

POLICY ISSUE (Notation Vote)

August 25, 2010

SECY-10-0112

FOR: The Commissioners

FROM: R. W. Borchardt
Executive Director for Operations

SUBJECT: REPORT REGARDING ENCOURAGING STATES AND LICENSEES
TO COMPLETE NATIONAL SOURCE TRACKING SYSTEM
CREDENTIALING AND TO USE THE SYSTEM ELECTRONICALLY

PURPOSE:

To request Commission approval of the staff's recommended approach to continue to encourage States and licensees to complete their credentialing for the National Source Tracking System (NSTS) and to use the system electronically through stakeholder outreach and program improvements.

SUMMARY:

In this paper, the staff discusses the outreach efforts to increase electronic input to NSTS by licensees and Agreement States, and examines issues that inhibit licensees from electronic access to the NSTS. This paper also presents options for establishing a regulatory requirement for licensees to complete their credentialing for NSTS and to enter sealed source transaction information on-line into the NSTS, with staff's recommended option.

BACKGROUND:

Staff briefed the Commission on April 23, 2009, on the accomplishments, challenges, and vision for the future integration of source management and protection into the U.S. Nuclear Regulatory Commission (NRC), Agreement State, and licensee radioactive source security programs. A major focus of the discussion included the status and future vision of the NSTS. Also, representatives from the Organization of Agreement States, and a manufacturer and distributor, briefed the Commission on their experiences using the NSTS, including difficulties in the credentialing and certification process.

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In a Staff Requirements Memorandum dated May 20, 2009, entitled "Briefing on Radioactive Source Security, 2:00 P.M., Thursday, April 23, 2009, Commissioners' Conference Room, One White Flint North, Rockville, Maryland (Open To Public Attendance)" (SRM-M090423), the staff was directed to look into ways to encourage States and licensees to complete their credentialing for NSTS and to use the system electronically, including re-examining the need to establish a regulatory requirement, and provide recommendations.

The NSTS database contains information on all nationally tracked sources as defined in 10 CFR 20.1003. Each licensee who manufactures, transfers, receives, disassembles, or disposes of a nationally tracked source is required to report their source transactions to the NSTS. The information contained in the NSTS is considered sensitive information, and is designated as "Official Use Only" (see Enclosure 1 for additional information on NSTS).

Currently, over 74,000 sources, possessed by approximately 1,400 NRC and Agreement State licensees, are tracked in NSTS. As prescribed in 10 CFR 20.2207, or the compatible Agreement State requirements, licensees currently have several options for reporting transaction information to the NSTS:

- The on-line system;
- Electronically, using a computer-readable format;
- By facsimile of the NRC Form 748;
- By mail to the address stated on the NRC Form 748; and
- By telephone with a follow-up by facsimile or mail of the NRC Form 748

On-line access is via the internet and includes a licensee entering individual sealed sources transactions or uploading a computer-readable file of multiple sealed sources. An individual must be credentialed to have on-line access to NSTS. Electronic reporting, using a computer-readable format, entails the licensee forwarding an email or electronic media containing a computer-readable formatted file of the source information to the NSTS Help Desk to be uploaded for the licensee.

DISCUSSION:

The NRC staff considers on-line access to be the most efficient method to report source transaction information to the NSTS. This method maintains the most up-to-date database, in the shortest period of time, with the least expenditure of NRC and contractor resources for data entry. The NSTS on-line computer screens have drop-down selection lists for data entry, which aids in preventing the introduction of incorrect data or typographic errors. Once a specific source has been initially entered in NSTS by a licensee, subsequent source transactions do not require re-entry of the basic source-identifying information by future licensees possessing the source. As of August 1, 2010, 580 (41percent) licensees have on-line web access to NSTS, out of approximately 1,400 entities (both NRC and Agreement State licensees) that have sources registered in the NSTS.

