

**ACTION PLAN TO RESPOND TO RECOMMENDATIONS TO ADDRESS  
SECURITY ISSUES IN THE  
U. S. NUCLEAR REGULATORY COMMISSION MATERIALS PROGRAM**

**INTRODUCTION**

This action plan provides a comprehensive, integrated set of proposed staff actions to respond to recommendations from three reports:

1. U.S. Government Accountability Office (GAO) Testimony, GAO-07-1038T, "Actions Taken by NRC to Strengthen Its Licensing Process for Sealed Radioactive Sources Are Not Effective," July 12, 2007
2. Senate Homeland Security and Governmental Affairs Committee, Permanent Subcommittee on Investigations (PSI) Staff Report: "Dirty Bomb Vulnerabilities," July 12, 2007
3. U.S. Nuclear Regulatory Commission (NRC) Office of the Inspector General (OIG) Audit Report, OIG-07-A-12, "Summary Report and Perspectives on Byproduct Material Security and Control," March 30, 2007

The reports contain eight recommendations. For reference purposes, the recommendations are numbered as follows:

1. GAO Testimony: G-1, G-2, and G-3
2. PSI Staff Report: S-1, S-2a, S-2b, and S-3
3. NRC OIG Report: N-1

Also, two additional actions, which are not specifically covered by the eight recommendations, are included as Additional Actions A-1 and A-2:

- A-1. Enhance communication with the public on the risk of exposure to radioactive materials
- A-2. General license rulemaking (ongoing, budgeted) and review of the general license regulatory framework (unbudgeted)

For each recommendation, the Action Plan presents the proposed action, completion date, discussion, office lead and supporting offices, and unbudgeted resources. If the action is already budgeted, this is indicated in the resources section.

The total unbudgeted resources to implement the Action Plan are as follows:

Enclosure

Recommendation	FY08 Unbudgeted		FY09 Unbudgeted	
	FTE	\$ (Thousands)	FTE	\$ (Thousands)
G-1, G-2, G-3, S-2a (Increase from previous estimate: 2.0 FTE and \$100,000 in FY08)	11.5	310	9.0	500
S-2b	1.0	760	1.0	5,910
S-3	1.5	1,100	2.0	1,850
N-1, S-1 (Increase from previous estimate: 0.5 FTE for FY08)	1.0	400	0.0	0
A-1		(Budgeted)		(Budgeted)
A-2 (Not included in previous estimate)	0.5	10	0.0	0
<b>TOTAL</b> (Increase from previous estimate: 3.0 FTE and \$110,00 for FY08)	<b>15.5</b>	<b>2,580</b>	<b>12.0</b>	<b>8,260</b>

**Recommendation G-1:**

The NRC should develop improved guidance for examining NRC license applications, in order to avoid allowing a malevolent group to obtain a license. The improved criteria should consider whether pre-licensing site visits to new licensees should be mandatory.

**Action:**

1. A Pre-Licensing Guidance Working Group has been convened, with an Agreement State program director as co-chair. The Group will develop and issue revised guidance to address pre-licensing reviews and visits. Exceptions will be addressed. The staff will coordinate with Agreement States to assure that the States implement compatible guidance.

2. A Materials Program Working Group will be formed, composed of NRC Headquarters, NRC Regional, and Agreement State representatives. The Group will identify short-term and long-term measures to be implemented for both specific and general licensees, pending completion of the Web-Based Licensing (WBL) system, the National Source Tracking System (NSTS), the interface between NSTS and WBL, the NSTS rulemaking and the

general license rulemaking. Licensing of imports and exports will be included, as well as prevention of counterfeiting as discussed under Recommendation G-3. The measures to be considered will include guidance or other actions to source suppliers with the objective of preventing unauthorized transfers. The staff will coordinate to assure that compatible compensatory measures are implemented in all Agreement States. The working group will also address the recommendations from the independent panel discussed under Recommendation N-1. A proposed charter for the group is Attachment 1 to this plan.

