POLICY ISSUE
(Information)

February 6, 2015 SECY-15-0020

FOR: The Commissioners

FROM: Catherine Haney, Director /**RA**/
Office of Nuclear Material Safety and Safeguards

SUBJECT: THE U.S. NUCLEAR REGULATORY COMMISSION IMPLEMENTATION PLAN FOR THE RADIATION SOURCE PROTECTION AND SECURITY TASK FORCE REPORT

PURPOSE:

The purpose of this paper is to provide the Commission with a summary of the enclosed biennial update of the "U.S. Nuclear Regulatory Commission (NRC) Implementation Plan for the Radiation Source Protection and Security Task Force Report," in accordance with the Staff Requirements Memorandum (SRM) for SECY-06-0231, "NRC Implementation Plan for the Radiation Source Protection and Security Task Force Report," dated January 16, 2007. This plan highlights interagency efforts in the area of radiation source protection and security, including updates on progress toward a comprehensive approach to improve the security of cesium-137 chloride (CsCl) sources. This paper does not address any new commitments or resource implications.

SUMMARY:

The Energy Policy Act of 2005 (EPAct) created an interagency task force on radiation source protection and security under the lead of the NRC. After receiving the first draft report in June 2006 by the Radiation Source Protection and Security Task Force (Task Force), the Commission directed the staff in the SRM for COMSECY-06-0032, "Draft Report to the President and the U.S. Congress on the Radiation Source Protection and Security Task Force

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Report," dated August 3, 2006, to develop a plan, including prioritization, cost estimates, and the staff's view on how to proceed with implementation of the recommendations and actions in the report for which NRC has responsibility.

The staff submitted the first implementation plan to the Commission in SECY-06-0231 (November 22, 2006). This plan as well as all the other updates to the plan are publicly available in the Agencywide Documents Access and Management System (ADAMS) (ADAMS Accession Number ML062430024) and are easily accessible from the NRC Web site (http://www.nrc.gov/security/byproduct/task-force.html). This implementation plan addressed the recommendations and actions from the Task Force report that was provided to the President and Congress on August 15, 2006. The staff used this implementation plan to organize and track the efforts related to the Task Force recommendations and actions. The staff continues to provide the Commission with biennial updates to the implementation plan.

BACKGROUND:

The EPAct mandates that not later than 1 year after the date of the legislative enactment of the Act, and not less than once every 4 years thereafter, the Task Force shall submit to the President and Congress a report and recommendations on materials source security. In 2006, the NRC submitted the first Task Force report to the President and Congress. The report contained 10 recommendations and 18 actions that addressed security and control of radioactive sources. In accordance with the EPAct, the Task Force also submitted its second and third reports to the President and Congress on August 11, 2010, and August 14, 2014. These reports are publicly available in ADAMS (ADAMS Accession Numbers ML062190349, ML102230141, and ML14219A642) and are on the NRC Web site. The 2010 and 2014 reports presented the status of previous reports' open recommendations and actions, including the resolution of a number of significant recommendations and actions. The 2010 report also presented 11 additional recommendations, in which several of those included actions related to the issue of CsCl sources. The 2014 report presented three new recommendations. To date, a total of 10 recommendations and actions remain open from all three Task Force reports. The implementation plan tracks the open recommendations and actions and defines them as tasks to be completed by appropriate agency leads within the framework of their upcoming activities.

DISCUSSION:

Since the last update to the Commission in SECY-12-0165, "U.S. Nuclear Regulatory Commission Implementation Plan for the Radiation Source Protection and Security Task Force Report," dated December 7, 2012 (ADAMS Accession Number ML12333A365), the Task Force has continued its efforts to assign lead responsibilities to various Task Force agencies and organizations for the new recommendations from the 2014 report and the remaining open recommendations and actions from both the 2006 and 2010 reports. It is the responsibility of those agencies and organizations to determine how to disseminate those responsibilities within their respective agencies and organizations. The updated plan presents a strategy for implementing these recommendations and actions, identifies issues that could complicate implementation, and identifies lead offices, resource estimates, and task breakdowns. Some of the recommendations and actions have no specific NRC implementation activities. The plan will remain as a living, publicly available document in ADAMS (ML14352A348). The staff has updated the plan to reflect progress through January 2015.

