasting and effective corrective action were discussed with you and members of your staff on December 17, 2021. These apparent violations were characterized by the NRC following your identification of the monitoring noncompliance.

In addition, since your facility has not been the subject of an escalated enforcement action within the last two inspections, and based on our understanding of your corrective action, a civil penalty may not be warranted in accordance with Section 2.3.4 of the Enforcement Policy. The

final decision will be based on you confirming on the license docket that the corrective actions previously described to the NRC staff have been or are being taken.

Before the NRC makes its enforcement decision, we are providing you an opportunity to either respond in writing to the apparent violations addressed in the inspection report within 30 days of the date of this letter or request a predecisional enforcement conference (PEC). If a PEC is held, the PEC will be closed to public observation since information related to an Office of Investigations report will be discussed and is not publicly available. In addition, the NRC may issue a press release to announce the time and date of the conference. If you decide to participate in a PEC, please contact Dr. Lizette Roldán-Otero at (817) 200-1455 or via email at Lizette.Roldan-Otero@nrc.gov within 10 days of the date of this letter. A PEC should be held within 30 days of the date of this letter.

If you choose to provide a written response, it should be clearly marked as a "Response to Apparent Violation in NRC Inspection Report 030-35371/2020-001; EA-21-100" and should include for each apparent violation: (1) the reason for the apparent violation or, if contested, the basis for disputing the apparent violation; (2) the corrective steps that have been taken and the results achieved; (3) the corrective steps that will be taken; and (4) the date when full compliance will be achieved. Your response may reference or include previously docketed correspondence, if the correspondence adequately addresses the required response. Additionally, your response should be sent to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001, with a copy mailed to Ms. Mary C. Muessle, Director, Division of Nuclear Materials Safety, U.S. Nuclear Regulatory Commission Region IV, 1600 East Lamar Boulevard, Arlington, Texas, 76011, and emailed to R4Enforcement@nrc.gov within 30 days of the date of this letter. If an adequate response is not received within the time specified or an extension of time has not been granted by the NRC, the NRC will proceed with its enforcement decision or schedule a PEC.

If you choose to request a PEC, the conference will afford you the opportunity to provide your perspective on these matters and any other information that you believe the NRC should take into consideration before making an enforcement decision. The decision to hold a PEC does not mean that the NRC has determined that a violation has occurred or that enforcement action will be taken. This conference would be conducted to obtain information to assist the NRC in making an enforcement decision. The topics discussed during the conference may include information to determine whether a violation occurred, information to determine the significance of a violation, information related to the identification of a violation, and information related to any corrective actions taken or planned.

In presenting your corrective actions, 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 NRC Information Notice 96-28, "Suggested Guidance Relating to Development and Implementation of Corrective Action," may be helpful in preparing your response, ADAMS Accession No. ML061240509.

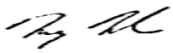
Please be advised that the characterization of the apparent violations described in the enclosed inspection report may change as a result of further NRC review. You will be advised by separate correspondence of the results of our deliberations on this matter.

In accordance with 10 CFR 2.390 of the NRC's "Agency Rules of Practice and Procedure," a copy of this letter, its enclosure, and your response, if you choose to provide one, will be made available electronically for public inspection in the NRC Public Document Room and from the

NRC's ADAMS, accessible from the NRC website at http://www.nrc.gov/reading-rm/adams.html. To the extent possible, your response should not include any personal privacy or proprietary information so that it can be made available to the public without redaction.

If you have any questions concerning this matter, please contact Dr. Lizette Roldán-Otero of my staff at 817-200-1455.

Sincerely,



Signed by Muessle, Mary
on 01/13/22

Mary C. Muessle, Director
Division of Nuclear Materials Safety

Docket No. 030-35371
License No. 50-27667-01

Enclosures:
1. Factual Summary
2. NRC Inspection Report 030-35371/2020-001

cc:
Irene Casares
Radiological Health Physicist II
Alaska State Public Health Laboratories
Department of Health & Social Services
5455 Dr. Martin Luther King Jr. Ave
Anchorage, Alaska 99507

SUBJECT: NRC INSPECTION REPORT 03035371/2020001 AND INVESTIGATION REPORT 4-2020-022- DATED JANUARY 13, 2022

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ADAMS ACCESSION NUMBER: **ML22013B223**

