

**RULEMAKING ISSUE**  
(Notation Vote)

May 18, 2005

SECY-05-0092

FOR: The Commissioners

FROM: Luis A. Reyes  
Executive Director for Operations /RA/

SUBJECT: PROPOSED RULE: NATIONAL SOURCE TRACKING OF SEALED  
SOURCES (RIN 3150-AH48)

PURPOSE:

To request Commission approval to publish a proposed rule in the *Federal Register* that would amend Parts 20, 32, and 150 of Title 10 of the *Code of Federal Regulations*. The proposed amendments would establish the regulatory foundation for the National Source Tracking System. The proposed rule would require licensees to report transactions involving the manufacture, transfer, receipt, and disposal of nationally tracked sources. The proposed changes would apply to both the U.S. Nuclear Regulatory Commission (NRC) and Agreement State licensees.

SUMMARY:

In recent years, there has been increased interest in the security of radioactive material of greatest concern. An interagency working group on radiological dispersal devices (RDD) was formed to investigate the control of nuclear material. The International Atomic Energy Agency (IAEA) Board of Governors approved a major revision to the IAEA "Code of Conduct on the Safety and Security of Radioactive Sources" (hereafter Code of Conduct). To address recommendations from the RDD Working Group and in the Code of Conduct, NRC formed a

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National Source Tracking (NST) Working Group in November 2003 to develop a national source tracking system. A Steering Committee and an Interagency Coordinating Committee were also formed. The NST Working Group developed requirements for the National Source Tracking System. In July 2004, the National Source Tracking Rulemaking Working Group was formed to develop the proposed rule necessary to implement the National Source Tracking System. The proposed rule would require licensees to report transactions involving nationally tracked sources to the National Source Tracking System. The staff is requesting Commission approval to publish a proposed rule in the *Federal Register* that would amend 10 CFR 20, 32, and 150 to implement the requirements necessary to support the National Source Tracking System.

#### BACKGROUND:

As a result of the terrorist attacks in the United States on September 11, 2001, NRC has undertaken a comprehensive review of nuclear material security requirements, with particular focus on radioactive material of concern. In June 2002, NRC and the U.S. Department of Energy (DOE) established an interagency Working Group on RDDs to investigate how to improve the control of nuclear material. The RDD Working Group recommended that a National Source Tracking System be developed to better understand and monitor the location and movement of sources of concern. This recommendation is contained in the May 2003, report, entitled, "Radiological Dispersal Devices: An Initial Study to Identify Radioactive Materials of Greatest Concern and Approaches to Their Tracking, Tagging, and Disposition."

The Commission has also supported U.S. Government efforts to establish common international guidance for safety and security of radioactive materials of concern. This effort has resulted in a major revision to the Code of Conduct. The revised Code of Conduct was approved by the IAEA Board of Governors in September 2003. The U.S. Government has formally notified the Director General of the IAEA of its political commitment for the current Code of Conduct. The Code of Conduct contains a recommendation that each IAEA Member State should develop a national register of radioactive sources that should include Category 1 and Category 2 radioactive sources as described in Annex 1 of the Code of Conduct.

As part of the effort to improve the security of radioactive sources, NRC initiated development of a national tracking system for radioactive sources of concern. It formed the NST Working Group in November 2003, the SafeSource<sup>1</sup> Steering Committee in December 2003, and the Interagency Coordinating Committee (ICC) in February 2004, to aid in the development of the National Source Tracking System. Because this is intended to be a national system, both DOE and the Agreement States are represented with the NRC on the working group and the committees. The ICC also has representatives from other Federal agencies with an interest in source security. A list of agencies represented is provided in Attachment 1. The ICC's primary responsibility is to provide guidance regarding interagency issues associated with the development, coordination, and implementation of the National Source Tracking System, to

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<sup>1</sup>SafeSource is the name for the overall project that includes the web-based licensing project, the interim database project, and the National Source Tracking project.

prevent licensees from receiving similar requests from more than one agency. The ICC involvement also assured that the system meets the U.S. Government's international commitments.

The NST Working Group's primary function was to develop the requirements for a National Source Tracking System for radioactive sources of concern. The Working Group will also be involved in developing and providing training for the new system. The Steering Committee was formed to provide guidance on critical issues related to the development, coordination, and implementation of the National Source Tracking System.

A second working group, the NST Rulemaking Working Group, was formed in July 2004 to translate the requirements for the system into rule language. This Working Group has an Agreement State member, but no DOE representation. The attached proposed rule is the result of this working group's efforts. The substantive provisions of the proposed rule are consistent with the requirements developed by the NST Working Group, as well as the recommendations to develop a National Source Tracking System from the RDD report and a source registry from the Code of Conduct.

NST is only one aspect of NRC's efforts to enhance the control of radioactive material of greatest concern. NST does not ensure the physical protection of sources; it provides greater source accountability. The National Source Tracking System in conjunction with controls imposed by Order on irradiator licensees, manufacturer and distributor licensees, and other material licensees will result in better control of sources. In addition, the final rule on import/export of radioactive material is currently before the Commission (SECY-05-0043). The Commission Paper on the Orders on transportation of radioactive materials in quantities of concern is due to the Commission this spring. All of these activities, along with current regulations, form NRC's foundation for control of radioactive material. All of these activities are integrated and complement each other. For example, the advance notifications that will be required by the import/export final rule will be recorded in the National Source Tracking System database. The Orders to materials licensees include provisions on shipments and transfers of radioactive material. The staff plans to conduct future rulemakings to codify the requirements currently being imposed by the Orders. This rulemaking addresses the National Source Tracking System and only includes those requirements necessary to directly support the system. The rulemaking does not address other control measures, and the scope of this rulemaking does not include source transportation. This rulemaking also does not address reporting of lost/stolen sources.

#### DISCUSSION:

Currently, NRC and Agreement State regulations do not require a licensee to report its inventory of licensed material. Until recently, there was no information on what is actually possessed by licensees versus what licensees are authorized to possess. To address this lack of information on actual possessed material, NRC, with the cooperation of the Agreement States, began working on an interim database of sealed sources. In November 2003, both NRC and Agreement State licensees were contacted and requested to voluntarily provide some basic information on the Category 1 and Category 2 sealed sources located at their facilities. There were over 1300 licensees that reported possessing sealed sources at the Category 1 and Category 2 levels. These facilities will be requested to update the information each year until

the National Source Tracking System is operational. While the interim database provides a snapshot in time of information regarding sealed sources, the National Source Tracking System will provide information on an ongoing basis.

The proposed rule would establish the regulatory framework for the National Source Tracking System for both NRC and Agreement State licensees. The National Source Tracking System is being developed and would be implemented under the Commission's statutory authority to promote the common defense and security. The proposed rule would require licensees to report to the National Source Tracking System the manufacture, transfer, receipt, and disposal of nationally tracked sources. Basic information to be collected would include the manufacturer, model number, serial number, radioactive material, activity, and manufacture date for each source. In addition, information on the facilities involved in the transaction (facility name, license number, and individual preparing the report) would be collected, as well as the transaction date. For transfers, the estimated arrival date would also be reported. Actual transportation of the sources will not be tracked in the National Source Tracking System. For transactions that involve the source as part of a waste shipment or disposal, the licensee would need to provide the waste manifest number and the container identification for the container with the source. Waste brokers and disposal facilities would not be expected to open the container to verify that the source is included. To have timely information, the proposed rule would require that licensees report transaction information by the close of the next business day after the transaction occurs. The data in the National Source Tracking System will be considered Official Use Only. The Information will not be considered to be either Safeguards Information or Safeguards Information - Modified Handling.

To ease the reporting burden on licensees, a secure Internet-based interface to the National Source Tracking System is planned. This interface would enable licensees to access the system using an Internet browser, log on to the system, and provide the required information on-line. On-line access should be faster, more accurate, and less labor-intensive than having licensees complete forms to be mailed and entered into the system centrally. A licensee would only be able to view the information on its own facility. Licensees would also be able to provide information by electronic batch file or by mail, fax, or telephone. The company that receives the contract for the National Source Tracking System will write the guidance document that will provide instruction on how to report the transactions; consequently, the guidance document will not be available until the final rule is effective.

Furthermore, each licensee would be required to report its initial inventory of nationally tracked sources. Licensees must report all inventories of Category 1 nationally tracked sources by December 31, 2006, and all inventories of Category 2 nationally tracked sources by March 31, 2007. To ease the burden on licensees, the initial loading of information will be from the interim database. Each licensee that has reported source information to the interim database would be provided a copy of that source information and be allowed to update it so that the inventory information is accurate by these dates. Transaction reporting for Category 1 and Category 2 sources would begin on December 31, 2006, and March 31, 2007, respectively.

Licensees would be required to correct any error(s) in previously filed reports or submit missing reports within five business days of the discovery of the error(s) or missed report. Each licensee would also be required to annually reconcile the information in the National Source Tracking System against its actual inventory and verify that the information is correct. These

steps promote the accuracy and reliability of the information in the system. In addition, the staff plans to invite comment on the inclusion of a quality assurance provision that would require licensees have a second person double check the data before submission to the National Source Tracking System. We are seeking information on the appropriateness of the provision and the added burden.

The proposed rule would define the term “nationally tracked source as a sealed source” containing a quantity of radioactive material equal to or greater than the Category 2 levels listed in the new Appendix F to 10 CFR Part 20. For the purpose of this rulemaking, the term “nationally tracked source” does not include material encapsulated solely for disposal, or nuclear material contained in any fuel assembly, subassembly, fuel rod, or fuel pellet. This definition is based on the IAEA Code of Conduct and is consistent with the definition of sealed sources elsewhere in NRC regulations and with definitions contained in Agreement State regulations.

As directed by the Commission in the August 21, 2003, Staff Requirements Memorandum (SRM) M030716, “Discussion of Intergovernmental Issues,” the radioactive materials to be included in the National Source Tracking System are the 16 radionuclides from the IAEA Code of Conduct and the additional seven radionuclides listed in the SRM. The staff has not included radium (Ra)-226 on the list of radionuclides because NRC does not regulate Ra-226. However, the National Source Tracking System will allow licensees to voluntarily enter transactions for Ra-226 sealed sources. Additionally, States may decide to develop regulations that require licensees to report Ra-226 transactions to the National Source Tracking System.

The staff notes that the list of 22 radionuclides is currently considered Official Use Only because of the addition of the seven radionuclides that come from the DOE/NRC RDD report. In order to include these seven radionuclides in the rulemaking, the list, with the thresholds, must be made publicly available. In addition, the staff notes the inconsistency between this proposed rule and the import/export final rule, which only includes the 15 radionuclides from the IAEA Code of Conduct. The Orders to materials licensees included the full list of 22 radionuclides. The interim database included the full list of radionuclides. Based on information from the interim database, NRC and Agreement State licensees do not possess large numbers of nationally tracked sources containing these radionuclides. However, this is a national system and will include information from DOE facilities. DOE facilities are more likely to possess these radionuclides and DOE has indicated that the additional radionuclides should be included in the National Source Tracking System. The staff supports the inclusion of the additional radionuclides in the National Source Tracking System. The tracking system is for domestic purposes and should include the same radionuclides as the Orders to materials licensees.

Some members of the Working Groups have expressed concern over aggregation. They are concerned that licensees may possess enough Category 3 sources to cause security concerns. There have also been indications that licensees are requesting manufacturers to make sources just below the Category 2 threshold. Aggregation cannot be addressed in an item-level tracking system because the sources would move in and out of the system with changes in ownership; the information would quickly become unreliable. The best way to address the issue is to lower the reporting threshold. Although Category 3 sources are not included in this proposed rulemaking, the staff does plan to invite comment on inclusion of Category 3 sources so that we

can reconsider this issue at a later date. We are seeking information on the number of additional licensees that would be impacted, the number of Category 3 sources possessed by licensees, and how often those sources change hands. This information will enable NRC to make a more informed decision, in the future, on the inclusion of Category 3 sources in the National Source Tracking System.

The proposed rule would also require manufacturers of nationally tracked sources to assign a unique serial number to each nationally tracked source that it makes. This change is necessary because sources would be tracked within the National Source Tracking System by a combination of the manufacturer, model, and serial number. The staff believes that manufacturers already use a unique number for each source they make; however, the proposed amendment would ensure that this occurs.

Licensees are currently required to report lost or stolen sources to the NRC Operations Center or to their Agreement State. Information on lost or stolen sources is currently placed in the Nuclear Material Events Database (NMED); this practice will continue. Agency staff will obtain the information on lost or stolen nationally tracked sources from the event reports and/or NMED and then enter the information into the National Source Tracking System. This approach avoids a duplication in reporting by licensees to both the Operations Center or Agreement State and the National Source Tracking System. The Working Group was concerned that licensees might report the information to the National Source Tracking System, believe that they had made all the necessary reports and fail to report to the Operations Center. The information needed for the National Source Tracking System would not satisfy the information needs of an event report. Information on destroyed sources (for example, a source destroyed in a fire or while being retrieved by a well-logging rig) would also be obtained from the event reports or NMED.

The proposed rule would impose a new reporting requirement on licensees. The staff has evaluated other information collections to see if there are any similar reporting requirements. One area of potential duplicate reporting exists: current regulations require licensees to report transfers, receipts, and inventory to the Nuclear Materials Management Safeguards System (NMMSS,) a classified database, for 1 gram or more of plutonium and any thorium that has foreign obligations. However, because the NMMSS does not collect information at the individual source level, information such as the make, model, and serial number of a sealed source is not available from the NMMSS database. The National Source Tracking System would only have information on sealed sources and so would not collect information on sources that are not considered sealed, or on any bulk material that a licensee may possess. Although the NMMSS and the National Source Tracking System would include information on the same plutonium and thorium isotopes, the information would be in different formats and with different levels of detail, as required by each system.

Furthermore, staff review of the interim database showed there were only 21 plutonium sealed sources above the Category 2 threshold and no thorium sources reported. In practice, the staff finds that these sources, compared to other sealed sources, are typically held by licensees for longer time periods and are not routinely transferred. Consequently, incidences of double-reporting are expected to be rare. The staff does not believe that the limited number of licensees and transactions likely to be affected by the dual reporting requirement would impose an unnecessary burden.

The staff considered adding a provision to require licensees to report to the National Source Tracking System when a source was placed in storage and no longer being actively used. The information on source storage could have been used for planning purposes for source recovery. After due consideration, the staff decided not to include a storage reporting provision in the rule. A question related to source storage could be included in the "Smart audit" questionnaires that may be sent to licensees to help prioritize the security inspection process.

The proposed rule is consistent with NRC's strategic objective and performance goals. The proposed rule would continue to ensure the secure use and management of radioactive materials. While the proposed rule does not change the physical protection requirements for nationally tracked sources, the proposed changes are part of a comprehensive radioactive source control program for sources. The National Source Tracking System will provide greater source accountability, and in conjunction with other activities will result in improved security for nationally tracked sources. Information from the National Source Tracking System will enable NRC to better risk-inform inspection and security efforts for byproduct material licensees by helping NRC to focus on those licensees that actually possess nationally tracked sources, thus making our actions more effective and efficient. The rulemaking will be conducted in an open process. The draft proposed rule was provided to the Agreement States for preliminary review. The proposed rule will be published in the *Federal Register* for a 75-day public comment period. We also plan to hold two to four public meetings during the public comment period to obtain stakeholder input. The exact dates, times, and locations will be determined after the Commission provides direction on the proposed rule.

#### AGREEMENT STATE ISSUES:

A copy of the draft proposed rule was posted on NRC's Technical Conference Forum so the Agreement States could have an early opportunity for review. The National Source Tracking System, including the proposed rule, was also discussed at the Organization of Agreement States' (OAS) annual meeting in September 2004.

We received comments from the States of Illinois and Washington. Both States were opposed to the inclusion of Category 3 sources in the National Source Tracking System. Reasons included additional burden imposed on licensees, prohibitive cost of adding Category 3 sources, and the belief that there would be no notable security benefit because these sources are well below a reasonable health and safety concern for use in an RDD. Illinois also voiced concern over the need to have physical verification of at least some portion of the information by an inspection. Illinois recommended that NRC consider entering into additional agreements under section 274i of the Atomic Energy Act of 1954, as amended with Agreement States so that physical verification of information could be performed during routine safety inspections. NRC staff plans to pursue the option of entering into additional 274i agreements, although other options may be considered, if identified.

Illinois does not believe that transactions need to be reported within 1 business day and suggests the standard of 5 business days. Illinois does not believe that reporting within 1 business day provides any additional security benefits. The 1 business day reporting timeframe is being retained because the interagency community has identified 1 day as the necessary minimum for providing the transaction information. Illinois also expressed concern with the requirement regarding notification of loss or theft within 1 hour of discovery and the

harmonization of that requirement with the policy set in the President's Homeland Security Directive number 5. Illinois points out that Illinois licensees are instructed to immediately contact the local law enforcement authority and the Illinois Emergency Management Agency for an emergency related to theft of radioactive material. The State fears that multiple and varying reporting requirements would confuse licensees and notes that this is particularly troublesome because NRC does not have emergency response capability to put resources into the field. The staff has not retained the provision which would have modified the requirements to report lost, stolen, or missing material, including the 1-hour reporting provision. The existing requirements to report lost, stolen, or missing material immediately after its occurrence becomes known to the licensee remains in place. Changes to the reporting provisions for lost, stolen, or missing material would be considered in a future rulemaking.