ACCOMPLISHMENTS

The following recommendations and actions were completed since the last update received by the Commission:

2006 Recommendation 4-2:

"The Task Force recommends that the Federal agencies and States continue efforts to improve coordination and communication of their ongoing activities in the area of radiation protection and security for Category 1 and 2 sources."

> Status: Significant improvement in Federal, State, Tribal, and stakeholder communication and cooperation has been achieved since the creation of the Task Force in 2005, therefore, meeting the recommendation's focus on "improvement" in this arena. The Task Force has established processes and mechanisms to ensure effective communication and cooperation between Federal, State, and Tribal stakeholder groups in the area of radiation protection and security for Category 1 and 2 sources. A number of interagency groups and forums, some of which have State representation, continue to meet to address policy and programmatic issues pertaining to radiation protection and security. The Task Force will continue to improve communication and cooperation, consistent with the concept of continued coordination and communication amongst Federal and State partners required in the EPAct and acknowledged in the Task Force's Charter.

2006 Action 10-1:

In the international arena, coordination and communication has continued to improve as well. Specifically, a number of international efforts have improved the international community's commitment to implement the International Atomic Energy Agency Import/Export Guidance, which addresses 2006 Action 10-1:

"The U.S. Government should continue the efforts to promote international harmonization of import and export controls for Category 1 and 2 radioactive sources."

> Status: Similar to 2006 Recommendation 4-2, the Task Force will continue to support and be engaged in communication activities, specifically pertaining to engagement with the international community on harmonized application of import/export controls of Category 1 and 2 materials, which too, is addressed in the Task Force Charter.

2010 Recommendation 1:

"The Task Force recommends that U.S. Government agencies use the radionuclides and the associated Category 2 threshold quantities in Table II, "Radionuclides that Warrant Enhanced Security and Protection" (as shown on page 11 of the 2010 Task Force report), as the appropriate framework for considering which sources warrant enhanced security* and that they adopt the definitions for a significant RED [radiological exposure device] and a significant RDD [radiation dispersal device] (as shown on page 8 of the 2010 Task Force report) for prioritizing and allocating resources to eliminate, control, or mitigate risks of malevolent radiological

incidents. *By warrants enhanced security and protection is meant enhanced in comparison to the security and protection applied to radioactive sealed sources before September 11, 2001."

Status: All applicable Task Force agencies and organizations completed their assessment in addressing the recommendation and provided a status in the 2014 Task Force report.

2006 Action 6-2:

"The NRC should evaluate the feasibility of establishing a national database for materials licensees that would contain information on pending applications and information on individuals cleared for unescorted access."

Status: The deployment of the Web-Based Licensing System on August 31, 2012, addressed the first portion of the recommendation, pertaining to a system capable of tracking pending license applications. The second portion of the recommendation was addressed by a feasibility assessment that was completed by staff. The feasibility assessment resulted in the conclusion that it is not feasible at this time to implement a national database for materials licensees that contains information on individuals cleared for unescorted access.

2006 Action 4-1:

"The NRC should consider imposing additional measures to verify the validity of licenses before the transfer of risk-significant radioactive sources, on all licensees authorized to possess Category 1 and 2 quantities of radioactive material."

Status: The 10 CFR Part 37, "Physical Protection of Byproduct Material" final rule, approved by the Commission on March 16, 2012, requires that licensees verify with the NRC's license verification system (LVS) or the license issuing authority that the transferee's license authorizes the receipt of the type, form, and quantity of radioactive material to be transferred—and that a transferee is authorized to receive radioactive material at the location requested for delivery—prior to transferring Category 1 or Category 2 quantities of radioactive material to an NRC or Agreement State licensee. The LVS was deployed in May 2013.

2006 Recommendation 5-1:

"The Task Force recommends development of a transport security memorandum of understanding (MOU) to serve as the foundation for cooperation in the establishment of a comprehensive and consistent transport security program for risk-significant sources."

Status: The MOU for the secure transport of radioactive material was completed and final signature from the U.S. Department of Homeland Security (DHS) was received on January 17, 2015.

2006 Recommendation 5-3:

"The Task Force recommends that the U.S. Government immediately develop a strategy and take actions to address the security of international shipments of Category 1 and 2 radioactive sources that transit or are transshipped through the land territory of the United States."