☒SUNSI Review: By: JEV	ADAMS: ☒ Yes ☐ No	☐ Non-Publicly Available ☒ Publicly Available	☒Non-Sensitive ☐ Sensitive	Keyword: EA-21-100

OFFICE	DNMS:MIB	DNMS:C:MIB	RIV:ACES	RC	OE	NMSS
NAME	JvonEhr	LRoldan-Otero	JGroom	DCylkowski	LSreenivas	RSun
SIGNATURE	/RA/ E	/RA/ E	/RA/E	/RA/ E	/RA/ E	/RA/ E
DATE	12/17/2021	01/03/22	12/20/21	01/04/22	01/13/22	01/13/22
OFFICE	OGC	D:DNMS				
NAME	MLemoncelli	MMuessle				
SIGNATURE	/NLO/ E	MCM				
DATE	01/13/22	01/13/22				

OFFICIAL RECORD COPY

FACTUAL SUMMARY
NRC INVESTIGATION REPORT 4-2020-022

On May 29, 2020, the U.S. Nuclear Regulatory Commission (NRC) Office of Investigations (OI), Region IV, initiated an investigation to determine whether a radiographer's assistant (RA) employed by Kakivik Asset Management, LLC. (licensee) at a temporary job site on the North Slope of Alaska willfully conducted industrial radiography without the required personal monitoring equipment and willfully falsified a licensee daily radiation report record. The investigation was completed on July 9, 2021.

On February 28, 2020, the RA was part of an industrial radiographic crew performing licensed activities at a temporary job site on the North Slope of Alaska. A licensee Quality Coordinator arrived at the jobsite to conduct an audit of the individuals and the radiographic operations. As part of this audit, the Quality Coordinator requested to see the personnel monitoring equipment of the two individuals. The RA did not have his personnel monitoring equipment present (a combination direct reading dosimeter and alarm ratemeter device and separate optically stimulated luminescence dosimeter).

In the OI interview, the RA affirmed that he attended a radiological worker school, and, while there, received 40 hours of basic radiation training. In addition, the RA stated that the licensee provided 3 days of radiation training, which consisted of watching videos and taking tests to ensure that he could do the job safely. The RA also affirmed that his training included instruction on NRC regulations, including the requirement to wear dosimetry.

The RA admitted to OI that he did not have his personnel monitoring equipment on February 28, 2020, and offered an explanation. The RA stated that he had changed his uniform from the previous day because it was dirty and had left his personnel monitoring equipment in that uniform. The RA stated that his uniforms had many pockets, and he was under the impression that he had his personnel monitoring equipment when he left for work and during work.

The RA stated that the purpose of the daily radiation report is so the licensee could track radiation exposure and that he had to fill out that report every night. The RA then confirmed with OI that he was required to have his personnel monitoring equipment on his person in order for him to fill out the daily radiation report. The RA indicated he wrote the personnel monitoring equipment serial numbers on the daily radiation report from memory.

The RA further stated that, at the beginning of a shift, "we will look at the [direct reading] dosimeter … and make sure we wrote down whatever … dosage you had there," and said, "we will have to make sure [if] it wasn't zero, zero it down before we started." When questioned about zeroing the direct reading dosimeter at the beginning of the shift, and how he had recorded a "0" reading on the daily radiation report if he did not actually have his direct reading dosimeter in possession, the RA indicated that he did not physically take out his direct reading dosimeter to zero it down.

Based on the evidence developed during the investigation, it appears that an RA willfully conducted industrial radiography without the required personal monitoring equipment and willfully falsified a licensee daily radiation report record. This caused the licensee to be in violation of 10 CFR 34.47(a) and 10 CFR 34.47(b).

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Docket:	030-35371
License:	50-27667-01
Report:	2020-001
EA No:	EA-21-100
Licensee:	Kakivik Asset Management, LLC
Locations Inspected:	N/A – In-office review
Inspection Dates:	In-office review from March 17 through May 11, 2020, and from July 20 through December 1, 2021
Exit Meeting Date:	December 17, 2021
Inspectors:	Jason vonEhr, Health Physicist Commercial, Industrial, R&D and Academic Branch Division of Radiological Safety and Security, Region I
Approved By:	Dr. Lizette Roldán-Otero, Chief Materials Inspection Branch Division of Nuclear Materials Safety, Region IV
Attachment:	Supplemental Inspection Information

EXECUTIVE SUMMARY

Kakivik Asset Management, Inc.
NRC Inspection Report 030-35371/2020-001

The U.S. Nuclear Regulatory Commission (NRC) conducted an in-office review concerning a noncompliance identified by Kakivik Asset Management, LLC (Kakivik) and communicated to the NRC on March 17, 2020, involving the failure of a radiographer's assistant to wear the personnel monitoring required under Title 10 of the *Code of Federal Regulation*s (10 CFR) 10 CFR Part 34 during radiographic operations.

