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NUCLEAR ENERGY INSTITUTE

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March 10, 2017

Ms. Cindy Bladey  
Office of Administration  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001

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**Subject:** Comments on Category 3 Source Security and Accountability (Docket No. NRC-2016-0276)

**Project Number:** 689

Dear Ms. Bladey:

On behalf of the Nuclear Energy Institute's<sup>1</sup> members, we appreciate the opportunity to comment on the Nuclear Regulatory Commission's (NRC) effort to determine if it is necessary to revise NRC regulations or processes governing Category 3 source protection and accountability (Docket No. NRC-2016-0276). Staff requirements memorandum, SRM-COMJMB-16-0001, directs the staff to undertake this effort mainly due to the results of a 2015 Government Accountability Office (GAO) investigation that attempted to obtain radioactive materials licenses from NRC and two Agreement States. Staff is considering potential enhancements to require license verification through the License Verification System (LVS) or by directly contacting the regulatory authority for Category 3 licenses, include Category 3 sources in the National Source Tracking System (NSTS), and require Part 37 security requirements for Category 3 quantities. We appreciated the public meetings held on this topic and efforts undertaken by the staff in providing an overview of the issues.

This letter and attachment document the basis for our conclusion that the expansion of LVS, NSTS, and additional security measures for Category 3 sources adds little to no value, is not supported by historical analysis of the threat, and cannot be cost justified. Simply put, this effort is a solution looking for a problem. At a time of shrinking resources, additional tracking and verification would result in a large administrative burden for licensees, NRC, and the Agreement States to address a problem that does not exist. The attached comments address industry's positions on the NRC staff's questions in the federal register notice dated January 9, 2017.

<sup>1</sup> The Nuclear Energy Institute (NEI) is the organization responsible for establishing unified industry policy on matters affecting the nuclear energy industry, including the regulatory aspects of generic operational and technical issues. NEI's members include all entities licensed to operate commercial nuclear power plants in the United States, nuclear plant designers, major architect/engineering firms, fuel cycle facilities, nuclear materials licensees, and other organizations and entities involved in the nuclear energy industry.

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Based on the information provided in the federal register notice and public meetings, NRC has provided no evidence that a fundamental problem exists—other than the GAO findings—to demonstrate that legitimate licenses have been altered by licensees to obtain material they are not authorized to possess, that licensees are maliciously obtaining material in excess of their licensed possession limits, that licensees are not accounting for Category 3 sources, or that there is a threat or adversary interest in Category 3 quantities of material. Overall, no evidence has been provided to indicate that the existing requirements and the current regulatory framework are not adequate to oversee licensed activities and ensure public health and safety.

In 2006, NRC implemented pre-licensing guidance to ensure that applicants were legitimate and that radioactive materials would be used as intended. This guidance has been updated as needed. The most recent GAO investigation was successful because of the failure of one State employee to follow the existing pre-licensing guidance and was not the result of a regulatory gap. No amount of additional regulation would have prevented the GAO from obtaining material if the licensing entities do not follow the pre-licensing guidance. Instead of pursuing rulemaking, NRC and Agreement States should review and enhance, if needed, the pre-licensing guidance and utilize it.

The staff was directed to conduct a vulnerability analysis to inform the decision on source security and accountability actions. We applaud such direction. The details of this assessment, such as the scope, timing, and role of stakeholders in providing input, were not provided during the public meeting. Any vulnerability assessment must provide a specific rationale for the tracking and inventory requirements for these sources and discuss the public health and safety effects due to malicious use of Category 3 sources. Previous analysis of potential health effects from the use of sources identified radionuclide “quantities of concern” to be in the range of Category 1 and 2 values. If this current effort proceeds, a comprehensive draft vulnerability assessment should be made available to stakeholders for review and comment prior to any final decision on whether to proceed with any regulatory enhancements.

Further, 10 CFR 30.41 describes the requirements for license verification prior to the transfer of material. There is no evidence to suggest that this process is broken. The overwhelming majority of licensees possessing Category 3 sources have decades of regulatory history and virtually all transfers of material that occur between licensees are with known entities and based on long term commercial relationships. We are not aware of any evidence to suggest that these licensees are altering their license or maliciously attempting to obtain material in excess of their possession limits. There simply is zero to negligible risk with the transfer of Category 3 material between these licensees. Adding requirements for tracking sources in NSTS and utilizing LVS only adds an administrative burden with no increase to security.

