



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

May 13, 2020

EA-20-024
NMED Item 200094
NRC Event 54557

Mr. Tommy Jacobs
Corporate Radiation Safety Officer
Oceaneering International, Inc.
10600 West Sam Houston Parkway North
Houston, Texas 77064

SUBJECT: NOTICE OF VIOLATION AND EXERCISE OF ENFORCEMENT DISCRETION,
NRC INSPECTION REPORT 150-00017/2020-001

Dear Mr. Jacobs:

This letter refers to the event reported to the U.S. Nuclear Regulatory Commission (NRC) on March 2, 2020 (Nuclear Material Events Database (NMED), Item 200094, NRC Event Notification 54557), involving the loss of a sealed source containing NRC-licensed byproduct material at a temporary job site in the Gulf of Mexico. You followed up the initial telephone notification with a written report, dated March 23, 2020, which presented the facts and circumstances surrounding the event. The enclosed report presents the results of the NRC's review of the event, the associated timeline, as well as the NRC's understanding of the actions taken by Oceaneering International, Inc. A final exit briefing was conducted (telephonically) with you on May 4, 2020, to discuss the results of our review.

Based on the results of this review, the NRC has determined two violations of NRC requirements occurred. The violations were evaluated in accordance with the NRC Enforcement Policy, which can be found at the NRC's Web site at <http://www.nrc.gov/about-nrc/regulatory/enforcement/enforce-pol.html>. The violations are cited and described in the enclosed Notice of Violation (Notice) because they were either self-revealing as a result of the event or identified by the NRC inspector during the in-office review. The violations involved the failures to: (A) maintain constant control and surveillance of licensed material while not in storage, as required by Title 10 of the *Code of Federal Regulations* (10 CFR) 20.1802; and (B) read and record the exposures from direct reading dosimeters at the beginning and end of each shift.

In accordance with the NRC Enforcement Policy, Violation (A) would normally be categorized at Severity Level III and considered for escalated enforcement action. However, after considering the facts and circumstances of the loss of licensed byproduct material, and in consultation with the Director of the NRC's Office of Enforcement, I have been authorized to exercise enforcement discretion in accordance with Section 3.5 of the Enforcement Policy, "Use of Enforcement Discretion," and assess Violation (A) at Severity Level IV.

The NRC is exercising discretion because of the circumstances that resulted in the byproduct material falling into the Gulf of Mexico represent an isolated, rather than programmatic weakness. Further, the NRC determined that the byproduct material, because of its physical characteristics and inaccessible location, is of limited safety and environmental significance and does not pose a material health, safety, or security risk to members of the public.

The NRC considers Violation (B) above to be a low safety significance violation and thus has categorized it in accordance with the NRC Enforcement Policy at Severity Level IV. This violation is being cited as Severity Level IV because it was identified by the NRC inspector during the review.

The NRC has concluded that information regarding: (1) the reason for the violations; (2) the corrective actions that have been taken and the results achieved; and (3) the date when full compliance will be achieved is already adequately addressed on the docket in your 30-day report dated March 23, 2020, and in the enclosed inspection report. Therefore, you are not required to respond to this letter unless the description therein does not accurately reflect your corrective actions or your position. In that case, or if you choose to provide additional information, you should follow the instructions specified in the enclosed Notice.

In accordance with 10 CFR 2.390 of the NRC's "Agency Rules of Practice and Procedure," 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 Agencywide Documents Access and Management System, accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>.

If you have any questions concerning this matter, please contact Ms. Patricia Silva of my staff at 817-200-1455.