Delays in transcription and resolution of source data reported off-line sometimes impact the receiving licensee's ability to execute a receipt transaction. In addition to licensees, 36 of the 37 Agreement States have on-line access to NSTS. The staff continues to work with the remaining Agreement State. Stakeholder outreach efforts to increase on-line and electronic usage of the system have been extensive, ongoing, and vigorous since the proposed NSTS rule was published in 2005. The outreach efforts have resulted in an increasing number of credentialed users, increasing number of applicants enrolling to have on-line access to the system, and an increase in electronic reporting. In particular, the staff has focused on industrial radiographers, which is the largest group of individual source-users that make frequent transaction reports during the year. Through these efforts, more than 55 percent of industrial radiographers that are required to report to NSTS now have credentials and on-line access. Manufacturers and distributors generate the largest number of source transactions in a given time period. Most of these licensees submit their transactions on-line or via computer-readable format. In May, June, and July 2010, the combination of on-line and computer-readable format transactions were 80 percent or better of the total NSTS transactions made in those months (see Enclosure 2 for detailed information). Efforts to encourage on-line access to the NSTS will continue, and will include workshops, upgrades to the NSTS to include automated alerts and notifications for significant events, and a re-evaluation of the NSTS security categorization.

The most significant impediment to on-line access for licensees has been the required credentialing process. There have been administrative issues where licensees had difficulty enrolling because of the level of detailed information needed in the application. These administrative difficulties have mostly been ameliorated or eliminated (through discussion and process improvement with the Office of Information Services and the Computer Security Office). There still exists some technical, computer software/hardware challenges, which are currently being addressed on a case-by-case basis.

The frequency of reporting transactions to the NSTS influences all licensees' business interests to become a credentialed user. All licensees with nationally tracked sources are required to perform annual inventory reconciliation. However, there is a wide spectrum in the frequencies to report source transactions to the NSTS during the year, and different categories of licensees have varying frequencies for reporting transactions. A summary of the most frequently mentioned reasons licensees have identified for not accessing NSTS on-line are:

- It is easier to fax, email or mail the NRC Form 748;
- The credentialing application and certificate downloads are difficult and time consuming for licensees who use the system infrequently, e.g., need to access NSTS only once a year for annual reconciliation;
- The software for downloading certificates is incompatible with their computer operating system;
- The need to go through the credentialing process each time an approved NSTS user leaves a licensee;
- Some licensees are not comfortable using a computer.

OPTIONS:

The staff has evaluated several options to increase the on-line and electronic access to NSTS. Current help desk costs on average are \$114,000 per month. The staff estimates that a scenario where 98 percent of the source transactions are reported online or electronically would result in a monthly cost savings of \$16,000 per month. In developing options, the staff's goal was to provide the Commission with a range of options for having transaction information updated in the NSTS on-line or electronically, and to identify a means to implement that policy. More detailed advantages and disadvantages of the following options can be found in Enclosure 1.

- (1) Continue with current regulatory requirements, continue addressing issues as lessons are learned and improvements are implemented, and continue to encourage licensees to access the NSTS on-line and electronically, while addressing the technical issues as they are encountered. Since the effective date of the NSTS rule, the number of on-line and electronic transactions has been increasing. Recent transaction analysis (May, June, and July 2010) indicates that greater than 80 percent of transactions were performed either on-line or electronically via computer-readable file. The NSTS has been operational for less than 2 years; the staff has made progress in ease-of-use of the system and credentialing from the lessons learned in this period of time. Staff outreach materials have been developed and staff continues to look for new avenues to explore with the NSTS participating community. This option would also allow licensees and the States to gain additional experience. To assist licensees that have not used on-line or electronic computer-readable format, staff is finalizing an improved set of NRC Form 748s that can be saved with licensee transaction data and submitted electronically via email, eliminating errors encountered with facsimiles. The revised forms would allow the NSTS Help Desk to extract the information from the form electronically, eliminating the need for the NSTS Help Desk to transcribe information from an image file into the NSTS. This new NRC Form 748 will reduce the risk of data entry error and maintain higher data integrity, while reducing manual input, NSTS Helpdesk assistance, and data reconciliation costs. The NRC is also reducing the complexity in the credentialing application and on-line access by providing easier access to NRC staff assistance with completing the credentialing process, addressing issues of computer compatibility (e.g., current and future operating systems, firewalls, etc.) and re-evaluating the security level of the NSTS.
- (2) Change 10 CFR Part 20 to require certain high-use or high volume licensees to use on-line access, while providing current options for other licensees. The frequency of input to the NSTS by licensees varies. For instance, there are licensees with a large number of sources and frequent transactions (e.g., manufacturers and distributors, with daily transactions), and those with a large number of sources with infrequent transactions (e.g., panoramic irradiators and stereotactic radio surgery units, that transact every 2 to 5 years). There are licensees with a small number of sources, but frequent transactions (e.g., industrial radiography that transact every 3 months), and those with very infrequent transactions (e.g., self-contained irradiators for blood irradiation, research, or calibration).