Program Overview

Kakivik is authorized under NRC Materials License 50-27667-01 to possess and use byproduct materials, including iridium-192, for industrial radiographic operations. Licensed activities are authorized to be performed at temporary job sites in areas of NRC jurisdiction. The licensee's operations are primarily concentrated on the North Slope of Alaska and the Anchorage, Alaska area.

NRC In-Office Review Findings

The licensee had a two-person industrial radiographic crew conducting operations on the North Slope of Alaska. One of the licensee's Quality Coordinators performed a field audit, which identified that the licensee's radiographer's assistant was not wearing the required personnel monitoring equipment. In addition, the licensee's review identified the failure to read and record the exposure of the radiographer's assistant's direct reading dosimeter at the beginning of the shift.

Based on information gathered during the in-office review, the NRC performed an investigation into the incident to determine whether willful misconduct was involved in the noncompliance. The NRC determined that two apparent violations of NRC requirements occurred. The apparent violations involved the failures to: (a) ensure that an individual wear personnel monitoring equipment during radiographic operations, as required by Title 10 of the Code of Federal Regulations (10 CFR) 34.47(a); and (b) read and record the exposure of a direct reading dosimeter at the start of a shift.

REPORT DETAILS

1. Program Overview

1.1. Program Scope

Kakivik Asset Management, Inc. (Kakivik) is authorized under U.S Nuclear Regulatory Commission (NRC) Materials License 50-27667-01 to possess and use byproduct materials, including iridium-192 (Ir-192), for industrial radiographic operations. Licensed activities are authorized to be performed at temporary job sites in areas of NRC jurisdiction. The licensee's operations are primarily concentrated on the North Slope of Alaska and the Anchorage, Alaska area.

1.2. In-Office Review Scope

From March 17 through May 11, 2020, the NRC conducted an in-office review of the licensee-identified noncompliance that occurred on February 28, 2020. The NRC performed an investigation from May 29, 2020, to July 9, 2021, followed by additional in-office review from July 20 through December 1, 2021. The scope of the inspection was to examine the facts and circumstances surrounding the noncompliances that occurred on February 28, 2020, at a temporary job site on the North Slope of Alaska. Based on the ongoing COVID-19 Public Health Emergency and the initial facts and circumstances the licensee communicated to the NRC on March 17, 2020, the NRC determined that no on-site reactive inspection was necessary to review the issues.

Within the areas identified above, the inspection consisted of an examination of selected procedures and representative records and interviews with personnel both directly and indirectly involved in the noncompliance.

2. Timeline and Licensee Investigation of February 28, 2020 Noncompliance

On February 28, 2020, the licensee's industrial radiographic crew was performing licensed activities at a temporary job site on the North Slope of Alaska. As part of the licensee's field audit program required by Title 10 of the *Code of Federal Regulations* (10 CFR) 34.43(e), a Kakivik Quality Coordinator, who was also a qualified radiographer, arrived to conduct an audit of the individuals and the radiographic operations. As part of this audit, the Kakivik Quality Coordinator requested to see the personnel monitoring equipment of the two individuals. The radiographer's assistant did not have his personnel monitoring equipment present.

The Quality Coordinator instructed the radiographer's assistant to locate the missing personnel monitoring equipment, which was located in the radiographer's assistant camp room. The Quality Coordinator informed individuals in the Kakivik management chain up through the Radiation Safety Supervisor, who initiated a licensee investigation into the incident.

The licensee shared the results of its investigation with the NRC on March 17, 2020, which determined that the radiographer's assistant left the personnel monitoring equipment in the pocket of the clothes that were worn the previous night. The investigation further determined that the radiographer's assistant went into the Kakivik

field office source vault, signed out and withdrew the radiographic exposure device, filled out the Daily Radiation Job Sheet with the personnel monitoring equipment identifying information and beginning-of-day direct reading dosimeter reading, and began radiographic operations with the radiographer all without having the personnel monitoring equipment present.