**Completion Dates:**

1. Complete revised guidance for pre-licensing visits: November 30, 2007
2. Develop corrective measures:
  - a. Short-term measures:
 

Improve license verification:	October 30, 2007
Reduce counterfeiting:	December 31, 2007
Reduce vulnerabilities in GL program:	March 30, 2008
  - b. Follow-up to independent review: April 30, 2008
  - c. Issue final corrective measures: September 30, 2008

**Discussion:**

Based on recently revised interim procedures, the staff is currently conducting pre-licensing visits or in-office meetings with new materials applicants, except those who already possess or are listed on an NRC or Agreement State license. The Pre-Licensing Guidance Working Group will further develop and issue revised guidance to address pre-licensing reviews and visits. This guidance would be implemented in FY08 after training of the Regional staff.

With respect to potentially broader requirements, the 2006 Radiation Source Protection and Security Task Force Report, Action 6-1, states that NRC should expeditiously implement fingerprinting provisions for Category 1 and 2 sources. NRC has already imposed fingerprinting requirements for a large number of Category 1 and 2 licensees, and is coordinating with the Agreement States to impose similar requirements on the remaining Category 1 and 2 licensees. In addition, in a followup to Action 6-3 in the Task Force Report, the staff is pursuing a Memorandum of Understanding with the Department of Homeland Security, which would allow access to the Systematic Alien Verification for Entitlements (SAVE) database in connection with background checks for materials licensee personnel.

**Office Leads:**

1. Revised Pre-licensing Guidance: Region I
2. Materials Program Working Group: FSME

**Support:** NSIR, OIP, OGC, ADM, Regions, Agreement States

**Resources:**

Action	FY08 Unbudgeted		FY09 Unbudgeted	
	FTE	\$ (Thousands)	FTE	\$ (Thousands)
Pre-Licensing Working Group	0.5	10	0.0	0
NRC Inspection Resources to Conduct Additional Site Visits	3.0	0	1.0	0
Development of Corrective Measures by the Materials Program Working Group (Increase from previous estimate: 2.0 FTE and \$100,000 for FY08)	4.0	200	0.0	0
NRC Implementation of Corrective Measures	4.0	100	8.0	500
<b>TOTAL</b> (Increase from previous estimate: 2.0 FTE and \$100,000 for FY08)	<b>11.5</b>	<b>310</b>	<b>9.0</b>	<b>500</b>

**Recommendation G-2:** The NRC should conduct periodic oversight of license application examiners so that NRC will be assured that any new guidance is being appropriately applied.

**Action:** The Materials Program Working Group (see G-1 above) will develop recommendations addressing current training and oversight procedures for both NRC and Agreement State licensing programs and staff, in order to assure effective, consistent implementation.

**Completion Date:** March 31, 2008

**Discussion:** NRC materials license reviewers undergo a rigorous, structured training and qualification program that takes approximately 24 months, with formal course work and on-the-job training. The Integrated Materials Performance Evaluation Program (IMPEP) periodically evaluates license reviewer training and qualification programs, as well as the actual performance of license programs and reviewers, in both NRC offices and the Agreement States. Also, the NRC Regions engaged in materials licensing conduct internal performance assessments at least twice per year. Until the working group completes its review and makes recommendations, the Regions will place emphasis in their

performance assessments to assure that pre-licensing guidance is consistently followed.

The working group will evaluate the existing training provided to reviewers, and the effectiveness of IMPEP procedures and regional assessments, and make recommendations for improvements. With regard to IMPEP, the working group will consider the topics that are addressed, the depth of the review, and the frequency of the review.

**Office Lead:** FSME

**Support:** NSIR, Regions, OGC

**Resources:** (Included in G-1 above.)

**Recommendation G-3:** The NRC should explore options to prevent individuals from counterfeiting NRC licenses, especially if the counterfeiting allows the purchase of more radioactive materials than authorized.

**Action:** The Materials Program Working Group (see G-1 above) will address and make recommendations on the issue of counterfeiting, as well as related verification issues. Import and export licenses will be included.

