



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

October 10, 2019

EA-19-040

Mr. Jack Peters  
Manufacturing Sciences Corporation  
804 S Illinois Avenue  
Oak Ridge, TN 37830

SUBJECT: EXPORT OF NUCLEAR MATERIAL UNDER U.S. NUCLEAR REGULATORY  
COMMISSION'S LICENSING AUTHORITY – NOTICE OF VIOLATION

Dear Mr. Peters:

This letter refers to the U.S. Nuclear Regulatory Commission's (NRC) review of information concerning the export of 360 kilograms (kg) of depleted uranium (DU) in an individual shipment exceeding 10 kg without obtaining a specific license. The purpose of the review was to determine whether nuclear material was exported without obtaining a specific license from the NRC authorizing the shipment, as required by Title 10 of the *Code of Federal Regulations* (10 CFR) Part 110.

In a letter dated July 3, 2019, (Agencywide Documents Access and Management System (ADAMS) Accession No. ML19158A080), the NRC identified an apparent violation of NRC requirements, the export of nuclear material without obtaining a specific license, as required by 10 CFR 110.5, 110.9(b), 110.20(a), and 110.22(b), that was being considered for escalated enforcement. The letter also provided you the opportunity to address the apparent violation by either: (1) submitting a written response; (2) attending a predecisional enforcement conference; or (3) participating in an Alternative Dispute Resolution mediation, before we made our final enforcement decision. Manufacturing Sciences Corporation (MSC) submitted a written response on July 18, 2019 (ADAMS Accession No. ML19204A317).

Based on a review of the information provided by MSC's response to NRC's letter dated July 3, 2019, the NRC has determined that a violation of NRC requirements occurred. This violation is cited in the enclosed Notice of Violation (Notice). The violation involved the export of nuclear material without obtaining a specific license. Specifically, in October 2018, the National Nuclear Security Administration (NNSA) received an inquiry from the European Atomic Energy Community (EURATOM) regarding an export of DU from the U.S. to Germany. Prior to the receipt of DU by the intended recipient, EURATOM had not received notification of the export to Germany through official channels. On November 21, 2018, the NNSA requested that Nuclear Material Management and Safeguards System (NMMSS) staff initiate communications with MSC regarding its apparent failure to report the DU export.<sup>1</sup> The communications also revealed

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<sup>1</sup> As documented in its July 3, 2019 letter, the NRC exercised enforcement discretion and refrained from citing the reporting violation in accordance with Section 3.5 of the NRC's Enforcement Policy. The staff made this determination by considering the merits of the case including the significance of the violation, the clarity of the requirement and associated guidance, and other relevant circumstances.

that MSC failed to obtain a specific export license for the export because the quantity of material exported exceeded the limits for the material type for a general export license under 10 CFR 110.22(b). Section 110.22(b) states that a general license is issued to any person to export uranium or thorium in individual shipments of 10 kg or less. MSC was not in possession of a specific export license for this export, which exceeded the 10 kg limit permitted under the general license.

The NRC considers the export of nuclear material without obtaining a specific license, a violation against 10 CFR 110.5, 110.9, 110.20(a), and 110.22(b), to be significant because it impacted the NRC's ability to perform its regulatory oversight function wherein the U.S. Government would have requested assurances from EURATOM confirming that upon receipt, the material would be made subject to all the terms and conditions of the U.S. – EURATOM Agreement for Cooperation. Therefore, this violation has been categorized in accordance with the NRC Enforcement Policy at Severity Level III (SLIII). The NRC Enforcement Policy may be found on the NRC Web site at [www.nrc.gov/about-nrc/regulatory/enforcement/enforce-pol.html](http://www.nrc.gov/about-nrc/regulatory/enforcement/enforce-pol.html).

Because your facility has not been the subject of escalated enforcement actions within the last 2 years, the NRC considered whether credit was warranted for *Corrective Action* in accordance with the civil penalty assessment process in Section 2.3.4 of the Enforcement Policy. Your corrective actions included: (1) the initiation of an internal Condition Report, “MSC-CR-18-011” which included corrective actions to prevent any future export violations; (2) issuance of a new procedure, “Foreign Shipments of Radioactive Material” MSC-TS-4.1; (3) attendance at the NRC-NMMSS Training on July 23, 2019; and (4) training of all MSC personnel that included reporting requirements for exports, implementation of the procedure on foreign shipments, and a review of NRC requirements for exporting nuclear material.

Therefore, to encourage prompt identification and comprehensive correction of violations, the NRC will not propose a civil penalty in this case. However, significant violations in the future could result in a civil penalty. In addition, issuance of this SLIII violation constitutes escalated enforcement action that may subject you to increased inspection effort.

