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May 23, 2019

Director, Office of Enforcement
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Subject: Answer to Notice of Violation and Proposed Imposition of Civil Penalty
USNRC License No.: 42-32219-01
Docket No.: 030-35252
NRC Inspection Report 030-35252/2018-003; EA-18-124

Dear Sir or Madam:

Team Industrial Services, Inc. ("TEAM") provides the following written answer in accordance with 10 CFR 2.205 to the Notice of Violation and Proposed Imposition of Civil Penalty dated March 8, 2019. The Notice identified an apparent violation issued as a result of the investigation conducted October 12, 2017 through August 27, 2018 concerning actions taken by TEAM radiographers at a temporary jobsite aboard the USS Harpers Ferry. The apparent violation, as described in the Notice, is set forth below for reference followed by our response.

"License Condition 25.A of NRC Materials License 42-32219-1 Amendment 54, requires, in part, that the licensee conduct its program in accordance with its application dated March 20, 2015. A procedure identified as part of its Radiation Protection Program Manual and included in the application package, Operating Procedure 30.J.2 "Operating & Emergency Procedure," Revision 14, Section 14, "Operating Procedures for Radiographic and X-ray Equipment," Step 14.4.3.e.1, requires, in part, that if a the radiographic exposure device is to be relocated for subsequent exposures, the device shall be placed in the fully locked position if there is movement to another physical location.

Contrary to the above, on August 29, 2017, the licensee moved a radiographic exposure device for subsequent exposures to another physical location and failed to ensure that the device was placed in the fully locked position. Specifically, the radiographers carried a radiographic exposure device in an unlocked position onboard the USS Harpers Ferry from the location of their truck at the pier."

TEAM's Position: Our investigation of the issue indicates a violation of TEAM's Operating and Emergency Procedure, 30.J.2, occurred as the result of a radiographer's failure to fully lock the exposure device following a pre-job inspection of the radiographic equipment. However based on our findings, we contend that the violation was not willful as described in the Notice, but was due to a human error made in completing the daily inspection process. As such TEAM disputes the classification of the violation as willful and provides the following information to show the violation was not willful. We also contend that the alleged violation was not significant as additional safety barriers were in place to prevent any inadvertent exposure.

OE01
IE07
RGN-IV
NRC/OE

TEAM is requesting the violation be reduced from a Severity III violation and the associated Proposed Civil Penalty rescinded in its entirety.

Results of Investigation: During our investigation, Radiographer "A" stated that he completed an inspection of the exposure device and associate equipment as required by 10 CFR 34.31(a) at the truck prior to boarding the USS Harpers Ferry, which included required tolerance and operational checks of the equipment. However, upon completing the inspection he failed to fully engage the plunger lock on the device. The exposure device was then handed to Radiographer "B" who hand-carried the exposure device aboard the USS Harpers Ferry. Once aboard the ship where the radiographs were to take place, Radiographer "B" was made aware of the unlocked plunger and immediately engaged the plunger until it was time to connect the equipment and conduct operations. Radiographer "A" chose to perform the daily equipment inspection at the truck in order to save time from having to complete the task once on board. The failure to depress the plunger lock was in no means intended to save time in performing any part of radiographic operations. There was no intent to leave the device in an unlocked state prior to boarding the USS Harpers Ferry nor was there any appreciable advantage to relocating the device in the partially unlocked condition.

Our investigation further indicated both Radiographers were trained on TEAM's Operating and Emergency Procedures and were knowledgeable in the requirements, including the requirement to fully lock the exposure device prior to relocating to another physical location.

Mitigating Factors: The exposure device being utilized was a [redacted] which by design incorporates three independent locking mechanisms to prevent accidental movement or exposure of the source. (See description and picture below.)

The three lock mechanisms include:

1) A positive locking mechanism (slide bar) which secures the source assembly in the exposure device and prevents movement of the source;
2) A selector dial which prevents movement of the positive locking mechanism until time to expose the source. The selector dial has three positions: lock, connect and operate. The selector dial can be rotated left from the lock position to the connect position or right to the operate position with the lock position being in the top center. Turning the selector dial to the connect position unlocks and opens the rear cover of the lock assembly for inspection of the source assembly and/or connection of the drive assembly. In the connect position, the source assembly remains secured by the slide bar as in this position there is no way to engage the slide bar. Turning the selector dial to the operate position exposes an opening in the dial whereby the slide bar can be engaged to release the source assembly when ready to make an exposure; and,
3) A keyed plunger lock which prevents the selector dial from being rotated.