NRC staff has analyzed the proposed rule in accordance with the procedures established within Part III of Handbook 5.9 to Management Directive 5.9, "Categorization Process for NRC Program Elements." Staff has determined that the proposed rule is classified as Compatibility Category "NRC." The NRC program elements in this category are those that relate directly to areas of regulation reserved to NRC by the Atomic Energy Act of 1954, as amended, as implemented in the provisions of Title 10 of the *Code of Federal Regulations*. Although an Agreement State may not adopt program elements reserved to NRC, it may wish to inform its licensees of certain requirements via a mechanism that is consistent with the particular State's administrative procedure laws but does not confer regulatory authority on the State.

Because the provisions of the National Source Tracking System are classified as Compatibility Category "NRC," NRC will be responsible for inspection and enforcement. An Agreement State may not inspect and enforce the provisions unless the Agreement State enters into a 274i agreement. Some Agreement States may choose this approach, others may not. The OAS representative on the Steering Committee has suggested that the Commission allow Agreement States to adopt the source-tracking requirements and be recognized as the regulatory authority in that State for the enforcement and inspection of the National Source Tracking System reporting requirements. Agreement State licensees accustomed to dealing with their State agency might find NRC inspection and enforcement of the reporting requirements confusing. Under the OAS suggestion, Agreement States that adopt the proposed rule would include the reporting requirements as part of their routine inspection program, but NRC would maintain control of the National Source Tracking System and the reported data. This approach would place Agreement States outside the 274i agreement process and would use the viable working relationship Agreement States currently have with their licensees to further the NRC mission of tracking Category 1 and Category 2 sources. The staff is not taking a position on this option and is only providing it to the Commission for information at this time. The options for inspection and enforcement of this rule and the Orders will be addressed at a later date, under a separate effort.

#### RESOURCES:

To complete the rulemaking, 1.2 full-time equivalent positions will be required of which the majority will be required in FY 06. Contract support will be used to develop the regulatory analysis and OMB supporting statement (approximately \$100,000 half of which was spent in FY 05 and half of which will be used in FY 06). These resources are included in the current budget.

COMMITMENTS:

Listed below are the actions or activities committed to by the staff in this paper.

1. The staff has committed to holding two public meetings during the public comment period on the rule.

RECOMMENDATIONS:

That the Commission:

1. Approve for publication in the *Federal Register* the proposed amendments to Parts 20, 32, and 150 of 10 CFR (Attachment 2).
2. Note:
  - a. The *Federal Register* notice will provide 75 days for public comment.
  - b. The Chief Counsel for Advocacy of the Small Business Administration will be informed of the certification and the reasons for it, as required by the Regulatory Flexibility Act, 5 U.S.C. 605(b).
  - c. A draft Regulatory Analysis has been prepared for this rulemaking (Attachment 3).
  - d. Appropriate Congressional committees will be informed of this action.
  - e. A press release will be issued by the Office of Public Affairs when the proposed rulemaking is filed with the Office of the Federal Register.
  - f. OMB review is required and a clearance package will be forwarded to OMB no later than the date the proposed rule is submitted to the Office of the Federal Register for publication.

COORDINATION:

The Office of the General Counsel has no legal objection to the proposed rulemaking. The Office of the Chief Financial Officer has reviewed this Commission Paper for resource implications and has no objections. The rule suggests changes in information collection requirements that must be submitted to OMB no later than the date the proposed rule is forwarded to the *Federal Register* for publication.

The Commissioners

10

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Luis A. Reyes,  
Executive Director  
for Operations

Attachments:

1. List of ICC Member Agencies
2. Federal Register Notice
3. Draft Regulatory Analysis

## List of ICC Member Agencies

Nuclear Regulatory Commission  
Agreement States - California  
Department of Commerce  
Department of Defense  
Department of Energy  
Department of Homeland Security - Infrastructure Protection  
Department of Homeland Security - Transportation Security Administration  
Department of Homeland Security - Customs and Border Protection  
Department of State  
Department of Transportation  
Environmental Protection Agency  
Federal Bureau of Investigations

NUCLEAR REGULATORY COMMISSION

10 CFR Parts 20, 32, and 150

RIN: 3150-AH48

National Source Tracking of Sealed Sources

**AGENCY:** Nuclear Regulatory Commission.

**ACTION:** Proposed rule.

**SUMMARY:** The Nuclear Regulatory Commission (NRC) is proposing to amend its regulations to implement a National Source Tracking System for certain sealed sources. The proposed amendments would require licensees to report certain transactions involving these sealed sources to the National Source Tracking System. These transactions would include manufacture, transfer, receipt, or disposal of the nationally tracked source. The proposed amendment would also require each licensee to provide its initial inventory of nationally tracked sources to the National Source Tracking System and annually verify and reconcile the information in the system with the licensee's actual inventory. In addition, the proposed amendment would require manufacturers to assign a unique serial number to each nationally tracked source.

**DATES:** Submit comments on the rule by **(INSERT DATE 75 DAYS AFTER PUBLICATION IN THE FEDERAL REGISTER)**. Submit comments specific to the information collections aspects of this rule by **(INSERT DATE 30 DAYS AFTER PUBLICATION IN THE FEDERAL**

**REGISTER).** Comments received after the above dates will be considered if it is practical to do so, but assurance of consideration cannot be given to comments received after these dates.

**ADDRESSES:** You may submit comments by any one of the following methods. Please include the following number (RIN 3150-AH48) in the subject line of your comments.

Comments on rulemakings submitted in writing or in electronic form will be made available to the public in their entirety on the NRC rulemaking web site. Personal information will not be removed from your comments.

Mail comments to: Secretary, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, ATTN: Rulemakings and Adjudications Staff.

E-mail comments to: [SECY@nrc.gov](mailto:SECY@nrc.gov). If you do not receive a reply e-mail confirming that we have received your comments, contact us directly at (301) 415-1966. You may also submit comments via the NRC's rulemaking web site at <http://ruleforum.llnl.gov>. Address questions about our rulemaking website to Carol Gallagher (301) 415-5905; email [cag@nrc.gov](mailto:cag@nrc.gov). Comments can also be submitted via the Federal Rulemaking Portal <http://www.regulations.gov>.

Hand deliver comments to: 11555 Rockville Pike, Rockville, Maryland 20852, between 7:30 am and 4:15 pm Federal workdays. (Telephone (301) 415-1966).

Fax comments to: Secretary, U.S. Nuclear Regulatory Commission at (301) 415-1101.

You may submit comments on the information collections by the methods indicated in the Paperwork Reduction Act Statement.

Publicly available documents related to this rulemaking may be examined and copied for a fee at the NRC's Public Document Room (PDR), Public File Area O1 F21, One White Flint North, 11555 Rockville Pike, Rockville, Maryland. Selected documents, including comments,

can be viewed and downloaded electronically via the NRC rulemaking web site at <http://ruleforum.llnl.gov>.

Publicly available documents created or received at the NRC after November 1, 1999, are available electronically at the NRC's Electronic Reading Room at <http://www.nrc.gov/NRC/ADAMS/index.html>. From this site, the public can gain entry into the NRC's Agencywide Document Access and Management System (ADAMS), which provides text and image files of NRC's public documents. If you do not have access to ADAMS or if there are problems in accessing the documents located in ADAMS, contact the NRC Public Document Room (PDR) Reference staff at 1-800-397-4209, 301-415-4737 or by email to [pdr@nrc.gov](mailto:pdr@nrc.gov).

FOR FURTHER INFORMATION CONTACT: Merri Horn, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, telephone (301) 415-8126, e-mail, [mlh1@nrc.gov](mailto:mlh1@nrc.gov).

**SUPPLEMENTARY INFORMATION:**

- I. Background.
- II. Discussion.
  - A. What Action Is the NRC Taking?
  - B. What is a Nationally Tracked Source?
  - C. Who Would This Action Affect?
  - D. How Would Information Be Reported to the National Source Tracking System?
  - E. Would a Licensee Need to Report Its Current Inventory to the System?
  - F. What Information Would Be Collected on Source Origin?
  - G. What Information Would Be Collected on Source Transfer?

- H. What Information Would Be Reported for Receipt of Sources?
- I. What Information Would Be Reported on Source Endpoints?
- J. How Would the National Source Tracking System Information Be Kept Current?
- K. How Would Incorrect Information be Changed in the National Source Tracking System?
- L. Some Licensee Now Must Report Similar Information to the Nuclear Materials Management Safeguards System. Would This Rule Result in a Duplication in Reporting?
- M. Are the Proposed Actions Consistent with International Obligations?
- N. When Do These Actions Become Effective?
- O. Who Would have Access to the Information and What Would It Be Used For?
- P. What Other Things Would Be Required by the Proposed Action?
- Q. What Should I Consider as I Prepare My Comments to NRC?
- III. Discussion of Proposed Amendments by Section.
- IV. Criminal Penalties.
- V. Agreement State Compatibility.
- VI. Plain Language
- VII. Voluntary Consensus Standards.
- VIII. Environmental Impact: Categorical Exclusion.
- IX. Paperwork Reduction Act Statement.
- X. Public Protection Notification.
- XI. Regulatory Analysis.
- XII. Regulatory Flexibility Certification.
- XIII. Backfit Analysis.

## I. Background

As a result of the terrorist attacks in the United States on September 11, 2001, the NRC has undertaken a comprehensive review of nuclear material security requirements, with particular focus on radioactive material of concern. This material, including Cobalt-60, Cesium-137, Iridium-192, and Americium-241 isotopes, has the potential to be used in a radiological dispersal device (RDD) or a radiological exposure device (RED) in the absence of proper security measures. The NRC's review takes into consideration the changing domestic and international threat environments and related U.S. Government-supported international initiatives in the nuclear security area, particularly activities conducted by the International Atomic Energy Agency (IAEA).

In June 2002, the Secretary of Energy and the NRC Chairman met to discuss the adequate protection of inventories of nuclear materials that could be used in a RDD. At the June meeting, the Secretary of Energy and the NRC Chairman agreed to convene an Interagency Working Group on Radiological Dispersal Devices to address security concerns. In May 2003, the joint U.S. Department of Energy (DOE)/NRC report was issued. The report, entitled, "Radiological Dispersal Devices: An Initial Study to Identify Radioactive Materials of Greatest Concern and Approaches to Their Tracking, Tagging, and Disposition" is available on the DOE website at :

[http://www.energy.gov/engine/doe/files/dynamic/9620039919\\_RDDRPTF14MAY.pdf](http://www.energy.gov/engine/doe/files/dynamic/9620039919_RDDRPTF14MAY.pdf). One of the recommendations contained in the report is that a national source tracking system be developed to better understand and monitor the location and movement of sources of interest. The full report contains a list of radionuclides and thresholds above which tracking of the sources is recommended. Note that in the public version the table of radionuclides has been redacted.

The NRC has also supported U.S. Government efforts to establish international guidance for the safety and security of radioactive materials of concern. This effort has

resulted in a major revision of the IAEA Code of Conduct on the Safety and Security of Radioactive Sources (Code of Conduct). The revised Code of Conduct was approved by the IAEA Board of Governors in September 2003, and is available on the IAEA website at <http://www-pub.iaea.org/MTCD/publications/PDF/Code-2004.pdf>. In particular, the Code of Conduct recommends that each IAEA member State develop a national source registry of radioactive sources that should include Category 1 and 2 radioactive sources as described in Annex 1 of the Code of Conduct. The recommendation covers 16 isotopes that should be included in the source registry.

The work on the DOE/NRC joint report was done in parallel with the work on the Code of Conduct and the development of IAEA TECDOC-1344, "Categorization of Radioactive Sources." TECDOC-1344 provides the underlying methodology for the development of the Code of Conduct thresholds. The quantities of concern identified in the DOE/NRC report are similar to the Code of Conduct Category 2 threshold values, so to allow alignment between the domestic and international efforts to increase the safety and security of radioactive sources, NRC has adopted the Category 2 values.

The U.S. Government has formally notified the Director General of the IAEA of its strong support for the current Code of Conduct. Although the Code of Conduct does not have the stature of an international treaty, and its provisions are non-binding on IAEA member States, the U.S. Government has endorsed the Code of Conduct and is working toward implementation of its various provisions. The Commission is conducting this rulemaking and an import/export rulemaking to reflect those Code of Conduct recommendations which are consistent with NRC responsibilities under the Atomic Energy Act, including promotion of the common defense and security. This is the second rulemaking that the Commission has undertaken to implement provisions of the Code of Conduct. A proposed rule addressing the import/export of Category 1

and 2 radioactive materials was published for public comment on September 16, 2004 (69 FR 55787) and the final rule should be published this summer.

Efforts to improve controls over sealed sources face significant challenges, especially balancing the need to secure the materials without discouraging their beneficial use in academic, medical, and industrial applications. Radioactive materials provide critical capabilities in the oil and gas, electrical power, construction, and food industries; are used to treat millions of patients each year in diagnostic and therapeutic procedures; are used in a variety of military applications; and are used in technology research and development involving academic, government, and private institutions. These materials are as diverse in geographical location as they are in functional use.

National source tracking is part of a comprehensive radioactive source control program for radioactive materials of greatest concern. Although neither a national source tracking system nor source registry can ensure the physical protection of sources, it will provide greater source accountability. A national source tracking system in conjunction with controls such as those imposed by Orders on irradiator licensees, manufacturer and distributor licensees, and other material licensees will result in improved security for radioactive sources.

There is clearly broad U.S. Government and international interest in tracking radioactive sources to improve accountability and control. Currently, there is no single U.S. source of information to verify the licensed users, locations, quantities and movement of these materials. Separate NRC and Agreement State systems contain information on licensees and the maximum amounts of materials they are authorized to possess but do not record actual sources or their movements.

To address this lack of information on such issues as actual material possessed, the NRC, with the cooperation of the Agreement States, began working on an interim database of sources of concern. In November 2003, both NRC and Agreement State licensees were

contacted and requested to voluntarily provide some basic information on the sealed sources located at their facilities. Of the approximately 2600 licensees contacted, over half of the licensees reported possessing Category 1 or Category 2 sealed sources. The interim database will be updated in 2005 and again in 2006 and will ultimately be replaced by the National Source Tracking System. While the interim database provides a snapshot in time, the National Source Tracking System will provide information on an ongoing basis.

Development of the National Source Tracking System is a two-part activity that includes both a rulemaking and information technology development. When completely operational, the National Source Tracking System will be a web-based system that would allow licensees to meet the proposed reporting requirements on-line with ease. The system will contain information on NRC licensees, Agreement State licensees, and DOE facilities. This proposed rulemaking would impose requirements on both NRC and Agreement State licensees and would establish the regulatory foundation for the National Source Tracking System recommended in the DOE/NRC report and implement the Code of Conduct recommendation to develop a source registry. National Source Tracking is being developed and would be implemented under the NRC's statutory authority to promote the common defense and security.

To inform the development of the National Source Tracking System, the NRC established an Interagency Coordinating Committee to provide guidance regarding interagency issues associated with the development, coordination, and implementation of the system and to prevent licensees from receiving similar requests from more than one agency. The Committee membership consists of representatives from various Federal Agencies with an interest in source security and a representative from the Agreement States. The views of the Committee were included in the development of the requirements for the National Source Tracking System and this rulemaking.

## II. Discussion

### A. *What Action is the NRC Taking?*

The NRC is proposing a rule that would implement a new program called the National Source Tracking System. The proposed rule would require licensees to report information on the manufacture, transfer, receipt, and disposal of nationally tracked sources. This information would capture the origin of each nationally tracked source (manufacture, recycling, or import), all transfers to other licensees, all receipts of nationally tracked sources, and endpoints of each nationally tracked source (disposal or export). Ultimately, the National Source Tracking System would be able to provide a life history account of all nationally tracked sources.

A system of this type would need prompt updating to be useful and accurate. In order to capture information as soon as possible, licensees would be required to report information on nationally tracked source transactions by the close of the next business day. To ease the burden on licensees, the NRC is planning to establish a secure Internet-based interface to the National Source Tracking System. This interface would permit licensees access to the system using an Internet browser. Licensees would log on to the system and enter the required information by filling out a form on-line. While on-line access should be fast, accurate, and convenient for licensees, the NRC would also allow licensees the option of completing and mailing or faxing paper forms. In addition, licensees would also be able to provide batch information using a computer readable format file. The format will be specified in a guidance document on implementation of the National Source Tracking System.