**Completion Date:** March 31, 2008

**Discussion:** As discussed in the PSI Staff Report, licenses may be copied or faxed, so it is not sufficient to prevent counterfeiting of the original license alone. Other verification methods must also be implemented. The 2006 Radiation Source Protection and Security Task Force Report, Action 4-1, states that NRC should consider imposing additional measures to verify the validity of licenses prior to transfers of risk-significant sources. NRC regulation 10 CFR Section 30.41(d) currently allows transfers of licensed material based on copies of licenses, written certifications from customers, or (for emergency shipments) oral certifications from customers. (Manufacturers and distributors have been issued orders which impose more stringent verification requirements for transfers of Category 1 and 2 sources.) This regulation and similar provisions will be reviewed. The working group's efforts will be coordinated with the Agreement States to assure development of a nation-wide solution to the counterfeiting issue. However, this is a short-term measure and is not comprehensive; the long-term solution requires the development of the integrated WBL and NSTS and associated rulemaking, and the inclusion of Agreement State licenses in WBL. Completion of these activities will make counterfeiting ineffective (see Recommendation S-3).

**Office Lead:** FSME

**Support:** ADM, OIP, NSIR

**Resources:** (Included in G-1 above.)

**Recommendation S-1:** The NRC should reevaluate the apparent good-faith presumption that pervades its licensing process.

**Action:** Include this topic within the scope of the independent, external review to be conducted under Recommendation N-1 below.

**Completion Date:** January 31, 2008

**Discussion:** This recommendation is broad in scope and calls into question a fundamental premise of the licensing approach used by the NRC staff and the Agreement States. Therefore, the staff has included it in the proposed charter for the independent, external panel (Attachment 2) to this Action Plan.

**Office Lead:** FSME

**Resources:** (Included in N-1 below.)

**Recommendation S-2a:** The NRC should physically inspect applicants' facilities before the issuance of a Category 3 Materials License.

**Action:** See G-1 above. Based on recently revised interim procedures, the staff is currently conducting pre-licensing visits or in-office meetings with new materials applicants, except those who already possess or are listed on an NRC or Agreement State license. The Pre-Licensing Guidance Working Group will further develop and issue revised guidance to address pre-licensing reviews and visits.

**Completion Date:** November 30, 2007

**Office Lead:** Region I

**Support:** FSME, OIP, NSIR, OGC, Regions, Agreement States

**Resources:** (See G-1 above.)

**Recommendation S-2b:** The NRC should consider including Category 3 sources in the proposed NSTS.

**Action:** As previously directed by the Commission in the Staff Requirements Memorandum (SRM) dated June 9, 2006, the NSTS rulemaking will include consideration of Category 3 sources. The staff currently plans to expand the NSTS to include Category 3 sources. (This is consistent with Action 11-3 of the Radiation Source Protection and Security Task Force Report.)

The staff recommends that the scope of the NSTS rulemaking be expanded to include Category 3.5 sources. This will require the additional resources listed in the table below. Note that Category 3.5 sources are a factor of 10 smaller in amount of radioactivity than Category 3 sources.

**Completion Dates:** For Category 3 Sources:  
 Proposed Rule to the Commission: March 2008  
 Final Rule : Late 2008 - Early 2009

Implement Expanded NSTS - Category 3: October 2009

Note: The schedule listed above is to complete the expansion of the NSTS and rulemaking to include Category 3, as directed by the SRM. If the recommendation in this Action Plan to include Category 3.5 sources is approved, the additional resources listed below will be needed. The staff is developing the technical basis that will allow the rulemaking including Category 3.5 to meet or exceed the dates above.

**Discussion:** The current budget covers inclusion of Category 3 sources in the NSTS rulemaking. Even though the recommendation covers Category 3 sources only, the staff's resource estimates below would allow for inclusion of additional sources, down to Category 3.5, in order to more comprehensively address the concerns underlying the recommendation; that is, that smaller sources could be aggregated into larger sources which would pose a significant safety and security hazard.

Most of the additional cost to expand the NSTS is not associated with the rulemaking or the NSTS database itself, but rather the cost of adding and certifying a larger number of additional licensees, who will be authorized to access the system to enter or verify data.