The NRC has concluded that information regarding: (1) the reasons for the violation; (2) the corrective actions that have been taken and the results achieved; and (3) the date when full compliance was achieved is already adequately addressed on the docket in your letter dated July 18, 2019. Therefore, you are not required to respond to this letter and Notice 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 Procedures,” a copy of this letter, its enclosure, and your response will be made available electronically for public inspection in the NRC Public Document Room and in the NRC's Agencywide Documents Access and Management System (ADAMS), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>. If you choose to respond to this letter and Notice, to the extent possible, your response should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the Public without redaction. If personal privacy or proprietary information is necessary to provide an acceptable response, please provide a bracketed copy of your response that identifies the information that should be protected and a redacted copy of your response that deletes such information. If you request withholding of such information, you must specifically identify the portions of your response that

you seek to have withheld and provide in detail the bases for your claim of withholding (e.g., explain why the disclosure of information will create an unwarranted invasion of personal privacy or provide the information required by 10 CFR 2.390(b) to support a request for withholding confidential commercial or financial information). The NRC also includes significant enforcement actions on its Web site at [\(http://www.nrc.gov/reading-rm/doc-collections/enforcement/actions/\)](http://www.nrc.gov/reading-rm/doc-collections/enforcement/actions/).

Please contact Andrea R. Jones at (404) 997-4443, if you have any questions regarding this matter.

Sincerely,

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George A. Wilson, Director  
Office of Enforcement

Enclosure:  
Notice of Violation

SUBJECT: EXPORT OF NUCLEAR MATERIAL UNDER U.S. NUCLEAR REGULATORY  
COMMISSION'S LICENSING AUTHORITY – NOTICE OF VIOLATION.  
DATED: OCTOBER 10, 2019.

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**ADAMS Accession No.: ML19234A148****\*concurrence via e-mail**

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## NOTICE OF VIOLATION

Manufacturing Sciences Corporation.  
Oak Ridge, TN

EA-19-040

Based on the U.S. Nuclear Regulatory Commission's (NRC) evaluation of Manufacturing Sciences Corporation (MSC) activities associated with the export of depleted uranium in May 2018, a violation of NRC requirements was identified. In accordance with the NRC Enforcement Policy, the violation is listed below:

- A. Title 10 of the *Code of Federal Regulations* (10 CFR) 110.5, states, in part, that “no person may export any nuclear equipment or material listed in 10 CFR 110.9, unless authorized by a general or specific license issued under this part.”

10 CFR 110.9 lists source material, which includes uranium-235 in the form of depleted uranium as a material that falls within the NRC's export licensing authority.

10 CFR 110.20(a) states that, “A person may use a NRC general license as an authority to export or import nuclear equipment or material, if the nuclear equipment or material to be exported or imported is covered by the NRC general licenses as described in §§ 110.21 through 110.27. If an export or import is not covered by the NRC general licenses described in §§ 110.21 through 110.27, a person must file with the Commission for a specific license in accordance with §§ 110.31 through 110.32.”

10 CFR 110.22(b) states, in part, that a general license is issued to any person to export uranium in individual shipments of 10 kilograms or less to any country not listed in 10 CFR 110.28 or 110.29.

Contrary to the above, on May 22, 2018, MSC exported 360 kilograms of depleted uranium to Germany, a country not listed in 10 CFR 110.28 or 110.29. MSC failed to obtain a specific license authorizing the export, as required by 10 CFR 110.5, 110.9, 110.20(a) and 110.22(b), for the individual shipment exceeding 10 kilograms.

This is a Severity Level III violation (Section 6.15.c.4).

The NRC has concluded that information regarding the reason for the violation, the corrective actions taken and planned to correct the violation and prevent recurrence, and the date when full compliance was achieved, is already adequately addressed in your July 18, 2019 letter. However, you are required to submit a written statement or explanation pursuant to 10 CFR 2.201 if the description therein does not accurately reflect your corrective actions or your position. In that case, or if you choose to respond, clearly mark your response as a “Reply to a Notice of Violation; EA-19-040” and send it to the NRC, ATTN: Document Control Desk, Washington, DC 20555-0001 with a copy to the with a copy to the Director, Office of International Programs, within 30 days of the date of the letter transmitting this Notice.

Enclosure

If you contest this enforcement action, you should also provide a copy of your response, with the basis for your denial, to the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001.

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 Agencywide Documents Access and Management System (ADAMS), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>. To the extent possible, your response should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the public without redaction. If personal privacy or proprietary information is necessary to provide an acceptable response, then please provide a bracketed copy of your response that identifies the information that should be protected and a redacted copy of your response that deletes such information. If you request withholding of such material, you must specifically identify the portions of your response that you seek to have withheld and provide in detail the bases for your claim of withholding (e.g., explain why the disclosure of information will create an unwarranted invasion of personal privacy or provide the information required by 10 CFR 2.390(b) to support a request for withholding confidential commercial or financial information). If safeguards information is necessary to provide an acceptable response, please provide the level of protection described in 10 CFR 73.21. If Classified Information is necessary to provide an acceptable response, please provide the level of protection described in 10 CFR Part 95.

In accordance with 10 CFR 19.11, Manufacturing Sciences Corporation may be required to post this Notice within two working days of receipt.

Dated this 10<sup>th</sup> day of October 2019.