The licensee determined that either two or three radiographic exposures were conducted by the two-person crew prior to the arrival of the Kakivik Quality Coordinator. The third exposure as indicated by the radiographer was a test exposure to assist in accurately calculating the needed exposure time for the remaining exposures.

In determining the radiographer's assistant occupational exposure that went unmonitored during this period, the licensee interviewed both crew members to assist in an exposure calculation. The radiographer and radiographer's assistant stated during the licensee's investigation that the radiographer's assistant stayed near the radiographer during the entirety of the radiographic operations and never "approached any closer than the end of the cranks during exposure." The radiographer's direct reading dosimeter read approximately 1 millirem at the end of the day's exposures, which included the two exposures that the Kakivik Quality Coordinator performed with the radiographer in the absence of the radiographer's assistant while the radiographer's assistant searched for the missing personnel monitoring equipment.

Based on the above time-distance determinations, and in consideration of the activity of the Ir-192 radiographic exposure source and the collimator that was in-use at the time, the licensee conservatively estimated that the radiographer's assistant exposure was an estimated 2.5 millirem during the course of the day. The licensee provided the third-party dosimetry processing organization with a letter on April 23, 2020, requesting the adjustment of the radiographer's assistant's official exposure record to include the above estimated unmonitored exposure. No issues were identified in the NRC's review of the licensee's dose calculation for the unmonitored radiographer's assistant.

3. Licensee Compliance with NRC Reporting Requirements

The licensee notified the NRC on March 17, 2020, by telephone to discuss the noncompliance. The licensee was concerned about the potential applicability of the reporting requirements in 10 CFR Part 20, 21, and 34 with regards to the situation. Following a review of the initial facts and circumstances provided by the licensee, the inspector confirmed that there were no reporting requirements that applied to the noncompliance and surrounding facts and circumstances, including 10 CFR Parts 20, 21, 30, and 34. Nonetheless, the licensee provided a written follow-up to the March 17, 2020, call with a report dated March 24, 2020 (Agencywide Documents Access and Management System (ADAMS) Accession Number ML21351A224).

4. NRC Findings

The NRC's in-office review from March 17 through May 11, 2020, and from July 20 through December 1, 2021, following the investigation, identified two apparent violations of NRC requirements. These apparent violations involved the licensee's failures to: (A) ensure that an individual wear personnel monitoring equipment during radiographic operations, as required by 10 CFR 34.47(a); and (B) read and record the exposure of a direct reading dosimeter at the start of a shift.

4.1. Apparent Violation No. 1 – Personnel Monitoring Equipment

As described in Section 2, the licensee identified that the radiographer's assistant was not wearing personnel monitoring equipment while conducting radiographic operations. The equipment required by 10 CFR 34.47(a) include a direct reading dosimeter, an operating alarm ratemeter, and a personnel dosimeter that is processed and evaluated by an accredited National Voluntary Laboratory Accreditation Program processor. The licensee provided radiographic personnel a combination direct reading dosimeter and alarm ratemeter device and an Optically Stimulated Luminescence (OSL) Dosimeter to satisfy the first two devices described in 10 CFR 34.47(a). However, the radiographer's assistant did not wear any of the required equipment during the February 28, 2020, radiographic operations.

The apparent violation is listed below:

> 10 CFR 34.47(a) requires, in part, that the licensee may not permit any individual to act as a radiographer or a radiographer's assistant unless, at all times during radiographic operations, each individual wears, on the trunk of the body, a direct reading dosimeter, an operating alarm ratemeter, and a personnel dosimeter.
>
> Contrary to the above, on February 28, 2020, the licensee permitted an individual to act as a radiographer's assistant during radiographic operations and the individual did not wear, on the trunk of the body, a direct reading dosimeter, an operating alarm ratemeter, and a personnel dosimeter. Specifically, a radiographer's assistant was performing radiography as part of a crew at a temporary job site on the North Slope of Alaska and did not have any of the required personnel monitoring equipment.

