



# OFFICE OF THE INSPECTOR GENERAL

U.S. NUCLEAR REGULATORY COMMISSION  
DEFENSE NUCLEAR FACILITIES SAFETY BOARD

## Audit of NRC's Oversight of Source Material Exports to Foreign Countries

OIG-17-A-08  
February 16, 2017



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

**OFFICE OF THE  
INSPECTOR GENERAL**

February 16, 2017

MEMORANDUM TO: Victor M. McCree  
Executive Director for Operations

Nader Mamish  
Director, Office of International Programs

FROM: Dr. Brett M. Baker */RA/*  
Assistant Inspector General for Audits

SUBJECT: AUDIT OF NRC'S OVERSIGHT OF SOURCE MATERIAL  
EXPORTS TO FOREIGN COUNTRIES (OIG-17-A-08)

Attached is the Office of the Inspector General's (OIG) audit report titled *Audit of NRC's Oversight of Source Material Exports to Foreign Countries*.

The report presents the results of the subject audit. Following the January 12, 2017, exit conference, agency staff indicated that they would be providing formal comments for inclusion in this report.

Please provide information on actions taken or planned on each of the recommendations within 30 days of the date of this memorandum. Actions taken or planned are subject to OIG followup as stated in Management Directive 6.1.

We appreciate the cooperation extended to us by members of your staff during the audit. If you have any questions or comments about our report, please contact me at (301) 415-5915 or Sherri Miotla, Team Leader, at (301) 415-5914.

Attachment: As stated



# Office of the Inspector General

U.S. Nuclear Regulatory Commission  
Defense Nuclear Facilities Safety Board

OIG-17-A-08

February 16, 2017

## Results in Brief

### Why We Did This Review

The U.S. Nuclear Regulatory Commission's (NRC) mission is to regulate the Nation's civilian use of nuclear materials to ensure protection of public health and safety, promote the common defense and security, and protect the environment. One of the agency's statutorily mandated responsibilities under the *Atomic Energy Act of 1954*, as amended, is to license the import and export of nuclear materials.

Source material is often exported to be enriched and used as fuel for nuclear power plants across the world. As source material (uranium) could potentially be enriched to produce highly enriched uranium – the primary ingredient of an atomic weapon – tracking and accounting for the exports of source material are important to (1) ensure that it is used only for peaceful purposes, (2) comply with international treaty obligations, and (3) provide data to policymakers and other government officials.

The audit objective was to determine the effectiveness of NRC's oversight of the export of source material.

### *Audit of NRC's Oversight of Source Material Exports to Foreign Countries*

#### What We Found

OIG found that NRC provides effective oversight of source material exports in coordination with other Federal agencies; however, opportunities for improvement exist within NRC's internal processes. Specifically, NRC should (1) create an export inspection program, (2) clarify specific NRC regulations related to exports, and (3) create a qualification program for export licensing officers.

NRC does not perform source material export preclicensing site visits or inspections even though one of NRC's principal regulatory functions – oversight – consists of inspections and performance assessment. This occurs because NRC does not require site visits or inspections. Without preclicensing site visits or inspections, NRC cannot confirm if export applicants are legitimate and does not have the assurance licensees are in compliance with export regulations.

Additionally, NRC does not verify if some export applicants have a certain required NRC license, nor does NRC enforce the requirement that export carriers be listed on export applications. This is due to some ambiguity in the export regulations and the lack of a formalized training program for export licensing officers.

#### What We Recommend

This report makes recommendations to improve NRC's oversight of the export of source material through the creation of an export inspection program, clarification of specific NRC regulations related to exports, and creation of a qualification program for export licensing officers.

Agency management does not entirely agree with the findings and recommendations. Agency comments are included in Appendix E of this report.

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## **ABBREVIATIONS AND ACRONYMS**

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10 CFR	Title 10 of the Code of Federal Regulations
IAEA	International Atomic Energy Agency
NMSS	Office of Nuclear Material Safety Safeguards
NMMSS	Nuclear Materials Management and Safeguards System
NRC	Nuclear Regulatory Commission
OIG	Office of the Inspector General
OIP	Office of International Programs

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## I. BACKGROUND

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NRC's mission is to regulate the Nation's civilian use of nuclear materials to ensure protection of public health and safety, promote the common defense and security, and protect the environment. One of the agency's statutorily mandated responsibilities under the *Atomic Energy Act of 1954* (Atomic Energy Act), as amended, is to license the export and import of nuclear materials such as source material<sup>1</sup> from and to the United States. Source material is often exported to be enriched and used as fuel for nuclear power plants across the world. As source material (uranium) could potentially be enriched to produce highly enriched uranium – the primary ingredient of an atomic weapon – tracking and accounting for the exports of source material are important to (1) ensure that it is used only for peaceful purposes, (2) comply with international treaty obligations, and (3) provide data to policymakers and other government officials.

### **Foreign and Domestic Nonproliferation Oversight**

NRC's responsibilities are based on a range of treaties, laws, and international agreements collectively known as the nuclear nonproliferation regime. The main objective of this international regime is to limit other nations from acquiring nuclear weapons. For more details on the nuclear nonproliferation regime, see Appendix A.

Domestically, the U.S. Government supports the nonproliferation regime through a system of export controls and licensing laws and regulations. In order to engage in international trade of source material, the entity must first obtain an export license<sup>2</sup> from NRC. NRC also determines if a

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<sup>1</sup> Source material refers to uranium or thorium, or any combination thereof, in any physical or chemical form or ores which contain greater than 0.05% by weight of uranium and/or thorium.

<sup>2</sup> NRC issues two types of licenses for export of nuclear materials: general licenses and specific licenses. In a general license, NRC does not issue a separate license document to a particular entity as the licensee simply needs to comply with all applicable domestic requirements stated in the Code of Federal Regulations – this applies to the export of small quantities of source material. If an export is not covered by the general license, an entity must file an application for a specific license. A specific license is a paper document issued by NRC on a case-by-case basis to a named entity for the proposed transaction described in the license application form, such as the export of large amounts of source material.

bilateral agreement for peaceful nuclear cooperation is in place between the U.S. Government and the government of the importing nation. For more details on domestic nonproliferation oversight by NRC and other Federal agencies, see Appendix B.

## **NRC Regulations**

NRC regulations governing the export/import licensing process are provided in Title 10 of the Code of Federal Regulations (10 CFR), Part 110, "Export and Import of Nuclear Equipment and Material." Part 110 prescribes licensing, enforcement, and rulemaking procedures for export and import licenses, and also lists the nuclear facilities, equipment, and materials under NRC export and import licensing authority.

NRC regulations governing the licensing of source material are provided in 10 CFR Part 40, "Domestic Licensing of Source Material." The regulations in this part establish procedures and criteria for the issuance of licenses to receive title to, receive, possess, use, transfer, or deliver source material. Part 40 also establishes certain requirements for the physical protection of import and export shipments of natural uranium.

In a scenario where an entity possesses source material and seeks to export it, the entity must first adhere to Part 40 license requirements. The owner or the entity that possesses the material must also obtain a specific Part 110 license, or coordinate with another U.S. entity that holds a specific Part 110 license to authorize the export transaction.

## **NRC Roles and Responsibilities**

The Office of International Programs (OIP) plans, develops, and implements programs, in concert with other NRC offices, to carry out policies in the international arena, including export and import licensing responsibilities. Specifically, OIP licenses exports and imports, performs rulemaking activities associated with Part 110, reviews nuclear nonproliferation initiatives, and develops international safeguards policy.

The Office of Nuclear Material Safety and Safeguards (NMSS) provides technical reviews of export and import license applications to identify any potential proliferation concerns, pursuant to Part 110. NMSS facilitates

the application of International Atomic Energy Agency (IAEA)<sup>3</sup> safeguards and evaluates the adequacy of OIP's export/import licensing reviews. NMSS also conducts activities to enhance safeguards programs in other countries and promotes nuclear nonproliferation.