**Office Lead:** FSME

**Support:** OIS, NSIR, Agreement States

**Resources:**

Action	FY08 Unbudgeted		FY09 Unbudgeted	
	FTE	\$ (Thousands)	FTE	\$ (Thousands)
Expand Scope of NSTS Rulemaking from Category 3 to Category 3.5 Sources	0.5	10	0.5	10
Maintain Interim Inventory Database Down to Category 3.5, Pending Launch of NSTS	0.0	250	0.0	300
Expansion of NSTS to Include Category 3 and 3.5 Sources (Note: These resources do not include additional resources needed for initial development of the NSTS to include Category 1 and 2 sources.)	0.5	500	0.5	5,600*
<b>TOTAL</b>	<b>1.0</b>	<b>760</b>	<b>1.0</b>	<b>5,910</b>

\*A large part of this amount reflects the cost of adding and certifying additional licensees, so that they can access the system to enter or verify data.

**Recommendation S-3:**

The NRC should act quickly to establish a WBL system to ensure that source materials can be obtained only in authorized amounts by legitimate users.

**Actions:**

The staff will expand the WBL system to allow on-line verification of licenses, establish an interface with NSTS, and make the system externally accessible to licensees and government agencies who need to enter or verify data.

**Completion Dates:**

1. Develop and implement external WBL, including NRC licensees: October 2009
2. Add Agreement State licensees to WBL: FY-2010 and FY-2011

**Discussion:**

If the action to expand the WBL system is approved and budgeted, the externally accessible system would be implemented in October 2009, with NRC licensees included in the database. Addition of the much greater number of Agreement State licensees would begin in FY10 and extend through FY11, costing about \$6 million. Most of the cost for FY09 and beyond would be for verification of outside parties authorized to access the WBL system. The WBL activities will require extensive coordination

with Agreement States and other Federal agencies, so resources are included for that purpose. In addition to expenditures by NRC, the Agreement States will incur unexpected costs to support entering their data into WBL.

Recommendation S-3 addresses the concern that licensees could “shop around” and exceed their authorized quantities by buying authorized quantities from multiple vendors, a concern that intersects with the license counterfeiting considered in Recommendation G-3. The proposed solution includes an interface between the NSTS and WBL to allow vendors to review proposed purchases against the licensee’s current inventory and license possession limits. This interface, along with establishment of current information about NRC and Agreement State active licenses in WBL, will require the ongoing cooperation of the Agreement States to continually update the database. Other Federal agencies, including the Domestic Nuclear Detection Office and Customs and Border Protection are interested in assisting with the development of and using such a system. In addition, the Radiation Source Protection and Security Task Force Report, Action 6-2, states that 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. Action 11-2 states that NRC should consider programming the NSTS to provide automatic daily information to Customs officials on export/import shipment notifications. External accessibility will allow direct access by licensees and government agencies to verify or enter data.

**Office Lead:** FSME

**Support:** OIS, NSIR, Agreement States

**Resources:**

Action	FY08 Unbudgeted		FY09 Unbudgeted	
	FTE	\$ (Thousands)	FTE	\$ (Thousands)
Expand WBL System to Allow On-line Verification, Establish an Interface with NSTS, and Allow Access by Outside Parties	0.5	1,000	1.0	1,750
Coordination with Agreement States	1.0	100	1.0	100
<b>TOTAL</b>	<b>1.5</b>	<b>1,100</b>	<b>2.0</b>	<b>1,850</b>

**Recommendation N-1:** The NRC should convene an independent panel of experts external to the agency to identify agency vulnerabilities concerning NRC's material licensing and tracking programs, and validate the agency's byproduct material security efforts.

**Action:** NRC will arrange the independent, external review, as recommended. The proposed charter for this independent panel includes Recommendation S-1 above. As noted earlier, the panel's recommendations will be provided to the Materials Program Working Group for implementation.