## *B. What is a Nationally Tracked Source?*

A sealed source consists of radioactive material that is permanently sealed in a capsule or closely bonded to a non-radioactive substrate designed to prevent leakage or escape of the radioactive material. In either case, it is effectively a solid form of radioactive material which is not exempt from regulatory control. A nationally tracked source is a sealed source containing a quantity of radioactive material equal to or greater than the Category 2 levels listed in the proposed new Appendix F to 10 CFR Part 20. A nationally tracked source may be either a Category 1 source or a Category 2 source. For the purpose of this rulemaking, the term *nationally tracked source* does not include material encapsulated solely for disposal, or nuclear material contained in any fuel assembly, subassembly, fuel rod, or fuel pellet. Material encapsulated solely for disposal refers to material that without the disposal packaging would not be considered encapsulated. For example, a licensee's bulk material that it plans to send for burial may be placed in a matrix (e.g. mixed in concrete), to meet burial requirements. The placement of the radioactive material in the matrix material may be considered encapsulating. This type of material would not be covered by the rule. However, if a nationally tracked source were to be placed in a matrix material, the sealed source would still be covered by the rule.

Category 1 nationally tracked sources are those containing a quantity equal to or greater than the Category 1 threshold. Category 2 nationally tracked sources are those containing a quantity equal to or greater than the Category 2 threshold but less than the Category 1 threshold. This definition is based on the IAEA Code of Conduct and is consistent with the definition of sealed sources in other parts of the NRC regulations and with definitions contained in Agreement State regulations.

The specific radioactive material and amounts covered by this rule are listed in the proposed Appendix F to Part 20. The isotopes and thresholds of 15 of the isotopes are identical to the Table I values from the Code of Conduct. The IAEA Code of Conduct includes

a recommendation that these isotopes and thresholds be included in a national source registry. The U.S. Government has formally endorsed these values. The NRC has adopted the Category 2 values to allow alignment between domestic and international efforts to increase the safety and security of radioactive sources.

The Terabecquerel (TBq) values listed in Appendix F are the regulatory standard. The curie (Ci) values specified are obtained by converting from the TBq value. The Ci values are provided for practical usefulness only and are rounded after conversion. The curie values are not intended to be the regulatory standard.

Table I of the IAEA Code of Conduct actually lists 16 isotopes that should be included in a national source registry. Included in this listing is radium (Ra)-226. Because NRC does not regulate Ra-226, it will not be subject to the proposed rule requirements. However, the National Source Tracking System will allow licensees to voluntarily enter transactions for Ra-226 sealed sources. Additionally, States may decide to develop regulations that require their licensees to report Ra-226 transactions to the State. The NRC could decide to allow such transaction reports to be recorded in the National Source Tracking System. The Category 2 threshold for Ra-226 is 0.4 TBq.

The Commission recognizes that by allowing voluntary reporting, the Ra-226 information in the National Source Tracking System will not be reliable. Some licensees might report their Ra-226 transactions and others might not. This could result in one-sided transactions in the system. For example, a licensee may report the transfer of a Ra-226 source but the recipient may not report its receipt of the Ra-226 source. However, there were no Ra-226 sealed sources reported to the interim database, and while this does not mean that there are no Ra-226 sealed sources (the interim database survey did not go to the entire population of facilities that could possess Ra-226), the Commission believes that the inclusion of voluntary

reporting of Ra-226 sealed sources will allow the U. S. Government to more fully address the Code of Conduct recommendation for a source registry.

The Commission has expanded the National Source Tracking System list of isotopes to include 6 isotopes that are not on the Code of Conduct list and one isotope that is listed in the Code of Conduct but is not included in the recommendation for the source registry. The 7 additional isotopes to be included are actinium (Ac)-227, plutonium (Pu)-236, Pu-239, Pu-240, polonium-210, thorium (Th)-228, and Th-229. The DOE/NRC RDD report recommendation for a National Source Tracking System included these 7 isotopes. The thresholds were developed using the same methodology as those listed in the Code of Conduct. These isotopes were included in the interim database. Based on information from the interim database, NRC and Agreement State licensees do not possess large numbers of nationally tracked sources containing these isotopes. However, this is a national system and will include information from DOE facilities. DOE facilities are more likely to possess these isotopes and DOE agreed that these isotopes should be included. Therefore, the Commission is including them in this rulemaking.

At this time, the NRC does not plan to include Category 3 sources (sources at 1/10th of the Category 2 threshold). However, we may consider the inclusion of Category 3 sources in the future because a licensee possessing a large number of Category 3 sources could present a security concern. An item level tracking system cannot include aggregation of sources because the sources may move in and out of the tracking system with changes in ownership. For example, a manufacturer could possess enough material that a Category 3 source would be reported, however, a licensee receiving the Category 3 source may not need to report the receipt because this is its only source. The tracking system would have information on the manufacture and transfer of the source, but not on its receipt. The data on Category 3 sources could quickly become unreliable. The best way to address the concern of aggregation within an

item-level tracking system would be to the lower the threshold for tracking so that all parties would be required to report transactions.

The NRC specifically invites comment on the inclusion of Category 3 sources in the National Source Tracking System. We are interested in information concerning:

- (1) The number of additional licensees that would be impacted;
- (2) The number of Category 3 sources possessed by licensees; and
- (3) How often those sources change hands.

This information will enable the NRC to make a more informed decision on the inclusion of Category 3 sources in the National Source Tracking System. Category 3 sources are typically used in fixed industrial gauges involving high activity sources (e.g., level gauges, dredger gauges, conveyor gauges, and spinning pipe gauges) and in high dose rate remote afterloaders for medical therapy.

#### *C. Who Would This Action Affect?*

The proposed rule would apply to any person (entity or individual) in possession of a Category 1 or Category 2 source. It would apply to --

All licensees, both those with NRC licenses and those with Agreement State licenses;  
Manufacturers and distributors of Category 1 and Category 2 sources;

Medical facilities, radiographers, irradiators, reactors, and any other licensees that are the end users of nationally tracked sources; and

Disposal facilities and waste brokers.

The proposed rule would apply whether the source is actively used or in long-term storage.

Nationally tracked sources are possessed by all types of licensees, but primarily by byproduct material licensees. Nationally tracked sources are used in the oil and gas, electrical power, construction, medical, and food industries. They are used in a variety of military

applications and in technology research and development. Nationally tracked sources are classified either Category 1 or 2 based on the activity level of the radioactive material of concern. Category 1 sources are typically used in devices such as radiothermal generators and irradiators, and in practices such as radiation teletherapy. Category 2 sources are typically used in industrial gamma radiography, blood irradiators, and some well logging.

*D. How Would Information Be Reported to the National Source Tracking System?*

Licensees would have several options for reporting transaction information to the National Source Tracking System. These methods would include on-line, computer-readable format files, paper, fax, and telephone. For most licensees, the most convenient, least burdensome method will be to report the information on-line. To report information on-line, a licensee would need to establish an account with the National Source Tracking System. Once an account is established, the licensee would be provided with password information that would allow access to the on-line system. A licensee would have access only to information regarding its own material or facility; a licensee would not have access to information concerning other licensees or facilities. When logged on, the licensee could type the necessary information onto the on-line forms. Once a source is in the system, the licensee would be able to click on the source and report a transfer or other transaction. The identifying information would not need to be typed in a second time because information such as license number, facility name, and address would pop up automatically.

Many licensees conduct a large number of transactions, especially manufacturing and distribution licensees. We recognize that most licensees have a system in which information on sources is maintained. The National Source Tracking System would be able to accept batch load information using a computer-readable format. This should ease the reporting burden for a licensee with a large number of transactions. The licensee would be able to electronically send a batch load using a computer readable format file that contained all of the transactions

that occurred that day. The format could also be used for reporting the initial inventory. The computer-readable format that would be used has not been developed yet. NRC and the company responsible for developing the National Source Tracking System will work with licensees to develop the mechanism to accept batch load information so that it is compatible with many of the existing systems in use by licensees.

Licensees would also be able to complete a paper version of the National Source Tracking Transaction form and submit the form by either mail or fax. Additionally, licensees would be able to provide transaction information by telephone and then follow-up with a paper copy. Additional guidance on submitting information will be provided when the final rule is published. The guidance would contain mailing addresses and telephone and fax numbers for providing information to the National Source Tracking System, as well as information on the computer-readable format to be used.

*E. Would a Licensee Need to Report Its Current Inventory to The System?*

Yes, licensees would be required to report their current inventory of nationally tracked sources by a specified date. There would be separate report dates for Category 1 and Category 2 level nationally tracked sources. Licensees would be required to report all Category 1 sources to the National Source Tracking System by December 31, 2006, and all Category 2 sources by March 31, 2007.

To ease the reporting process, information already in the interim database would be downloaded to the National Source Tracking System. Each licensee that reported information to the interim database would be provided a copy of its information and asked to either verify the information or provide updated information. NRC staff and the company that will operate the National Source Tracking System will work with licensees to make sure the inventory information is correct. Licensees that did not provide information to the interim database would need to report the information on its nationally tracked source inventory by the specified dates.

Disposal facilities would not need to report sources that have already been buried or otherwise disposed.

*F. What Information Would Be Collected on Source Origin?*

Each time a nationally tracked source is manufactured in the United States, the licensee would be required to report the source information to the National Source Tracking System. The information must be reported by the close of the next business day. The licensee would report the manufacturer (make), model number, serial number, radioactive material, activity at manufacture, and manufacture date for each source. The licensee must also provide its license number, facility name, as well as the name of the individual that prepared the report.

Some sources are recycled or reconfigured. For example, a source that has decayed below its usefulness is sometimes returned to the manufacturer for reconfiguration. The decayed source may be placed in a reactor and reactivated. The source retains its serial number, but now has a new activity. The new activity and date must be reported to the National Source Tracking System.

For every nationally tracked source that is imported, the facility obtaining the source would be required to report the source information to the National Source Tracking System by the close of the next business day after receipt of the imported source at the site. For the purposes of the National Source Tracking System, this would be considered the source origin unless the source had been previously possessed in the United States. The licensee would need to report the manufacturer (make), model number, serial number, radioactive material, activity at manufacture or import, and manufacture or import date for each source. The licensee must also provide its license number, facility name, as well as the name of the individual that prepared the report and the date of receipt. The licensee would also need to provide information on the facility (name and address) that sent the source and the import license number.

Under separate regulations on import/export of radioactive material, the NRC will be notified on imports of radioactive material at Category 2 levels or above (69 FR 55785; September 16, 2004). (NOTE THIS INFORMATION WILL BE UPDATED WHEN THE FINAL RULE ON IMPORT/EXPORT IS ISSUED). This notification should include source identification information. NRC staff would enter the notification information into the National Source Tracking System. Therefore, a licensee that is receiving imported nationally tracked sources may be able to report the transaction as a simple receipt, if using the on-line method. Much of the source information would already be in the National Source Tracking System; the licensee would be able to click on the pending import and then click on the source to indicate that the source had been received at the site.

*G. What Information Would Be Collected on Source Transfer?*

Each time a nationally tracked source is transferred to another authorized facility, the licensee would be required to report the transfer to the National Source Tracking System by the close of the next business day. The licensee must report the recipient name (facility the source is being transferred to) and license number, the shipping date, the estimated arrival date, and the identifying source information (manufacturer, model number, serial number, and radioactive material). If the source is being exported, the export license number would be reported for the recipient's license number. The licensee also would need to provide its name and license number as well as the name of the individual making the report. For nationally tracked sources that are transferred as waste under a Uniform Low-level Radioactive Waste Manifest, the licensee would also have to report the waste manifest number and the container identification number for the container with the nationally tracked source.

Source transfer transactions only cover transfers between different licensees and/or authorized facilities (DOE site or an export). They do not include transfer to a temporary job site. Transactions in which the nationally tracked source remains in the possession of the

licensee would not require a report to the National Source Tracking System. For example, a radiographer conducting business would not need to report transfers between temporary job sites, even if the temporary job site is located in another state or if the work is conducted under a reciprocity agreement.

#### *H. What Information Would Be Reported for Receipt of Sources?*

A licensee would be required to report each receipt of a nationally tracked source by the close of the next business day. The licensee must report the identifying source information (manufacturer, model number, serial number, and radioactive material) and the date of receipt. The licensee must include its facility name and license number and the name of the individual that prepared the report. The licensee must also provide the name and license number of the facility that sent the source because this information is necessary to match the transactions. If the source is an import, the licensee would also need to report the source activity and associated activity date. The import license number would be reported as the license number of the sending facility. If a licensee receives a nationally tracked source as part of a waste shipment, the licensee must provide the Uniform Low-level Radioactive Waste Manifest number and the container identification for the container that contains the nationally tracked source. A waste broker or disposal facility are examples of licensees that might receive a nationally tracked source as part of a waste shipment. These licensees would not be expected to open the waste container and verify the presence of the nationally tracked source; they may rely on the licensee who shipped the source.

#### *I. What Information Would Be Reported on Source Endpoints?*

Endpoints for a source include export, disposal, decay, and destruction of the source. Exports would be treated as a transfer. (See Section G for more information on source transfer.) An export is considered a reversible endpoint because the source can be imported

back into the country. The export license number would be reported as the license number of the receiving facility.

Disposal of a source would be reported by the licensee conducting the actual burial in a low-level disposal facility or other authorized disposal mechanism. Licensees sending a source to a low-level burial ground for disposal would treat the transaction as a transfer, and would report the types of information to be reported for a transfer, including the waste manifest number and the container identification number. The disposal facility may rely on the information from the licensee that sent the waste for disposal and is not expected to open the waste container to verify contents. The disposal facility must report to the National Source Tracking System the date and method of disposal, the waste manifest number, and the container identification number for the container with the nationally tracked source. The disposal facility must also provide its facility name and license number, as well as the name of the individual that prepared the report. The report must be made by the close of the next business day.

One feature of the National Source Tracking System would be that the decay of a source would be automatically calculated so a licensee would not need to report an endpoint of decay. Once a source has decayed below Category 2 levels, the source would be automatically removed from a licensee's active inventory in the National Source Tracking System. The licensee would receive a notification that the source has decayed below the tracking level and that transactions for this source no longer need to be reported.

Licensees currently report accidental destruction of sources to the NRC Operations Center or to the Agreement States. NRC staff would enter the information from the event report into the National Source Tracking System. Because sealed sources are designed to be robust, accidental destruction is rare. Examples of accidental destruction include sources

destroyed during attempts to remove them from devices, and well logging sources that become disconnected downhole and destroyed during retrieval attempts.

Other endpoints that would be captured by the National Source Tracking System include a lost or stolen source or a source abandoned in a well. These events are already reported to either NRC or to the Agreement State. Licensees would not be required to report this information a second time to the National Source Tracking System. Agreement State licensees would continue to report to the Agreement State. NRC staff would obtain the information on these events from the event reports or the Nuclear Medical Event Database and enter the information into the National Source Tracking System.

*J. How Would the National Source Tracking System Information Be Kept Current?*

Data integrity for the National Source Tracking System is extremely important and necessary to keep the information correct and up-to-date. Licensees are expected to provide correct information to the National Source Tracking System and should double-check the accuracy of information before submission. To address quality assurance concerns on the data, the NRC is considering adding a requirement that would require licensees to double-check the accuracy of the data by using two independent checkers before submission of the transaction report. The NRC specifically invites comment on the inclusion of a requirement for a quality assurance check of the data before submission. We are interested in information concerning:

- (1) Whether these are the appropriate requirements for quality assurance;
- (2) What are the appropriate requirements for quality assurance; and
- (3) The additional burden such a requirement would impose on licensees.

If licensees accurately report their transactions in a timely manner, the National Source Tracking System would contain correct, up-to-date information. However, we recognize that some transactions may be missed and that errors may be introduced into the system over time.

Typical reasons for discrepancies, which might nevertheless occur, could be failure to report the receipt of a source, failure to report the transfer of a source to another licensee, missing a source during the reporting of the initial inventory, selection of the wrong model number, or incorrectly typing the serial number. Each licensee would be required to correct any errors or missed transactions that it discovers within 5 business days of the discovery. In addition, licensees would be required to reconcile their on-site inventory of nationally tracked sources with the information previously reported to the National Source Tracking System. This reconciliation would occur during the month of June of each year. This reconciliation would be necessary to maintain the accuracy and reliability of the National Source Tracking database. The licensee would be able to print a copy of the inventory information from the National Source Tracking System. Licensees without on-line access would receive a paper copy of the information in the National Source Tracking System. The licensee would compare the information in the system to the actual inventory at the licensee's facility, including a check of the model and serial number of each source. This reconciliation would not require the licensee to conduct an additional physical inventory of its sources. Licensees are currently required to conduct physical inventories either annually, semi-annually, or quarterly depending on the type of license. The licensee would be required to reconcile any differences by reporting the appropriate transaction(s) or corrections to the National Source Tracking System. The licensee would be required to verify by the end of June of each year that the inventory in the National Source Tracking System is correct. The first reconciliation would occur in June 2007.

*K. How Would Incorrect Information Be Changed in the National Source Tracking System?*

Each licensee would be responsible for correcting any incorrect information in the National Source Tracking System, regardless of the source of the error, within 5 business days of the discovery. Typing errors and errors such as inadvertent selection of the wrong model number need to be corrected in the system so that the information in the National Source

Tracking System is correct. A licensee would be able to submit a corrected form that contains the correct information online or through any other permitted reporting mechanism at any time.