Status: The Task Force conducted a series of meetings with the Transportation Security Administration and U.S. Customs and Border Protection (CBP) in 2013 to specifically address transshipment issues. Based on a comparison of Category 1 and 2 radioactive material transshipment data from CBP to shipment data NRC retains, the Task Force was able to conclude that there is a limited amount of transshipments that are being conducted and that there appears to be visibility of the majority of these transshipments through reporting to the NRC. During a 2 year time frame that the Task Force used for the evaluation, the Task Force determined that CBP had tracked all Category 1 and Category 2 radioactive material transshipments that were also reported to the NRC with the exception of one shipment. However, the Task Force also proposed further engagement with U.S. Department of Transportation and CBP to address possible implementation of security requirements, policies, or procedures regarding these types of shipments, such as adopting requirements similar to 10 CFR Part 37 into the revalidation certifications for Type B packages that may contain transshipped material. The Task Force completed its analysis per the recommendation and proposed these actions that could be implemented by the specific agencies that have a role in the shipment of these materials.

2006 Action 10-3:

"The Task Force suggests the use of education and the creation of incentives to discourage the export of used Category 1 and 2 radioactive sources as an alternative to disposal."

Status: Since 2010 updates have been made to the export control regulations for radioactive sources. These updates require more stringent coordination between exporter and importer, and help ensure that sources will not be exported simply as an alternative to disposal.

2010 Recommendation 6:

"The Task Force recommends that the NRC incorporate procedures to review the status, such as the date of, the reason for, and location of sources in long-term storage, in the current inspection program."

Status: On May 12, 2014, the NRC issued Regulatory Issue Summary (RIS) 2014-04 to encourage licensees to provide specific information pertaining to the long-term storage of their sources through the National Source Tracking System or NRC Form 748 transaction reports in response to closing out this recommendation. This RIS both benefits the licensees and the regulators in their awareness of and long-term planning of these sources.

2010 Recommendation 7:

"The Task Force recommends that the U.S. Government, in collaboration with responsible State agencies, evaluate and develop a plan to improve, as necessary, processes for dealing with unwanted, abandoned, or impounded sources, including storage, reuse, recycling, or other disposition method."

Status: 2010 Recommendation 7 was identified when commercial sealed source disposal options were severely constrained; however, as identified in the 2014 Task Force report, there has since been an increase in commercial disposal options. This has helped to mitigate the problem of disposal of disused and unwanted sources. This positive development and the continued collaboration among Federal, State, private sector, and non-governmental stakeholders resulted in closing this recommendation.

SIGNIFICANT DEVELOPMENTS

Since the last update to the Commission in SECY-12-0165 (December 2012), the following significant developments occurred related to NRC-led initiatives addressed by two of the three new recommendations presented in the 2014 Task Force report:

2014 Recommendation 1:

"The Task Force recommends that U.S. Government agencies assess the adequacy of and coordinate strategies for preventing and mitigating cybersecurity vulnerabilities related to Category 1 and 2 radioactive sources."

Status: An NRC-led working group, including Agreement State membership, was formed in 2013 and the working group has developed, distributed, and will continue to distribute surveys to Category 1 and 2 radioactive materials licensees to assess the cybersecurity landscapes of these licensees. This group will analyze the results of these surveys and also, the results from an initial assessment matrix of all the various applicable licensee types/groups to determine if cybersecurity vulnerabilities exist and will ultimately provide its conclusions and any possible recommendations to the Commission.

2014 Recommendation 2:

"The Task Force recommends that the NRC evaluate the need for sealed source licensees to address the eventual disposition/disposal costs of Category 1 and 2 quantities of radioactive sources through source disposition/disposal financial planning or other mechanisms. Disposition costs should include the cost of packaging, transport, and disposal (when available) of these sources."

Status: An NRC-led working group, including Agreement State membership, was formed in 2014 and is examining the adequacy of current financial assurance/planning requirements for dispositioning/disposal of byproduct material and is to provide its conclusions and recommendations to the Commission in response to SRM-M140918-1,

> "Provide the Results of the Byproduct Financial Scoping Study and Provide Recommendations on Next Steps."

The final new recommendation that was included in the 2014 Task Force report (2014 Recommendation 3), which the U.S. Department of Energy (DOE)/National Nuclear Security Administration (NNSA) has the lead responsibility for, addresses efforts in the area of alternative technologies. Reference to this recommendation is included in the following section, "Update on Cesium Chloride Issues," despite that this new recommendation is much broader than just consideration of alternatives technologies for devices containing CsCl sources. The concept of the new recommendation pertaining to the development of a government incentivized program was extracted from a previously completed recommendation, 2010 Recommendation 10, that recommended initial focus be on CsCl.

