

RULEMAKING ISSUE AFFIRMATION

October 19, 2004

SECY-04-0190

FOR: The Commissioners

FROM: Luis A. Reyes
Executive Director for Operations

SUBJECT: FINAL RULE: SECURITY REQUIREMENTS FOR PORTABLE
GAUGES CONTAINING BYPRODUCT MATERIAL (RIN 3150-
AH06)

PURPOSE:

To request Commission approval for publication of the final rule in the Federal Register to amend 10 CFR 30.34, "Terms and conditions of licenses." The final rule requires a portable gauge licensee to use a minimum of two independent physical controls that form tangible barriers to secure portable gauges from unauthorized removal whenever portable gauges are not under the control and constant surveillance of the licensee.

SUMMARY:

As a matter of protecting public health and safety from potential radiation exposure and enhancing public confidence, the NRC is increasing the security controls for portable gauges. The number of incidents of stolen gauges reported per year is small when compared with the total number of gauges in use, and the amount of radioactive material used in a portable gauge is also relatively small. However, theft of portable gauges is still a concern due to the potential for an individual to receive a radiation dose in excess of regulatory limits as a result of close contact with the source. It also poses a concern if a stolen portable gauge is then abandoned

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in the environment or recycled in a steel mill. In addition, given the public's increased interest in, and sensitivity to, security and safety of radioactive material after the events of September 11, 2001, it is prudent to further improve the security of portable gauges to enhance public confidence.

BACKGROUND:

In August 2002, a working group was formed to explore various options and requirements for the rulemaking. Personnel from the Agreement States of Florida and Arkansas participated as working group members. During the rulemaking process, the staff also consulted the U.S. Department of Transportation (DOT) hazardous material transportation staff. A steering group was also formed to address issues and facilitate concurrences.

The working group developed the proposed rule (SECY-03-0092, June 5, 2003), which was approved for publication by the Commission in a Staff Requirements Memorandum dated July 14, 2003 (Attachment 1). The proposed rule was published in the Federal Register (68 FR 45172) on August 1, 2003 (Attachment 2). The comment period closed on October 15, 2003, and the U.S. Nuclear Regulatory Commission (NRC) received 11 comment letters on the proposed rule. The commenters included a member of the public, members of an industry advisory group, three licensees, one radiation service company, two manufacturers, and three States.

DISCUSSION:

Due to the events of September 11, 2001, there is an increased public interest and sensitivity regarding the frequency of stolen gauges. The number of incidents of stolen gauges (about 50 out of about 22,000 or less than a quarter of 1 percent) reported per year is small when compared with the total number of gauges in use. The amount of radioactive material used in a portable gauge is also relatively small. The most commonly used portable gauges contain two encapsulated sources: a sealed gamma source containing 0.30 to 0.37 gigabecquerels (8 to 10 millicuries) of cesium-137 (Cs-137) and a sealed neutron source containing 1.48 to 1.85 gigabecquerels (40 to 50 millicuries) of americium-241/beryllium (Am-241/Be).

There have not been any reported incidents of individuals suffering from a radiation injury or overexposure associated with stolen portable gauges, but the potential exists for an individual to receive a radiation exposure exceeding the regulatory limits as a result of close contact with the sealed source. The dose rate on the surface of the device for a typical portable gauge is about 0.2 millisievert per hour (mSv/hr) (20 millirem per hour (mrem/hr)); and the dose rate on the source is more than 10 mSv/hr (1,000 mrem/hr). It is also a concern if a portable gauge is abandoned in the environment or recycled in a steel mill. Many landfills and recycling facilities are now equipped with radiation monitors; therefore, radioactive sources are often detected and removed early in the process. The potential for radioactive material to enter a metal recycling plant is small, but the cost for cleanup is large if such an event occurs. In 2001, a radioactive source was melted in a steel mill in Florida. The metal recycling plant was shut down for more than a month, and the cost for cleanup was more than \$10 million.

The staff believes that the existing control is insufficient to reduce the current rate of stolen gauges. NRC has issued several Information Notices to remind licensees of their responsibilities concerning the security of portable gauges, but the number of reported incidents

has not significantly decreased. In order to protect the public from the potential health and safety risks due to stolen gauges and to enhance public confidence, it is prudent to require additional controls to reduce the number of stolen portable gauges.