*L. Some Licensees Now Must Report Similar Information to the Nuclear Materials Management Safeguards System. Would This Rule Result in a Duplication in Reporting?*

Yes, some information on plutonium (Pu) and thorium (Th) would be collected by both the Nuclear Materials Management Safeguards System (NMMSS) and the National Source Tracking System. The current regulations require reporting transfers, receipts, and inventory to NMMSS for one gram or more of plutonium and any thorium that has foreign obligations. However, NMMSS does not collect information at the source level; therefore, the detailed information (make, model, serial number) on sealed sources could not be extracted from NMMSS to provide input into the National Source Tracking System. The National Source Tracking System would only have information on sealed sources and would not contain information on sources that are not considered sealed or on any bulk material that a licensee may possess. The thresholds are also different for the two systems. Therefore, we would not be able to extract information from the National Source Tracking System to support NMMSS. Neither system would be able to collect the needed information for the other system without modifications to the database and additional changes to the regulations.

In practice, NRC finds that these Pu and Th sources are typically held by licensees for long time periods and not routinely transferred to other licensees, so incidences of double-reporting are expected to be rare. No licensee reported Th sources to the interim database, and there were only 21 Pu sealed sources reported that were above the Category 2 threshold. The NRC does not believe that the limited number of licensees and transactions likely to be affected by this dual reporting requirement would impose an unnecessary burden. The NMMSS and the National Source Tracking System would collect information on these isotopes but in different formats and with different levels of detail and thresholds as needed by

each system.

*M. Are the Proposed Actions Consistent with International Obligations?*

Yes, the National Source Tracking System will be consistent with international obligations. The system is intended to respond to the recommendation in the IAEA Code of Conduct for development of a national source registry.

*N. When Do These Actions Become Effective?*

The rule would become effective 60 days after the final rule is published in the *Federal Register*. The requirements for Category 1 nationally tracked sources would be implemented by December 31, 2006. This means that by this date any licensee that possesses a Category 1 level source must have reported its initial inventory and report thereafter all transactions involving Category 1 sources to the National Source Tracking System. The requirements for Category 2 nationally tracked sources would be implemented by March 31, 2007. By this date, all licensees must have reported their initial inventory of nationally tracked sources and report thereafter all transactions to the National Source Tracking System.

*O. Who Would Have Access to the Information and What Would It be Used For?*

Information in the National Source Tracking System will be considered Official Use Only; the information will not be considered to be Safeguards Information or Safeguards Information - Modified Handling. A licensee would be able to view the data on its facility, but not data on other licensees. Agreement State staff would be able to view information on the licensees in their state, but would not be able to view information on licensees in other states. The one exception is information related to lost or stolen sources. Agreement State staff would be able to view the information on lost or stolen sources from all licensees. This will enable better coordination of recovery efforts. Other Federal and State agencies will also be able to view the information on lost or stolen sources and other information on a need-to-know basis.

Once fully operational, the National Source Tracking System would be used for a variety of purposes. This standardized, centralized information will help NRC and Agreement States to monitor the location and use of nationally tracked sources; conduct inspections and investigations; communicate nationally tracked source information to other government agencies; verify legitimate ownership and use of nationally tracked sources; and further analyze hazards attributable to the possession and use of these sources.

*P. What Other Things would be Required by the Proposed Action?*

The proposed rule would also require manufacturers of nationally tracked sources to use a unique serial number for each source. The combination of manufacturer, model, and serial number will be used in the National Source Tracking System to track the history of each source.

*Q. What Should I Consider as I Prepare My Comments to NRC?*

Tips for preparing your comments. When submitting your comments, remember to:

- i. Identify the rulemaking (RIN 3150-AH48).
- ii. Explain why you agree or disagree; suggest alternatives and substitute language for your requested changes.
- iii. Describe any assumptions and provide any technical information and/or data that you used.
- iv. If you estimate potential costs or burdens, explain how you arrived at your estimate in sufficient detail to allow for it to be reproduced.
- v. Provide specific examples to illustrate your concerns, and suggest alternatives.
- vi. Explain your views as clearly as possible.
- vii. Make sure to submit your comments by the comment period deadline identified.
- viii. See item B of the Discussion portion of this notice for NRC's specific request for comments regarding the future inclusion of Category 3 sources in the National Source Tracking System. See item J of the Discussion portion of this notice for the request for comments regarding the

inclusion of a quality assurance provision on data submission. See section IX for the request for comments on the information collection aspects and section XII for the request for comments on the impacts to small businesses.

### III. Discussion of Proposed Amendments by Section

#### § 20.1003 Definitions.

A definition of nationally tracked sources would be added to the regulations.

#### § 20.2207 Reports of transactions involving nationally tracked sources.

A new section would be added to the regulations to require licensees to report to the National Source Tracking System transactions involving nationally tracked sources. New paragraph (a) would require the reporting of the manufacture of a nationally tracked source. New paragraph (b) would require the reporting of all transfers of nationally tracked sources to another authorized facility. New paragraph (c) would require the reporting of all receipts of a nationally tracked source. New paragraph (d) would require the reporting of the disposal of any nationally tracked source. Each of these paragraphs would require the licensee to report specific information for the transaction, which would include for each source information such as the manufacturer, model, serial number, radioactive material, activity and activity date, and the transaction date. The licensee would also need to provide the facility name, license number, address, and name of the individual that prepared the report. If the transaction involves the use of the Uniform Low-Level Radioactive Waste Manifest, the licensee would need to report the waste manifest number and the container identification for the container with the source.

New paragraph (e) would require licensees to report these transactions to the National Source Tracking System by the close of the next business day. The regulations would allow the licensee to report the transactions either on-line, electronically using a computer-readable format, by facsimile, by mail, or by telephone.

New paragraph (f) would require each licensee to correct any error in a previously filed report or file a new report for a missed transaction within 5 business days of the discovery of the error or missed transaction. Each licensee would also be required to reconcile and verify the information in the National Source Tracking System during the month of June each year. This process would involve comparing the inventory information in the National Source Tracking System and the actual inventory possessed by the licensee. The proposed amendment would require any discrepancies to be resolved by filing the reports identified by paragraphs (a) through (d) described above.

New paragraph (g) would require a licensee to report its initial inventory of Category 1 nationally tracked sources by December 31, 2006, and the inventory of Category 2 nationally tracked sources by March 31, 2007.

#### Appendix F Nationally Tracked Source Thresholds.

A new appendix would be added to Part 20 that provides the thresholds for nationally tracked sources at the Category 1 and Category 2 levels. The Terabecquerel (TBq) values listed in Appendix F are the regulatory standard. The curie (Ci) values specified are obtained by converting from the TBq value. The Ci values are provided for practical usefulness only and are rounded after conversion. The curie values are not intended to be the regulatory standard.

#### § 32.2 Definitions.

A definition of nationally tracked sources would be added to the regulations.

### § 32.201 Serialization of nationally tracked sources.

A new section would be added that requires manufacturers of nationally tracked sources to assign a unique serial number to each nationally tracked source that is manufactured after the effective date of the rule.

### § 150.3 Definitions

A definition of nationally tracked sources would be added to the regulations.

### §150.15 Persons not exempt

A new section is added that would require source manufacturers licensed by Agreement States to assign a unique serial number for each nationally tracked source that is manufactured after the effective date of the rule.

### § 150.18 Submission to Commission of nationally tracked source transaction reports.

A new section would be added to the regulations to require Agreement State licensees to report to the National Source Tracking System all transactions involving nationally tracked sources. New paragraph (a) would require the reporting of the manufacture of a nationally tracked source. New paragraph (b) would require the reporting of all transfers of nationally tracked sources to another authorized facility. New paragraph (c) would require the reporting of all receipts of a nationally tracked source. New paragraph (d) would require the reporting of the disposal of any nationally tracked source. Each of these paragraphs would require the licensee to report specific information for the transaction, which would include for each source information such as the manufacturer, model, serial number, radioactive material, activity and activity date, and the transaction date. The licensee would also need to provide the facility name, license number, address, and name of the individual that prepared the report. If the

transaction involves the use of the Uniform Low-Level Radioactive Waste Manifest, the licensee would need to report the waste manifest number and the container identification for the container with the source.

New paragraph (e) would require licensees to report these transactions to the National Source Tracking System by the close of the next business day. The regulations would allow the licensee to report the transactions either on-line, electronically using a computer-readable format, by facsimile, by mail, or by telephone.

New paragraph (f) would require each licensee to correct any error in a previously filed report or file a new report for a missed transaction within 5 business days of the discovery of the error or missed transaction. Each licensee would also be required to reconcile and verify the information in the National Source Tracking System during the month of June each year. This process would involve comparing the inventory information in the National Source Tracking System and the actual inventory possessed by the licensee. The proposed amendment would require any discrepancies to be resolved by filing the reports identified by paragraphs (a) through (d) described above.

New paragraph (g) would require a licensee to report its initial inventory of Category 1 nationally tracked sources by December 31, 2006, and the inventory of Category 2 nationally tracked sources by March 31, 2007.

#### IV. Criminal Penalties

For the purpose of Section 223 of the Atomic Energy Act (AEA), the Commission is proposing to amend 10 CFR Parts 20, 32, and 150 under one or more of Sections 161b, 161i, or 161o of the AEA. Willful violations of the rule would be subject to criminal enforcement.

## V. Agreement State Compatibility

Under the “Policy Statement on Adequacy and Compatibility of Agreement State Programs” approved by the Commission on June 30, 1997, and published in the *Federal Register* on September 3, 1997 (62 FR 46517), § 20.2207, the proposed rule is classified as Compatibility Category “NRC.” The NRC program elements in this category are those that relate directly to areas of regulation reserved to the NRC by the Atomic Energy Act of 1954, as amended (AEA), or the provisions of Title 10 of the Code of Federal Regulations. Although an Agreement State may not adopt program elements reserved to NRC, it may wish to inform its licensees of certain requirements via a mechanism that is consistent with the particular State’s administrative procedure laws but does not confer regulatory authority on the State.

## VI. Plain Language

The Presidential Memorandum dated June 1, 1998, entitled, “Plain Language in Government Writing” directed that the Government’s writing be in plain language. The NRC requests comments on this proposed rule specifically with respect to the clarity and effectiveness of the language used. Comments should be sent to the address listed under the heading “ADDRESSES” above.

## VII. Voluntary Consensus Standards

The National Technology Transfer Act of 1995 (Pub. L. 104-113) requires that Federal agencies use technical standards that are developed or adopted by voluntary consensus standards bodies unless the use of such a standard is inconsistent with applicable law or otherwise impractical. In this proposed rule, the NRC would require licensees that possess, manufacture, transfer, receive, or dispose of nationally tracked sources to report the information relating to such transactions to the National Source Tracking System. This action does not constitute the establishment of a standard that establishes generally applicable requirements.

## VIII. Environmental Impact: Categorical Exclusion

The NRC has determined that this proposed rule is the type of action described as a categorical exclusion in 10 CFR 51.22(c)(1) for the proposed changes to Part 150 and as described in 10 CFR 51.22(c)(3)(iii) for the changes to Parts 20 and 32. Therefore, neither an environmental impact statement nor an environmental assessment has been prepared for this proposed rule.

## IX. Paperwork Reduction Act Statement

This proposed rule contains new or amended information collection requirements that are subject to the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq). This rule has been submitted to the Office of Management and Budget (OMB) for review and approval of the information collection requirements.

*Type of submission, new or revision:* Revision; NRC Form 748 - New.

*The title of the information collection:* 10 CFR 20, 32, and 150, "National Source Tracking of Sealed Sources."

*The form number if applicable:* NRC Form 748, "National Source Tracking Transaction Report."

*How often the collection is required:* Initially, at completion of a transaction, and at inventory reconciliation.

*Who will be required or asked to report:* Licensees that manufacture, receive, transfer, or dispose of nationally tracked sources.

*An estimate of the number of annual responses:* 4,423 (NRC Form 748 - 2613 responses; 10 CFR 20 - 467 responses; 10 CFR 32 - 10 recordkeepers; 10 CFR 150 - 1333 responses).

*The estimated number of annual respondents:* 1,350

*An estimate of the total number of hours needed annually to complete the requirement or request:* 2,662 (NRC Form 748 - 412 hours [an average of 10 minutes per response]; 10 CFR 20 - 467 [1 hour per response]; 10 CFR 32 - 450 hours [45 hours per recordkeeper]; 10 CFR 150 - 1333 hours [1 hour per response]).

*Abstract:* The NRC is proposing to amend its regulations to implement a National Source Tracking System for certain sealed sources. The proposed amendments would require licensees to report certain transactions involving nationally tracked sources to the National

Source Tracking System. These transactions would include manufacture, transfer, receipt, or disposal of the nationally tracked source. The proposed amendment would require each licensee to provide its initial inventory of nationally tracked sources to the National Source Tracking System and annually verify and reconcile the information in the system with the licensee's actual inventory. The proposed rule would also require manufacturers of nationally tracked sources to assign a unique serial number of each source. This information collection is mandatory and will be used to populate the National Source Tracking System.

The U.S. Nuclear Regulatory Commission is seeking public comment on the potential impact of the information collections contained in this proposed rule on the following issues:

1. Is the proposed information collection necessary for the proper performance of the functions of the NRC, including whether the information will have practical utility?
2. Is the estimate of burden accurate?
3. Is there a way to enhance the quality, utility, and clarity of the information to be collected?
4. How can the burden of the information collection be minimized, including the use of automated collection techniques?

A copy of the OMB clearance package may be viewed free of charge at the NRC Public Document Room, One White Flint North, 11555 Rockville Pike, Room O-1 F21, Rockville, MD 20852. The OMB clearance package and rule are available at the NRC Worldwide Web site:

<http://www.nrc.gov/public-involve/doc-comment/omb/index.html> for 60 days after the signature date of this notice and are also available at the NRC rulemaking web site, <http://ruleforum.llnl.gov>.

Send comments on any aspect of these proposed information collections, including suggestions for reducing the burden and on the above issues, by **(INSERT DATE 30 DAYS AFTER PUBLICATION IN THE FEDERAL REGISTER)** to the Records and FOIA/Privacy Services Branch (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by Internet electronic mail to [INFOCOLLECTS@NRC.GOV](mailto:INFOCOLLECTS@NRC.GOV) and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0001, 3150-0014, 3150-0032, and 3150-xxxx), Office of Management and Budget, Washington, DC 20503. Comments received after this date will be considered if it is practical to do so, but assurance of consideration cannot be given to comments received after this date. You may also comment by telephone at (202) 395-3087.

#### X. Public Protection Notification

The NRC may not conduct or sponsor, and a person is not required to respond to, a request for information or an information collection requirement unless the requesting document displays a currently valid OMB control number.

#### XI. Regulatory Analysis

The Commission has prepared a draft regulatory analysis on this proposed regulation. The analysis examines the costs and benefits of the alternatives considered by the Commission.

The largest burden would likely fall on the manufacturers and distributors of nationally tracked sources because they will have the most transactions to report. The NRC believes that by allowing batch loading of information using a computer readable format, the burden on the high transaction licensees will be lessened. The present value of the costs of the National Source Tracking System to NRC is estimated to be \$21.8 million and to industry is estimated to be \$1.7 million in 2005 dollars using a 3 percent discount rate. These estimated costs include the cost of development of the system and operation and maintenance thru the year 2016.

The Commission requests public comment on the draft regulatory analysis. Comments on the draft analysis may be submitted to the NRC as indicated under the ADDRESSES heading. The analysis is available for inspection in the NRC Public Document Room, 11555 Rockville Pike, Rockville, MD. Single copies of the regulatory analysis are available from Merri Horn, telephone (301) 415-8126, e-mail, mlh1@nrc.gov of the Office of Nuclear Material Safety and Safeguards.

## XII. Regulatory Flexibility Certification

In accordance with the Regulatory Flexibility Act of 1980 (5 U.S.C. 605(b)), the Commission certifies that this rule would not, if promulgated, have a significant economic impact on a substantial number of small entities. The proposed rule would affect about 350 NRC licensees and an additional 1,000 Agreement State licensees. Affected licensees include laboratories, reactors, universities, colleges, medical clinics, hospitals, irradiators, and radiographers, some of which may qualify as small business entities as defined by 10 CFR

2.810. However, the proposed rule is not expected to have a significant economic impact on these licensees.

The total time required by a licensee to complete each National Source Tracking Transaction report is estimated to be approximately 15 minutes, depending on the number of sources involved in the transaction and the method of reporting. This is time needed to complete the report. No research or compilation is necessary as all information is transcribed from bills of lading, in-house records kept for other purposes, sales agreements, etc. Each licensee would also spend on average 1 hour on the annual reconciliation. The total annual burden to perform the proposed reporting is approximately 2,662 hours. Based on the draft regulatory analysis conducted for this action, the costs of the proposed amendments for affected licensees are estimated to be \$232,000 total or on average about \$172 per affected licensee. The NRC believes that the selected alternative reflected in the proposed amendment is the least burdensome, most flexible alternative that would accomplish the NRC's regulatory objective.