UPDATE ON CESIUM CHLORIDE ISSUES

This plan highlights interagency efforts in the area of radiation source protection and security, including updates on progress toward a comprehensive approach to improve the security of CsCl sources as previously requested in the SRM for SECY-08-0184, "Strategy for the Security and Use of Cesium-137 Chloride Sources," dated April 15, 2009. As noted in previous updates to the Commission, for efficiency, the staff is providing a status on CsCl issues in the periodic updates of the implementation plan. Specifically, status updates on initiatives related to the SRM for SECY-08-0184 are provided for the following topic areas and corresponding recommendations:

Development of a Government-facilitated Disposal Pathway

> 2010 Recommendation 4:
>
> "The Task Force recommends that the U.S. Government, regional compacts, and States continue to evaluate disposal options for disused radioactive sources, including options for handling a potentially large number of disused CsCl sources that may be replaced once viable alternatives are available."

Short-term and Long-term Research and Development of Alternative Technologies

> 2010 Recommendation 9:
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> "The Task Force recommends that the U.S. Government enhance support of short-term and long-term research and development for alternative technologies."

Development of a Government Incentivized Program for the Replacement of Existing Sources with Effective Alternatives

> 2010 Recommendation 10:
>
> "The Task Force recommends that the U.S. Government, contingent upon the availability of alternative technologies and taking into consideration the availability of disposal pathways for disused sources, investigate options such as a voluntary, prioritized,

Government-incentivized program for the replacement of Category 1 and 2 sources with effective alternatives, with an initial focus on sources containing CsCl."

2014 Recommendation 3:

"The Task Force recommends that the U.S. Government, as appropriate,[1] investigate options such as voluntary, prioritized, incentivized, programs for the replacement of Category 1 and 2 radioactive sources with effective alternatives. The Task Force further recommends that U.S. Government agencies, where appropriate, lead by example in the consideration of and transition to alternative technologies that meet technical, operational, and cost requirements."

A description of the status of the above-listed items is reflected in the enclosed implementation plan. In general, the Task Force's previous recommendations that focused on the replacement of CsCl radioactive sources with alternatives (2010 Recommendations 3, 10, and 11, as referenced in the implementation plan) have been designated as "complete" with the publication of the "Policy Statement of the U.S. Nuclear Regulatory Commission on the Protection of Cesium-137 Chloride Sources" on July 25, 2011 (76 FR 44378) that sets forth NRC's policy on the secure use of sealed sources containing CsCl. The Policy states that the NRC recognizes that near-term replacement of devices or CsCl sources in existing blood, research, and calibration irradiators is not practicable or necessary due to implementation of the additional security requirements and lack of a disposal capacity. Despite this, continuing efforts are being made by DOE on developing its final Greater-Than-Class C Low-Level Radioactive Waste Environmental Impact Statement to give special consideration for disposal options for CsCl sources (relevant to 2006 Action 9-1) and the design, development, testing, and certification of two new Type B packages to support the recovery and transportation of Category 1 and 2 sources commonly used in irradiators and cancer treatment devices (relevant to 2010 Recommendation 8). Efforts are also focused on initiating the evaluation of existing alternative technologies and needed research and development that could reduce security risks. DOE/NNSA has the lead for this effort and DHS is assisting efforts in this area through its Nuclear Sector Coordinating Council (NSCC), which is supported by Federal, State, and industry stakeholders. This initiative, which is led and supported by these other agencies is an example of the Task Force's attempt to more effectively and efficiently track recommendations via other mechanisms outside of the Task Force, such as through support from the NSCC. The Task Force will continue to look for similar opportunities to carry out recommended initiatives through other means. The staff, in partnership with the Agreement States, will monitor any new developments in the area of alternative technologies as well as continue to monitor any changes in the threat environment that may necessitate a recommendation to the Commission for regulatory action.

[1] NRC's statutory mandate precludes it from promoting one technology over another for non-safety or security reasons. The NRC would review in accordance with its procedures any new license application for new technologies.

In addition to the CsCl activities discussed in the above recommendations and actions, the NRC continues to maintain awareness of the DOE/NNSA voluntary program to retrofit existing CsCl irradiators with additional physical security enhancements and to incorporate these improvements into the designs of newly manufactured units.

COORDINATION:

The Office of the General Counsel has reviewed this paper and has no legal objection.

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