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As stated above, based on all available information, we conclude that the expansion of LVS, NSTS or additional security measures for Category 3 sources adds little to no value, is not supported by historical analysis of the threat or any new compelling threat indicators that demonstrate that the current regulatory mechanisms are not effective in protecting Category 3 radioactive materials, and cannot be cost justified. We respectfully suggest that the staff recommend that no additional resources be expended for such activities.

Thank you for your consideration of these comments. Please contact me if you have any questions.

Sincerely,

A handwritten signature in cursive script that reads "Nima Ashkeboussi".

Nima Ashkeboussi

c: Ms. Irene Wu, NMSS/MSTR, NRC  
Mr. Daniel Collins, NMSS/MSTR, NRC

## **Comments on Category 3 Source Security and Accountability**

### General Questions Related to License Verification

1. Should the current methods for verification of licenses prior to transferring Category 3 quantities of radioactive material listed in 10 CFR 30.41(d)(1)-(5), 10 CFR 40.51(d)(1)-(5), and 10 CFR 70.42(d)(1)-(5) be changed such that only the methods prescribed in 10 CFR 37.71 are allowed?

No, changes should not be made to 10 CFR 30.41, 40.51, or 70.42 to prescribe license verification as described in 37.71. This would significantly impact radioactive material and radioactive waste transfers, transportation, and shipping without any evidence to suggest the current regulations and process is broken.

2. Would there be an increase in safety and/or security if the regulations were changed to only allow license verification through the NRC's License Verification System (LVS) or the transferee's license issuing authority for transfers of Category 3 quantities of radioactive material? If so, how much of an increase would there be?

There would be significant cost with no increase in safety or security for Part 50 licensees, Part 40 and 70 fuel cycle facilities, and other established Part 30 licensees (e.g. manufacturers/distributors, medical institutions, waste brokers, and universities) if they are required to use LVS for Category 3 transfers. These licensees have decades of regulatory history, transfer material with known entities based on long term commercial relationships, and are not at risk for altering licenses to maliciously obtain material. New licensees go through rigorous pre-application screening to verify that they are legitimate applicants that will use radioactive material as licensed. There is a lack of evidence to demonstrate the requiring LVS for Category 3 transfers would improve safety or security greater than a negligible amount.

3. If the NRC changed the regulations to limit license verification only through the LVS or the transferee's license issuing authority for transfers of Category 3 quantities of radioactive material, should licensees transferring Category 3 quantities to manufacturers and distributors be excepted from the limitation?

If the NRC changes the regulations to require LVS, which we do not support, it should clearly exempt Part 50 licensees, Part 40 and 70 fuel cycle facility licensees, manufacturers and distributors, and medical institutions. These licensees are well known and do not pose a risk to altering their license or maliciously obtaining material in excess of their possession limits.

4. Is there anything else we should consider when evaluating different methods of license verification prior to transferring Category 3 quantities of radioactive material?

The existing regulations and procedures are adequate to address Category 3 transfers and any modifications to the regulations are unnecessary.

General Questions Related to the NSTS

1. Should Category 3 sources be included in the NSTS? Please provide a rationale for your answer.

No, NSTS should not be expanded to include Category 3 sources. NSTS was implemented to track high-risk nuclear materials from the time they are manufactured or imported through the time of their disposal, export, or decay. Category 3 sources have rightly been excluded from tracking because, based on NRC analysis, potential health effects from the use of material in a radiological dispersal or exposure device are in the range of Category 1 and 2 values. Expanding the scope of material tracked in NSTS to Category 3 sources would increase the number of licensees using LVS by approximately a factor of 3, while increasing the number of sources tracked to an estimate of well over an additional 100,000 sources. Absent any new data that shows there is serious health effects from malicious use of Category 3 sources and a legitimate vulnerability, increasing the level of tracking is excessive, unnecessary, and unjustifiable.

2. If Category 3 sources are included in the NSTS, should the NRC consider imposing the same reporting requirements currently required for Category 1 and 2 sources (10 CFR 20.2207(f))?