Based on the number of portable gauges in operation and the number of licensees that will be impacted by this rule, the staff believes that requiring two physical controls is the best option in achieving the goal of reducing the current number of stolen gauges and, at the same time, providing sufficient flexibility for the licensees in selecting controls that are most suitable to the licensee. There are approximately 1100 NRC licensees and 4000 Agreement State licensees that will be impacted by the final rule. As discussed in SECY-03-0092 for the proposed rule, the staff evaluated various control options, including: no action alternative; prohibiting unattended storage in vehicles with an annual cost impact of about \$70 million; prohibiting unattended storage at locations other than licensed facilities (e.g., requiring daily return of gauges) with an annual cost impact of about \$220 to \$625 million; requiring use of a metal enclosure with a one-time cost impact of about \$10 million and an annual cost of \$400,000; and requiring two physical controls with a one-time cost of about \$5 million and an annual cost of \$200,000. The estimated benefit gained is about \$170,000 per year from resources saved due to reducing the need to replace stolen gauges and to respond to events. A 50-percent reduction in the number of stolen gauges was assumed in the benefit analysis.

This rule was developed on the basis of public health and safety and not on the basis of common defense and security. As stated in the International Atomic Energy Agency (IAEA) Categorization of Radioactive Source (TECDOC-1344), a portable gauge is a Category 4 source. Since the IAEA Code of Conduct on the Safety and Security of Radioactive Sources only covers Categories 1, 2 and 3 sources, the Code of Conduct does not apply to portable gauges. Under the IAEA interim guidance on the Security of Radioactive Sources (TECDOC-1355), the designated security grouping for a portable gauge is Group C, which requires access control at the source location and one technical measure separating the source from unauthorized personnel. Currently, the United States has not adopted IAEA interim guidance TECDOC-1355.

Public Comments

Among the 11 comment letters, six indicate that they support the goal to reduce the loss or theft of portable gauges, but some believe that NRC has not effectively addressed the root cause; two state that current requirements are adequate; one indicates that the rule is well-intended; one expresses the view that a double-lock requirement may be excessive; and one believes that the current practice of using a chain to secure a gauge in an open-bed pickup truck is not adequate security. These comments and the NRC responses are discussed in detail in the Federal Register notice (Attachment 3).

Three States submitted comments on the published proposed rule. The State of Washington indicates that NRC security measures do not go far enough, noting that State requirements exceed NRC's proposed rule requirements regarding visibility and daily return of portable gauges to an approved storage location. The State of North Carolina believes that current regulations are sufficient to ensure the protection of the occupational worker, members of the public, and the environment with regard to the hazards associated with the safe use of portable gauges. It also does not believe that the NRC rule would effectively address the root cause of unauthorized removal or theft of portable gauges. In the State of North Carolina's view, the

visibility of the transportation cases or the easy access to the portable gauges are the root causes. The Commonwealth of Virginia supports the goal of the rule, but believes the proposed rule to be impractical to implement.

The staff is concerned about the continual theft of portable gauges. The staff does not believe the current practice of having one physical control is sufficient to reduce the current rate of these incidents, and believes that additional requirements are needed to improve the control of portable gauges.

Although requiring that portable gauges be returned daily to an approved storage location might be a more effective regulatory measure, the staff does not believe the significant cost impact to licensees would be commensurate with the potential benefit gained from those measures. The staff believes that requiring a minimum of two independent physical controls is the best approach to reduce the unauthorized removal or theft of portable gauges and, at the same time, to provide sufficient flexibility for licensees. The State comments and the NRC responses are discussed in detail in the Federal Register notice (Attachment 3).

Visibility Issue

Several commenters suggested that the rule should address the visibility of the gauge (e.g., a thief sees it, thinks it's valuable, and steals it). The working group agreed that portable gauges are often stolen because it is the thief's perception that the transportation case contains valuable commercial equipment. Similarly, the working group considered that there are benefits from keeping the portable gauge and its transportation case out-of-sight or covered.