- (3) Change 10 CFR Part 20 to require all licensees subject to NSTS reporting requirements to complete the credentialing process and to access the system via on-line only. This would eliminate all other options currently authorized in the regulation. This would provide the most effective and efficient means of entering transactions into NSTS from a data collection perspective. It would also be the lowest cost for the NRC.
- (4) Require those licensees that submit information to the NSTS database by means other than on-line access to pay for those transactions (i.e., for mailed, emailed, and by facsimile transactions submission). This would better align costs to NSTS users with the level of service provided. However, the NSTS is funded as part of the generic homeland security effort, which is not part of the license fee base. Also, the agency is not authorized to collect fees from Agreement State licensees.

RESOURCES:

There is no substantial additional budgetary adjustment requirement to NRC if the agency uses the current regulatory requirement and continues to pursue increased electronic use by stakeholders, as recommended (Option 1). Options 2, 3, and 4 are not currently funded in the agency's FY 2011 budget or the FY 2012 budget request. If FSME pursues rulemaking, there would need to be budget adjustments and a shift in current funding allocations. Options 2, 3, and 4 do not include implementation costs of the new rule, which would include developing new procedures, technical support, and staff training to address the new requirements placed on the affected licensees. Implementation costs for the current rule have been significant. This paper does not address implementation costs nor does it try to predict long-term cost savings to NRC related to the investments described in Option 1 through 3.

RECOMMENDATION:

The staff recommends that the Commission approve Option 1, to continue with the current regulatory requirements, with continuing efforts and developments to promote credentialing for on-line access to NSTS by licensees, to investigate other viable authentication means, and to streamline alternative electronic methods to input transaction information into the NSTS.

COORDINATION:

This action has been coordinated with staff in the Office of the Chief Financial Officer, Office of Information Services, and the Computer Security Office. The Office of the General Counsel has reviewed this package and has no legal objection.

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This action has also been coordinated with the Organization of Agreement States (OAS) Executive Board, which also recommends that the Commission approve Option 1.

/RA/

R. W. Borchardt
Executive Director
for Operations

Enclosure:

1. Supporting Information about the National Source Tracking System
2. NSTS Transaction Statistics

Supporting Information about the National Source Tracking System and Encouraging Credentialing and Electronic Use

I. THE NATIONAL SOURCE TRACKING SYSTEM (NSTS)

NSTS is a public-facing system requiring electronic authentication that provides internet-based access for data modification. Electronic authentication is the process of establishing confidence in users' identities, to ensure that users are who they say they are, and that the user who attempts to perform functions in the database system is in fact the user who is authorized to do so. Authentication of an NSTS user is accomplished by means of credentialing the user as well as issuing them a smartcard, smartcard reader, and facilitating the download of two unique digital certificates to their issued smartcard. The level of rigor required, for an individual to obtain a credential for electronic access to NSTS, is not trivial; the use of the credential is easy once on-line access is obtained. The difficulty of the process has caused some individuals and organizations to bypass the on-line method of transaction information updates, and use what they perceive to be the less burdensome method of information entry. This use of alternatives to on-line or electronic transaction entry has circumvented the most effective, efficient, and most accurate method of maintaining the NSTS database with accurate and up-to-date information.