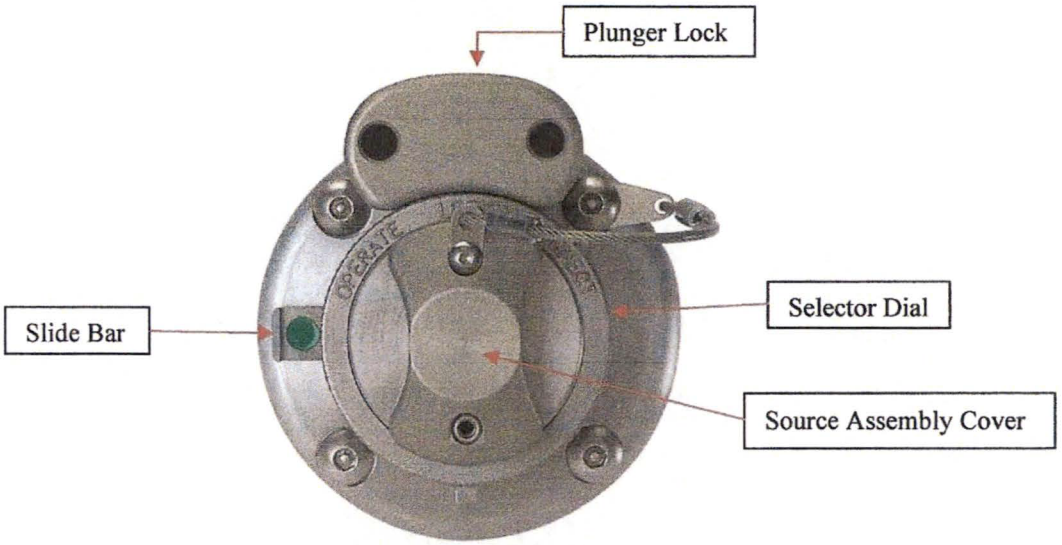

Figure 1: [redacted] Lock Assembly

The device also incorporates a tungsten shield at the exit port that can only be opened once a guide tube is connected to the device. The tungsten shield provides a shielding factor to reduce exposure from the source, but also provides another level of security as it prevents the source from projecting out of the exposure device unless a guide tube is connected.

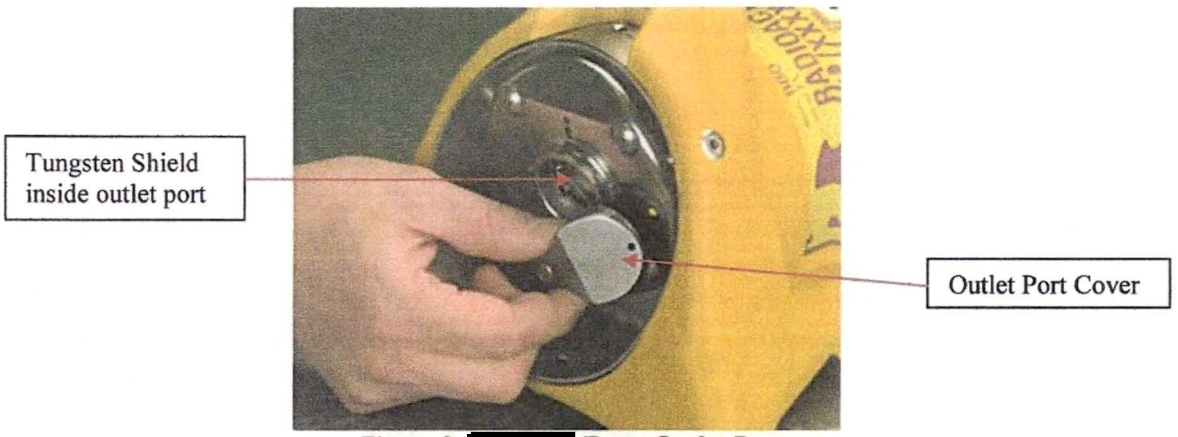

Figure 2: [redacted] Front Outlet Port

The following steps must be taken in order to expose the source:

1) The plunger must be unlocked and the selector dial turned to connect
2) The drive cable must be connected to the source assembly and the drive assembly connected to the exposure device. Once connected the selector dial is rotated back to the lock position.
3) A guide tube must be connected to the exit port of the device.
4) Following full assembly of the system, the selector dial must be rotated to the operate position, the slide bar engaged to release the source assembly and the tungsten shield

rotated to the open position. Only now can the source be moved from the device to an exposed position.