Sincerely,

Mary C.
Muessle
Mary Muessle, Director
Division of Nuclear Materials Safety

Digitally signed by
Mary C. Muessle
Date: 2020.05.13
11:55:08 -05'00'

Docket: 150-00017

License: General License under 10 CFR 150.20

Enclosures:

1. Notice of Violation (Notice)
2. NRC Inspection Report 150-00017/2020-001

cc:

Jeff Dauzat, Administrator
Louisiana Dept. of Environmental Quality

Charlotte Sullivan, Manager
Texas Department of State Health Services

NOTICE OF VIOLATION AND EXERCISE OF ENFORCEMENT DISCRETION, NRC
INSPECTION REPORT 150-00017/2020 001 - DATED May 13, 2020

DISTRIBUTION:

M. Shaffer, DRA
M. Muessle, D/DNMS
L. Howell, DD/DNMS
R4DNMS_MIB
R4DNMS_MLDB
R. Erickson, SAO/DNMS
J. Cook, SAO/DNMS
B. Maier, SLO/ORA

https://usnrc-my.sharepoint.com/personal/jev1_nrc_gov/Documents/JEV1/Oceaneering NOV and Narrative Report.docx

ADAMS ACCESSION NUMBER:

☒ SUNSI Review:

ADAMS:

☐ Non-Publicly Available☒ Non-Sensitive

Keyword:

By: JEV

☒ Yes ☐ No☒ Publicly Available☐ Sensitive

EA-20-024

| OFFICE | HP:MIB | C:MIB | ACES | D:DNMS | | |
|-----------|------------|------------|-----------|-----------------|-------------------------------------|--|
| NAME | JEvonEhr | PASilva | JGroom | MMuessle | | |
| SIGNATURE | JEV | PAS | JRG | Mary C. Muessle | Digitally signed by Mary C. Muessle | |
| DATE | 05/06/2020 | 05/07/2020 | 05/8/2020 | | May 13, 2020 11:55:45 -05'00' | |

OFFICIAL RECORD COPY

NOTICE OF VIOLATION

Oceaneering International, Inc.
Houston, Texas

Docket No. 150-00017
License No. 10 CFR 150.20

During an NRC review of NRC Event Notification 54557, two violations of NRC requirements were identified. In accordance with the NRC Enforcement Policy, the violations are listed below:

- A) 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.

Contrary to the above, on March 2, 2020, the licensee failed to control and maintain constant surveillance of licensed material that was in a controlled or unrestricted area that was not in storage. Specifically, the licensee failed to control a radiography exposure device that was being moved between radiographic exposures on an offshore Gulf of Mexico production platform, which resulted in the radiography exposure device falling into the Gulf of Mexico.

This is a Severity Level IV violation (NRC Enforcement Policy Section 3.5).

- B) 10 CFR 34.47(d) requires, in part, that direct reading dosimeters such as pocket dosimeters or electronic personal dosimeters, must be read and the exposures recorded at the beginning and end of each shift.

Contrary to the above, on March 2, 2020, for direct reading dosimeters, the licensee failed to read and record the exposure at the beginning and end of each shift. Specifically, the licensee conducted radiographic operations at an offshore Gulf of Mexico production platform and failed to record the end-of-shift direct reading dosimeter for the two active radiographers.

This is a Severity Level IV violation (NRC Enforcement Policy Section 6.3.d).

The NRC has concluded that information regarding: (1) the reason for the violations; (2) the corrective actions that have been taken and the results achieved; and (3) the date when full compliance will be achieved is already adequately addressed on the docket in your letter dated March 23, 2020, and the enclosed inspection report.

However, if the description therein does not accurately reflect your position or your corrective actions, you are required to submit a written statement or explanation pursuant to 10 CFR 2.201 within 30 days of the date of the letter transmitting this Notice of Violation (Notice). In that case, or if you choose to respond, clearly mark your response as a "Reply to a Notice of Violation; EA-20-024," and send it to the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001 with a copy to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001, and the Regional Administrator, U.S. Nuclear Regulatory Commission, Region IV, 1600 East Lamar Blvd., Arlington, Texas 76011-4511.

If you choose to respond, your response will be made available electronically for public inspection in the NRC Public Document Room or in the NRC's ADAMS, accessible from the 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.

In accordance with 10 CFR 19.11, you may be required to post this Notice within 2 working days of receipt.

