

Mr. David L. Skeen
Director, Office of International Programs
11555 Rockville, MD 20852

May 17, 2024

Subject: Response to Apparent Violations in Letter, EA-23-151

Dear Mr. Skeen,

The purpose of this letter is to provide Schlumberger Technology Corporation's ("STC's") Response to Apparent Violations in EA-23-151 dated March 18, 2024.

On March 2, 2021, STC voluntarily self-disclosed the unauthorized export of a Category 2 quantity of byproduct material to the Bahamas. As a result of this disclosure, the NRC has identified one apparent violation of regulatory requirements in 10 CFR Part 110, which the NRC has stated it is considering for escalated enforcement. The NRC has also identified a second apparent violation related to a late advanced notification of the import of two Category 2 shipments from Turkmenistan. These apparent violations were the subject of a Notice of Apparent Violation issued on March 18, 2024.

In this Notice of Apparent Violation, the NRC requested a written "Response to Apparent Violations in EA-23-151," in the event STC opted to respond in writing rather than attend a predecisional enforcement conference. The March 18th letter requested that the response include (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. The attached document provides the requested information.

Please do not hesitate to contact me if additional detail is needed or if you have any further questions or concerns.

Sincerely,

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Response to Apparent Violations in Letter, EA-23-151

I. Summary:

STC acknowledges that its export of a Category 2 quantity of byproduct material to the Bahamas, as stated in Apparent Violation A, was an unauthorized export in violation of 10 CFR Part 110.

Nonetheless, given the circumstances set forth in Section II.B.2 below, STC believes that Apparent Violation A is of low significance and should thus be assessed a Level IV significance and disposed of as a Non-cited Violation. Should the NRC assess the violation significance at Level III and issue a Notice of Violation (“NOV”), this response also demonstrates that, in light of STC’s enforcement history and corrective actions, no civil penalty is warranted.

STC also acknowledges that it issued a late advanced notification of the import of two Category 2 shipments coming from Turkmenistan, as stated in Apparent Violation B. STC believes that Apparent Violation B is of low significance and should thus be assessed a Level IV significance and disposed of as a Non-cited Violation, as set forth in Section III.B.

II. Apparent Violation A:

A. Background of Apparent Violation A

STC failed to recognize that a specific license was necessary for a particular export of a Category 2 quantity of byproduct material to an oil rig located in the territorial waters of the Bahamas.¹ Having failed to recognize the need for a specific license, STC did not apply for and possess a specific NRC export license authorizing the export. STC also failed to provide pertinent documentation that the recipient of the material had the necessary authorization under the laws and regulations of the importing country to receive and possess the material. STC also failed to provide advanced notification and documentation at least 24 hours prior to shipment.

As a result, on December 14th, 2020, a Category 2 quantity of byproduct material, in the form of well-logging sources, was exported from the U.S. to an oil rig in the Bahamas without an NRC export license. The sources arrived at the rig on 12/18/2020.

Apparent Cause:

At the time of the export, STC personnel involved did not recognize that the aggregated quantities of radioactive material exceeding the Category 2 threshold could not be exported under the terms of the general license in 10 CFR § 110.23. Schlumberger does not use or export any single source that exceeds the Category 2 threshold and normally does not export shipments that aggregate to Category 2 quantities. However, in this case the export was made for a single use, utilized a dedicated supply boat for shipment to and from the offshore oil rig and the material was subsequently planned for return to the United States. Under these circumstances, STC personnel failed to recognize the need for a specific, rather than a general, license.

¹ This shipment contained a total of 1.184 TBq of Am241Be in the form of two separate sources, each containing 0.592TBq of Am241Be, in addition to a single source of 0.063 TBq of Cs-137.

STC self-identified this violation and reported it to the NRC on March 2, 2021.

Corrective Actions:

First, the most immediate corrective action was that the material itself was returned to the United States to the safe custody of STC. This eliminated any further security or non-proliferation concerns regarding the Category 2 material.

In an effort to avoid any repeat violations, STC provided awareness training to its logistics specialists involved in the import or export of radioactive materials. STC also routes all of its radioactive exports from the United States through a single export specialist. Because its individual sources fall below the Category 2 limits, STC only exports quantities of materials that are below the Category 2 limits. However, the export specialist is trained by the STC U.S. Radiation Safety Office (“RSO”) and will call or alert the RSO in the event that there is a request to export Category 2 quantities of materials, including exports that aggregate to Category 2 quantities.

This process has a track record of success. In the three years since the unauthorized export, STC has had numerous exports of radioactive materials and none have exceeded the Category 2 limits.

While STC intends to continue limiting its exports to below Category 2 levels, it is also currently pursuing NRC licenses to export Category 2 quantities to multiple countries in the event the need arises to consolidate shipments.