When evaluating different ways to keep gauges out-of-sight, the working group concluded that in various methods (such as keeping the gauge in dark corners, inside a van, inside a van with tinted glass windows, etc.) of keeping a gauge from being visible would be subject to differing interpretations, resulting in questionable effectiveness and enforceability. The working group considered requiring licensees to cover the portable gauge to address the visibility problem, but DOT staff was concerned that covering the portable gauge containing radioactive materials during transportation would be inconsistent with DOT regulations. Specifically, covering the gauge would defeat the intent of DOT requirements for labels and markings (i.e., communicating to first responders of the presence of radioactive material in an emergency). Therefore, requiring to cover the portable gauge and its transportation case would potentially place NRC licensees in noncompliance with DOT requirements. The working group also considered requiring the licensees to use an "enclosure" as a means to address the visibility problem. However, requiring the use of an enclosure would have a significant cost impact on the licensees that might not be commensurate with the potential benefit gained from reducing the number of unauthorized removals or thefts of portable gauges. The working group concluded that these approaches to address the visibility problem would not be practical or effective and might be inconsistent with other regulatory requirements.

Working Group Recommendation

After considering public comments and discussions with the DOT staff, the working group recommended that no changes should be made to the proposed rule for enhancing the security requirements for portable gauges. Therefore, the final rule contains the exact same requirements as the proposed rule. The final rule would require that each portable gauge

licensee use a minimum of two independent physical controls that form tangible barriers to secure portable gauges from unauthorized removal, whenever portable gauges are not under the control and constant surveillance of the licensee.

The final rule is expected to reduce the frequency of unauthorized removal or theft of portable gauges, consistent with the NRC Security Goal to “Ensure the secure use and management of radioactive materials.” Fewer incidents of unauthorized removal or theft of portable gauges should result in a lower potential for public exposure, and a lower probability of events such as inadvertent steel smelting of gauges, consistent with the NRC Safety Goal to “Ensure protection of public health and safety and the environment.” It is expected that the final rule would also be consistent with the NRC Effectiveness Goal to “Ensure that NRC actions are effective, efficient, realistic, and timely,” because the new requirement should increase control of licensed material, without undue burden on the regulated community. Finally, consistent with the NRC Openness Goal to “Ensure openness in our regulatory process,” the staff has developed the rule through a rulemaking process involving a working group with non-NRC members (e.g., Agreement States); consulted with another cognizant Federal agency; and received stakeholder and public input in the development of the rule through posting in the NRC rulemaking forum website and publication in the Federal Register of the proposed rule. In addition, the Federal Register notice of the final rule will address public and State comments on the proposed rule and NRC’s responses. The staff plans to incorporate implementing guidelines through future routine updates of the consolidated guidance document, NUREG-1556, Vol. 1, “Program-Specific Guidance About Portable Gauge Licenses.”

AGREEMENT STATE ISSUES:

A copy of the draft Federal Register notice for the final rule was posted on the NRC’s Technical Conference Forum for the Agreement States to have an early opportunity for review. Input was received from the States of Washington, Iowa, Arkansas, California, and Wisconsin. The State of Washington supports the rulemaking and reiterated the need for addressing visibility problems and for daily return of portable gauges to an approved storage location. The State of Iowa suggests that it might be a good idea to issue an Information Notice to assist the licensees in implementing the final rule. The State of Arkansas agrees that loss of control of portable gauges is a serious concern, but states that the final rule does not effectively address the root cause of the thefts of portable gauges and that current regulations are adequate. The State of Arkansas also feels that removing the visibility of a portable gauge would be the most effective deterrent to theft and unauthorized removal. The State of California states that the examples included in the Statements of Consideration for the proposed rule may need clarification and should be included in a guidance document. The State of Wisconsin indicates that it has no comments on the final rule. No changes were made as a result of these comments. In lieu of issuing an Information Notice, NRC staff will prepare an article for the “NMSS Licensee Newsletter” once the rule is published.

NRC staff has analyzed the final rule in accordance with the procedures established in Part III of Handbook 5.9 to Management Directive 5.9, “Categorization Process for NRC Program Elements.” Staff has determined that the amendment, 10 CFR 30.34(i), should be classified as Compatibility Category “C.” An Agreement State should adopt the essential objectives of the Compatibility Category “C” program elements to avoid conflict, duplication, gaps, or conditions that would jeopardize an orderly pattern in the regulation of Agreement material on a nationwide basis. The staff has determined that the essential objective of the amendment, 10 CFR

30.34(i), is to reduce the frequency of unauthorized removal or theft of portable gauges by requiring licensees to provide a minimum of two independent physical controls that form tangible barriers to secure portable gauges from unauthorized removal whenever portable gauges are not under the control and constant surveillance of the licensee.