In 2005, the regulatory analysis for the NSTS proposed rule estimated that 75 percent of licensees would supply transaction information via on-line access. The estimate did not foresee the level of effort and time necessary to obtain a smartcard and download certificates for on-line access to the NSTS. The NSTS is categorized as a level 4 security system, according to the National Institute of Standards and Technology guidelines for civilian Information Technology (IT) systems.

II. STAFFS OUTREACH EFFORTS

Since the deployment of the NSTS in 2009, the number of stakeholders that report source transactions on-line and electronically has been increasing through continuous staff efforts. Some of the major outreach efforts to encourage on-line and electronic access include the following:

- Extensive telephone outreach to licensees, especially during annual reconciliation of licensee inventories;
- Attendance and participation at stakeholder professional meetings (e.g., Health Physics Society, American Association of Physicists in Medicine, American Society for Nondestructive Testing, Organization of Agreement States (OAS), and the Conference of Radiation Control Program Directors (CRCPD));
- Targeted workshops for industrial radiography licensees;
- Link to the U.S. Nuclear Regulatory Commission (NRC) NSTS website accessible from the NRC home page (Key Topic), which includes computer based training modules for NSTS;
- NSTS Blog for communications/updates concerning the NSTS system and website;
- Issuance of Regulatory Issue Summaries;
- Webinar training to interested groups upon request on how to use the NSTS;
- Establishment of a Change Control Board, which includes industry representatives, NRC, and Agreement State representatives, for maintenance system update releases;
- Emphasis on becoming an electronic user to stakeholders who are contacted for any reason and who are not already accessing the NSTS via the internet.

Specific outreach to encourage Agreement States participation in NSTS included:

- NSTS booth at vendors fair at professional conferences (e.g., an Agreement State Regulatory Conference);
- Brochures distributed to Agreement States for promoting NSTS on-line reporting;
- Presentation at OAS and CRCPD conferences;
- Webinar presentations to Agreement State program staff upon request;
- Bimonthly conference calls with the Agreement State NSTS points-of-contact.

The Office of Federal and State Materials and Environmental Programs (FSME) is currently soliciting an integrated marketing solutions contractor to provide expertise to NRC staff during the deployment of NSTS Version 2. The objectives of the contract are to provide NRC with the ability to:

- Obtain buy-in and support for the NSTS from stakeholders, including licensees and Agreement States;
- Promote the mission of NSTS: Accountability for all Category 1 and Category 2 sources in the United States; and
- Communicate with other stakeholders, such as the public, Congress, etc.

The main deliverable from this contract will be an integrated marketing plan and the associated products to implement the plan. In addition, the contractor will conduct market research with licensees, Agreement State staff, and NRC to determine the best approach for re-marketing NSTS.

III. COMPUTER COMPATIBILITY ISSUES

The Statements of Consideration for the NSTS final rule stated that licensees would not be required to invest in any additional equipment to accomplish their reporting requirements. Most licensees already have computers and internet access, but not all. The NSTS is compatible with Internet Explorer Version 6 or higher, which not all licensees use on their computers. In addition, there are operating system limitations for a few users relating to the credentialing software, and card reader middleware required to download certificates on the NSTS smartcards. Also, all system users must sign rules of behavior that describe user responsibilities and expected behavior with regard to NSTS information and system usage; one of the rules prohibits use of wireless technology to access NSTS. In some cases, smartcard readers cannot be connected easily to licensees' computers without the assistance of the user's IT administrator with appropriate system rights for security purposes. These administrative and technical issues cause some licensees to use methods of transaction reporting other than on-line access. Users with technical issues can receive technical support through the NSTS Help Desk, and through the NRC's Office of Information Services for more complex problems. Computer compatibility issues are being addressed by the NRC, by coordinating upgrades with computer vendors. The administrative procedures have been and continue to be streamlined by NRC through inter-office cooperation.

