

**Duran-Hernandez, Doris**

**From:** Wu, Irene  
**Sent:** Friday, March 03, 2017 4:34 PM  
**To:** Duran-Hernandez, Doris  
**Cc:** Davis, Gina  
**Subject:** FW: UVA-EHS comments on NRC-2016-0276  
**Attachments:** UVA Category 3 Comment Letter.pdf

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Comments received on Docket ID NRC-2016-0276

**From:** Welling, Michael (mw4bd) [mailto:mw4bd@eservices.virginia.edu]  
**Sent:** Friday, March 03, 2017 10:47 AM  
**To:** Wu, Irene <Irene.Wu@nrc.gov>  
**Cc:** Cohen, Michael L. (mlc6f) <mlc6f@eservices.virginia.edu>; Steva, Deborah P. (Debby) (dps3c) <dps3c@eservices.virginia.edu>  
**Subject:** [External\_Sender] UVA-EHS comments on NRC-2016-0276

Irene,  
Attached are comments from The Radiation Safety Program at UVA. If you have any questions, please contact Debby Steva at 434-982-4917. Thanks.  
Mike

**Michael Welling**  
Health Physicist  
Environmental Health & Safety

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SUNSI Review Complete  
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Add= I.Wu (I.Wu)



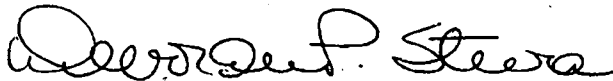
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ENVIRONMENTAL HEALTH & SAFETY

February 23, 2017

US Nuclear Regulatory Commission  
Cindy Bladley, Office of Administration  
Mail Stop:OWFN-12-H08.  
Washington, DC 20555-0001

Dear Ms. Bladley,

We wish to submit the following comments with regards to NRC-2016-0276 "Category 3 Source Security and Accountability". If you have any questions I may be reached at 434-982-4917 or [dps3c@virginia.edu](mailto:dps3c@virginia.edu).



Deborah P. Steva, RSO



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*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?

We recommend that the manufacturers/distributors should be required to verify the license prior to distributing a Category 3 source in accordance with 37.71. We also recommend that the licensed users not be required to verify the license of the manufacturers/distributors when returning the Category 3 sources. By requiring HDR source users to verify the license of Varian/Nucletron each quarter would be of no security benefit and would only increase the workload on licensee staff.

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?

No, this addition would not increase the physical security of the source which is already covered under 10 CFR 20.1801 and 1802. However, this addition would prevent a licensee from illegally manipulating a license and providing that to a manufacturer/distributor. We recommend that Category 3 licenses be included in the LVS.

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 exempted from the limitation?

Yes, we recommend that Category 3 source user licensees be exempted from any requirement to verify the manufacturer/distributor license when returning Category 3 sources.

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

If NRC decides not to exempt all Category 3 licensees, then we recommend that medical users of Category 3 sources should be exempted as they are required to be properly vetted and approved by Health Departments and other state agencies before they can begin to treat patients with Category 3 sources.

*General Questions Related to the NSTS*



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

No. A majority of Category 3 sources utilized are for the HDR which are exchanged at quarterly frequencies. A requirement to track Category 3 sources in NSTS would not increase the security of these sources and would only add unnecessary burden to licensees who would be required to enter source exchanges into NSTS every 3 months. This would add a great amount of burden to the manufacturer/distributors.

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))?

No.

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?

No. The sources are still in possession of the licensee until received after shipment so requiring the NSTS reporting to be completed prior to the receipt after shipping would not be correct. 10 CFR 37.75, 77 and 79 have requirements for the shipping coordination including estimated receipt time of the sources. Therefore this change would not add any security value to the process.

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?

No. NSTS only indicates that the sources are in possession of a licensee, not their physical security status. NSTS indication would only change by an individual entering this information after the discovery of a change in status.

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

The NRC needs to include results of a cost benefits analysis regarding how much time would be required by licensees, manufacturers and distributors for maintaining Category 3 sources in NSTS. By requiring Category 3 sources, this would also increase the workload on Category 2 licensees such as radiography licensees due to the fact that their sources would not fall below the NSTS reporting requirements until they are below the Category 3 thresholds. It is assumed that most radiography licensees return their sources above this limit. Due to this requirement the



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workload to these licensees and their manufacturer/distributors would greatly increase with no benefit.

*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?

We have the availability to access LVS online and will maintain this access.

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?

We transfer one Category 3 source quarterly. The source is transferred directly to the manufacturer.

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

No.

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?

Yes. We have had one experience using LVS to verify a license. Our Gamma Knife center tried to use LVS to verify the manufacturer/distributor's license but there was an error and he was told to contact the licensing agency. The LVS licenses should be periodically verified to be accurate and accessible by the NRC to prevent licensees having to contact the licensing agencies.

*Specific Questions for Licensees Related to the NSTS*



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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?

We currently utilize online access for reporting to NSTS and will maintain this access.

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?

Yes. We have noticed that the half-life utilized by NSTS does not match what is used by our treatment planning system. NSTS uses a 5.27 year half-life for Co-60 while the treatment planning system uses a 5.26 half-life. This will lead to a difference in activity levels as the number of years increases. A second issue is that the significant digits for activity are not same in NSTS as what is provided to us by the manufacturer/distributor. A third issue was the reliability of issued tokens. Several did not work due to a dead battery.

*Other Questions*

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

No. The typical Category 3 source is used in a hospital cancer setting for patient care. IAEA states that Category 3 sources could cause injury if a person handles them for some hours. It also states that a fatal exposure would take days or weeks to occur. Enhancing these sources would not be beneficial for the cost involved. The HDR source utilized is Ir-192 which has a half-life of 73.831 days and a maximum activity level of 13 curies when installed. These sources would not cause a wide-scale radiological exposure if used for nefarious purposes.

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?

Yes, any Category 3 generally licensed device should be changed to a specific licensed source.