Dated this 13th of May 2020

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Docket: 150-00017

License: General License under 10 CFR 150.20

Report: 2020-001

EA No: EA-20-024

Licensee: Oceaneering International, Inc.

Locations Inspected: N/A – In-office review

Inspection Dates: N/A – In-office review through April 30, 2020

Exit Meeting Date: May 4, 2020

Inspectors: Jason vonEhr, Health Physicist
Materials Inspection Branch
Division of Nuclear Materials Safety, Region IV

Approved By: Patricia A. Silva, Chief
Materials Inspection Branch
Division of Nuclear Materials Safety, Region IV

Attachment: Supplemental Inspection Information

EXECUTIVE SUMMARY

Oceaneering International, Inc. NRC Inspection Report 150-00017/2020-001

The U.S. Nuclear Regulatory Commission (NRC) conducted an in-office review concerning a lost source event reported by Oceaneering International, Inc., to the NRC on March 2, 2020 (Nuclear Material Events Database Item 200094, NRC Event Notification 54557) in accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) 20.2201(a)(1)(i). The report concerned the loss of a sealed source containing NRC-licensed byproduct material in excess of 1,000 times the associated quantity listed in Appendix C of 10 CFR Part 20.

Program Overview

Oceaneering International, Inc. was a reciprocity licensee operating under a general license granted under 10 CFR 150.20 using State of Louisiana License LA-7396-L01. The general license authorizes the licensee to possess and use NRC-licensed byproduct material in accordance with NRC regulations, the provisions of the State of Louisiana radioactive materials license, as well as Oceaneering International, Inc.'s Operating and Emergency Procedures submitted to the NRC concerning the licensee's lay-barge and offshore platform radiography activities.

NRC In-Office Review Findings

The licensee had a three-person crew conducting radiographic operations offshore in the Gulf of Mexico in block West Delta 73A, approximately 75 miles south of New Orleans, Louisiana, on the afternoon of March 2, 2020. One of the licensee's crew was moving the radiographic exposure device's associated equipment between radiographic exposures on the offshore production platform when the exposure device fell into the Gulf of Mexico.

The licensee crew members informed the licensee's client, a third-party energy company, and informed the licensee's management team. The licensee's management representative then informed the NRC via the NRC Headquarters Operations Officers.

The NRC determined that two violations of NRC requirements occurred. The violations involved the failures to: (A) maintain constant control and surveillance of licensed material while not in storage, as required by 10 CFR 20.1802; and (B) read and record the exposures from direct reading dosimeters at the beginning and end of each shift. Violation (A) was determined to be a Severity Level IV violation by use of Enforcement Discretion, while Violation (B) was determined to be a Severity Level IV violation in accordance with the NRC's Enforcement Policy examples in Section 6.3.

REPORT DETAILS

1. Program Overview

1.1. Program Scope

Oceaneering International, Inc., was a reciprocity licensee operating under a general license granted under Title 10 of the *Code of Federal Regulations* (10 CFR) 150.20. The licensee was authorized for reciprocity with State of Louisiana radioactive materials license LA-7396-L01, Amendment 166, expiration date December 31, 2020. The general license authorized the licensee to possess and use NRC-licensed byproduct material in accordance with NRC regulations, the provisions of the State of Louisiana radioactive materials license, as well as Oceaneering International, Inc.'s Operating and Emergency Procedures (Section X, Revision 1) submitted to the NRC on May 24, 2018, concerning the licensee's lay-barge and offshore platform radiography activities.

The licensee was initially granted general approval for the conduct of reciprocity activities in areas of NRC jurisdiction for calendar year 2020 on December 13, 2019. For the specific licensed activities conducted on March 2, 2020, at the West Delta 73A offshore production platform in the Gulf of Mexico, the licensee applied for and received approval from the NRC on February 26, 2020.