B. Analysis of Significance and Penalty

1. Background

Through its Enforcement Policy, the NRC seeks to deter noncompliance with its regulations and to encourage prompt identification and prompt, comprehensive correction of violations of NRC requirements.² Violators will be subject to enforcement action, and each enforcement action will reflect the safety or security significance of the violation.³

The first step in the enforcement process is assessing the violation’s level of severity or significance (both actual and potential), depending on risk, safety, and security significance.⁴ The severity levels range from I (highest) to IV (lowest), and minor (not documented).⁵ The NRC evaluates four criteria in determining a violation's significance: (1) were there actual safety or security consequences; (2) were there potential safety or security consequences; (3) did the violation impact the NRC’s ability to perform

² NRC Enforcement Policy at 6.

³ *Id.*

⁴ *Id.* at 9.

⁵ *Id.* at 11-12.

its regulatory oversight process; and (4) was the violation willful.⁶ For example, a violation will be assessed as Level IV if it involves a violation that is less serious, but is of more than minor concern, that resulted in no or relatively inappreciable potential safety or security consequences (that is, it is not significant based on risk), while a violation will be assessed as Level III if it resulted in or could have resulted in moderate safety or security consequence.⁷

After assessing a violation's significance, the NRC will determine how to disposition the violation. The disposition will reflect the seriousness of the violation and the circumstances involved. Violations can be dispositioned as non-cited violations ("NCVs"), cited in NOVs, or issued with civil penalties and orders.⁸ For example, a Level IV violation by a nuclear materials facility licensee can be dispositioned as an NCV if it meets four criteria: (1) the licensee identified the violation; (2) the licensee corrected (or committed to correcting) the violation within a reasonable period of time by specific corrective action committed to by the end of the inspection, including immediate corrective action and comprehensive action to prevent recurrence; (3) the violation was not repetitive as a result of inadequate corrective action; and (4) the violation was not willful.⁹

The Enforcement Policy recognizes that nuclear regulation cannot employ a one-size-fits-all approach. As such, "recognizing that the regulation of nuclear activities in many cases does not lend itself to a mechanistic treatment, judgment and discretion must be exercised in determining the severity levels of the violations and the appropriate enforcement sanctions."¹⁰

2. Apparent Violation A Should be a Level IV Violation with No Civil Penalty

The NRC has indicated that it is considering escalated enforcement for Apparent Violation A. However, based on the above criteria for evaluating the significance and disposition of violations, STC believes that Apparent Violation A should be assessed a Level IV significance and disposed of as an NCV. The NRC's assessment and disposition should reflect the violation's overall low security and nonproliferation significance, and STC's lack of willfulness.

As noted previously, a violation will be assessed as Level IV if it involves a violation that is less serious, but of more than minor concern, that resulted in no or relatively inappreciable potential safety or security consequences (that is, it is not significant based on risk), while a violation will be assessed as Level III if it resulted in or could have resulted in moderate safety or security consequence.¹¹ In accordance with this standard, and recognizing the safety and security risks associated with most unauthorized exports, the NRC typically assigns a Level III violation for an "[e]xport of byproduct

⁶ *Id.* at 9-11.

⁷ *Id.* at 11-12.

⁸ *Id.* at 14-18.

⁹ *Id.* at 16.

¹⁰ *Id.* at 11.

¹¹ *Id.* at 11-12.

material identified in 10 CFR part 110, Appendix P, to individuals or entities not authorized to receive such materials;” or for a “[f]ailure to obtain a specific license before the export or import of any NRC licensable equipment, special nuclear material, and source or byproduct materials, when required.”¹²

The facts of this situation, however, differ greatly from a normal unauthorized export. In this case, the export was made for a single use after which the material was to be returned to STC in the US. STC further utilized a dedicated supply boat for this shipment, which went to an offshore oil rig with a minimal risk of further diversion. The material was also sent to an oil rig in the waters of the Bahamas, which is a destination of low concern from a security/non-proliferation standpoint. In sum, the unique and controlled nature of this specific unauthorized export resulted in virtually no potential safety or security consequences. As a result, STC believes that Apparent Violation A should be of Level IV significance. The NRC should further dispose of Violation A as an NCV, because: (1) STC self-identified the violation and corrected it; (2) there have been no further violations in three years, demonstrating adequacy of the corrective actions; and (3) the violation was not willful.

If the NRC disagrees and issues Apparent Violation A as a Level III violation, STC asks that the NRC issue the violation without a civil penalty. According to the Enforcement Policy, the first Level III violation in two years that receives credit for corrective actions will be assessed no civil penalty.¹³ Both of these criteria are true in this case. First, STC has had no other escalated enforcement actions in the last two years. Second, as described above, STC has taken corrective actions in response to the violation. In particular, STC recovered the exported material, provided training to its relevant employees, has a process in place to screen exports, has not had a reoccurrence in three years, and is seeking general licenses to cover potential consolidated exports. Therefore, STC should not be assessed a civil penalty for this violation.