If NRC promulgates a rule requiring Category 3 source tracking in NSTS, the rule should use a graded approach that recognizes the lower level of risk and not impose the same stringent reporting requirements for Category 1 and 2 sources.

3. Should the NRC consider alternatives to the current NSTS reporting requirements for Category 1 and 2 sources to increase the immediacy of information availability, such as requiring the source transfers to be reported prior to, or on the same day as, the source shipment date?

The current reporting requirements for Category 1 and 2 sources are adequate.

4. Would there be an increase in safety and/or security if the regulations were changed to include Category 3 sources in the NSTS? If so, how much of an increase would there be?

There would be no more than a negligible increase to safety or security if the regulations required Category 3 source tracking in NSTS. NSTS is intended to increase accountability of sources and plays no part in securing material to prevent theft. There are no examples of licensees attempting to maliciously obtain material that were prevented from doing so with the use of NSTS. Furthermore, in real time, NSTS would not be able to detect the occurrence of licensee exceeding their possession limit.

5. Is there anything else we should consider as part of our evaluation of including Category 3 sources in the NSTS?

NRC should consider first time users, Agreement States, and the financial burden on NRC for requiring Category 3 source tracking in NSTS. Furthermore, NRC developed the concept of the Integrated Source Management Portfolio (ISMP) to integrate information technology tools to form a comprehensive program to ensure the security and control of high risk Category 1 and 2 quantities. ISMP currently works by integrating NRC and Agreement State Category 1 and 2 licensee data from NSTS, the Web-Based Licensing (WBL) System, and LVS. Requiring the use of NSTS without having all Agreement State licenses in WBL would lead to a process with significant gaps. Without the automated process through LVS, NRC and Agreement State staff would have to manually review NSTS and the license to verify transfers are valid and that possession limits are not exceeded.

Specific Questions for Licensees Related to License Verification

1. It currently takes approximately one month to get credentialed to access the LVS. If you currently do not have online access to LVS, and NRC establishes new requirements for license verification involving Category 3 quantities of radioactive material, would you be inclined to sign up for online access, or would you use alternative methods for license verification such as emailing the NRC Form 748 "Manual License Verification Report" to the LVS Help Desk or calling the license-issuing regulatory authority directly?

No comments.

2. Approximately how many transfers involving Category 3 quantities of radioactive material do you do monthly? What percentage involves transfers directly to/from a manufacturer?

A typical nuclear power plant may process less than 10 transfers annually of Category 1 and 2 quantities of material. Expanding this requirement to include Category 3 materials would represent a large increase in regulatory burden and could impact the ability of the licensee to make radioactive material shipment in a timely fashion. Nuclear power plants may have 80-100 Category 3 quantity transfers per year, with a majority made during refueling outages. Less than 1% of these transfers are directly to/from a manufacturer, but are shipments to well-known entities.

3. Should license verification be required when transferring to an established manufacturer?

License verification (LVS) should not be required for established, well known, and credible licensees. There is no risk that these licensees would alter their license. In addition to established manufacturers, any rule should at a minimum exempt Part 50 licensees, Part 40 and 70 fuel cycle facility licensees, distributors, and medical institutions. NRC should provide the criteria for what they consider "established".

4. Do you have online access to LVS? If so, have you experienced any issues with the LVS? Do you have any recommendations on how to improve LVS?

Licenses with LVS access using the system typically receive error messages to contact the license-issuing regulatory authority directly. There appear to be delays in updating LVS with current licenses issued by Agreement States. This creates added burden to the licensee to obtain a current license outside the online LVS process. This problem will be magnified if all Category 3 Agreement State licenses are not in WBL.

Specific Questions for Licensees Related to the NSTS

1. It currently takes approximately one month to get credentialed to access the NSTS. If you currently do not have online access to the NSTS and NRC establishes new requirements for the tracking of Category 3 sources in the NSTS, would you be inclined to sign up for online access or would you use alternative methods for NSTS reporting such as emailing or faxing the NRC Form 748 "National Source Tracking Transaction Report" to the NSTS Help Desk?

No comment.