### Export License Process

To request a specific export license, applicants must submit a completed export application and an established application fee to OIP. OIP licensing officers perform an acceptance review of incoming application documents to verify completeness, including that the appropriate fee has been included before docketing the incoming package. The licensing officer then coordinates with NMSS and the Executive Branch<sup>4</sup> to obtain their views on the proposed licensing action, as necessary. OIP management performs a final review of the contents of the export application file to confirm that all required communications, approvals, and documents are present. See Figure 1 for a simplified version of the export application approval process.

**Figure 1: Export Licensing Process**



**Source:** OIG analysis of export licensing process.

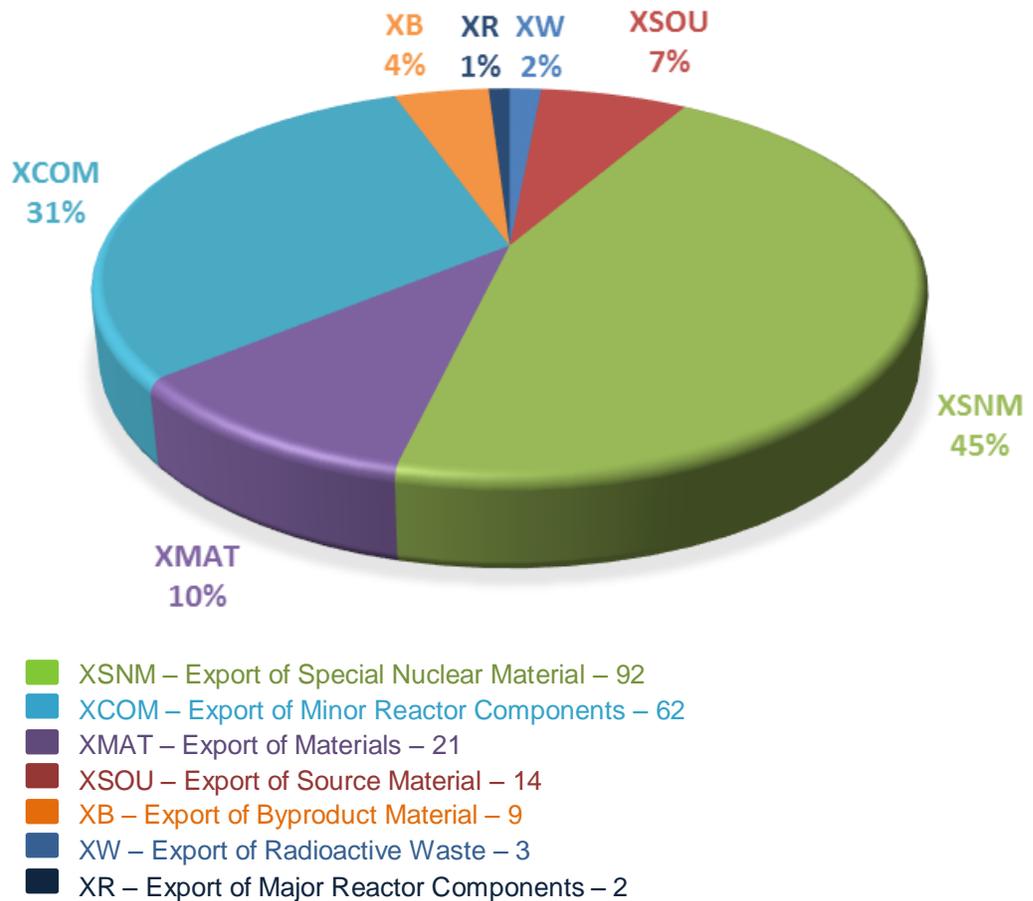
<sup>3</sup> IAEA is an international organization of the United Nations that works with its Member States and multiple partners worldwide to promote the safe, secure, and peaceful use of nuclear technologies.

<sup>4</sup> The Executive Branch consists of members from the Departments of State, Energy, Defense, and Commerce. The Executive Branch is responsible for gaining foreign government assurances for peaceful nuclear cooperation agreed upon under the *Atomic Energy Act*.

## Source Material Export Data

Over the past 5 years (2011 – 2015), NRC issued 203 export licenses consisting of source material, special nuclear material<sup>5</sup>, byproduct material<sup>6</sup>, materials (such as deuterium), radioactive waste, minor reactor components, and major reactor components exports. Of the 203 export licenses issued, 14 were for source material. See Figure 2 for a breakdown of export licenses issued during this period.

**Figure 2: Export Licenses Issued From 2011 – 2015**



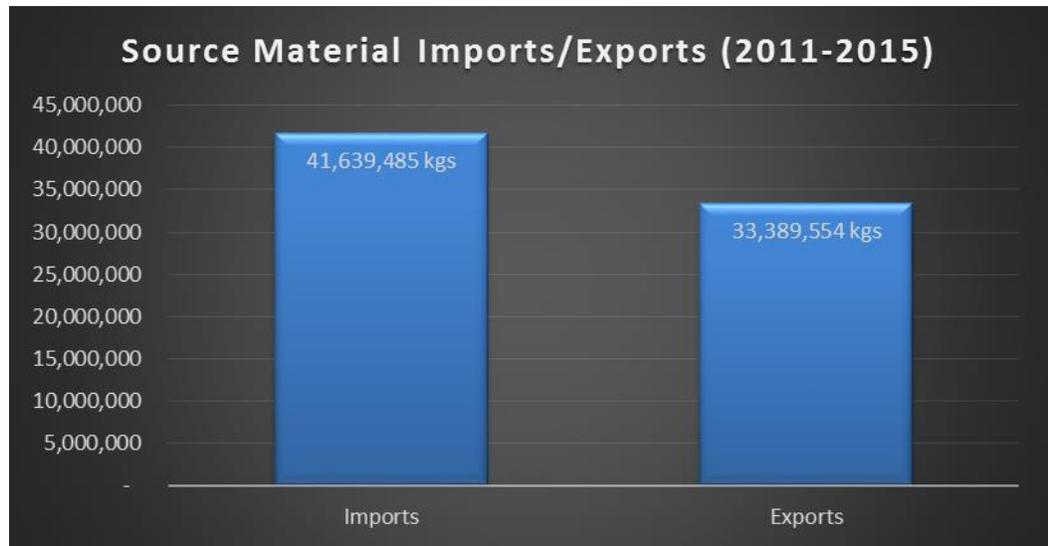
**Source:** OIG analysis of export license data provided by OIP.

<sup>5</sup> Special nuclear material refers to plutonium, uranium-233, or uranium enriched in the isotopes uranium-233 or uranium-235.

<sup>6</sup> Byproduct material, in general, is nuclear material (other than special nuclear material) that is produced or made radioactive in a nuclear reactor or particle accelerator.

The United States has primarily been a net importer of source material for the past several years. For example, from 2011 to 2015, the United States imported approximately 8 million kilograms more source material than it exported. See Figure 3 for a bar graph of source material imports versus exports for this time period.

**Figure 3: Source Material Import/Export From 2011 – 2015**



**Source:** OIG analysis of Nuclear Materials Management and Safeguards System (NMSS) data.

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## II. OBJECTIVE

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The audit objective was to determine the effectiveness of NRC's oversight of the export of source material. See Appendix C for information on the audit scope and methodology.

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## III. FINDINGS

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NRC provides effective oversight of source material exports in coordination with other Federal agencies; however, opportunities for improvement exist within NRC's internal processes. Specifically, NRC should

- Create an export inspection program.
- Clarify specific NRC regulations related to exports.
- Create a qualification program for export licensing officers.

### **A. No Prelicensing Site Visits or Source Material Export Inspections**

NRC does not perform prelicensing site visits or source material export inspections<sup>7</sup> even though one of NRC's principal regulatory functions – oversight – consists of inspections and performance assessment. This occurs because NRC does not require prelicensing visits or export inspections. Without these visits or inspections, NRC cannot confirm if export applicants are legitimate and does not have assurance licensees are in compliance with export regulations.

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<sup>7</sup> OIP has carried out some export inspections of other types of nuclear material such as byproduct material.