Because of the widely differing conditions under which impacted licensees operate, the NRC is specifically requesting public comment from licensees concerning the impact of the proposed regulation. The NRC particularly desires comment from licensees who qualify as small businesses, specifically as to how the proposed regulation will affect them and how the regulation may be tiered or otherwise modified to impose less stringent requirements on small entities while still adequately protecting the public health and safety and common defense and security. Comments on how the regulation could be modified to take into account the differing needs of small entities should specifically discuss—

(a) The size of the business and how the proposed regulation would result in a significant economic burden upon it as compared to a larger organization in the same business community;

(b) How the proposed regulation could be further modified to take into account the business's differing needs or capabilities;

(c) The benefits that would accrue, or the detriments that would be avoided, if the proposed regulation was modified as suggested by the commenter;

(d) How the proposed regulation, as modified, would more closely equalize the impact of NRC regulations as opposed to providing special advantages to any individuals or groups; and

(e) How the proposed regulation, as modified, would still adequately protect the public health and safety and common defense and security.

Comments should be submitted as indicated under the **ADDRESSEES** heading.

### XIII. Backfit Analysis

The NRC has determined that the backfit rule (§§ 50.109, 70.76, 72.62, or 76.76) does not apply to this proposed rule because this amendment would not involve any provisions that would impose backfits as defined in the backfit rule. Therefore, a backfit analysis is not required.

### List of Subjects

10 CFR Part 20

Byproduct material, Criminal penalties, Licensed material, Nuclear materials, Nuclear power plants and reactors, Occupational safety and health, Packaging and containers,

Radiation protection, Reporting and recordkeeping requirements, Source material, Special nuclear material, Waste treatment and disposal.

#### 10 CFR Part 32

Byproduct material, Criminal penalties, Labeling, Nuclear materials, Radiation protection, Reporting and recordkeeping requirements.

#### 10 CFR Part 150

Criminal penalties, Hazardous materials transportation, Intergovernmental relations, Nuclear materials, Reporting and recordkeeping requirements, Security measures, Source material, Special nuclear material.

For the reasons set out in the preamble and under the authority of the Atomic Energy Act of 1954, as amended; the Energy Reorganization Act of 1974, as amended; and 5 U.S.C. 553; the NRC is proposing to adopt the following amendments to 10 CFR Parts 20, 32, and 150.

### PART 20 --STANDARDS FOR PROTECTION AGAINST RADIATION

1. The authority citation for Part 20 continues to read as follows:

AUTHORITY: Secs. 53, 63, 65, 81, 103, 104, 161, 182, 186, 68 Stat. 930, 933, 935, 936, 937, 948, 953, 955, as amended, sec. 1701, 106 Stat. 2951, 2952, 2953 (42 U.S.C. 2073, 2093, 2095, 2111, 2133, 2134, 2201, 2232, 2236, 2297f), secs. 201, as amended, 202, 206, 88 Stat. 1242, as amended, 1244, 1246 (42 U.S.C. 5841, 5842, 5846); sec. 1704, 112 Stat. 2750 (44 U.S.C. 3504 note).

2. In § 20.1003, a new definition *Nationally tracked source* is added in alphabetical order to read as follows:

**§ 20.1003 Definitions.**

\* \* \* \* \*

*Nationally tracked source* is a sealed source containing a quantity equal to or greater than Category 1 or 2 levels of any radioactive material listed in Appendix F of this Part. In this context a sealed source is defined as radioactive material that is permanently sealed in a capsule or closely bonded, in a solid form and which is not exempt from regulatory control. It does not mean material encapsulated solely for disposal, or nuclear material contained in any fuel assembly, subassembly, fuel rod, or fuel pellet. Category 1 nationally tracked sources are those containing radioactive material at a quantity equal to or greater than the Category 1 threshold. Category 2 nationally tracked sources are those containing radioactive material at a quantity equal to or greater than the Category 2 threshold but less than the Category 1 threshold.

\* \* \* \* \*

3. In § 20.1009 paragraph (b) is revised and paragraph (c)(6) is added to read as follows:

**§20.1009 Information collection requirements: OMB approval.**

\* \* \* \* \*

(b) The approved information collection requirements contained in this part appear in §§ 20.1003, 20.1101, 20.1202, 20.1203, 20.1204, 20.1206, 20.1208, 20.1301, 20.1302, 20.1403, 20.1404, 20.1406, 20.1501, 20.1601, 20.1703, 20.1901, 20.1904, 20.1905, 20.1906, 20.2002,

20.2004, 20.2005, 20.2006, 20.2102, 20.2103, 20.2104, 20.2105, 20.2106, 20.2107, 20.2108, 20.2110, 20.2201, 20.2202, 20.2203, 20.2204, 20.2205, 20.2206, 20.2207, 20.2301, and appendix G to this part.

(c) \* \* \*

(6) In § 20.2207, NRC Form 748 is approved under control number 3150-xxxx.

4. Section 20.2207 is added to read as follows:

### **Subpart M--Reports**

#### **§ 20.2207 Reports of transactions involving nationally tracked sources.**

Each licensee who manufactures, transfers, receives, or disposes of a nationally tracked source shall complete and submit a National Source Tracking Transaction Report (NRC Form 748) as specified in paragraphs (a) through (d) of this section for each type of transaction.

(a) Each licensee who manufactures a nationally tracked source shall complete and submit a National Source Tracking Transaction Report (NRC Form 748). The report must include the following information:

- (1) The name and license number of the reporting licensee;
- (2) The name of the individual preparing the report;
- (3) The manufacturer, model, and serial number of the source;
- (4) The radioactive material in the source;
- (5) The initial source strength in becquerels (curies) at the time of manufacture; and
- (6) The manufacture date of the source.

(b) Each licensee that transfers a nationally tracked source to another person shall complete and submit a National Source Tracking Transaction Report (NRC Form 748). The report must include the following information:

- (1) The name and license number of the reporting licensee;
- (2) The name of the individual preparing the report;
- (3) The name and license number of the recipient facility and the shipping address;
- (4) The manufacturer, model, and serial number of the source or, if not available, other information to uniquely identify the source;
- (5) The radioactive material in the source;
- (6) The initial or current source strength in becquerels (curies);
- (7) The date for which the source strength is reported;
- (8) The shipping date;
- (9) The estimated arrival date; and
- (10) For nationally tracked sources transferred as waste under a Uniform Low-Level Radioactive Waste Manifest, the waste manifest number and the container identification of the container with the nationally tracked source.

(c) Each licensee that receives a nationally tracked source shall complete and submit a National Source Tracking Transaction Report (NRC Form 748). The report must include the following information:

- (1) The name and license number of the reporting licensee;
- (2) The name of the individual preparing the report;
- (3) The name and license number of the person that provided the source;

(4) The manufacturer, model, and serial number of the source or, if not available, other information to uniquely identify the source;

(5) The radioactive material in the source;

(6) The initial or current source strength in becquerels (curies);

(7) The date for which the source strength is reported;

(8) The date of receipt; and

(9) For material received under a Uniform Low-Level Radioactive Waste Manifest, the waste manifest number and the container identification with the nationally tracked source.

(d) Each licensee who disposes of a nationally tracked source shall complete and submit a National Source Tracking Transaction Report (NRC Form 748). The report must include the following information:

(1) The name and license number of the reporting licensee;

(2) The name of the individual preparing the report;

(3) The waste manifest number;

(4) The container identification with the nationally tracked source.

(5) The date of disposal; and

(6) The method of disposal.

(e) The reports discussed in paragraphs (a) through (d) of this section must be submitted by the close of the next business day after the transaction. A single report may be submitted for multiple sources and transactions. The reports must be submitted to the National Source Tracking System by using:

- (1) The on-line National Source Tracking System;
- (2) Electronically using a computer-readable format;
- (3) By facsimile;
- (4) By mail to the address on the National Source Tracking Transaction Report Form (NRC Form 748); or
- (5) By telephone with followup by facsimile or mail.

(f) Each licensee shall 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. Each licensee shall reconcile and verify the inventory of nationally tracked sources possessed by the licensee against that licensee's data in the National Source Tracking System. The verification must be conducted during the month of June in each year. The reconciliation process must include resolving any discrepancies between the National Source Tracking System and the actual inventory by filing the reports identified by paragraphs (a) through (d) of this section.

(g) Each licensee that possesses Category 1 nationally tracked sources shall report its initial inventory of Category 1 nationally tracked sources to the National Source Tracking System by December 31, 2006. Each licensee that possesses Category 2 nationally tracked sources shall report its initial inventory of Category 2 nationally tracked sources to the National Source Tracking System by March 31, 2007. The information may be submitted by using any of the methods identified by paragraph (e)(1) through (e)(4) of this section. The initial inventory report must include the following information:

- (1) The name and license number of the reporting licensee;

- (2) The name of the individual preparing the report;
- (3) The manufacturer, model, and serial number of each nationally tracked source or, if not available, other information to uniquely identify the source;
- (4) The radioactive material in the sealed source;
- (5) The initial or current source strength in becquerels (curies); and
- (6) The date for which the source strength is reported.

5. In Part 20, new Appendix F is added to read as follows:

**Appendix F to Part 20 - Nationally Tracked Source Thresholds**

The Terabecquerel (TBq) values are the regulatory standard. The curie (Ci) values specified are obtained by converting from the TBq value. The curie values are provided for practical usefulness only and are rounded after conversion.

<b>Radioactive Material</b>	<b>Category 1 (TBq)</b>	<b>Category 1 (Ci)</b>	<b>Category 2 (TBq)</b>	<b>Category 2 (Ci)</b>
Actinium-227	20	540	0.2	5.4
Americium-241	60	1,600	0.6	16
Americium-241/Be	60	1,600	0.6	16
Californium-252	20	540	0.2	5.4
Cobalt-60	30	810	0.3	8.1
Curium-244	50	1,400	0.5	14
Cesium-137	100	2,700	1	27
Gadolinium-153	1,000	27,000	10	270
Iridium-192	80	2,200	0.8	22
Plutonium-236	60	1,600	0.6	16
Plutonium-238	60	1,600	0.6	16
Plutonium-239	60	1,600	0.6	16
Plutonium-239/Be	60	1,600	0.6	16
Plutonium-240	60	1,600	0.6	16
Polonium-210	60	1,600	0.6	16
Promethium-147	40,000	1,100,000	400	11,000
Selenium-75	200	5,400	2	54
Strontium-90	1,000	27,000	10	270
Thorium-228	20	540	0.2	5.4
Thorium-229	20	540	0.2	5.4

Thulium-170	20,000	540,000	200	5,400
Ytterbium-169	300	8,100	3	81

PART 32--SPECIFIC DOMESTIC LICENSES TO MANUFACTURE OR TRANSFER CERTAIN ITEMS CONTAINING BYPRODUCT MATERIAL

6. The authority citation for Part 32 continues to read as follows:

AUTHORITY: Secs. 81, 161, 182, 183, 68 Stat. 935, 948, 953, 954, as amended (42 U.S.C. 2111, 2201, 2232, 2233); sec. 201, 88 Stat. 1242, as amended (42 U.S.C. 5841); sec. 1704, 112 Stat. 2750 (44 U.S.C. 3504 note).

7. In § 32.2, the paragraph designations are removed and a new definition *Nationally tracked source* is added in alphabetical order to read as follows:

**§ 32.2 Definitions.**

\* \* \* \* \*

*Nationally tracked source* is a sealed source containing a quantity equal to or greater than Category 1 or 2 levels of any radioactive material listed in Appendix F to Part 20 of this Chapter. In this context a sealed source is defined as radioactive material that is permanently sealed in a capsule or closely bonded, in a solid form and which is not exempt from regulatory control. It does not mean material encapsulated solely for disposal, or nuclear material contained in any fuel assembly, subassembly, fuel rod, or fuel pellet. Category 1 nationally tracked sources are those containing radioactive material at a quantity equal to or greater than the Category 1 threshold. Category 2 nationally tracked sources are those containing

radioactive material at a quantity equal to or greater than the Category 2 threshold but less than the Category 1 threshold.

\* \* \* \* \*

8. Section 32.8 paragraph (b) is revised to read as follows:

**§ 32.8 Information collection requirements: OMB approval.**

\* \* \* \* \*

(b) The approved information collection requirements contained in this part appear in §§ 32.11, 32.12, 32.14, 32.15, 32.16, 32.17, 32.18, 32.19, 32.20, 32.21, 32.21a, 32.22, 32.23, 32.25, 32.26, 32.27, 32.29, 32.51, 32.51a, 32.52, 32.53, 32.54, 32.55, 32.56, 32.57, 32.58, 32.61, 32.62, 32.71, 32.72, 32.74, 32.201, and 32.210.

9. Section 32.201 is added under Subpart D to read as follows:

**Subpart D--Specifically Licensed Items**

**§ 32.201 Serialization of nationally tracked sources.**

Each licensee who manufactures a nationally tracked source after **[the effective date of this rule]** shall assign a unique serial number to each nationally tracked source. Serial numbers must be composed only of alpha-numeric characters.

PART 150--EXEMPTIONS AND CONTINUED REGULATORY AUTHORITY IN AGREEMENT STATES AND IN OFFSHORE WATERS UNDER SECTION 274

10. The authority citation for Part 150 continues to read as follows:

AUTHORITY: Sec. 161, 68 Stat. 948, as amended, sec. 274, 73 Stat. 688 (42 U.S.C. 2201, 2021); sec. 201, 88 Stat. 1242, as amended (42 U.S.C. 5841); sec. 1704, 112 Stat. 2750 (44 U.S.C. 3504 note). Sections 150.3, 150.15, 150.15a, 150.31, 150.32 also issued under secs. 11e(2), 81, 68 Stat. 923, 935, as amended, secs. 83, 84, 92 Stat. 3033, 3039 (42 U.S.C. 2014e(2), 2111, 2113, 2114). Section 150.14 also issued under sec. 53, 68 Stat. 930, as amended (42 U.S.C. 2073). Section 150.15 also issued under secs. 135, 141, Pub. L. 97-425, 96 Stat. 2232, 2241 (42 U.S.C. 10155, 10161). Section 150.17a also issued under sec. 122, 68 Stat. 939 (42 U.S.C. 2152). Section 150.30 also issued under sec. 234, 83 Stat. 444 (42 U.S.C. 2282).

11. In § 150.3, a new definition *Nationally tracked source* is added in alphabetical order to read as follows:

**§ 150.3 Definitions.**

\* \* \* \* \*

*Nationally tracked source* is a sealed source containing a quantity equal to or greater than Category 1 or 2 levels of any radioactive material listed in Appendix F to Part 20 of this Chapter. In this context a sealed source is defined as radioactive material that is permanently sealed in a capsule or closely bonded, in a solid form and which is not exempt from regulatory control. It does not mean material encapsulated solely for disposal, or nuclear material contained in any fuel assembly, subassembly, fuel rod, or fuel pellet. Category 1 nationally tracked sources are those containing radioactive material at a quantity equal to or greater than the Category 1 threshold. Category 2 nationally tracked sources are those containing

radioactive material at a quantity equal to or greater than the Category 2 threshold but less than the Category 1 threshold.

\* \* \* \* \*

12. Section 150.8 paragraph (b) is revised and paragraph (c)(3) is added to read as follows:

**§ 150.8 Information collection requirements: OMB approval.**

\* \* \* \* \*

(b) The approved information collection requirements contained in this part appear in §§ 150.16, 150.17, 150.17a, 150.18, 150.19, 150.20, and 150.31.

(c) \* \* \*

(3) In § 150.18, NRC Form 748 is approved under control number 3150-xxxx.

13. In 150.15 paragraph (a)(10) is added to read as follows:

**§ 150.15 Persons not exempt.**

(a) \* \* \*

(10) The assignment of unique serial numbers to each newly manufactured nationally tracked source as required by Section 32.201 of this chapter.

14. Section 150.18 is added to read as follows:

**§ 150.18 Submission to Commission of National Source Tracking Transaction Reports.**

Each person who, pursuant to an Agreement State specific license, manufactures, transfers, receives, or disposes of a nationally tracked source shall complete and submit a National Source Tracking Transaction Report (NRC Form 748) as specified in paragraphs (a) through (d) of this section for each type of transaction.

(a) Each licensee who manufactures a nationally tracked source shall complete and submit a National Source Tracking Transaction Report (NRC Form 748). The report must include the following information:

- (1) The name and license number of the reporting licensee;
- (2) The name of the individual preparing the report;
- (3) The manufacturer, model, and serial number of the source;
- (4) The radioactive material in the source;
- (5) The initial source strength in becquerels (curies) at the time of manufacture; and
- (6) The manufacture date of the source.

(b) Each licensee that transfers a nationally tracked source to another person shall complete and submit a National Source Tracking Transaction Report (NRC Form 748). The report must include the following information:

- (1) The name and license number of the reporting licensee;
- (2) The name of the individual preparing the report;
- (3) The name and license number of the recipient facility and the shipping address;
- (4) The manufacturer, model, and serial number of the source or, if not available, other information to uniquely identify the source;
- (5) The radioactive material in the source;
- (6) The initial or current source strength in becquerels (curies);
- (7) The date for which the source strength is reported;
- (8) The shipping date;
- (9) The estimated arrival date; and
- (10) For nationally tracked sources transferred as waste under a Uniform Low-Level Radioactive Waste Manifest, the waste manifest number and the container identification of the container with the nationally tracked source.