The licensee's failure to ensure that an individual wore personnel monitoring equipment during radiographic operations was identified as an apparent violation of 10 CFR 34.47(a). (030-35371/2020-001-01)

4.2. Apparent Violation No. 2 – Failure to Read and Record

At the start of the shift and prior to the commencement of radiographic operations, the radiographer's assistant completed part of the licensee's Daily Radiation Job Sheet, which as described in Section 2, that included areas for the radiography crew to identify and record their personnel monitoring equipment including the serial number and beginning-of-day direct reading dosimeter reading. The radiographer's assistant certified by recording the serial numbers of his electronic combined dosimeter/alarm ratemeter device and the OSL dosimeter that they were present and on his person prior to the commencement of radiographic operations. Furthermore, the radiographer's assistant recorded the starting exposure of the direct reading dosimeter component of the combination dosimetry as "zero" on the Daily Radiation Job Sheet, without possessing the device.

As a result, the radiographer's assistant failed to read and record the exposure of a direct reading dosimeter at the start of a shift, as required by 10 CFR 34.47(b).

The apparent violation is listed below:

> 10 CFR 34.47(b) requires, in part, that direct reading dosimeters must be read and the exposures recorded at the beginning and end of each shift, and records must be maintained in accordance with 10 CFR 34.83.
>
> Contrary to the above, on February 28, 2020, the licensee failed to ensure that a direct reading dosimeter was read and the exposure recorded at the beginning and end of each shift, and records maintained in accordance with 10 CFR 34.83. Specifically, the licensee's radiographer's assistant performed radiography without a direct reading dosimeter and falsified the record to indicate the direct reading dosimeter reading prior to the performance of radiography.

The licensee's failure to read and record the exposure at the beginning and end of each shift was identified as an apparent violation of 10 CFR 34.47(b). (030-35371/2020-001-02)

5. Corrective Actions

The licensee's Quality Coordinator identified the noncompliances, and afterwards the licensee performed an investigation that resulted in the termination of the employment of the radiographer's assistant. The licensee calculated a conservative estimate of the potential exposure received by the subject individual (2.5 millirem), taking into account time, activity, shielding, and the recorded exposure of the radiographer. In addition, the licensee stated in its letter to the NRC regarding the incident that the following actions were taken or planned to take to prevent recurrence:

- Radiographer suspended without pay for 1 week and retrained prior to returning to work (internal policy required 'buddy check' and put supervisory responsibility on the radiographer for their assistants, hence the disciplinary action against the radiographer).

- Radiographer conducted "research project" on what violations occurred and reported to the Radiation Safety Supervisor, as well as to peers during the next few safety meetings.

- "Elevating" the practice of peer checking (or "buddy check") from a "best practice" to a requirement for all radiography crews.

6. Exit Meeting Summary

On December 17, 2021, the NRC conducted a final telephonic exit briefing with Kakivik. The licensee was represented by:

- Mr. Mike Haley, President and Chief Executive Officer;
- Mr. Randy Sulte, Chief Operating Officer;
- Mr. Kim Beardsell, Project Manager;
- Mr. Ian Moreau, Technology and Quality Manager;
- Mr. David Torres, Corporate Radiation Safety Officer

The licensee acknowledged the inspection findings and did not dispute any of the details presented during the call. Mr. Torres was scheduled to leave his position as Corporate Radiation Safety Officer in the period shortly after the exit briefing, and Mr. Moreau was anticipated to fill in for Mr. Torres for the interim period.

Supplemental Inspection Information

PARTIAL LIST OF PERSONS CONTACTED

Mike Haley, President and Chief Executive Officer;
Randy Sulte, Chief Operating Officer;
Kim Beardsell, Project Manager;
Ian Moreau, Technology and Quality Manager;
David Torres, Corporate Radiation Safety Officer

INSPECTION PROCEDURES USED

87103 – Inspection of Materials Licensee's Involved in an Incident or Bankruptcy Filing
87121 – Industrial Radiography Programs

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

030-35371/2020-001-01	AV	Failure to ensure that, during radiographic operations, that each individual wears, on the trunk of the body, a direct reading dosimeter, an operating alarm ratemeter, and a personnel dosimeter. (10 CFR 34.47(a))
030-35371/2020-001-02	AV	Failure to read and record the exposure at the beginning and end of each shift. (10 CFR 34.47(b))

Closed

None

Discussed

None

LIST OF ACRONYMS USED

ADAMS	Agencywide Documents Access and Management System
CFR	*Code of Federal Regulations*
Ir-192	Iriduim-192
NRC	U.S. Nuclear Regulatory Commission
PEC	Predecisional Enforcement Conference
OSL	Optically Stimulated Luminescence