## ***What Is Required***

### **NRC Should Inspect Licensees to Ensure Compliance with Requirements**

As a regulator, NRC fulfills one of its principal regulatory functions through oversight. Oversight consists of performance assessment and inspections (including prelicensing site visits) to verify licensee activities are properly conducted, and to ensure safe and secure operations in accordance with NRC's regulations.

Furthermore, Part 110.53 states that each export licensee (a) must have an office in the United States, (b) shall maintain their export records for 5 years, and (c) shall maintain adequate safeguards against tampering with and loss of these records.<sup>8</sup> The regulations also state that export licensees shall permit NRC to inspect their records, premises, and activities when necessary to fulfill the requirements of the *Atomic Energy Act*.

## ***What We Found***

### **NRC Does Not Perform Prelicensing Site Visits or Source Material Export Inspections**

NRC has not performed prelicensing site visits to ensure that entities applying for an export license have a physical office in the United States where records will be kept and safeguarded, nor has NRC conducted source material export licensee inspections to verify that export activities are conducted in accordance with NRC's regulations.

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<sup>8</sup> The requirements in Part 110.53 apply to both general and specific licensees.

### No Prelicensing Site Visits

Currently, there are no prelicensing site visits of source material export applicants (except for applicants that already have a Part 40 license) to ensure they are legitimate companies and have physical offices in the United States. The lack of any prelicensing site visits is especially significant for applicants such as export brokers or carriers who, unlike shippers, are not inspected under any other NRC oversight program. For example, shippers would be subject to Part 40 inspections because they are often the licensees who possess the source material. Conversely, brokers and carriers without a Part 40 license are not subject to any NRC inspections since they do not technically possess or own the source material, despite playing a significant role as the export licensee acting on behalf of the shipper or importer.

- “Shippers” are the licensees possessing/selling/exporting the material.
- “Brokers” serve as the intermediary and act on behalf of the shipper or the importer. They may also provide transportation services.
- “Carriers” serve as the transporter of the material from shipper to importer.

Conducting prelicensing site visits does not simply confirm the existence of an office, it exercises NRC's oversight responsibility to obtain the assurance that entities will use an export license for its intended purpose and provides a basis for their credibility.

### No Inspections to Verify if Source Material Exporters Maintain and Safeguard Export Records

In addition to not conducting prelicensing site visits, NRC does not perform inspections to verify if source material export licensees are maintaining and safeguarding source material export records for 5 years. According to OIP staff, the office has carried out a few export records inspections of other types of material such as byproduct material. However, staff were uncertain if OIP had ever conducted an export inspection of source material records. An OIP staff member also stated that once the export license is issued, OIP does not provide much oversight of the licensee.

## NMMSS Reporting

Although NRC does not conduct physical inspections of export licensees, it does use NMMSS as a means of licensee oversight. For example, one export license condition requires shippers to report any material inventory changes to NMMSS. NRC then sends this data to the IAEA on a monthly basis to ensure export/import records match with records from other countries. NRC also requires that all U.S. export licensees complete an annual NMMSS report containing all of their export transactions for the year. Finally, OIP conducts a quarterly material balance report by comparing the export data in NMMSS to the terms of each export license to ensure material export limits were not exceeded, improper material was not exported, etc. Together, these reports effectively capture information which allows NRC to identify potential licensee violations.

NMMSS is a centralized U.S. Government database used to track and account for source and special nuclear material. The system contains current and historical data on the possession, use, and shipment of source and special nuclear material within the United States, as well as all exports and imports of such material.

## ***Why This Occurred***

### **NRC Does Not Require Prelicensing Visits or Source Material Export Inspections**

Prelicensing site visits and source material export inspections are not conducted because NRC does not require them. Although Part 110.53 requires that licensees have a physical office in the United States and maintain and safeguard export records for 5 years, NRC does not have sufficient controls in place to verify compliance with these requirements.

There are no export inspection procedures or inspection manual chapters requiring the need for site visits or export inspections. In a search of all public and non-public NRC inspection procedures, OIG was unable to locate any procedures specific to exports. NRC inspectors identified a transportation inspection procedure<sup>9</sup> that somewhat relates to exports. However, this procedure focuses more on compliance with packaging,

<sup>9</sup> Inspection Procedure 86740, "Inspection of Transportation Activities"

preparation for shipment, and transportation of licensed material – not on material exports. An inspector who uses the transportation inspection procedure said the procedure “only includes one or two side references to exports and does not talk about exports in specific terms.”

A manager in OIP stated that NRC used to conduct inspections of certain export licensees in the 1980's and 1990's, but that was discontinued because the licensees' records were well maintained and they always demonstrated compliance with licensing requirements. The manager said NRC staff determined at that time focusing resources on domestic licensing issues such as possession and inventory control were judged to be a more effective and efficient use of agency resources. Even so, much has changed in the global nuclear safety and security landscape over the past 20 to 30 years.

#### Discontinued Export Inspection Procedure

OIG identified a fuel cycle facility material control and accounting export inspection procedure<sup>10</sup> that was discontinued in 2010. This procedure – which was the only procedure OIG found directly related to exports – was previously used to verify that material control and accounting procedures associated with special nuclear material exports were carried out in accordance with NRC's regulations. When OIG asked NMSS and OIP staff why the inspection procedure was discontinued, they could not recall. However, a regional inspector, who previously performed this inspection, said it was discontinued because of apparent conflicting jurisdictional responsibilities. The inspector believed it was difficult for OIP and NMSS management to determine what was within each other's purview when addressing inspection violations. Consequently, OIP and NMSS management ultimately decided to discontinue the export inspection procedure and to incorporate certain elements of it into an existing fuel cycle facility recordkeeping inspection procedure<sup>11</sup>.

The recordkeeping inspection procedure was updated in 2010 to include a small section on material control and accounting of not only special nuclear material exports, but of source material exports as well. However, per the instructions in this procedure, the export inspection is only to be

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<sup>10</sup> Inspection Procedure 85301, “Material Control and Accounting for Imports and Exports”

<sup>11</sup> Inspection Procedure 85408, “Recordkeeping Program”

conducted at the request of OIP. To date, OIP has yet to request this inspection.

### Lack of Collaboration between OIP and NRC Regions

To capitalize on inspection effectiveness, OIP and the regional offices must work together more closely. Currently, there is minimal collaboration and communication between OIP and the regions. OIP staff stated they primarily work with NMSS and with other Federal agencies in their oversight of export licensees, but they rarely coordinate with NRC regional staff who are responsible for conducting material inspections. A regional inspector also stated that regional inspectors infrequently work with OIP, and opined that communication between OIP and the regional inspectors could be better.

## ***Why This Is Important***

### **Oversight Not As Effective Without Site Visits and Inspections**

Without prelicensing site visits and export inspections, NRC is not adequately fulfilling one of its regulatory functions – oversight. NRC cannot confirm if certain export license applicants – primarily the brokers or carriers that do not possess a Part 40 license – are legitimate without prelicensing site visits. Conducting prelicensing site visits provides additional assurance that entities will use an export license for its intended purpose.

NRC inspections are needed to monitor licensee compliance with the terms of their export licenses and the export regulations listed in all of Part 110, not just Part 110.53. For example, export inspections could be used to verify licensee failures to obtain a required specific export license, to confirm that exports go to authorized countries, or to monitor untimely licensee advance shipment notifications. Without such inspections, there is a higher probability of licensee non-compliance with regulatory requirements resulting in the potential for violations or deliberate misconduct to go unidentified.

During an inspection 1 year prior to discontinuing the fuel cycle facility export inspection procedure in 2010, inspectors issued a violation to a

licensee for exporting more material than its license permitted, thus demonstrating the effectiveness of export inspections. While the NMSS reconciliation reports could potentially detect these kinds of violations, NRC inspections would serve as another means to oversee export licensees and verify that the Part 110 requirements are being met. Furthermore, NMMSS has been shown to contain accounting mistakes caused by discrepancies in reported export/import amounts.