(c) Each licensee that receives a nationally tracked source shall complete and submit a National Source Tracking Transaction Report (NRC Form 748). The report must include the following information:

- (1) The name and license number of the reporting licensee;
- (2) The name of the individual preparing the report;
- (3) The name and license number of the person that provided the source;

(4) The manufacturer, model, and serial number of the source or, if not available, other information to uniquely identify the source;

(5) The radioactive material in the source;

(6) The initial or current source strength in becquerels (curies);

(7) The date for which the source strength is reported;

(8) The date of receipt; and

(9) For material received under a Uniform Low-Level Radioactive Waste Manifest, the waste manifest number and the container identification with the nationally tracked source.

(d) Each licensee who disposes of a nationally tracked source shall complete and submit a National Source Tracking Transaction Report (NRC Form 748). The report must include the following information:

(1) The name and license number of the reporting licensee;

(2) The name of the individual preparing the report;

(3) The waste manifest number;

(4) The container identification with the nationally tracked source.

(5) The date of disposal; and

(6) The method of disposal.

(e) The reports discussed in paragraphs (a) through (d) of this section must be submitted by the close of the next business day after the transaction. A single report may be

submitted for multiple sources and transactions. The reports must be submitted to the National Source Tracking System by using:

- (1) The on-line National Source Tracking System;
- (2) Electronically using a computer-readable format;
- (3) By facsimile;
- (4) By mail to the address on the National Source Tracking Transaction Report Form (NRC Form 748); or
- (5) By telephone with followup by facsimile or mail.

(f) Each licensee shall 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. Each licensee shall reconcile and verify the inventory of nationally tracked sources possessed by the licensee against that licensee's data in the National Source Tracking System. The verification must be conducted during the month of June in each year. The reconciliation process must include resolving any discrepancies between the National Source Tracking System and the actual inventory by filing the reports identified by paragraphs (a) through (d) of this section.

(g) Each licensee that possesses Category 1 nationally tracked sources shall report its initial inventory of Category 1 nationally tracked sources to the National Source Tracking System by December 31, 2006. Each licensee that possesses Category 2 nationally tracked sources shall report its initial inventory of Category 2 nationally tracked sources to the National Source Tracking System by March 31, 2007. The information may be submitted by using any

of the methods identified by paragraph (e)(1) through (e)(4) of this section. The initial inventory report must include the following information:

- (1) The name and license number of the reporting licensee;
- (2) The name of the individual preparing the report;
- (3) The manufacturer, model, and serial number of each nationally tracked source or, if not available, other information to uniquely identify the source;
- (4) The radioactive material in the sealed source;
- (5) The initial or current source strength in becquerels (curies); and
- (6) The date for which the source strength is reported.

Dated at Rockville, Maryland, this \_\_\_\_\_ day of \_\_\_\_\_, 2005.

For the Nuclear Regulatory Commission.

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Annette Vietti-Cook,  
Secretary of the Commission.

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# **Regulatory Analysis for the Proposed Rule on National Source Tracking of Sealed Sources - 10 CFR Parts 20, 32, and 150**

Draft Report

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**U.S. Nuclear Regulatory Commission**  
Office of Nuclear Material Safety and Safeguards

April 28, 2005



## EXECUTIVE SUMMARY

The U.S. Nuclear Regulatory Commission (NRC) is proposing to amend its regulations to implement a new program called the National Source Tracking System. Under this program, licensees would be required to report information on the manufacture, transfer, receipt, and disposal of nationally tracked sources. This information will be used to support the National Source Tracking System and will provide the NRC with a life cycle account for nationally tracked sources and, thus, improve accountability and controls over them.

This regulatory analysis evaluates the values and impacts associated with the two regulatory alternatives considered by the NRC to address the tracking of sealed sources:

- *Option 1: No Action.* Under the no-action alternative, the NRC would not establish the National Source Tracking System. Thus, licensees would not be required to report transaction information associated with the manufacture, transfer, receipt, and disposal of nationally tracked sources.
- *Option 2: National Source Tracking System.* Under the National Source Tracking System alternative, the NRC would establish the National Source Tracking System. Under this program, each licensee who manufactures, transfers, receives, or disposes of a nationally tracked source would be required to: (1) report its initial inventory of Category 1 and/or 2 nationally tracked sources; (2) complete and submit a National Source Tracking Transaction Report after each transaction; (3) correct any errors in previously filed National Source Tracking Transaction Reports within five business days of the discovery; and (4) reconcile and verify its inventory of nationally tracked sources on an annual basis. In addition, licensees who manufacture nationally tracked sources after the effective date of the rule would be required to assign a unique serial number to each nationally tracked source.

The no-action alternative is the default approach if Option 2 is not the preferred alternative. The primary function of Option 1 is to establish the baseline condition from which the incremental values and impacts associated with the National Source Tracking System alternative are calculated.

The NRC estimated the incremental costs to industry and the NRC under Option 2. These costs were estimated for the years 2005 through 2016. All costs incurred in the future were calculated in 2005 dollars using discount rates of 7 and 3 percent. The results are presented in Table ES-1.

**Table ES-1**  
**Present Value of the Total Costs Under Option 2,**  
**the National Source Tracking System Alternative: 2005 - 2016 <sup>a</sup>**  
**(2005 dollars)**

<b>Discount Rate</b>	<b>Costs to Industry</b>	<b>Costs to the NRC</b>	<b>Total Costs</b>
7%	\$1,395,740	\$18,266,000	\$19,661,740
3%	\$1,737,940	\$21,787,000	\$23,524,940

<sup>a</sup> Table includes rounding error.

As shown in Table ES-1, the net present value under Option 2, using a 7 percent discount rate, is estimated to be a total cost of \$19,661,740. Using a 3 percent discount rate, the net present value is estimated to be a total cost of \$23,524,940.

The NRC staff believes that the expected qualitative values contribute substantially to the benefits of the National Source Tracking System. These qualitative values include:

- *Improved Security for Nationally Tracked Sources.* The National Source Tracking System is expected to result in improved accountability and controls over nationally tracked sources. This is expected to improve public health (accident/event) and avert potential offsite property damage and costs by decreasing the risk of a security-related event involving nationally tracked sources.
- *Improved Understanding of the Location of Nationally Tracked Sources.* Information contained in the National Source Tracking System would improve the information available to the NRC, as well as other government entities (e.g., Department of Homeland Security, Agreement States), concerning the locations of nationally tracked sources.
- *Improved Regulatory Efficiency.* The establishment of a national program to monitor the location of nationally tracked sources would improve regulatory efficiency by: (1) increasing accountability among all parties associated with a nationally tracked source transaction and (2) responding to a recommendation in the IAEA's Code of Conduct.
- *Enhanced Ability to Promote and Maintain the Common Defense and Security.* Information contained in the National Source Tracking System would allow the NRC to better monitor the location of nationally tracked sources and, thus, improve accountability and controls over them. Consequently, the National Source Tracking System would enhance the NRC's ability to maintain and promote the common defense and security.
- *Increased Public Confidence.* Information contained in the National Source Tracking System would allow the NRC to better monitor the location of nationally tracked sources. This is expected to result in increased public confidence in NRC's regulation of inventories of radioactive materials that could be used in the production of radiological dispersal devices (RDDs) and radiological exposure devices (REDs).

The NRC believes the incremental costs to licensees and the NRC under Option 2 are justified because the requested actions and information are necessary to monitor the location of nationally tracked sources and, thus, promote and maintain the common defense and security.

# TABLE OF CONTENTS

1.	Introduction	<u>1</u>
1.1	Background	<u>1</u>
1.2	Objectives of the Proposed Regulatory Action	<u>2</u>
2.	Identification and Preliminary Analysis of Alternative Approaches	<u>3</u>
2.1	Option 1: No Action	<u>3</u>
2.2	Option 2: National Source Tracking System	<u>3</u>
3.	Analysis of Values and Impacts	<u>4</u>
3.1	Identification of Affected Attributes	<u>4</u>
3.2	Methodology	<u>6</u>
	3.2.1 Baseline for Analysis	<u>6</u>
	3.2.2 Assumptions	<u>7</u>
	3.2.3 Analysis	<u>10</u>
3.3	Results	<u>17</u>
4.	Backfit Analysis	<u>20</u>
5.	Decision Rationale	<u>20</u>
6.	Implementation	<u>20</u>

## 1. Introduction

The U.S. Nuclear Regulatory Commission (NRC) is proposing to amend its regulations to implement a new program called the National Source Tracking System. Under this program, licensees would be required to report information on the manufacture, transfer, receipt, and disposal of nationally tracked sources. This information will be used to support the National Source Tracking System and will provide the NRC with a life cycle account for nationally tracked sources and, thus, improve accountability and controls over them.

The NRC considered two alternatives to address the tracking of certain sealed sources. The purpose of this regulatory analysis is to evaluate the values and impacts associated with these two regulatory alternatives. The NRC considers the regulatory analysis process an integral part of its statutory mission to promote the common defense and security, to ensure adequate protection of public health and safety, and to protect the environment from civilian uses of byproduct, source, and special nuclear materials. This document presents background material, describes the objectives of the proposed regulatory action, outlines the alternatives considered by the NRC, and evaluates the values and impacts of the regulatory alternatives.

### 1.1 Background

As a result of the terrorist attacks in the U.S. on September 11, 2001, the NRC has undertaken a comprehensive review of nuclear material security requirements, with particular focus on radioactive material of concern. This material, including Cobalt-60, Cesium-137, Iridium-192, and Americium-241 isotopes, has the potential to be used in a radiological dispersal device (RDD) or a radiological exposure device (RED) in the absence of proper security measures. The NRC's review takes into consideration the changing domestic and international threat environments and related U.S. Government supported international initiatives in the nuclear security area, particularly activities conducted by the International Atomic Energy Agency (IAEA).

In June 2002, the Secretary of Energy and the NRC Chairman met to discuss the adequate protection of inventories of nuclear materials that could be used in a RDD. At the June meeting, the Secretary of Energy and the NRC Chairman agreed to convene an Interagency Working Group on Radiological Dispersal Devices to address security concerns. In May 2003, the joint U.S. Department of Energy (DOE)/NRC report, "Radiological Dispersal Devices: An Initial Study to Identify Radioactive Materials of Greatest Concern and Approaches to Their Tracking, Tagging, and Disposition," was issued.<sup>1</sup> One of the recommendations contained in the report is that a national source tracking system be developed to better understand and monitor the location and movement of sources of interest.

The NRC has also supported U.S. Government efforts to establish international guidance for the safety and security of radioactive materials of concern. This effort has resulted in a major revision of the IAEA Code of Conduct on the Safety and Security of Radioactive Sources (Code of Conduct). The revised Code of Conduct was approved by the IAEA Board of Governors in

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<sup>1</sup> This report is available on the DOE Web site at:  
[http://www.energy.gov/engine/doe/files/dynamic/1222004142719\\_RDDRPTF14MAY03.pdf](http://www.energy.gov/engine/doe/files/dynamic/1222004142719_RDDRPTF14MAY03.pdf).

September 2003.<sup>2</sup> In particular, the Code of Conduct recommends that each IAEA member State develop a national source registry of radioactive sources that should include Category 1 and 2 radioactive sources as described in Annex 1 of the Code of Conduct. The recommendation covers 16 isotopes that should be included in the source registry.

The U.S. Government has formally notified the Director General of the IAEA of its political commitment for the current Code of Conduct. Although the Code of Conduct does not have the stature of an international treaty, and its provisions are non-binding on IAEA member States, the U.S. Government has endorsed the Code of Conduct and is working toward implementation of its various provisions. The Commission is conducting this rulemaking to reflect those Code of Conduct recommendations that are consistent with the NRC's responsibilities under the Atomic Energy Act, including the promotion of the common defense and security.

Efforts to improve controls over sealed sources face significant challenges, especially balancing the need to secure the materials without discouraging their beneficial use in academic, medical, and industrial applications. Radioactive materials provide critical capabilities in the oil and gas, electrical power, construction, and food industries; are used to treat millions of patients each year in diagnostic and therapeutic procedures; are used in a variety of military applications; and are used in technology research and development involving academic, government, and private institutions. These materials are as diverse in geographical location as they are in functional use.

National source tracking is part of a comprehensive radioactive source control program for radioactive materials of greatest concern. Although neither a national source tracking system nor a source registry can ensure the physical protection of sources, they would provide greater source accountability. Thus, the NRC believes that a national source tracking system, in conjunction with other activities, would result in improved security for radioactive sources.

## **1.2 Objectives of the Proposed Regulatory Action**

There is broad U.S. Government and international interest in tracking radioactive sources to improve accountability and control. Currently, there is no single U.S. source of information to verify the licensed users, locations, and quantities of these materials. Separate NRC and Agreement State systems contain information on licensees and the maximum amounts of materials they are authorized to possess but do not record actual sources.

To address this lack of information on actual material possessed, the NRC, with the cooperation of the Agreement States, began working on an interim database of sources of concern. In November 2003, both NRC and Agreement State licensees were contacted and requested to provide some basic information on the sealed sources located at their facilities. Of the approximately 2,600 licensees contacted, over half of the licensees reported possessing Category 1 or Category 2 sealed sources. The NRC plans to replace the interim database with the National Source Tracking System. While the interim database provides a snapshot in time, the National Source Tracking System is expected to provide information on an ongoing basis.

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<sup>2</sup> The revised Code of Conduct is available on the IAEA Web site at: <http://www-pub.iaea.org/MTCD/publications/PDF/Code-2004.pdf>.

Development of the National Source Tracking System would include both rulemaking and information technology (IT) development and maintenance activities. When completely operational, the National Source Tracking System will be a web-based system that would allow licensees to meet the proposed reporting requirements on-line with ease. This proposed rulemaking would impose requirements on both NRC and Agreement State licensees and would establish the regulatory foundation for the National Source Tracking System. The National Source Tracking System is being developed and would be implemented under the NRC's statutory authority to promote the common defense and security.

To inform the development of the National Source Tracking System, the NRC established an Interagency Coordinating Committee to provide guidance regarding interagency issues associated with the development, coordination, and implementation of the system. The Committee membership consists of representatives from various Federal agencies with an interest in source security and a representative from the Agreement States. The views of the Committee were included in the development of the requirements for the National Source Tracking System and this rulemaking.

## **2. Identification and Preliminary Analysis of Alternative Approaches**

This regulatory analysis evaluates the values and impacts of two regulatory alternatives. The following subsections describe these two alternatives.

### **2.1 Option 1: No Action**

Under Option 1, the NRC would not establish the National Source Tracking System. Thus, licensees would not be required to report transaction information associated with the manufacture, transfer, receipt, and disposal of nationally tracked sources.

### **2.2 Option 2: National Source Tracking System**

Under Option 2, the NRC would establish the National Source Tracking System. Under this program, each licensee who manufactures, transfers, receives, or disposes of a nationally tracked source would be required to:

- Report its initial inventory of Category 1 nationally tracked sources to the National Source Tracking System by December 31, 2006
- Report its initial inventory of Category 2 nationally tracked sources to the National Source Tracking System by March 31, 2007
- Complete and submit a National Source Tracking Transaction Report (i.e., NRC Form 748) after each transaction
- Correct any errors in previously filed National Source Tracking Transaction Reports within five business days of the discovery

- Reconcile and verify the inventory of nationally tracked sources it possesses against the data in the National Source Tracking System on an annual basis

In addition, each licensee who manufactures a nationally tracked source after the effective date of the rule would be required to assign a unique serial number to each nationally tracked source.

### **3. Analysis of Values and Impacts**

The three subsections below describe the analysis conducted to identify and evaluate the values and impacts expected to result from the implementation of the National Source Tracking System. Subsection 3.1 identifies the attributes that the National Source Tracking System is expected to affect. Subsection 3.2 describes the methodology used to analyze the values and impacts associated with the National Source Tracking System. Subsection 3.3 discusses the results of the analysis.

#### **3.1 Identification of Affected Attributes**

This subsection identifies the attributes, within the public and private sectors, that the National Source Tracking System is expected to affect, using the list of potential attributes provided in Chapter 5 of NUREG/BR-0184, "Regulatory Analysis Technical Evaluation Handbook," dated January 1997. Each attribute listed in Chapter 5 was evaluated. The basis for selecting those attributes expected to be affected by the National Source Tracking System is presented below.