1.2. In-Office Review Scope

On March 3, 2020, through April 30, 2020, the NRC conducted an in-office review of the event that occurred on March 2, 2020 (Nuclear Material Events Database Item 200094, NRC Event Notification 54557). The scope of the review was to examine the activities conducted under the NRC general license as they related to public health, safety, and security and to confirm compliance with the NRC's rules and regulations and with the conditions of the State of Louisiana license as they concerned radiographic operations leading up to and including the activities on March 2, 2020.

Within the areas identified above, the review included a selected examination of procedures and representative records, and interviews with personnel.

2. Timeline of NRC Event Notification 54557

On the evening of March 2, 2020, an assistant radiographer for the licensee was attempting to move radiographic exposure equipment down a set of stairs on the outer edge of an offshore production platform in block West Delta 73A off the coast of Louisiana. The assistant radiographer set the radiography camera down (Source Production and Equipment Company Model 150, S/N 1507, containing a model G-60 iridium-192 source, S/N AI2604, with an activity of approximately 18 curies) at the top of the stairway. The assistant radiographer went to move the drive cables (approximately 37 feet long), still connected to the radiography camera, down the stairway. The radiography camera's iridium-192 source was locked in the shielded position during this movement.

Prior to reaching the middle of the stairway on the way down, the assistant noticed the camera beginning to shift on the stairway and begin falling. The assistant

unsuccessfully attempted to intercept the radiography camera as it fell down the stairway. The radiography camera bounced off the stairway, snapped the drive cable, and fell into the Gulf of Mexico approximately 60 feet below the stairway.