Conducting prelicensing site visits and recurring export inspections will provide greater public assurance that NRC is effectively carrying out its mission to protect public health and safety, and promoting common defense and security.

### **Recommendations**

OIG recommends that the Executive Director for Operations and the Director of the Office of International Programs

1. Coordinate among OIP, NMSS, and regional offices, as appropriate, in developing and implementing an export inspection program to include prelicensing site visits and post-licensing inspections at Part 110 applicant and licensee locations. The prelicensing visits may only apply to export applicants who do not already possess another NRC license.

### **B. Incomplete Verification of Licensing Requirements**

NRC does not enforce the requirement that carriers of source material be listed on the export application, nor does the agency confirm if carriers have a Part 40 license while transporting over 500 kilograms of natural uranium for export purposes. This occurs because the regulations are ambiguous and contain some gaps which have led to licensee noncompliance.

## ***What Is Required***

### **Regulatory Requirements Should be Enforced and Verified**

According to Part 110.32(a) and (b), export applications must contain the name and address of the main applicant, and the name and address of any other party if different from the applicant.

Additionally, Part 40.12(b) states that carriers must have a Part 40 license to possess source material if exporting over 500 kilograms of natural uranium per shipment, unless the shipment is in the form of ore or ore residue.

## ***What We Found***

### **NRC Does Not Verify or Enforce All Export Regulatory Requirements**

OIP does not enforce the requirement that all parties, including U.S. carriers, be listed on the export application, nor does it confirm if carriers have a license to possess source material if transporting over 500 kilograms per shipment of natural uranium for export purposes.

- OIG was able to locate 36 source material export applications<sup>12</sup> approved between 2001 and 2015. Of the 36 applications, 32 did not list any carriers.
- The 32 applications collectively authorized the export of nearly 50 million kilograms of source material.

Several OIP staff members confirmed they do not require carriers to be listed on the export application or license because they do not believe it is required by NRC.

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<sup>12</sup> OIG was able to locate 36 applications of 48 total licenses provided by OIP.

### Part 40 Licenses for Carriers

In addition to reviewing export applications for carriers listed, OIG examined export licenses authorizing the export of over 500 kilograms of natural uranium. As mentioned above, only 4 (of 36) source material applications contained the names of any carriers. Of those 4 applications, OIG identified 4 different carriers involved with transporting at least 500 kilograms of natural uranium. OIG contacted NRC regional offices, who coordinated with Agreement States, to search their licensing databases to determine if those four carriers had Part 40 licenses. OIG was able to locate Part 40 licenses for 3 of the 4 carriers, but was unable to determine if the remaining carrier, without a license, actually transported over 500 kilograms of natural uranium in one shipment. Thus, OIG cannot conclude that this carrier is noncompliant with Part 40.12(b).

Nevertheless, there is a possibility there may be other carriers that are noncompliant with Part 40.12(b) because so few are listed on export licenses. NRC's regional offices and the Agreement States do not verify if carriers have their necessary Part 40 license, and OIP staff confirmed they also do not make this verification.

## ***Why This Occurred***

### **NRC's Export Regulations are Ambiguous and Contain Gaps**

NRC's export regulations are ambiguous, and there is a regulatory gap between Part 110 and Part 40.

### Carrier Versus Intermediate Consignee

When OIP staff claimed that NRC regulations did not require carriers to be listed on the application, they referred to Part 110.32(d) as their basis. Part 110.32(d) requires the export application to contain the names and addresses of all intermediate and ultimate consignees, other than "intermediate consignees performing shipping services only." Since Part 110 does not define the term "intermediate consignee," OIG asked OIP staff if intermediate consignees and U.S. carriers were synonymous. After further discussion with OIP staff and a representative from NRC's Office of

the General Counsel, the general conclusion was that intermediate consignees differ from carriers.

According to a senior staff member within OIP, intermediate consignee was a term that had previously caused some confusion, so OIP updated the export license to read "intermediate consignee in foreign country." [See Appendix D for a copy of an export license.] Based on this and on OIP staff interviews, OIG concludes that intermediate consignee in Part 110.32(d) refers to an entity in a foreign country that receives the material (import) and subsequently transports it to the ultimate foreign consignee<sup>13</sup>. Therefore, Part 110.32(d) does not exempt U.S. carriers from being listed on the export application. It appears OIP staff did not enforce this requirement due to confusion over 110.32(d), in addition to simply following an established internal practice.

#### Gap Between Part 40.12(b) and Part 110

OIP staff do not verify if carriers have Part 40 licenses because it is not part of their responsibilities. The regulations governing the export/import licensing process in Part 110 do not require OIP licensing officers to review Part 40 licenses as part of the licensing process. OIP staff stated their sole responsibility is to ensure compliance with Part 110, not Part 40. Staff also indicated that Part 110 authorizes exports and imports only, and does not authorize any person to possess, deliver, or domestically transport any nuclear equipment or material.

NRC's regional offices and the Agreement States also do not verify Part 40 licenses (for export purposes) because exports are solely OIP's responsibility. Regional staff said they have very little involvement, if any, with exports. Agreement States oversee the licensing to possess source material in their states; however, NRC regulations state that Agreement States must defer to NRC for all matters involving imports/exports since this activity is reserved to NRC in accordance with Section 274 of the *Atomic Energy Act*. Consequently, no party is technically responsible for enforcing the Part 40.12(b) requirement that carriers hold a Part 40 license if transporting over 500 kilograms of natural uranium for export purposes.

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<sup>13</sup> This is further supported by the definition provided by the U.S. Census Bureau Web site. It states an intermediate consignee is the person or entity in the foreign country who acts as an agent for the principal party in interest with the purpose of effecting delivery of items to the ultimate consignee.

There is also no mention of the Part 40.12(b) requirement in Part 110 despite it being a cross-cutting licensing matter.

### No OIP Qualification Program or Formalized Training

OIP licensing officers interface with numerous licensees and other agencies, in addition to working on approximately 150 import/export transactions per year involving different types of nuclear material, reactor components, and nuclear waste. Nonetheless, OIP does not provide a qualification program nor does it offer formalized training to its staff. OIG contacted other NRC headquarters offices, as well as the four regional offices, and learned that OIP is the only NRC office that does not require a qualification program for its licensing officers.

While OIP is not responsible for enforcing the Part 40.12(b) requirement, formal training may assist in addressing the confusion and lack of awareness surrounding this regulation. For example, when OIG asked OIP staff about Part 40.12(b), not one person was familiar with the requirement even though it was directly related to exports. OIG then contacted, through a regional inspector, a source material export licensee to inquire about the need for their carrier to hold a Part 40 license. A spokesperson for the licensee responded that their carrier was unaware of this requirement, and the carrier subsequently contacted OIP for clarification. An OIP staff member's response to the carrier was that the carrier could transport natural uranium without holding a Part 40 license since the material was not being physically stored at any of the carrier's facilities. This response was inconsistent with Part 40.12(b) and may have been preventable with sufficient training. OIP management is aware of the lack of formal training and is currently developing a qualification program for its licensing officers.

## ***Why This Is Important***

### **Noncompliance with Certain Export Regulations**

By OIP not enforcing the regulation that requires applicants to list all parties (including carriers) on an export application, export licensees are at risk of not being in compliance with Part 110.32(b). Additionally, by not confirming if carriers have a Part 40 license when transporting natural

uranium for export purposes, licensees could also be noncompliant with Part 40.12(b).

According to OIG's analysis, 32 of 36 – or nearly 89 percent – of source material export licensees are not in compliance with the requirements of 110.32(b).<sup>14</sup> This data, along with OIP's misinterpretation of Part 110.32(d), indicates that future noncompliance with Part 110.32 requirements would likely continue. And while OIG could not confirm any noncompliance with Part 40.12(b), there may be licensee noncompliance with this regulation due to NRC's lack of controls in enforcing the requirement.