2. Do you have online access to the NSTS? If so, have you experienced any issues with the NSTS? Do you have any recommendations on how to improve the NSTS?

NRC should revise the definition of a "nationally tracked source" in 10 CFR 20.1003 to clarify the scope of "radioactive material that is sealed in a capsule or closely bonded, in a solid form and which is not exempt from regulatory control". NRC is using a literal interpretation of the definition to include bulk material in storage capsules, which are not intended for distribution. This interpretation has implications for source manufacturers and other licensees (such as those with material targets, bulk special form capsules that are imported, or research reactors), which have been cited for failing to report such "sources" per 10 CFR 20.2207(a). This bulk material is stored until needed to manufacture sources. These storage capsules are cut open, the required material removed and the remaining material would be welded into a new capsule. The sources produced from this material for distribution would be recorded in NSTS. The intent of NSTS was not to track bulk material that was not intended for distribution, but rather was intended to track a distributed sealed source through its life cycle. The NRC should consider rulemaking, generic communications, or other regulatory guidance to clarify this non-safety related issue.

Specific Questions for Agreement States Related to License Verification

1. Approximately how many licenses do you authorize for Category 1, 2, and 3 quantities of radioactive material?

No comment.

2. If license verification through the LVS or the transferee's license issuing authority is required for transfers involving Category 3 quantities of radioactive material, would you encourage the use of LVS among your licensees, or plan for the additional burden imposed by the manual license verification process?

No comment.

3. If license verification through the LVS or the transferee's license issuing authority is required for transfers involving Category 3 quantities of radioactive material, would you consider adopting the Web-Based Licensing System (WBL) to ensure that the most up-to-date licenses are available for license verification using the LVS or voluntarily provide your Category 3 licenses (similar to what some Agreement States do now for Category 1 and 2 licenses) to be included in WBL, or would you do neither and prefer licensees to use the manual license verification process?

No comment.

4. What would the impact in time and resources be on your program to handle the additional regulatory oversight needed for Category 3 licensees if license verification through the LVS or the transferee's license issuing authority was required for transfers involving Category 3 quantities of radioactive material?

No comment.

Specific Question for Agreement States Related to the NSTS

1. The NRC currently administers the annual inventory reconciliation process on behalf of the Agreement States. This process involves providing hard copy inventories to every licensee that possesses nationally tracked sources at the end of the year, processing corrections to inventories, and processing confirmations of completion of the reconciliation into the NSTS. The process involves a significant amount of staff time and resources from November to February. If the Agreement States were to adopt administration of the annual inventory reconciliation process and if Category 3 sources were included in the NSTS, what would the additional regulatory burden be on the Agreement States to perform the annual inventory reconciliation for Category 1, 2, and 3 sources?

NRC should reexamine the need to continue the annual inventory reconciliation process and question the safety and security value that it provides. NRC states that this effort currently takes a significant amount of time and resources for the Category 1 and 2 sources. This is a significant administrative burden for NRC and licensees to largely resolve administrative issues, not safety or security concerns. While 10 CFR 20.2207(g) requires the annual reconciliation, that section of the rule also requires licensee to correct any error in previously filed reports or file a new report for any missed transaction within 5 business days of the discovery of the error or missed transaction. That provision should be sufficient to adequately ensure licensees maintain an accurate inventory, without the need for the burdensome annual reconciliation.

If NRC expanded NSTS to include Category 3 sources, the time and effort needed to complete this task would increase by a factor of 3 and is not justifiable from a resource perspective to address an issue that does not increase safety or security. If NRC adopts Category 3 tracking in NSTS, it should

not apply the annual reconciliation and NRC should consider a rulemaking to eliminate the annual inventory reconciliation.

Other Questions

1. Should physical security requirements for Category 1 and 2 quantities of radioactive material be expanded to include Category 3 quantities?

No. Based on the risk profile, threat, and vulnerability there is not a demonstrable need to enhance the security requirements of Category 3 quantities to levels similar to Category 1 and 2 quantities.

2. Some Category 3 sources are covered under a general license (10 CFR 31.5). Should the NRC consider establishing maximum quantities in general licensed devices, thereby reserving authorization to possess Category 1, 2, and 3 quantities of radioactive material to specific licensees?

No comment.