III. Apparent Violation B:

A. Background of Apparent Violation B

On December 4, 2023, STC failed to submit advanced notifications of two imported shipments of Category 2 quantities of radioactive material coming from Turkmenistan at least seven days in advance of each shipment.

The origin company (a separate company owned by STC’s parent, Schlumberger Limited) requested authorization to make two shipments of Category 2 quantities of radioactive materials to the U.S. In both cases the U.S. import specialist requested approval from the U.S. RSO per SLB’s standard procedures. The U.S. RSO requested origin to break the shipments into less than Category 2 quantity shipments to which origin agreed and subsequently re-submitted the commercial documents for approval. The commercial documents for the now six individual shipments were approved on October 19, 2023, by the US RSO.

¹² *Id.* at 78.

¹³ *Id.* at 19.

On November 30, 2023, the two shipments departed origin. On December 1, 2023, The U.S. import team identified the discrepancies between approved commercial documents and the actual shipment and requested clarification. On December 4, 2023, origin replied and provided shipment pre-alerts. At this point the U.S. team tried to stop the shipments, but they had departed for the U.S.

The U.S. RSO made the notification to the NRC as soon as it became apparent that shipments were consolidated to quantities above the Category 2 threshold, and the shipments could not be halted. This notification to the NRC did not meet the 7-day advance notice requirement.

Apparent Cause:

Origin applied for export permits prior to requesting approval from the U.S. imports team. This export request was made for two shipments each exceeding the Category 2 quantities. Later, when origin requested permission from the U.S. imports team to ship, the U.S. RSO requested the shipments be broken into smaller individual shipments.

Origin agreed to break the shipments into smaller shipments, but upon exporting, origin's customs authority rejected the shipments. The Turkmenistan customs authority refused to modify the export permits to accommodate the shipments approved by the U.S. team and required origin to ship per the original export permit of two shipments.

Schlumberger logistics personnel in the origin country were not aware that aggregated quantities of radioactive material exceeding the Category 2 threshold require an advance notification of at least 7 days prior to each shipment under 10 CFR § 110.50(c)(4). Therefore, Schlumberger origin logistics personnel shipped the material in the manner approved by the Turkmenistan customs authority without first alerting the U.S. imports team.

After departure from origin and before the final leg to the U.S., the U.S. import specialist identified that the shipment had been changed from that approved by the U.S. RSO. The specialist requested clarification from origin on the changes but stopped short of demanding the shipment be halted or alerting the U.S. RSO. In either case, it was too late to make timely notification and likely too late to stop the shipment.

Corrective Actions:

STC has made the following procedural changes for requests to ship Category 2 shipments of radioactive material:

- The U.S. RSO will identify the individual at origin who is responsible for ensuring compliance with instructions received from the U.S. RSO and who will communicate any changes prior to shipment.
- The U.S. RSO and origin will jointly determine how best and whether to consolidate shipment(s), instead of always splitting Category 2 shipments.
- The U.S. RSO will be responsible for making NRC advanced notifications when origin and the U.S. RSO agree on having a Category 2 shipment.
- The U.S. RSO will communicate origin's responsibilities to the designated responsible individual at origin, the origin logistics team, and the U.S. import specialist.

STC general procedural changes for all shipments of radioactive materials:

- Require immediate notification from U.S. import to RSO by phone when changes to shipment are detected at pre-alert or any stage in the green light process. Pre-alerts are provided to the U.S. import team by origin logistics at time of shipment booking.

B. Apparent Violation B Should be a Level IV Violation with No Civil Penalty

Based on the criteria set forth above for evaluating the significance and disposition of violations, STC believes Apparent Violation B should be assessed a Level IV significance and disposed of as an NCV. The NRC's assessment and disposition should reflect the violation's overall low security and nonproliferation significance, and STC's lack of willfulness.

The NRC's Enforcement Policy indicates that a failure to timely report imports should be a Level III violation "where, if this information had been provided, it would likely have caused the NRC to take further action or inquiry."¹⁴ STC has no reason to believe that the NRC would have taken any further action or inquiry in this case given the materials imported. Furthermore, STC attempted to comply with Category 2 limits and those limits were only bypassed due to issues with customs in the originating country. STC also informed the NRC as soon as it was made aware that the import would require notification. Finally, STC has pursued corrective actions, set forth above, to avoid a repeat issue.

IV. Conclusion

STC requests that the NRC disposition Apparent Violation A and Apparent Violation B in accordance with the reasoning set forth above.

¹⁴ NRC Enforcement Policy at 78.