Currently, there appears to be only a limited number of separate carriers involved with the export of nuclear material – most of them very experienced and familiar to NRC – which mitigates some of the safety and security concerns. NRC staff also regard source material as posing a low safety and security threat. However, shipments of source material from one site to another can take several months and involve a variety of transportation modes. These carriers transport not only source material, but may transport other materials such as special nuclear material. By not enforcing the requirements that carriers be listed on export applications and maintain necessary licenses, safety or security vulnerabilities could be introduced, particularly given that carriers are not inspected by NRC.

### **Recommendations**

OIG recommends that the Executive Director for Operations and the Director of the Office of International Programs

2. Communicate to export applicants and licensees that U.S. carriers and all other parties to the export, aside from intermediate consignees performing shipping services, are to be listed on future export applications and licenses.
3. Update OIP guidance to include the definition of "intermediate consignee."

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<sup>14</sup> This figure does not include other types of export licenses, such as those of other nuclear materials, waste, or reactor components.

4. Update OIP internal guidance to refer to Part 40.12(b) and verify that all carriers on export applications have a Part 40 license if exports exceed 500 kilograms of natural uranium.
  
5. Develop and implement a qualification program for OIP licensing officers.

## IV. CONSOLIDATED LIST OF RECOMMENDATIONS

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OIG recommends that the Executive Director for Operations and the Director of the Office of International Programs

1. Coordinate among OIP, NMSS, and implement regional offices, as appropriate, in developing and implementing an export inspection program to include prelicensing site visits and periodic post-licensing inspections at Part 110 applicant and licensee locations. The prelicensing visits may only apply to export applicants who do not already possess another NRC license.
2. Communicate to export applicants and licensees that U.S. carriers and all other parties to the export, aside from intermediate consignees performing shipping services, are to be listed on future export applications and licenses.
3. Update OIP guidance to include the definition of "intermediate consignee."
4. Update OIP internal guidance to refer to Part 40.12(b) and verify that all carriers on export applications have a Part 40 license if exports exceed 500 kilograms of natural uranium.
5. Develop and implement a qualification program for OIP licensing officers.

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## **V. AGENCY COMMENTS**

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On November 30, 2016, OIG provided the agency with a discussion draft of this report prior to the exit conference, which has held on January 12, 2017. Subsequently, agency management provided supplemental information via informal written and verbal comments that have been incorporated into this report, as appropriate.

On January 25, 2017, OIG provided the agency with a formal draft of this report. On February 7, 2017, agency management provided formal comments to the formal draft report that indicated partial agreement with the findings and recommendations contained in the audit report. Appendix E contains a copy of the agency's formal comments. Appendix F contains OIG analysis of the agency's formal comments.

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## FOREIGN NONPROLIFERATION OVERSIGHT

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The international nonproliferation regime is an amalgamation of laws, treaties, agreements, committees, and multiple international technical and professional organizations that aim to limit the spread of nuclear weapons worldwide. Major components of the regime include the following:

**1) The Treaty on the Nonproliferation of Nuclear Weapons:**

The *Treaty on the Nonproliferation of Nuclear Weapons* entered into force in 1970. It commits non-nuclear weapons members not to acquire nuclear weapons and to allow international inspection of all their nuclear activities to verify this commitment. It also commits nuclear weapons states not to assist non-weapons states in developing nuclear weapons, and to pursue the goal of an end to the nuclear arms race and eventually to nuclear disarmament.

**2) The International Atomic Energy Agency:**

IAEA's safeguards system verifies Nuclear Nonproliferation Treaty compliance. *Non-weapons Nuclear Nonproliferation Treaty* parties negotiate inspection agreements with the IAEA to verify the peaceful use of their nuclear materials. In late 1991, IAEA began considering how to strengthen the IAEA safeguards program and adopted new measures in 1995. In May 1997, the IAEA approved the *Model Protocol Additional to the Agreements* between the States and IAEA, and IAEA immediately began negotiating "Additional Protocols" to the States' safeguards agreements. The President signed the *U.S. Additional Protocol Implementation Act* on January 6, 2009.

**3) The Nuclear Suppliers Group:**

The Nuclear Suppliers Group is a group of nuclear supplier countries seeking to contribute to the nonproliferation of nuclear weapons through the implementation of guidelines for nuclear exports.

The Nuclear Suppliers Group guidelines for nuclear transfers govern the export of items that are especially designed or prepared for nuclear use. Before entities can import or export any nuclear material, the respective

governments have to notify each other and ensure that the entities comply with certain peaceful use commitments. First, governments agree on behalf of the exporting entity that the nuclear related export or import will not be used for any purpose that would result in any nuclear explosive device. Second, governments also agree that the nuclear related material cannot be exported to third party countries without obtaining similar peaceful use assurances from the proposed recipient country.

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## DOMESTIC OVERSIGHT OF NONPROLIFERATION POLICIES

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Under the *Atomic Energy Act*, all significant U.S. nuclear cooperation with other countries requires a peaceful nuclear cooperation agreement. Significant nuclear cooperation includes the transfer of nuclear facilities and U.S.-origin source and special nuclear material subject to licensing for commercial, medical, and industrial purposes. Such agreements, which require congressional approval, do not guarantee that cooperation will take place or that nuclear materials will be transferred, but rather set the terms of reference and authorize cooperation. The *Atomic Energy Act* includes requirements for an agreement's content, conditions for the President to exempt an agreement from those requirements, presidential determinations and other supporting information to be submitted to Congress, conditions affecting the implementation of an agreement once it takes effect, and procedures for Congress to consider and approve the agreement.

Section 123 of the *Atomic Energy Act* specifies the necessary steps for engaging in nuclear cooperation with another country. Section 123 lists nine criteria that an agreement must meet unless the President determines an exemption is necessary.

These include guarantees that

1. safeguards on transferred nuclear material and equipment continue in perpetuity;
2. full-scope IAEA safeguards are applied in non-nuclear weapon states;
3. nothing transferred is used for any nuclear explosive device or for any other military purpose;
4. there is no retransfer of material or restricted data without U.S. consent;
5. physical security on nuclear material is maintained;
6. there is no enrichment or reprocessing by the recipient state of transferred nuclear material or nuclear material produced with materials or facilities transferred pursuant to the agreement without prior approval;

7. storage for transferred plutonium and highly enriched uranium is approved in advance by the United States.

As a complement to NRC's licensing and regulatory role, the Department of Energy also participates in export controls. The Department of Energy authorizes the transfer of nuclear technology to countries having agreements for nuclear cooperation with the United States as detailed in the *Atomic Energy Act*. The Department of Energy also provides expertise in nuclear weapons to support nonproliferation policy and diplomacy, largely through its national laboratories. It issues permits for the export of nuclear information and knowledge under 10 CFR Part 810 regulations.

The Department of State, in consultation with the Department of Energy, negotiates U.S. agreements for nuclear cooperation and represents U.S. nonproliferation interests with other states and international organizations such as the IAEA.

Other agencies such as the Department of Commerce, Department of Defense, and National Security Council also play important roles in export oversight.

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## OBJECTIVE, SCOPE, AND METHODOLOGY

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### Objective

The audit objective was to determine the effectiveness of NRC's oversight of the export of source material.

### Scope

The audit primarily focused on NRC's internal processes related to the licensing of source material exports. We conducted this performance audit at NRC headquarters (Rockville, MD) from May 2016 through November 2016. Internal controls related to the audit objective were reviewed and analyzed. Throughout the audit, auditors were aware of the possibility of fraud, waste, and abuse in the program.

### Methodology

OIG reviewed relevant criteria including

- The *Atomic Energy Act of 1954*, as amended.
- 10 CFR Part 110 – “Export and Import of Nuclear Material”.
- 10 CFR Part 40 – “Domestic Licensing of Source Materials”.
- NRC Management Directive 9.14, “Organization and Functions, Office of International Programs”.
- U.S. Government Accountability Office's *Standards for Internal Control in the Federal Government* (2014).
- NRC inspection manual chapters and procedures, and several NUREGs and internal office procedures such as OIP Procedure (LIC-02), Non-Appendix P to 10 CFR Part 110, “Export and Import of Nuclear Equipment and Material”.