The National Source Tracking System is expected to affect the following attributes:

- *Public Health (Accident/Event).* The National Source Tracking System would require licensees to report information on the manufacture, transfer, receipt, and disposal of nationally tracked sources. This information would provide a life cycle account for these sources. As a result, the proposed regulatory action is expected to improve accountability and controls over them. This reduces the risk that terrorists may obtain and use radioactive materials in the production of RDDs and REDs and, therefore, has a positive effect on public health.
- *Offsite Property.* As stated above, licensees would be required to provide a life cycle account for nationally tracked sources. Improvement in the accountability and controls over these sources is expected to avert potential offsite property damage and costs (e.g., long-term relocation, emergency response) that may follow from a terrorist attack in which RDDs and/or REDs are used.
- *Industry Implementation.* The proposed regulatory action would require licensees to report their initial inventory of Category 1 and 2 nationally tracked sources to the National Source Tracking System. Licensees who reported nationally tracked source information to the interim database would need only to verify or update their reported inventory information. Licensees who did not provide nationally tracked source information to the interim database would need to report their inventory information by the specified dates. As a result, licensees (i.e., industry) will incur one-time implementation costs under the proposed regulatory action.

- *Industry Operation.* The proposed regulatory action would require licensees to: (1) complete and submit a National Source Tracking Transaction Report after each transaction; (2) correct any errors in previously filed National Source Tracking Transaction Reports within five business days of the discovery; (3) reconcile and verify the inventories of nationally tracked sources they possess against the data in the National Source Tracking System on an annual basis; and (4) assign a unique serial number to each nationally tracked source they manufacture (if applicable). As a result, licensees (i.e., industry) will incur annual operating costs under the proposed regulatory action.
- *NRC Implementation.* To implement the proposed regulatory action, the NRC would perform rulemaking and IT development activities. Specifically, the NRC would develop a final rule to implement the National Source Tracking System program and arrange to develop a web-based National Source Tracking System, as well as guidance on how to report information on nationally tracked source transactions to the National Source Tracking System.<sup>3</sup> As a result, the NRC will incur one-time implementation costs under the proposed regulatory action.
- *NRC Operation.* Under the proposed regulatory action, NRC staff would review nationally tracked source information submitted to the National Source Tracking System and arrange for operation and maintenance activities on the web-based National Source Tracking System. As a result, the NRC will incur annual operating costs under the proposed regulatory action.
- *Other Government.* Under the proposed regulatory action, other Federal agencies and State and local governments (e.g., Department of Homeland Security, Agreement States) would have access to and benefit from the information contained in the National Source Tracking System. This information may allow them to better monitor the location of nationally tracked sources and focus resources on higher risk licensees (e.g., based on the number of nationally tracked sources they possess). In addition, the information contained in the National Source Tracking System would improve coordination among the various agencies.
- *Improvements in Knowledge.* The proposed regulatory action would require licensees to report information on the manufacture, transfer, receipt, and disposal of nationally tracked sources. This information would allow the NRC to better understand the location of nationally tracked sources.
- *Regulatory Efficiency.* The proposed regulatory action would improve regulatory efficiency by establishing a national source tracking program to monitor the location of nationally tracked sources. Consequently, there would be increased accountability among all parties associated with a nationally tracked source transaction. In addition, the proposed regulatory action would improve regulatory efficiency by implementing applicable features of the IAEA's Code of Conduct.

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<sup>3</sup> Consistent with direction in Section 5.7.9 of NUREG/BR-0184, this analysis does not include the pre-decisional costs of developing and issuing the proposed rule.

- *Safeguards and Security Considerations.* The proposed regulatory action would require licensees to provide a life cycle account for nationally tracked sources. This information would allow the NRC to better monitor the location of nationally tracked sources and thus, improve accountability and controls over them. Consequently, the proposed regulatory action would enhance the NRC's ability to maintain and promote the common defense and security.
- *Other Considerations.* The proposed regulatory action would require licensees to provide a life cycle account for nationally tracked sources. This information would allow the NRC to better monitor the location of nationally tracked sources. As a result, the proposed regulatory action may increase public confidence in NRC's regulation of inventories of radioactive materials that could be used in the production of RDDs and REDs.

The National Source Tracking System is *not* expected to affect the following attributes:

- Public Health (Routine)
- Occupational Health (Accident)
- Occupational Health (Routine)
- Onsite Property
- General Public
- Antitrust Considerations
- Environmental Considerations

### **3.2 Methodology**

This subsection describes the methodology used to analyze the values and impacts associated with the implementation of the National Source Tracking System. The values include any desirable changes in the affected attributes, while the impacts include any undesirable changes in the affected attributes.

This analysis relies on both a quantitative and a qualitative analysis of the affected attributes. The quantitative analysis involves the assessment of values (savings) and impacts (costs) under the National Source Tracking System. The qualitative analysis involves a discussion of those attributes that the NRC was not able to quantify.

The balance of this subsection describes the most significant analytical data and assumptions used in the quantitative analysis of the affected attributes.

#### **3.2.1 Baseline for Analysis**

The analysis measures the incremental values and impacts of the National Source Tracking System relative to a baseline (Option 1, the no-action alternative), which is how the world would be in the absence of the National Source Tracking System.

### **3.2.2 Assumptions**

The following subsections discuss the assumptions used in the analysis.

#### **3.2.2.1 Number of Licensees that Possess Nationally Tracked Sources**

Based on data from the NRC's interim database of nationally tracked sources and NRC staff's best judgment, the NRC estimates that there will be 1,350 licensees that may possess Category 1 and/or 2 nationally tracked sources. There were 1,328 licensees that reported some inventory information to the interim database that indicates they possess Category 1 and/or 2 nationally tracked sources.

#### **3.2.2.2 Number of Nationally Tracked Sources**

Based on data in the NRC's interim database of nationally tracked sources and NRC staff's best judgment, the NRC estimates that, collectively, licensees possess approximately 75,000 Category 1 and/or 2 nationally tracked sources. The interim database contains information on about 3,600 of these sources<sup>4</sup>.

#### **3.2.2.3 Method of Submitting National Source Tracking Transaction Reports**

Based on best judgment, the NRC anticipates that, of the 1,350 licenses with nationally tracked sources, about 75 percent (1,015 licensees) would report nationally tracked source transaction information using on-line forms, about 15 percent (200 licensees) using computer-readable format files, about 4.75 percent (64 licensees) by fax, about 4.75 percent (64 licensees) by mail, and about 0.5 percent (7 licensees) by telephone with followup by fax or mail. These assumptions are reflected in Table 1.

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<sup>4</sup> In providing nationally tracked source information for the interim database, licensees were allowed to treat irradiators and gamma knives as a single source to encourage reporting of some data. Each gamma knife actually has 201 individual sources and each irradiator has from a few sources to over 1,500 individual sources.

**Table 1**  
**Estimated Number of Licensees that Possess**  
**Nationally Tracked Sources, by Report Submission Method**

Submission Method	Total Number of Licensees
On-line forms	1,015
Computer-readable format file	200
Fax	64
Mail	64
Telephone with followup by fax or mail	7
Total	1,350

**3.2.2.4 Number of National Source Tracking Transaction Reports**

Based on data in the NRC's interim database of nationally tracked sources and NRC staff's best judgment, the NRC estimates that, each year, licensees perform up to 63,050 nationally tracked source "transactions." The NRC also estimates that, of these 63,050 transactions, 15,000 are associated with the manufacture of new nationally tracked sources, 24,000 with the transfer of nationally tracked sources, 24,000 with the receipt of nationally tracked sources, and 50 with the disposal of nationally tracked sources. These numbers are based on the assumption that gamma knife sources are replaced every five years, radiography sources are replaced every four months, and one tenth of the irradiator sources are exchanged every year. These assumptions are reflected in Table 2.

**Table 2**  
**Estimated Annual Number of Nationally Tracked Source Transactions**

Type of Transaction	Number of Transactions
Manufacture	15,000
Transfer	24,000
Receipt	24,000
Disposal	50
Total	63,050

For each of the 63,050 transactions identified in Table 2, licensees would be required to complete and submit a National Source Tracking Transaction Report using on-line forms, computer-readable format files, fax, mail, or telephone with followup by fax or mail. The NRC is uncertain about the number of National Source Tracking Transaction Reports that would be submitted each year for each type of transaction and submission method (e.g., manufacture/on-

line forms, manufacture/fax). However, the NRC anticipates that the majority of the reports would be submitted by manufacturers and distributors. These entities are expected to report their transaction information electronically using computer-readable format files, given the large volume of transactions they perform. For purposes of this analysis, the NRC made the following simplifying assumptions:

- Manufacture:
  - Each year, licensees would perform 15,000 transactions associated with the manufacture of new nationally tracked sources
  - All reports associated with the manufacture of new nationally tracked sources would be submitted using computer-readable format files
  - Each report would contain information on 100 transactions
  
- Transfer and receipt:
  - Each year, licensees would perform 48,000 transactions associated with the transfer and receipt of nationally tracked sources
  - Reports associated with the transfer and receipt of nationally tracked sources would be submitted as follows:
    - 5,288 using on-line forms
    - 42,000 using computer-readable format files
    - 338 by fax
    - 338 by mail
    - 36 by telephone with followup by fax or mail
  - Each report submitted using computer-readable format files would contain information on 100 transactions; reports submitted using any other method would contain information on three transactions
  - The number of transfer reports equals the number of receipt reports
  
- Disposal:
  - Each year, licensees would perform 50 transactions associated with the disposal of nationally tracked sources
  - All reports associated with the disposal of nationally tracked sources would be submitted using on-line forms
  - Each report would contain information on three transactions

These assumptions are reflected in Table 3.

**Table 3**  
**Estimated Number of National Source Tracking Transaction**  
**Reports Submitted Annually, by Type of Transaction and Submission Method**

Type of Transaction	Submission Method					Total
	On-Line Forms	Computer-Readable Format File	Fax	Mail	Telephone with Followup by Fax or Mail	
Manufacture	0	150	0	0	0	150
Transfer	882	210	56	56	6	1,210
Receipt	882	210	56	56	6	1,210
Disposal	17	0	0	0	0	17
Total	1,781	570	112	112	12	2,587

### 3.2.3 Analysis

This subsection discusses the analyses of the quantifiable impacts (i.e., costs) associated with the implementation of the National Source Tracking System. For purposes of this analysis, the impacts under the National Source Tracking System were categorized as follows:

- Rulemaking and IT development/maintenance activities
- National source tracking system account set-up
- Initial inventory of nationally tracked sources
- National Source Tracking Transaction Reports
- Correction of previously filed National Source Tracking Transaction Reports
- Annual inventory reconciliation of nationally tracked sources
- Nationally tracked source unique serial numbers

The cost assumptions for each of the above impact categories are discussed in the following subsections. Note that all costs presented in this subsection are in 2005 dollars.

#### 3.2.3.1 Rulemaking and IT Development/Maintenance Activities

In implementing the proposed regulatory action, the NRC expects to perform final rulemaking and IT development/maintenance activities. Among other things, these activities include development of the final rule, guidance documents, and licensee training; development, enhancement, and maintenance and operation of the web-based National Source Tracking System.

The NRC estimates that, between 2005 and 2007, the NRC will incur \$6,791,300 to develop the National Source Tracking System. This value represents both NRC staff and contractor time and effort. The NRC anticipates that, of this \$6,791,300, \$1,056,000 will be incurred in Fiscal

Year (FY) 2005, \$4,744,000 in FY 2006, and \$991,300 in FY 2007.<sup>5</sup> Once the system is developed, the NRC estimates that approximately \$2,000,000 a year will be expended for the maintenance and operation of the system, beginning in FY 2008.<sup>6</sup> This includes NRC and contractor time and effort.

### **3.2.3.2 National Source Tracking System Account Set-Up**

To report nationally tracked source transaction information electronically, a licensee would need to establish an account with the National Source Tracking System. Once an account is established, the licensee would be provided with password information that would allow access to the system.

The NRC estimates that, on average, 0.5 hour (30 minutes) of licensee staff time would be required to establish an account with the National Source Tracking System. Using an estimated average labor rate of \$87 per hour for licensee staff<sup>7</sup>, the cost for establishing an account is estimated to be \$43.50 per licensee (i.e., 0.5 hour x \$87/hour). As shown in Table 1, the NRC anticipates that, of the 1,350 licensees with nationally tracked sources, 1,215 (i.e., 1,015 + 200) would report transaction information electronically using on-line forms or computer-readable format files. Thus, industry's total cost for establishing accounts with the National Source Tracking System is estimated to be \$52,853 (i.e., 1,215 licensees x \$43.50/licensee).

Note that, for purposes of this analysis, the NRC made the assumption that all licensees reporting nationally tracked source transaction information electronically would establish their accounts with the National Source Tracking System in 2006.

### **3.2.3.3 Initial Inventory of Nationally Tracked Sources**

Under existing regulations, licensees are required to conduct an inventory of their sealed sources. The proposed regulatory action would require licensees to report their initial inventory of Category 1 and 2 nationally tracked sources to the National Source Tracking System. Licensees that reported nationally tracked source information to the interim database would need only to verify or update their inventory information. Licensees that did not provide

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<sup>5</sup> FY 2005 covers the period between October 1, 2004 and September 30, 2005. FY 2006 covers the period between October 1, 2005 and September 30, 2006. FY 2007 covers the period between October 1, 2006 and September 30, 2007.

<sup>6</sup> FY 2008 covers the period between October 1, 2007 and September 30, 2008.

<sup>7</sup> The average hourly labor rate of \$87 is based on NRC staff's best judgment. This hourly labor rate includes costs associated with employee benefits (e.g., health plan). However, it does not include costs associated with overhead (e.g., rent, utilities). Note that this approach was taken because, for purposes of this analysis, the NRC is interested in measuring costs associated with incremental workload changes in response to the proposed regulatory action.

nationally tracked source information to the interim database would need to report their initial inventory of Category 1 nationally tracked sources to the National Source Tracking System by December 31, 2006, and their initial inventory of Category 2 nationally tracked sources by March 31, 2007.

The NRC estimates that licensees would require, on average, 0.50 hour (30 minutes) to verify/update or report initial inventory information on their nationally tracked sources.<sup>8</sup> Using an estimated average labor rate of \$87 per hour for licensee staff, the labor cost for verifying/updating or initially reporting this information is estimated to be \$43.50 per licensee (i.e., 0.50 hour x \$87/hour). As shown in Table 1, the NRC estimates that 1,350 licensees would verify/update or initially report inventory information for nationally tracked sources. Thus, the labor cost to licensees is estimated to be \$58,725 (i.e., 1,350 licensees x \$43.50/licensee).

In addition, the NRC estimates that licensees would incur materials costs, based on the submission method selected. These costs are described below:

- *On-Line Forms and Computer-Readable Format Files.* The NRC considers Internet access to be a standard business practice. Therefore, for purposes of this analysis, the cost associated with the purchase of Internet access services is not considered an incremental cost to licensees.
- *Fax.* The NRC estimates that each of the 64 licensees submitting information by fax (see Table 1) would incur a materials cost of \$0.15 for faxing the information to the National Source Tracking System.<sup>9</sup> Thus, the materials cost to licensees submitting information by fax is estimated to be \$9.60 (i.e., 64 licensees x \$0.15/licensee).
- *Mail.* The NRC estimates that each of the 64 licensees submitting information by mail (see Table 1) would incur a materials cost of \$3.64 for mailing the information to the National Source Tracking System.<sup>10</sup> Thus, the materials cost to licensees submitting information by mail is estimated to be \$232.96 (i.e., 64 licensees x \$3.64/licensee).
- *Telephone with Followup by Fax or Mail.* The NRC estimates that each of the seven licensees submitting information by telephone with followup by fax or mail would incur a materials cost of \$4.16 for making a telephone call and mailing the information to the National Source Tracking System.<sup>11</sup> Thus, the materials cost to licensees submitting

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<sup>8</sup> Note that some licensees may require more or less time to verify/update or initially report inventory information on their nationally tracked sources. The time required by each licensee would depend on licensee-specific factors (e.g., number of sources, licensee's efficiency).

<sup>9</sup> Based on the cost of a two-minute State-to-State telephone call.

<sup>10</sup> Includes costs associated with mailing a five-ounce package by certified mail in a manila envelope (\$1.29 for postage, \$2.30 for the certified-mail fee, and \$0.05 for a manila envelope).

<sup>11</sup> Includes a cost of \$0.52 for making a seven-minute State-to-State telephone call and a cost of \$3.64 for mailing the inventory information to the National Source Tracking System.

information by telephone with followup by fax or mail is estimated to be \$29.12 (i.e., 7 licensees x \$4.16/licensee).

Based on the above, the materials cost to licensees is estimated to be \$271.68 (i.e., \$0 + \$9.60 + \$232.96 + \$29.12).

In summary, the NRC estimates that industry's total one-time cost for verifying/updating or initially reporting nationally tracked source inventory information would be \$58,997 (i.e., \$58,725 + \$271.68). For purposes of this analysis, the NRC assumes that 50 percent of this *one-time* industry implementation cost would be incurred in 2006 and 50 percent would be incurred in 2007.

### **3.2.3.4 National Source Tracking Transaction Reports**

As stated earlier, the proposed regulatory action would require each licensee who manufactures, transfers, receives, or disposes a nationally tracked source to complete and submit a National Source Tracking Transaction Report (i.e., NRC Form 748).