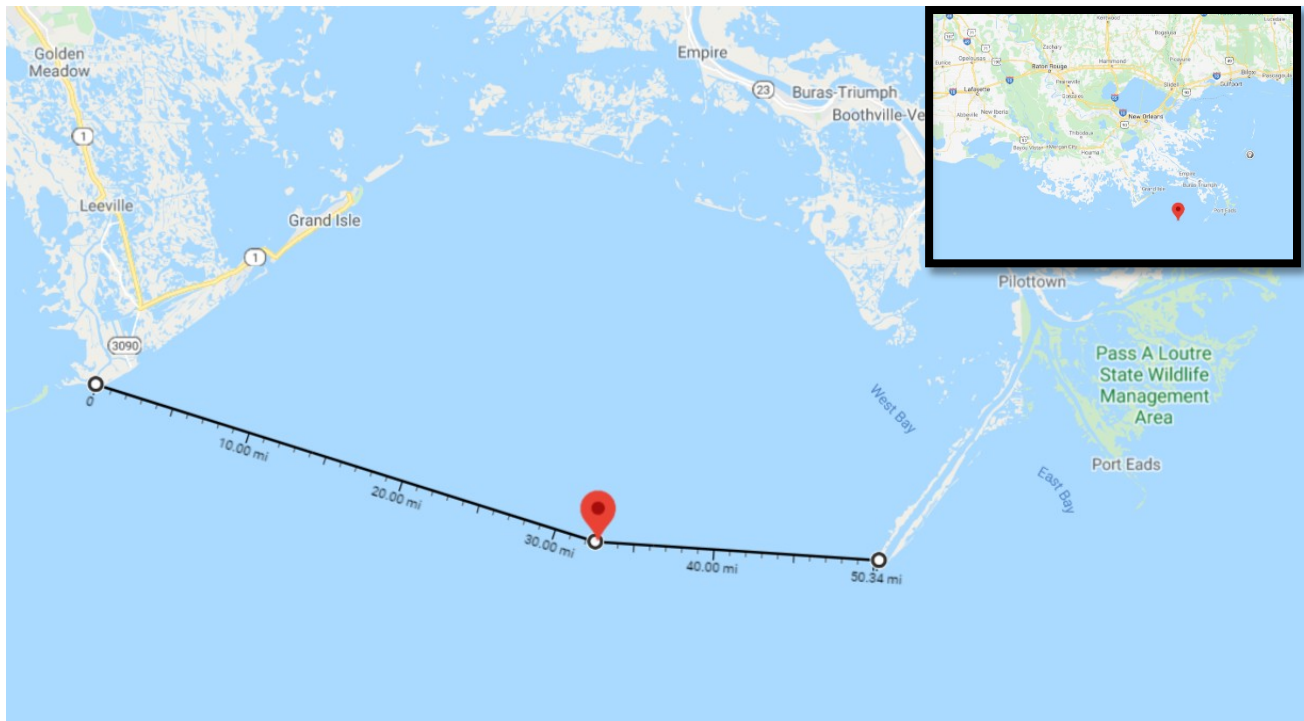


Figure 1 – Location of the Offshore Production Platform in West Delta 73A, relative to nearest land formations.

At the point of the West Delta 73A production, the Gulf of Mexico was approximately 160 feet deep. The production platform was approximately 18 miles from the Pilottown and Pass A Loutre State Wildlife Management Area, and 73 miles from New Orleans. (see Figure 1).

3. Licensee Compliance with NRC Reporting Requirements

The licensee reported the approximate time of the loss of the radiography device into the Gulf of Mexico at approximately 1850, Eastern Standard Time. The licensee called the NRC Headquarters' Operations Officers at 2231 Eastern Standard Time to report the lost material.

The licensee was required to make a telephonic notification in accordance with the NRC's regulation in 10 CFR 20.2201(a)(1)(i). This reporting regulation requires the notification by telephone to the NRC immediately after its occurrence becomes known to the licensee the loss of licensed material in an aggregate quantity equal to or greater than 1,000 times the quantity specified in Appendix C of 10 CFR Part 20. The loss of the material on March 2, 2020, was approximately 18 curies of iridium-192, which was in excess of 1,000 times the corresponding value in Appendix C (1 microcurie).

While 10 CFR Part 20 does not specify or define what 'immediate' means in terms of reporting criteria, the licensee was also subject to certain immediately reportable circumstances under 10 CFR 30.50, which specifies that 'immediate' reporting shall be made as soon as possible but no later than 4 hours after the discovery of the applicable

event or circumstance. The licensee's telephone notification was made within 4 hours of the event's occurrence, which was immediately known to the licensee, and therefore, reasonably met the NRC's timeliness criteria for this requirement.

In addition, following a telephone notification made in accordance with 10 CFR 20.2201(a)(1)(i), the licensee was subsequently required to submit a written report within 30 days of the making the telephone notification in accordance with 10 CFR 20.2201(b). This written report was received by the NRC on March 23, 2020 (NRC's Agencywide Documents Access and Management System (ADAMS) Accession ML20094F751). The NRC's review of the report determined that it was both timely and adequately addressed the required content described in 10 CFR 20.2201(b)(i)-(vi).

4. NRC Findings

The NRC's in-office review through April 30, 2020, resulted in two violations of NRC requirements. These violations involved the licensee's failures to: (A) maintain constant control and surveillance of licensed material while not in storage, as required by 10 CFR 20.1802; and (B) read and record the exposures from direct reading dosimeters at the beginning and end of each shift.

The inspector reviewed the licensee's records as they related to: the most recent iridium-192 source leak test; depleted uranium leak test; training records for all licensee crew members conducting radiography on the offshore rig; survey records leading up to the loss of material; and the licensee's written operating and emergency procedures as they pertained to the conduct of offshore radiography. The inspector also reviewed written statements from all three licensee employees (Note: two of these employees were not in the immediate vicinity and did not witness the subject event). The inspector conducted a telephonic interview with the third licensee employee, a radiographer assistant, who was attempting to move the radiography equipment and witnessed the radiography exposure device fall into the Gulf of Mexico. Aside from Violation (B) noted above, no deficiencies in records, training, execution of written procedures, or other NRC requirements were identified as a result of the NRC's review.