OIG interviewed NRC staff and management from OIP, NMSS, and the Office of the General Counsel, the Office of Nuclear Security and Incident Response, Region II, Region III, and Region IV; in addition to other agencies such as the Department of State and the Department of Energy.

Other audit activities included OIG's comprehensive data review of export applications and licenses issued from 2001 through 2015, and attendance at the annual NMMSS training in New Orleans, LA.

We conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

The work was conducted by Sherri Miotla, Team Leader; Mike Blair, Audit Manager; John Thorp, Technical Advisor; Avinash Jaigobind, Senior Auditor; Roxana Hartsock, Auditor; and Michelle Goff, Student Analyst.

**NRC EXPORT LICENSE**

EXPORT LICENSE	
<p>NRC FORM 250 (5-94)</p> <p><b>THIS LICENSE EXPIRES</b> _____</p> <p style="text-align: center;"><b>United States of America</b> Nuclear Regulatory Commission</p>	<p>NRC LICENSE NO. _____</p>
<p>Pursuant to the Atomic Energy Act of 1954, as amended, and the Energy Reorganization Act of 1974 and the regulations of the Nuclear Regulatory Commission issued pursuant thereto, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued to the licensee authorizing the export of the materials and/or production or utilization facilities listed below, subject to the terms and conditions herein.</p>	
<p style="text-align: center;">LICENSEE</p> <div style="border: 1px solid black; width: 150px; height: 40px; margin: 20px auto;"></div>	<p style="text-align: center;">ULTIMATE CONSIGNEE IN FOREIGN COUNTRY</p>
<p style="background-color: yellow;">INTERMEDIATE CONSIGNEE IN FOREIGN COUNTRY</p>	<p style="text-align: center;">OTHER PARTIES TO EXPORT</p>
<p>APPLICANT'S REF. NO. _____</p>	<p style="text-align: center;">COUNTRY OF ULTIMATE DESTINATION</p>
<p style="text-align: center;">QUANTITY</p>	<p style="text-align: center;">DESCRIPTION OF MATERIALS OR FACILITIES</p>
<p>Neither this license or any right under this license shall be assigned or otherwise transferred in violation of the provisions of the Atomic Energy Act of 1954, as amended, and the Energy Reorganization Act of 1974.</p> <p>This license is subject to the right of recapture or control by Section 108 of the Atomic Energy Act of 1954, as amended, and to all of the other provisions of said Acts, now or hereafter in effect and to all valid rules and regulations of the Nuclear Regulatory Commission.</p>	
<p>THIS LICENSE IS INVALID UNLESS SIGNED BELOW BY AUTHORIZED NRC REPRESENTATIVE</p>	
<p>DATE OF ISSUANCE _____</p>	
EXPORT LICENSE	

## AGENCY FORMAL COMMENTS



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

February 7, 2017

MEMORANDUM TO: Hubert T. Bell  
Inspector General for Audits

FROM: Michael F. Weber *Michael F. Weber*  
Acting Deputy Executive Director for Materials, Waste,  
Research, State, Tribal, Compliance, Administration,  
and Human Capital Programs  
Office of the Executive Director for Operations

SUBJECT: FORMAL COMMENTS ON OFFICE OF THE INSPECTOR  
GENERAL'S DRAFT REPORT "AUDIT OF NRC'S OVERSIGHT  
OF SOURCE MATERIAL EXPORTS TO FOREIGN COUNTRIES"

This memorandum and its enclosure respond to the email dated January 19, 2017 from the Office of the Inspector General (OIG) providing the Draft Report, "Audit of NRC's Oversight of Source Material Exports to Foreign Countries." NRC staff appreciates the evaluation performed by the OIG and the overall conclusion that the U.S. Nuclear Regulatory Commission (NRC) provides effective oversight of source material exports in coordination with other Federal agencies. In addition, staff agrees that opportunities for improvement exist with NRC's internal processes. However, as explained in the enclosure, staff has specific concerns about one of the findings and three of the recommendations.

Again, NRC appreciates your staff's efforts to improve oversight of the export/import licensing program. I would also note that the staff review concluded the draft report does not contain any sensitive unclassified information.

Enclosure:  
Comments on Draft Audit Report

CONTACT: Peter Habighorst, OIP/ECNP  
301-287-9241

**NRC STAFF'S COMMENTS ON OFFICE OF THE INSPECTOR GENERAL DRAFT REPORT  
"AUDIT OF NRC'S OVERSIGHT OF SOURCE MATERIAL EXPORTS TO FOREIGN  
COUNTRIES"**

**Recommendation 1: Coordinate among OIP, NMSS, and regional offices, as appropriate, in developing and implementing an export inspection program to include pre-licensing site visits and post-licensing inspections at Part 110 applicant and licensee locations. The pre-licensing visits may only apply to export applicants who do not already possess another NRC license.**

The staff agrees that post-licensing export inspections and certain follow-up efforts can be improved. However, the staff believes that conducting *pre-licensing* visits, even if only to export applicants such as brokers who do not already possess another NRC license, to ascertain where 10 CFR Part 110 records would be maintained and safeguarded would not be productive, and would be an inefficient and ineffective use of regulatory resources to exercise oversight.

OIG's recommendation for pre-licensing site visits is directed primarily at brokers and carriers – entities that OIG characterizes as "export applicants who do not already possess another NRC license." With respect to carriers, this recommendation is based on an incorrect premise: as addressed further below, carriers are not export applicants or parties to an export license, and for good reason.

At the pre-licensing stage, it simply is not possible to assess performance or to verify that "licensee" activities have been properly conducted, because applicants have not yet performed any licensed activities authorized within the scope of an export license. Export applicants who do not already possess another NRC license do not possess, and by their export application are not seeking authority to possess source material, which in any event is a domestic license activity. Therefore, pre-licensing visits would not accomplish the purpose of "obtain[ing] the assurance that entities will use an export license for its intended purpose..." Visiting an office location only to verify that an export applicant has locks on doors and a filing cabinet for storage is unwarranted. An export license is not an authorization to receive, possess or transfer nuclear material.

For new export license applications, the perceived need for pre-licensing visits by the NRC is obviated by the following factors:

- All applications received are forwarded to the Executive Branch for information or for review in accordance with 10 CFR 110.41 and OIP procedure LIC-02, "Non-Appendix P to 10 CFR 110, Export and Import of Nuclear Equipment and Material." Executive Branch agencies scrutinize information submitted in an application regarding the export transaction proposed, including the identity of the applicant, the material, the parties, as well as the intermediate and ultimate consignees in foreign countries.
- For all applications, OIP evaluates the Executive Branch analysis and coordinates the evaluation with OGC, NMSS, and NSIR.
- Export license applicants are typically well known NRC or Agreement State licensees or transport service providers.

Enclosure

- When contacted by new applicants, OIP licensing assistants and/or licensing officers explain the information that must be included on the license application form, especially since the form is used for so many different types of nuclear materials and equipment. All applicants are told they must provide a physical address within the United States (i.e., they cannot provide a Post Office box number).
- The export licensing process is highly transparent in that all export license applications are made public in some form and some must be noticed in the Federal Register.
- OIP licensing assistants and licensing officers maintain frequent contact with applicants and licensees either by phone or by email before, during and after the licensing review.

Therefore, the staff believes that the most effective use of the export inspection program is to verify proper implementation of an export license, confirm that exports of material or components are to authorized countries and parties, and verify compliance with 10 CFR Part 110 requirements for advance notifications of shipments.

#### **Finding B. Incomplete Verification of Licensing Requirements**

The staff disagrees that "carriers" are parties to an export and should therefore be listed as such on an export license application. There is no requirement in 10 CFR Part 110 or elsewhere in the NRC's regulations that requires carriers to be listed on an export license application (or that specifies that carriers are parties to an export). OIG cites 10 CFR 110.32(a) and (b) as support, but neither of these regulations specifies that carriers are parties to, or are required to be listed in, an export application. OIG also cites 10 CFR 40.12(b), which requires carriers to have a Part 40 license for possession of source material if transporting over 500 KG of source material for export, but that regulation likewise does not specify that carriers are parties to, or required to be listed in, an export license application; in any event, 10 CFR 40.12(b), which is intended to address domestic health and safety in transportation, has no bearing on the statutory non-proliferation criteria relevant for granting a source material export license application.