IV. OPTIONS TO ENCOURAGE STATES AND LICENSEES TO COMPLETE NATIONAL SOURCE TRACKING SYSTEM CREDENTIALING AND TO USE THE SYSTEM ELECTRONICALLY: ADVANTAGES AND DISADVANTAGES

- (1) Continue with current regulatory requirement, continue addressing issues as lessons are learned, and continue to encourage licensees to access the NSTS electronically while addressing the technical issues as they are encountered.

This option offers the following advantages:

- No rulemaking necessary;
- Experience continues to allow NRC to streamline most processes and address technical issues, expanding and improving on-line and electronic access;
- Maintain the flexibility across the various types of licensees;
- Manufacturers and distributors report to NSTS via computer-readable input because of the large number of transactions in a single day;
- Licensees with a single source and/or infrequent (e.g., annual reconciliation) input would submit transaction information via NRC Form 748, not requiring a certification or smartcard involvement;
- Licensees reporting transactions via electronic access to NSTS with a smartcard would continue to do so;
- Outreach program affords the opportunity to interact with licensees (NRC and Agreement States).

This option has the following disadvantages:

- Higher level of human involvement required for data entry;
- More costly in time (mail, telephone, fax) to NRC (contractor to screen and transcribe data);
- Some shipper/receiver data mismatch due to delays of transaction reaching NSTS
- Higher likelihood of human error, decreased data accuracy;
- Annual reconciliation causes annual spike in workload for transmitting inventory data to licensees.

- (2) Require certain high-use or high volume licensees to complete their credentialing and to use on-line access, while providing current options for other licensees. The frequency of input to the NSTS by licensees varies. For instance, there are licensees with a large number of sources and frequent transactions (e.g., manufacturers and distributors with daily transactions), and those with a large number of sources with infrequent transactions (e.g., panoramic irradiators, stereotactic radio surgery units that transact every 2 to 5 years). There are the licensees with a small number of sources, but frequent transactions (e.g., industrial radiography every 3 months), and those with infrequent transactions (e.g., self-contained irradiators for blood irradiation, research, or calibration that transact every 5 to 15 years).

This option offers the following advantages:

- Will increase the efficiency and accuracy of the data collection process by decreasing data transcription;
- Easier for licensee to perform transactions once credentialed;
- NRC will realize a cost reduction by requiring most frequent users to make entry to NSTS on-line;
- Facilitates the collection of data by NRC to satisfy statutory requirement;
- Better source accountability on most frequent transactions;
- Reduces the work effort created by the annual reconciliation requirement;
- Still allows infrequent users of NSTS the option to report by other means.

This option has the following disadvantages:

- Would require rulemaking;
- Would require those licensees affected to have:
 - Their own computer, configured for both credentialing software and NSTS;
 - Non-wireless internet access;
 - Firewall that would allow access to NSTS;
 - Technical/administrative support to install card reader and software;
- A particular licensee category may have both frequent and infrequent entry requirements;
- Determining what is or is not frequent could be subjective (an industrial radiographer with a single source may consider 8 transactions (four transfers and four receipts) a year as infrequent);
- Would need to consider Office of Management and Budget (OMB) concerns of over-burdening licensees;
- Would need to address exemption requests from licensees that request relief from the requirement.

- (3) Require those licenses subject to NSTS reporting requirements to complete the credentialing process and to access the system via on-line only. This would eliminate all other options currently authorized in the regulation.

This option offers the following advantages:

- Significant impact on the efficiency and accuracy of the data collection process;
- Easier for licensee to perform transactions, once credentialed;
- Less transcribing to update data, less likely to create transcription errors; menu drop-downs would preclude incorrect choices or input;
- Less human involvement to input data to NSTS, and NRC will realize a cost reduction;
- Better source accountability by quicker update;
- Reduces the work effort created by the annual reconciliation requirement.

