



The Dow Chemical Company
Midland, Michigan 48674
USA

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

Ms. Bladey:

The Dow Chemical Company has reviewed the information requests in the NRC-2016-0276 Request for Comment, and would like to submit the following comments for the NRC's consideration.

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?*

Dow Chemical Response

If the Agency decides to require the verification methods in 10 CFR 37.71 for transfers of Category 3 quantities of material, the Agency should clearly exempt the following three types of transfers:

- a. Transfers to an established manufacturer (e.g., the manufacturer of a sealed source);
- b. Transfers to established disposal facilities; and
- c. Transfers among parent, subsidiary or affiliate companies of the transferor.

For The Dow Chemical Company, the major of shipments of Category 3 radioactive material fall into two categories:

- d. Transfers of nuclear gauges from one licensed facility to another licensed facility within the same company, or between facilities that belong to the same corporate family (e.g., wholly-owned subsidiaries of Dow).
- e. Transfers of nuclear gauges to a licensed gauge manufacturing company for repair or disposal
- f. Transfers of nuclear gauges to a licensed disposal company.

For any of these types of transfers, the risk of sending Category 3 radioactive materials to a fictitious license is exceedingly small. We know who our subsidiaries are. We know the manufacturers and disposal firms. If a terrorist rented a storefront in order to register a new, fictitious manufacturer or disposal firm, we would not transfer gauges to those companies because we do not have any established relationship with them. Consequently, in these situations the license verification requirements in 10 CFR 30.41 are adequate. Requiring an additional step to verify the license through the NRC would just add an additional administrative burden without providing any additional safety or security over the materials.

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?*

Dow Chemical Response

Most materials licensees probably perform shipping to limited numbers of organizations like we do, and are at low risk of shipping Category 3 radioactive materials to fictitious licensees. The manufacturers of these sources are the entities that are most likely to ship sources to fictitious licenses. Requiring source manufacturers to perform this type of license verification would provide some enhancement in safety and security. Requiring materials licensees to perform similar verifications would provide very little enhancement in safety and security of the sources.

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?*

Dow Chemical Response

The Dow Chemical Company believes that materials licensees transferring Category 3 quantities of radioactive material should be exempt from additional license verification requirements. Additionally, exemptions should also be in place for transfers between different licenses within the same corporate structure (e.g., the combination of a parent company and its wholly-owned subsidiaries) and transfers to licensed waste processing and disposal facilities.

General Questions Related to the NSTS

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

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

Dow Chemical Response

No, Category 3 sources should not be included in the NSTS. Licensees are required to maintain their inventory of radioactive materials and document where the sources are sent when they transfer the devices. There are existing requirements to report lost radioactive materials to the NRC if they cannot be accounted for. Maintaining a centralized list of many thousand Category 3 sources does not enhance the safety and security of these devices, and just imposes an additional burden on the NRC and materials licensees to keep this list up-to-date. Short timeframes for reporting these transfers only increase that burden.

Specific Questions 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?*
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?*

Dow Chemical Response

We do not currently have access to the NSTS. If new requirements for tracking Category 3 quantities of radioactive material required were implement, we would likely sign up for online access to the NSTS.

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

1. Dow Chemical sites do not currently have access to the LVS. If new requirements for license verification for shipments of radioactive material required were implemented, most sites that possess Category 3 quantities of radioactive material would likely sign up for online access to the LVS.
2. Across the US, sites of The Dow Chemical Company make approximately 1-3 shipments of Category 3 quantities of radioactive material per month. More than 80% would be transfers to and from a manufacturer for repair or disposal of devices.
3. Requiring additional license verification when transferring to an established manufacturer would not provide any additional safety or security for Category 3 sources of radioactive material and would only impose additional burden on licensees to comply with the regulations. Additional verification beyond current requirements should not be required.
4. Dow Chemical sites do not currently have access to the LVS.

Other Questions

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

Dow Chemical Response

No. Many Category 3 sources in our industry are level gauges located in process areas and attached to structures within the facility, but do not include physical barriers that would meet the requirements for Category 1 and Category 2 quantities of radioactive material. However, these devices generally are installed in difficult-to-reach locations, cannot be removed from their installed location easily, and will set off process alarms if removed. They are also located within facilities that are subject to chemical security requirements specified by the Department of Homeland Security. Therefore, the likelihood of these devices being successfully targeted and removed from service is exceedingly low.

For example, consider a level gauge that is welded to a steel tank. The steel tank is on the third floor of a chemical manufacturing plant. The chemical manufacturing plant has a control room with computers where the signals from process control devices, including the level gauge, are constantly being evaluated. If the computer detects a problem with the signal, an alarm sounds. Personnel are monitoring the alarms 24 hours a day, 7 days a week. Meanwhile, the chemical manufacturing plant sits within a larger site (perhaps several square miles in size) with numerous other chemical manufacturing plants. The site has a security fence and a limited number of gates for access. Each gate is staffed with security personnel, and additional security personnel are circulating around the site at all hours of the day and night. In order for someone to steal the gauge, he or she would need to breach the perimeter security of the larger site, then somehow find exactly the right chemical manufacturing plant (without being challenged by anyone while en route), then find exactly the right tank (without being challenged by personnel at the chemical manufacturing plant, then somehow cut the welds to free the gauge from the tank (without

being detected by plant personnel or site security), and disconnect the wiring. This would instantly set off an alarm, because the signal would cease. And then the thief would need to somehow escape first from the individual plant, and then from the larger site, while carrying a heavy gauge. This scenario does not appear very credible.

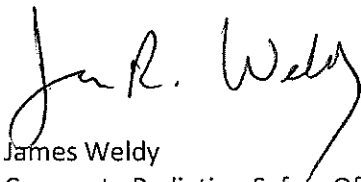
Imposing a requirement for additional physical barriers to access these devices would provide no significant increase in the security of these devices, would require major changes to the design of many of our facilities, and could create additional safety hazards for workers in the facility to be able to efficiently evacuate process area.

- 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?*

Dow Chemical Response

The Dow Chemical Company has very few devices across our company that are generally licensed, but contain a Category 3 quantity of radioactive material. Any changes in this area would have little impact on us.

Thank you for consideration of our feedback on this matter.
Best regards,



James Weldy
Corporate Radiation Safety Officer
The Dow Chemical Company