In 10 CFR Parts 37.5 and 71.4, the term "carrier means a person engaged in the transportation of passengers or property by land or water as a common contract, or private carrier, or by civil aircraft." With the exception of the requirements in 10 CFR 40.12(b), all other common and contract carriers, freight forwarders, warehousemen, and the U.S. Postal Service are explicitly exempt from NRC regulations to the extent they transport nuclear material in the regular course of carriage for another or storage incident thereto (Part 30.13, 40.12 (a), 50.11(c), 70.12). NRC domestic licenses provide for licensees to transport licensed material outside the confines of their plants or places of licensed material use, or to deliver licensed material to a carrier for transport, in compliance with all applicable NRC regulations, as well as the Department of Transportation (DOT) regulations, appropriate to the mode of transport. Only the NRC-licensed supplier of the material or equipment has the authority to transport it or to deliver it to a carrier for transport, and the NRC-licensed supplier is responsible for complying with all applicable NRC and DOT regulations, including when delivering material to a carrier. Thus, the U.S. supplier of material identified in an export license application is the licensee responsible for the material until it reaches the new end user. That licensee is ultimately responsible for hiring appropriate carriers that achieve all domestic requirements (i.e., 10 CFR 40, 10 CFR 73, and 10 CFR 37).

NRC Part 110 licenses only authorize the export or import transaction described. They do not authorize receipt, possession, use, transfer or transport of licensed material or equipment. Under the NRC's regulations, the only persons that are required to be listed on NRC export

licenses are the licensees responsible for supplying the licensed material or equipment to the foreign country.

**Recommendation 2: Communicate to export applicants and licensees that U.S. carriers and all other parties to the export, aside from intermediate consignees performing shipping services, are to be listed on future export applications and licenses**

As discussed above, the staff concludes the OIG conclusion is incorrect that carriers are "other parties" pursuant to 10 CFR 110.32 (b) and therefore should be listed on export applications and licenses. Carriers are not "parties" to an export in 10 CFR 110 and applicants are not required to list carriers on export applications. Entities performing transport services only, whether from the U.S. or a foreign country, are not required under the NRC's regulations to be included in export license applications.

Rather than being listed on the license, carriers are identified in advance shipment notifications for exports and imports of source material under 10 CFR 40.66 and 40.67 and this process has worked well to ensure the carrier is identified before the material is shipped. Given the lead time required to process an export license, it would be commercially impracticable to require carrier information up front, or to require license amendments each and every time a different carrier is considered for transportation. This is why such information is required as part of the advance notice for a shipment after issuance of the export license.

**Recommendation 4: Update OIP internal guidance to refer to Part 40.12(b) and verify that all carriers on export applications have a Part 40 license if exports exceed 500 kilograms of natural uranium.**

As explained above, carriers are not "other parties" and are not required to be identified on NRC export licenses or any other NRC licenses. 10 CFR 110.50(a) requires that, for general and specific licenses, "Each license is subject to all applicable provisions of the Atomic Energy Act and other applicable law and to all applicable rules, regulations, decisions and orders of the Commission." 10 CFR Part 40.12(b) is a domestic safety regulation that establishes requirements for source material licensees and the carriers they use, not export licensees. The staff believes this requirement is more appropriately addressed in the reviews of advance shipment notifications and in the pre-licensing discussions with export licensees.

Therefore, the staff plans to enhance training to licensing staff who review advance shipment notifications to address roles and responsibilities with respect to 40.12(b) oversight. The staff will include information concerning such roles and responsibilities as part of the training for the licensing officer qualification program that is currently being developed and will make export license holders and applicants aware of the requirements of 40.12(b).

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## OIG ANALYSIS OF AGENCY FORMAL COMMENTS

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**Recommendation 1: Coordinate among OIP, NMSS, and regional offices, as appropriate, in developing and implementing an export inspection program to include pre-licensing site visits and post-licensing inspection at Part 110 applicant and licensee locations. The pre-licensing visits may only apply to export applicants who do not already possess another NRC license.**

Agency Comment

The staff agrees that post-licensing export inspections and certain follow-up efforts can be improved. However, the staff believes that conducting pre-licensing visits, even if only to export applicants such as brokers who do not already possess another NRC license, to ascertain where 10 CFR Part 110 records would be maintained and safeguarded would not be productive, and would be an inefficient and ineffective use of regulatory resources to exercise oversight.

OIG's recommendation for pre-licensing site visits is directed primarily at brokers and carriers - entities that OIG characterizes as "export applicants who do not already possess another NRC license." With respect to carriers, this recommendation is based on an incorrect premise: as addressed further below, carriers are not export applicants or parties to an export license, and for good reason.

OIG Response

During the course of the audit, OIP staff stated that anyone could apply for an export license, including carriers.

Agency Comment

At the pre-licensing stage, it simply is not possible to assess performance or to verify that "licensee" activities have been properly conducted, because applicants have not yet performed any licensed activities authorized within the scope of an export license. Export applicants who

do not already possess another NRC license do not possess, and by their export application are not seeking authority to possess source material, which in any event is a domestic license activity. Therefore, pre-licensing visits would not accomplish the purpose of "obtain[ing] the assurance that entities will use an export license for its intended purpose...." Visiting an office location only to verify that an export applicant has locks on doors and a filing cabinet for storage is unwarranted. An export license is not an authorization to receive, possess or transfer nuclear material.

### OIG Response

OIG is not asking NRC to conduct prelicensing site visits to ensure compliance with all Part 110.53 requirements. Licensee activities should be inspected during post-licensing inspections. The purpose of the prelicensing visits is to ensure the export applicant is a legitimate organization with a physical office that matches the address provided by the applicant. Furthermore, the ability to ask questions and obtain applicant information in-person while conducting the site visit would also enhance the prescreening process.

OIG understands that an export license is not an authorization to receive, possess, or transfer nuclear material. However, an export license can authorize an entity to facilitate the export of millions of kilograms of nuclear material, which includes the responsibility of transporting the material. This consequently introduces added risk.

While OIP's primary concerns are on the exported material itself and its ultimate destination/end user, there should also be a focus on the export applicant to ensure the applicant uses the license for its intended purpose. This would be accomplished more effectively by including prelicensing site visits.

### Agency Comment

For new export license applications, the perceived need for pre-licensing visits by the NRC is obviated by the following factors:

- All applications received are forwarded to the Executive Branch for information or for review in accordance with 10 CFR 110.41 and OIP procedure LIC-02, "Non-Appendix P to 10 CFR 110, Export

and Import of Nuclear Equipment and Material." Executive Branch agencies scrutinize information submitted in an application regarding the export transaction proposed, including the identity of the applicant, the material, the parties, as well as the intermediate and ultimate consignees in foreign countries.

- For all applications, OIP evaluates the Executive Branch analysis and coordinates the evaluation with OGC, NMSS, and NSIR.
- Export license applicants are typically well known NRC or Agreement State licensees or transport service providers.
- When contacted by new applicants, OIP licensing assistants and/or licensing officers explain the information that must be included on the license application form, especially since the form is used for so many different types of nuclear materials and equipment. All applicants are told they must provide a physical address within the United States (i.e., they cannot provide a Post Office box number).
- The export licensing process is highly transparent in that all export license applications are made public in some form and some must be noticed in the Federal Register.
- OIP licensing assistants and licensing officers maintain frequent contact with applicants and licensees either by phone or by email before, during and after the licensing review.

#### OIG Response

The steps listed above are an excellent way to evaluate export applicants; however, OIG believes the vetting process is not complete unless a physical site visit is conducted. As stated above, export applicants are "typically" well known, not always well known. The prelicensing visit is intended for applicants who are not familiar to NRC. It is specifically aimed at those companies that do not possess any other NRC licenses and are therefore never subject to NRC inspections.