In accordance with the NRC Enforcement Policy, Violation (A) would normally be categorized at Severity Level III and considered for escalated enforcement action. In particular, the quantity of radioactive material that the licensee lost, approximately 18 curies of iridium-192, was in excess of 1,000 times the corresponding value in 10 CFR Part 20 Appendix C (1 microcurie), and therefore meets the Severity Level III enforcement example in the NRC Enforcement Policy, Section 6.7.c.10(a).

However, after considering the facts and circumstances of the loss of the byproduct material, the NRC exercised enforcement discretion in accordance with Section 3.5 of the Enforcement Policy, "Use of Enforcement Discretion," and assessed Violation (A) at Severity Level IV. The NRC determined that exercising discretion was appropriate because the circumstances that resulted in the byproduct material falling into the Gulf of Mexico and the inaccessibility of the byproduct material by any reasonable actions of members of the public. The NRC determined that the byproduct material does pose any material health, safety, or security risk to members of the public.

The licensee's failure to control and maintain constant surveillance of licensed material that is in a controlled or unrestricted area and that is not in storage was identified as a violation of 10 CFR 20.1802. (150-00017/2020-001-01)

With regards to Violation (B), the NRC in its review of the records associated with the radiographic activities on the day of the event, March 2, 2020, determined that the licensee personnel failed to record the end-of-shift direct reading dosimeters, as required by 10 CFR 34.47(d). Although radiographic activities were conducted prior to the loss of the radiography camera, the event appeared to have overshadowed the licensee's attention with regard to this particular requirement. The licensee was not able to provide any alternative method or record to account for the exposures received on the day of the event. However, the licensee's personal dosimeters, worn in accordance with 10 CFR 34.47(a) and exchanged monthly, would account for the exposures received on March 2, 2020, in addition to the rest of the monitoring period.

The licensee's failure to read and record the exposures from direct reading dosimeters at the beginning and end of each shift was identified as a violation of 10 CFR 34.47(d). (150-00017/2020-001-02)

5. Corrective Actions

The licensee began exploring actions in a timely manner that were lessons learned from going through the event. Examples of actions the licensee was exploring, including those that may assist in preventing recurrence, included:

1. Updates to operating and emergency procedures to address proper manual handling requirements.
2. Updates to operating and emergency procedures to address actions when a source is dropped or lost to sea.
3. Research and development recovery plan for lost sources to sea.
4. Radiation safety officers to draft and share a letter explaining manual handling process for moving cameras.
5. Technical evaluation of source life and tracking of the source and camera internally, indefinitely.
6. Research and explore tethering devices to prevent dropped objects with regards to the camera, crankout, and guide tube.

For Actions 1, 2, and 4, the licensee included specific feedback in the 30-day report, dated March 23, 2020.

6. Exit Meeting Summary

On May 4, 2020, the NRC conducted a final telephonic exit briefing with Oceaneering International, Inc. The licensee was represented by Mr. Tommy Jacobs, Corporate Radiation Safety Officer.

The licensee acknowledged the inspection findings and did not dispute any of the details presented during the call.

Supplemental Inspection Information

PARTIAL LIST OF PERSONS CONTACTED

Tommy Jacobs, Corporate Radiation Safety Officer
Aaron Lawrence, Morgan City, Louisiana, Site Radiation Safety Officer
Andre Domingue, Assistant Radiographer

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

| | | |
|-----------------------|-----|--|
| 150-00017/2020-001-01 | VIO | Failure to control and maintain constant surveillance of licensed material that is in a controlled or unrestricted area and that is not in storage. (10 CFR 20.1802) |
| 150-00017/2020-001-02 | VIO | Failure to read and record the exposures from direct reading dosimeters at the beginning and end of each shift. (10 CFR 34.47(d)) |

Closed

None

Discussed

None

LIST OF ACRONYMS USED

| | |
|-------|---|
| ADAMS | Agencywide Documents Access and Management System |
| CFR | <i>Code of Federal Regulations</i> |
| NMED | Nuclear Material Events Database |
| NRC | U.S. Nuclear Regulatory Commission |