Following is a discussion of the costs that would be incurred by industry in completing and submitting these reports:

- *Reports Submitted Using On-Line Forms.* The NRC estimates that, on average, 10 minutes of licensee staff time would be required to complete and submit a National Source Tracking Transaction Report on-line. Using an estimated average labor rate of \$87 per hour for licensee staff, the cost for conducting these activities is estimated to be \$14.50 per report (i.e., [10 minutes/60 minutes] x \$87/hour).<sup>12</sup>

As shown in Table 3, the NRC estimates that, each year, licensees would complete and submit 1,781 reports on-line. Thus, the industry's total annual cost for completing and submitting National Source Tracking Transaction Reports on-line is estimated to be \$25,825 (i.e., 1,781 reports x \$14.50/report).

- *Reports Submitted Using a Computer-Readable Format File.* The NRC estimates that, on average, five minutes of licensee staff time would be required to complete and submit a National Source Tracking Transaction Report electronically using a computer-readable format file. Using an estimated average labor rate of \$87 per hour for licensee staff, the cost for conducting these activities is estimated to be \$7.25 per report (i.e., [5 minutes/60 minutes] x \$87/hour).<sup>13</sup>

As shown in Table 3, the NRC estimates that, each year, licensees would complete and

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<sup>12</sup> The NRC considers Internet access to be a standard business practice. Therefore, for purposes of this analysis, the cost associated with the purchase of Internet access services is not considered an incremental cost to licensees.

<sup>13</sup> The NRC considers Internet access to be a standard business practice. Therefore, for purposes of this analysis, the cost associated with the purchase of Internet access services is not considered an incremental cost to licensees.

submit 570 reports using computer-readable format files. Thus, the industry's total annual cost for completing and submitting National Source Tracking Transaction Reports electronically using computer-readable format files is estimated to be \$4,133 (i.e., 570 reports x \$67.25/report).

- *Reports Submitted by Fax.* The NRC estimates that, on average, 0.25 hour (15 minutes) of licensee staff time would be required to complete and submit a National Source Tracking Transaction Report by fax. Using an estimated average labor rate of \$87 per hour for licensee staff, the labor cost for conducting these activities is estimated to be \$21.75 (i.e., 0.25 hours x \$87/hour). In addition, the NRC estimates that, on average, licensees would incur a materials cost of \$0.15 for each report they fax to the National Source Tracking System.<sup>14</sup> Thus, the total cost for completing and submitting a report is estimated to be \$21.90 (i.e., \$21.75 + \$0.15).

The NRC further estimates that, each year, licensees would complete and submit 112 reports by fax. Thus, the industry's total annual cost for completing and submitting National Source Tracking Transaction Reports by fax is estimated to be \$2,453 (i.e., 112 reports x \$21.90/report).

- *Reports Submitted by Mail.* The NRC estimates that, on average, 0.25 hour (15 minutes) of licensee staff time would be required to complete and submit a National Source Tracking Transaction Report by mail. Using an estimated average labor rate of \$87 per hour for licensee staff, the labor cost for conducting these activities is estimated to be \$21.75 (i.e., 0.25 hours x \$87/hour). In addition, the NRC estimates that, on average, licensees would incur a materials cost of \$3.64 for each report they mail to the National Source Tracking System.<sup>15</sup> Thus, the total cost for completing and submitting a report is estimated to be \$25.39 (i.e., \$21.75 + \$3.64).

The NRC further estimates that, each year, licensees would complete and submit 112 reports by mail. Thus, the industry's total annual cost for completing and submitting National Source Tracking Transaction Reports by mail is estimated to be \$2,844 (i.e., 112 reports x \$25.39/report).

- *Reports Submitted by Telephone with Followup by Fax or Mail.* The NRC estimates that, on average, 0.30 hours (18 minutes) of licensee staff time would be required to complete and submit a National Source Tracking Transaction Report by telephone with followup by fax or mail.<sup>16</sup> Using an estimated average labor rate of \$87 per hour for licensee staff, the labor cost for conducting these activities is estimated to be \$26.10

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<sup>14</sup> Based on the cost of a two-minute State-to-State telephone call.

<sup>15</sup> Includes costs associated with mailing a five-ounce package by certified mail in a manila envelope (\$1.29 for postage, \$2.30 for the certified-mail fee, and \$0.05 for a manila envelope).

<sup>16</sup> For purposes of this analysis, the NRC assumes that licensees submitting information by telephone with followup by fax or mail would spend three minutes more than licensees submitting information by mail or fax. This estimate takes into account the additional time they would need to report the information by telephone.

(i.e., 0.30 hours x \$87/hour). In addition, the NRC estimates that, on average, licensees would incur a cost of \$3.86 for each report they submit by telephone to the National Source Tracking System.<sup>17</sup> Thus, the total cost for completing and submitting a report is estimated to be \$29.96 (i.e., \$26.10 + \$3.86).

The NRC further estimates that, each year, licensees would complete and submit 12 reports by telephone. Thus, the industry's total annual cost for completing and submitting National Source Tracking Transaction Reports by telephone with followup by fax or mail is estimated to be \$360 (i.e., 12 reports x \$29.96/report).

Based on the above, the NRC estimates that industry's total annual cost for completing and submitting National Source Tracking Transaction Reports would be \$35,613 (i.e., \$25,825 + \$4,133 + \$2,453 + \$2,844 + \$360). For purposes of this analysis, the NRC assumes that this *annual* industry operating cost would be incurred for the first time in 2007.

### **3.2.3.5 Correction of Previously Filed National Source Tracking Transaction Reports**

The proposed regulatory action would require licensees to correct any errors in previously filed National Source Tracking Transaction Reports within five business days of the discovery. The NRC anticipates that all reports would be corrected and re-submitted using on-line forms.

The NRC estimates that, on average, 0.05 hour (3 minutes) of licensee staff time would be required to correct and re-submit a previously filed National Source Tracking Transaction Report on-line. Using an estimated average labor rate of \$87 per hour for licensee staff, the cost for conducting these activities is estimated to be \$4.35 per report (i.e., 0.05 hour x \$87/hour).<sup>18</sup> As shown in Table 3, the NRC estimates that, each year, licensees would submit 2,587 National Source Tracking Transaction Reports. Based on best judgment, the NRC estimates that licensees would correct and re-submit one percent of these reports (i.e., 2,587 x 0.01 = 26 reports). Thus, the industry's total annual cost for correcting and re-submitting previously filed National Source Tracking Transaction Reports is estimated to be \$113 (i.e., 26 reports x \$4.35/report).

Note that, for purposes of this analysis, the NRC assumes that this *annual* industry operating cost would be incurred for the first time in 2007.

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<sup>17</sup> Includes a cost of \$0.22 for making a three-minute State-to-State telephone call and a cost of \$3.64 for mailing the National Source Tracking Transaction Report.

<sup>18</sup> The NRC considers Internet access to be a standard business practice. Therefore, for purposes of this analysis, the cost associated with the purchase of Internet access services is not considered an incremental cost to licensees.

### 3.2.3.6 Annual Inventory Reconciliation of Nationally Tracked Sources

Under existing regulations, licensees are required to conduct inventories of their sealed sources. The proposed regulatory action would require each licensee to reconcile and verify its inventory of nationally tracked sources against the data in the National Source Tracking System. This verification would be conducted during the month of June each year. As part of the verification process, the licensee would be required to resolve any discrepancies between the National Source Tracking System and the actual inventory by filing the necessary National Source Tracking Transaction Report(s).

The NRC estimates that licensees would require, on average, one hour to reconcile and verify inventory information on their nationally tracked sources.<sup>19</sup> Using an estimated average labor rate of \$87 per hour for licensee staff, the labor cost for reconciling and verifying this information is estimated to be \$87 per licensee (i.e., 1 hour x \$87/hour). As shown in Table 1, the NRC estimates that 1,350 licensees would reconcile and verify inventory information for nationally tracked sources. Thus, the labor cost to licensees is estimated to be \$117,450 (i.e., 1,350 licensees x \$87/licensee).

In addition, the NRC estimates that licensees would incur materials costs, based on the submission method selected. These costs are described below:

- *On-Line Forms and Computer-Readable Format Files.* The NRC considers Internet access to be a standard business practice. Therefore, for purposes of this analysis, the cost associated with the purchase of Internet access services is not considered an incremental cost to licensees.
- *Fax.* The NRC estimates that each of the 64 licensees submitting information by fax (see Table 1) would incur a materials cost of \$0.15 for faxing the information to the National Source Tracking System.<sup>20</sup> Thus, the materials cost to licensees submitting information by fax is estimated to be \$9.60 (i.e., 64 licensees x \$0.15/licensee).
- *Mail.* The NRC estimates that each of the 64 licensees submitting information by mail (see Table 1) would incur a materials cost of \$3.64 for mailing the information to the National Source Tracking System.<sup>21</sup> Thus, the materials cost to licensees submitting information by mail is estimated to be \$232.96 (i.e., 64 licensees x \$3.64/licensee).
- *Telephone with Followup by Fax or Mail.* The NRC estimates that each of the seven licensees submitting information by telephone with followup by fax or mail would incur a materials cost of \$4.16 for making a telephone call and mailing the information to the

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<sup>19</sup> Note that some licensees may require more or less time to reconcile and verify inventory information on their nationally tracked sources. The time required by each licensee would depend on licensee-specific factors (e.g., number of sources, licensee's efficiency).

<sup>20</sup> Based on the cost of a two-minute State-to-State telephone call.

<sup>21</sup> Includes costs associated with mailing a five-ounce package by certified mail in a manila envelope (\$1.29 for postage, \$2.30 for the certified-mail fee, and \$0.05 for a manila envelope).

National Source Tracking System.<sup>22</sup> Thus, the materials cost to licensees submitting information by telephone with followup by fax or mail is estimated to be \$29.12 (i.e., 7 licensees x \$4.16/licensee).

Based on the above, the materials cost to licensees is estimated to be \$271.68 (i.e., \$0 + \$9.60 + \$232.96 + \$29.12).

In summary, the NRC estimates that industry's total annual cost for reconciling and verifying its inventory of nationally tracked sources would be \$117,722 (i.e., \$117,450 + \$271.68). For purposes of this analysis, the NRC assumes that this *annual* industry operating cost would be incurred for the first time in 2007.

### **3.2.3.7 Nationally Tracked Source Unique Serial Numbers**

The proposed regulatory action would require each licensee who manufactures a nationally tracked source after the effective date of the rule to assign a unique serial number to each nationally tracked source. Serial numbers may be composed only of alpha-numeric characters.

The NRC estimates that, on average, two minutes of licensee staff time would be required to assign a unique serial number to a nationally tracked source. Using an estimated average labor rate of \$87 per hour for licensee staff, the cost for assigning a serial number is estimated to be \$2.90 per source (i.e., [2 minutes/60 minutes] x \$87/hour). The NRC estimates that 15,000 nationally tracked sources are manufactured each year. Thus, the industry's total *annual* cost for assigning unique serial numbers to nationally tracked sources is estimated to be \$43,500 (i.e., 15,000 sources x \$2.90/source).

## **3.3 Results**

Under the National Source Tracking System alternative (Option 2), the NRC would require licensees to report information on the manufacture, transfer, receipt, and disposal of nationally tracked sources.

Using the cost assumptions discussed in Section 3.2 of this document, the NRC staff estimated the incremental costs to industry and the NRC under Option 2. These costs were estimated for the years 2005 through 2016. All costs incurred in the future were calculated in 2005 dollars using discount rates of 7 and 3 percent. Discounting all costs to year 2005 adjusts for the fact that costs incurred at different points in time are not equivalent. The results are presented in Table 4.

As shown in Table 4, the net present value under Option 2, using a 7 percent discount rate, is estimated to be a total cost of \$19,661,740. Using a 3 percent discount rate, the net present value is estimated to be a total cost of \$23,524,940.

The NRC staff believes that the expected qualitative values contribute substantially to the benefits of the National Source Tracking System. These qualitative values include:

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<sup>22</sup> Includes a cost of \$0.52 for making a seven-minute State-to-State telephone call and a cost of \$3.64 for mailing the inventory information to the National Source Tracking System.

- *Improved Security for Nationally Tracked Sources.* The National Source Tracking System is expected to result in improved accountability and controls over nationally tracked sources. This is expected to improve public health (accident/event) and avert potential offsite property damage and costs by decreasing the risk of a security-related event involving nationally tracked sources.
- *Improved Understanding of the Location of Nationally Tracked Sources.* Information contained in the National Source Tracking System would improve the information available to the NRC, as well as other government entities (e.g., Department of Homeland Security, Agreement States), concerning the locations of nationally tracked sources.
- *Improved Regulatory Efficiency.* The establishment of a national program to monitor the location of nationally tracked sources would improve regulatory efficiency by: (1) increasing accountability among all parties associated with a nationally tracked source transaction and (2) responding to a recommendation in the IAEA's Code of Conduct.
- *Enhanced Ability to Promote and Maintain the Common Defense and Security.* Information contained in the National Source Tracking System would allow the NRC to better monitor the location of nationally tracked sources and, thus, improve accountability and controls over them. Consequently, the National Source Tracking System would enhance the NRC's ability to maintain and promote the common defense and security.
- *Increased Public Confidence.* Information contained in the National Source Tracking System would allow the NRC to better monitor the location of nationally tracked sources. This is expected to result in increased public confidence in NRC's regulation of inventories of radioactive materials that could be used in the production of RDDs and REDs.

**Table 4**  
**Present Value of the Costs Under the National Source Tracking System Alternative (Option 2): 2005 - 2016 <sup>a</sup>**  
**(2005 dollars)**

Category	7% Discount Rate			3% Discount Rate		
	Costs to Industry	Costs to the NRC	Total Costs	Costs to Industry	Costs to the NRC	Total Costs
Rulemaking and IT Development/Maintenance Activities	\$0	\$18,266,000	\$18,266,000	\$0	\$21,787,000	\$21,787,000
National Source Tracking System Account Set-Up	\$49,000	\$0	\$49,000	\$51,000	\$0	\$51,000
Initial Inventory of Nationally Tracked Sources	\$53,000	\$0	\$53,000	\$56,000	\$0	\$56,000
National Source Tracking Transaction Reports	\$234,000	\$0	\$234,000	\$295,000	\$0	\$295,000
Correction of Previously Filed National Source Tracking Transaction Reports	\$740	\$0	\$740	\$940	\$0	\$940
Annual Inventory Reconciliation of Nationally Tracked Sources	\$773,000	\$0	\$773,000	\$975,000	\$0	\$975,000
Nationally Tracked Source Unique Serial Numbers	\$286,000	\$0	\$286,000	\$360,000	\$0	\$360,000
<b>Total</b>	\$1,395,740	\$18,266,000	\$19,661,740	\$1,737,940	\$21,787,000	\$23,524,940

<sup>a</sup> Table includes rounding error.

#### **4. Backfit Analysis**

The proposed regulatory action includes new reporting requirements and does not impose any backfits on systems, structures, or components of a facility. That is, the proposed regulatory action does not contain any provisions involving backfitting, as defined at 10 CFR 50.109, 70.76, 72.62, and 76.76. Therefore, a backfit analysis is not required.

#### **5. Decision Rationale**

For the two regulatory alternatives identified, the values and impacts have been considered. Option 2, the National Source Tracking System alternative, was determined to be the preferred option because it is expected to: (1) enhance the NRC's ability to promote and maintain the common defense and security, (2) improve understanding of the location of nationally tracked sources, (3) improve regulatory efficiency (by increasing accountability among all parties associated with a nationally tracked source transaction), (4) improve public health and safety, and (5) increase public confidence. The NRC believes that the incremental costs to licensees and the NRC under Option 2 are justified because the requested actions and information are necessary to monitor the location of nationally tracked sources and, thus, promote and maintain the common defense and security.

#### **6. Implementation**

The proposed regulatory action would be enacted through a Proposed Rule, public comments, and a Final Rule, with promulgation of the Final Rule by July 2006. No impediments to implementation of the recommended alternative have been identified.

The proposed regulatory action would require licensees who manufacture, transfer, receive, or dispose of a nationally tracked source to: (1) report their initial inventory of Category 1 and/or 2 nationally tracked sources to the National Source Tracking System; (2) complete and submit a National Source Tracking Transaction Report after each transaction; (3) correct any errors in previously filed National Source Tracking Transaction Reports within five business days of the discovery; and (4) reconcile and verify the inventories of nationally tracked sources they possess against the data in the National Source Tracking System on an annual basis. In addition, licensees who manufacture nationally tracked sources after the effective date of the rule would be required to assign a unique serial number to each nationally tracked source.

The NRC is currently in the process of developing the National Source Tracking System and expects to finalize its development by December 2006. When completely operational, the National Source Tracking System will be a web-based system that will allow licensees to easily meet the proposed reporting requirements.

The estimated resources entailed in this regulatory action are in the order of 5.5 full-time equivalent employees (FTEs) and are included under NRC costs. An additional 1.2 FTE will be used for development of the final rule. These resources will come principally from the Office of Nuclear Material Safety and Safeguards (NMSS). These resources are within NMSS's budget for the National Source Tracking System.