Agency Comment

Therefore, the staff believes that the most effective use of the export inspection program is to verify proper implementation of an export license, confirm that exports of material or components are to authorized countries and parties, and verify compliance with 10 CFR Part 110 requirements for advance notifications of shipments.

OIG Response

OIG agrees the items listed above are important for *post-licensing* inspections.

**Finding B: Incomplete Verification of Licensing Requirements**

Agency Comment

The staff disagrees that "carriers" are parties to an export and should therefore be listed as such on an export license application. There is no requirement in 10 CFR Part 110 or elsewhere in the NRC's regulations that requires carriers to be listed on an export license application (or that specifies that carriers are parties to an export). OIG cites 10 CFR 110.32(a) and (b) as support, but neither of these regulations specifies that carriers are parties to, or are required to be listed in, an export application. OIG also cites 10 CFR 40.12(b), which requires carriers to have a Part 40 license for possession of source material if transporting over 500 KG of source material for export, but that regulation likewise does not specify that carriers are parties to, or required to be listed in, an export license application; in any event, 10 CFR 40.12(b), which is intended to address domestic health and safety in transportation, has no bearing on the statutory non-proliferation criteria relevant for granting a source material export license application.

OIG Response

The regulations state that the name and address of the applicant and "any other party" are required to be listed on the export application. The term "party" is not defined in NRC's regulations; however, the standard definition of party is "a person or group participating in an action or affair." OIG questions how NRC could conclusively eliminate carriers as a party to

export transactions simply because carriers are not explicitly defined as being parties to an export in the regulations. The regulations do not list any examples of parties to an export, let alone carriers. Furthermore, in Part 110.32(d) – immediately below the requirement that all parties be listed on an export application – the requirement states that all intermediate and ultimate consignees be listed on the export application, *other than intermediate consignees performing shipping services only*. This illustrates that NRC made a conscious effort to exclude listing export carriers in foreign countries, yet did not do so for U.S. carriers.

It should also be noted that in its review of export applications, OIG found that some applicants did indeed list the carriers on the application. In each case, the applicant listed the carrier in Part C, Box 7, which asks for the names and addresses of suppliers “and/or other parties to the export.” It is OIG’s belief that carriers are required to be listed on the application according to how the regulation is written.

#### Agency Comment

In 10 CFR Parts 37.5 and 71.4, the term "carrier means a person engaged in the transportation of passengers or property by land or water as a common contract, or private carrier, or by civil aircraft." With the exception of the requirements in 10 CFR 40.12(b), all other common and contract carriers, freight forwarders, warehousemen , and the U.S. Postal Service are explicitly exempt from NRC regulations to the extent they transport nuclear material in the regular course of carriage for another or storage incident thereto (Part 30.13, 40.12 (a), 50.11(c), 70.12). NRC domestic licenses provide for licensees to transport licensed material outside the confines of their plants or places of licensed material use, or to deliver licensed material to a carrier for transport, in compliance with all applicable NRC regulations, as well as the Department of Transportation (DOT) regulations, appropriate to the mode of transport. Only the NRC-licensed supplier of the material or equipment has the authority to transport it or to deliver it to a carrier for transport, and the NRC-licensed supplier is responsible for complying with all applicable NRC and DOT regulations, including when delivering material to a carrier. Thus, the U.S. supplier of material identified in an export license application is the licensee responsible for the material until it reaches the new end user. That licensee is ultimately responsible for hiring appropriate carriers that achieve all domestic requirements (i.e., 10 CFR 40, 10 CFR 73, and

10 CFR 37).

OIG Response

OIG was previously informed that the primary export applicant is ultimately responsible for the material until it reaches the end user, and that the primary export applicant can be anyone such as the supplier, broker, or carrier. However, again, it appears that carriers must be listed on export applications according to how the regulations are written. The fact that other domestic licensing Parts of Chapter I explicitly exempt carriers, and Part 110 specifically exempts intermediate consignees performing shipping services only, affirms OIG's assertion that carriers are to be listed on export applications.

If the intent of the regulation is truly meant to exclude carriers from the export application, NRC should specifically exempt carriers as it does in other Parts of Chapter I of the CFR.

Agency Comment

NRC Part 110 licenses only authorize the export or import transaction described. They do not authorize receipt, possession, use, transfer or transport of licensed material or equipment.

Under the NRC's regulations, the only persons that are required to be listed on NRC export licenses are the licensees responsible for supplying the licensed material or equipment to the foreign country.

OIG Response

For the reasons stated above, OIG disagrees with agency's assertion that only the licensees responsible for supplying the licensed material or equipment are required to be listed on export licenses.

**Recommendation 2: Communicate to export applicants and licensees that U.S. carriers and all other parties to the export, asides from intermediate consignees performing shipping services, are to be listed on future export applications and licenses.**

Agency Comment

As discussed above, the staff concludes the OIG conclusion is incorrect that carriers are "other parties" pursuant to 10 CFR 110.32 (b) and therefore, should be listed on export applications and licenses. Carriers are not "parties" to an export in 10 CFR 110 and applicants are not required to list carriers on export applications. Entities performing transport services only, whether from the U.S. or a foreign country, are not required under the NRC's regulations to be included in export license applications.

Rather than being listed on the license, carriers are identified in advance shipment notifications for exports and imports of source material under 10 CFR 40.66 and 40.67 and this process has worked well to ensure the carrier is identified before the material is shipped. Given the lead time required to process an export license, it would be commercially impracticable to require carrier information up front, or to require license amendments each and every time a different carrier is considered for transportation. This is why such information is required as part of the advance notice for a shipment after issuance of the export license.

OIG Response

While OIG is aware of advance shipment notifications, it does not address the requirement that carriers be listed on export applications. OIP staff said there are only a handful of carriers who transport nuclear materials as it is a specialty service. Moreover, in order to maintain flexibility, OIP staff stated it is common for export applicants to list additional parties – including carriers – on the application even though some of these parties may never end up being involved with the export. Therefore, in OIG's estimation, it should not be too onerous for export applicants to list all potential carriers on the application.

**Recommendation 4: Update OIP internal guidance to refer to Part 40.12(b) and verify that all carriers on export applications have a Part 40 license if exports exceed 500 kilograms of natural uranium.**

Agency Comment

As explained above, carriers are not "other parties" and are not required to be identified on NRC export licenses or any other NRC licenses. 10 CFR 110.50(a) requires that, for general and specific licenses, "Each license is subject to all applicable provisions of the Atomic Energy Act and other applicable law and to all applicable rules, regulations, decisions and orders of the Commission." 10 CFR Part 40.12(b) is a domestic safety regulation that establishes requirements for source material licensees and the carriers they use, not export licensees. The staff believes this requirement is more appropriately addressed in the reviews of advance shipment notifications and in the pre-licensing discussions with export licensees.

OIG Response

According to 10 CFR Part 40.1(a), "The regulations in this part also establish certain requirements for the physical protection of import, export, and transient shipments of natural uranium."

Agency Comment

Therefore, the staff plans to enhance training to licensing staff who review advance shipment notifications to address roles and responsibilities with respect to 40.12(b) oversight. The staff will include information concerning such roles and responsibilities as part of the training for the licensing officer qualification program that is currently being developed and will make export license holders and applicants aware of the requirements of 40.12(b).

OIG Response

While these are excellent steps, OIG believes Part 40 license verification would take minimal effort and would provide the assurance that carriers do possess the license. This should be as simple as adding an extra line item to the OIP internal checklist asking the carrier to provide a copy of its

Part 40 license (if transporting natural uranium) during the application process.

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## TO REPORT FRAUD, WASTE, OR ABUSE

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### Please Contact:

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Telephone: 1-800-233-3497

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Address: U.S. Nuclear Regulatory Commission  
Office of the Inspector General  
Hotline Program  
Mail Stop O5-E13  
11555 Rockville Pike  
Rockville, MD 20852

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## COMMENTS AND SUGGESTIONS

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If you wish to provide comments on this report, please email OIG using this [link](#).

In addition, if you have suggestions for future OIG audits, please provide them using this [link](#).