This option has the following disadvantages:

- Would require rulemaking;
 - Government Paperwork Elimination Act only requires federal government to provide optional rather than mandatory electronic transactions with the federal government when practicable;
 - Would require every licensee to have:
 - Their own computer, configured for credentialing software, and smartcard reader middleware, and NSTS;
 - Non-wireless internet access;
 - Firewall that would allow access to NSTS;
 - Technical/administrative support to install card reader and software;
 - Infrequent use (low number of transactions), frequent credentialing (personnel turnover) may seem cumbersome;
 - Would need to consider OMB concerns of over-burdening licensees;
 - Would need to address exemption requests from licensees that request relief from the requirement.
- (4) Require those licensees that submit information to the NSTS database by means other than on-line access to pay for transactions (i.e., for mailed, emailed, and by facsimile transactions submission).

This option offers the following advantage:

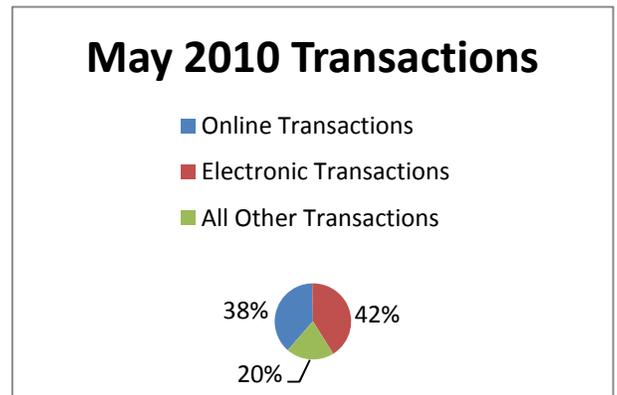
- Would decrease overhead of the NSTS;
- Encourage some licensees to access NSTS on-line (or via computer-readable format).

This option has the following disadvantage:

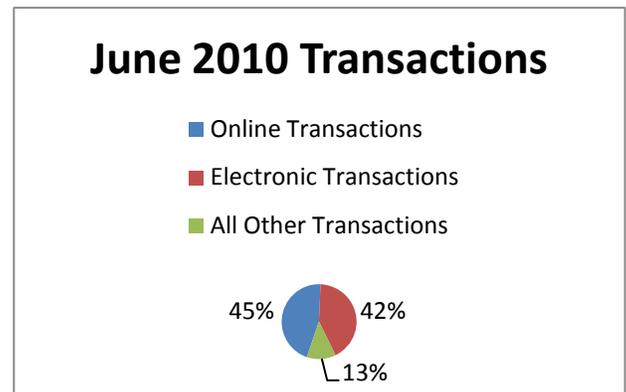
- NRC is not authorized to collect fees from Agreement State licensees;
- Would require rulemaking;
- Currently there is no fee mechanism to do this;
 - Material licensees are currently on a flat fee base;
 - NSTS is off the fee base; currently homeland security funded;
 - Would need to perform cost analysis to establish a fee schedule;
- Would need to address exemption requests from licensees that request relief from the requirement.

NSTS Transaction Statistics for May, June, and July 2010

May 2010 Transactions	Number of Transactions	Percentage of Transactions
Online Transactions	1822	38%
Electronic Transactions	1968	42%
All Other Transactions	968	20%
Total NSTS Transactions	4758	100%



June 2010 Transactions	Number of Transactions	Percentage of Transactions
Online Transactions	2591	45%
Electronic Transactions	2405	42%
All Other Transactions	717	13%
Total NSTS Transactions	5713	100%



July 2010 Transactions	Number of Transactions	Percentage of Transactions
Online Transactions	2787	47%
Electronic Transactions	1975	33%
All Other Transactions	1185	20%
Total NSTS Transactions	5947	100%