**Completion Date:** January 31, 2008

**Discussion:** The panel will be chaired by a former Agreement State program manager, and will include and another person who has not had substantial involvement in design or implementation of the current NRC materials program. The staff has identified specific individuals to fill these roles who have been selected based on their individual qualifications, knowledge of NRC regulatory programs, and impartiality with respect to the existing NRC materials policies and procedures. It is expected that another Federal agency, most likely the Defense Threat Reduction Agency, will provide a third qualified member. The panel will be convened in accordance with the agency's advisory committee process including consultation with the General Services Administration in accordance with 10 CFR 7.5. The panel's review will include an assessment of the existing and potential security vulnerabilities related to the NRC specific, import, export and general license programs. Their assessment will include, as a minimum, pre-licensing guidance, licensing procedures, the licensing process, possession limits on licenses, and license reviewer training and oversight. The panel will gather data by reviewing NRC licensing procedures and appropriate background documents, interviewing staff and selected licensees, visiting NRC Regional Offices and Agreement State Offices, evaluating business processes, etc.

**Office Lead:** FSME

**Support:** ADM

**Resources:**

Action	FY08 Unbudgeted		FY09 Unbudgeted	
	FTE	\$ (Thousands)	FTE	\$ (Thousands)
Independent Panel Review (Increase from previous estimate: 0.5 FTE for FY08)	1.0	400	0.0	0

**Additional Action A-1:** Enhance communication with the public on the risk of exposure to radioactive materials.

**Action:**

1. The staff will continue to participate on the interagency Public Education Subcommittee, chaired by the Department of Homeland Security, established under the Chairman's Radiation Source Protection and Security Task Force. This subcommittee is preparing an Action Plan to improve public education on radioactivity and potential radiological attacks.
2. As directed in the Staff Requirements Memorandum dated June 25, 2007, the staff will support OPA to upgrade the NRC website to improve information on radiation and radiation risk.

**Completion Dates:**

1. Interagency Public Education Subcommittee Action Plan: December 31, 2007
2. NRC website improvements: Ongoing

**Office Lead:** OPA, FSME

**Support:** NSIR, RES

**Resources:** (Budgeted)

**Additional Action A-2:** General License Rulemaking and Regulatory Framework Review

**Action:** The staff, with the additional resources shown below, will conduct a review of the regulatory framework associated with the general license program for byproduct material, and prepare a report specifying the desired "end state" for that program.

The staff will continue planned, budgeted efforts in the current general license rulemaking for byproduct material. The scope of this rulemaking includes consideration of specifically licensing certain sources, devices and materials that are currently eligible for a general license.

- Completion Dates:**
1. Review general license regulatory framework: June 2008
  2. General license rulemaking for Byproduct Material:
 

Proposed Rule:	September 2008
Final Rule:	September 2009

**Discussion:** The review of the general license regulatory framework will be undertaken to identify any gaps in regulatory control or modifications that might be appropriate to ensure a consistent, risk-informed, graded approach for these sources, devices, and materials, based on both safety and security. This review will also include examining whether various types of sources and devices should be regulated through general or specific licenses, and whether other mechanisms, such as a more formal registration process, should be considered. The information and recommendations developed will be used as input to the general license rulemaking. The recommendations from this effort will also be provided to the Materials Program Working Group for its consideration and integration into its recommendations. Such an examination is important to ensure that the long-term result of the combined set of activities in this Action Plan create a defensible, complete system of regulatory controls for sources, devices, and materials which are currently generally licensed. Although these actions are outside the scope of the recommendations considered in this Action Plan, they are relevant, because general licensees by definition can obtain radioactive material without prior approval or screening by NRC. Therefore, the same security concerns that prompted the recommendations for specific licensees need to be considered for general licensees.

The general license rulemaking could result in a significant increase in the number of specific licenses. If this occurs, significant additional, ongoing costs would be incurred for both the NRC and Agreement States for licensing, inspection, enforcement, allegation resolution, etc.

**Office Lead:** FSME

**Support:** NSIR, Agreement States

**Resources:**

Action	FY08 Unbudgeted		FY09 Unbudgeted	
	FTE	\$ (Thousands)	FTE	\$ (Thousands)
Review of General License Regulatory Framework (not included in previous estimates)	0.5	10	0.0	0
General License Rulemaking		(Budgeted)		(Budgeted)

## Attachments:

1. Proposed Charter for Materials Program Working Group
2. Proposed Charter for Independent External Review to Identify Vulnerabilities in the NRC Material Licensing Program
3. Action Plan Milestones