TEAM's Operating and Emergency procedure is more restrictive than the regulation since we require the device to be fully locked prior to movement to another location, However with only the plunger lock disengaged, the source assembly is still well secured within the exposure device with no risk of movement or exposure with the selector dial still set in the locked position, the slide bar still engaged securing the source assembly and the tungsten shield still in the closed position. The fact the source was secured within the exposure device to prevent unauthorized or accidental removal of the source from its shielded position meets the intent of 10 CFR 34.23(a). Additionally, the exposure device was under continual surveillance of the radiographers at all times also meeting the requirements of 10 CFR 34.23(a).

Arguments in Support of Requested Action: Although the exposure device was in fact moved from the truck at the pier to the USS Harpers Ferry in a partially unlocked condition, there was no willful intent to do so. The daily equipment inspection was performed prior to boarding to save time so that the inspection did not need to be performed once on board. As part of the daily inspection of the exposure device, the plunger was unlocked and the selector dial turned to "connect" to expose the source assembly connector. This step is performed in order to verify proper operation and perform tolerance (no go) checks on the source assembly connector. Upon completing the daily checks, the radiographer replaced the cover and rotated the selector dial to the lock position. Unfortunately, during reassembly, the radiographer failed to relock the plunger as the final step prior to moving it from the truck. At no time during the daily inspection process was the source in an unsecure mode and there was no risk of exposure to personnel.

Had the radiographer, in fact, wanted to "save time" as indicated in NRC's investigation, the drive assembly and possibly the guide tube would have been connected at the truck and the fully assembled system carried aboard the ship. This would have saved significant time on board and would have been a clear deliberate willful violation of TEAM's procedure. Unlocking the plunger alone would only result in 1-2 seconds of time savings.

To use a simple analogy as a comparison, unlocking the plunger to save time could be compared to someone removing the cap from a pen prior to entering a bank in order to save time in the bank writing a check. If someone wanted to save time in the bank, they would instead write the check prior to entering the bank. Based on our experience in industrial radiographic operations, the unlocked plunger was in no way meant as a willful action but as a human error made in completing the daily inspection process.

Corrective Actions (as previously provided in the letter dated February 6, 2019): Once the exposure device was identified by Radiographer "B" to be in an unlocked condition, it was immediately locked correcting the noncompliance. Following the incident, additional actions were taken as follows:

1) Immediately upon notification of the incident, both radiographers were provided disciplinary action in the form of a written warning placed on file for failure to adhere to Team's Operating and Emergency Procedures.

2) Both radiographers were also provided reinforcement training immediately following notification of the issue in the form of a review of the Operating and Emergency Procedures specifically covering Section 14 and the steps for properly locking the exposure device prior to relocating.

3) The incident including the resulting violation has been reviewed with all radiographic personnel from the Los Angeles Facility and will be recovered again during annual refresher training scheduled for later this year. If scheduling allows, we are requesting the two Radiographers involved present the topic during this training.

4) The incident and resulting violation were presented during the annual Radiation Safety Officers meeting held in January 2019 with all company RSO's so that the issue could be shared with all locations as part of their annual refresher training.

5) Additional field audits of both radiographers involved are also being considered, provided both remain actively performing radiographic operations, to ensure corrective actions have been and remain effective.

We consider the actions taken to be comprehensive and complete.

Conclusion: Based on the results of our investigation, we conclude that the exposure device was moved from the truck at the pier to the USS Harpers Ferry without being in the fully locked condition since the plunger was not relocked following the daily inspection. However, based on the mitigating factors and justification provided above, we do not consider this to be a willful violation as there was no intent to transport the exposure device in that state. It was an unintentional mistake that was immediately corrected once it was identified. Additionally, we do not consider the violation to be significant as there was no risk of exposure of the source due to the unlocked plunger as other redundant safety features were actively engaged and direct surveillance of the exposure device was maintained by the radiographic crew throughout.

TEAM is hereby requesting that NRC reduce the severity of the violation from Severity III to a more reasonable level appropriate for a non-willful violation of company procedure. Further, TEAM also requests withdrawal of the proposed penalty in its entirety.

If you should require any additional information or have any questions regarding this reply, please contact me at 219/310-8560 or 219/229-2909 or by email at David.Tebo@TeamInc.com.

Sincerely,

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