RECOMMENDATIONS:

That the Commission:

1. Approve for publication in the Federal Register the attached notice of final rule (Attachment 3).
2. Satisfy the requirement of the Regulatory Flexibility Act, 5 U.S.C. 605 (b), certify that this rule does not have significant impact on a substantial number of small entities. This certification is included in the attached Federal Register notice.
3. Note:
 - a. 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);
 - b. That a final Regulatory Analysis has been prepared for this rulemaking (Attachment 4);
 - c. That a final Environmental Assessment has been prepared for this rulemaking (Attachment 5);
 - d. The staff has determined that this action is not a "major rule," as defined in the Small Business Regulatory Enforcement Fairness Act of 1996 [5 U.S.C 804(2)] and has confirmed this determination with the Office of Management and Budget (OMB). The appropriate Congressional and Government Accountability Office contacts will be informed (Attachment 6);
 - e. The appropriate Congressional committees will be informed;
 - f. A press release will be issued by the Office of Public Affairs when the final rulemaking is filed with the Office of the Federal Register; and
 - g. OMB review is not necessary for this rulemaking.

COORDINATION:

The Office of the General Counsel has no legal objection to the final rulemaking. Resources needed to complete this rulemaking action are minimal and within existing budget allocation. The Office of the Chief Financial Officer has reviewed this Commission Paper for resource implications and has no objections. The final rule would make no changes to information

collection requirements in 10 CFR Part 30. This final rule was coordinated with DOT hazardous material transportation staff to ensure that the regulatory text is not in conflict with DOT regulations and the existing DOT/NRC Memorandum of Understanding. A copy of the draft Federal Register notice for the final rule was posted on the NRC's Technical Conference Forum for the Agreement States to have an early opportunity for review.

/RA/

Luis A. Reyes
Executive Director
for Operations

Attachments:

1. SRM Dated July 14, 2003
2. Proposed Rule, 68 FR 45172
3. Federal Register Notice
4. Final Regulatory Analysis
5. Final Environmental Assessment
6. SBREFA forms

ATTACHMENT 1

SRM Dated July 14, 2003

July 14, 2003

MEMORANDUM TO: William D. Travers
Executive Director for Operations

FROM: Annette L. Vietti-Cook, Secretary **/RA/**

SUBJECT: STAFF REQUIREMENTS - SECY-03-0092 - PROPOSED RULE -
ENHANCED SECURITY REQUIREMENTS FOR PORTABLE
GAUGES CONTAINING BYPRODUCT MATERIAL

The Commission has approved the staff's recommendation to publish in the Federal Register the proposed amendment to 10 CFR 30.34, subject to the changes noted below.

1. In the Federal Register notice, the first two lines in the summary section should be modified to read "The Nuclear Regulatory Commission (NRC) is proposing to amend its regulations in **10 CFR Part 30** governing the use of byproduct material in specifically licensed portable gauges. The proposed rule would require a **portable gauge** licensee to provide a minimum of..."
2. The proposed rule language on Page 20 on the FRN should be revised to read "Each **portable gauge** licensee shall use a minimum of two"

cc: Chairman Diaz
Commissioner McGaffigan
Commissioner Merrifield
OGC
CFO
OCA
OIG
OPA
Office Directors, Regions, ACRS, ACNW, ASLBP (via E-Mail)
PDR

ATTACHMENT 2

**Federal Register for Proposed Rule
(68 FR 45172; August 1, 2003)**

Proposed Rules

Federal Register

Vol. 68, No. 148

Friday, August 1, 2003

This section of the FEDERAL REGISTER contains notices to the public of the proposed issuance of rules and regulations. The purpose of these notices is to give interested persons an opportunity to participate in the rule making prior to the adoption of the final rules.

NUCLEAR REGULATORY COMMISSION

10 CFR Part 30

RIN 3150-AH06

Security Requirements for Portable Gauges Containing Byproduct Material

AGENCY: Nuclear Regulatory Commission.

ACTION: Proposed rule.

SUMMARY: The Nuclear Regulatory Commission (NRC) is proposing to amend its regulations governing the use of byproduct material in specifically licensed portable gauges. The proposed rule would require a portable gauge licensee to provide a minimum of two independent physical controls that form tangible barriers to secure portable gauges from unauthorized removal whenever the portable gauges are not under the control and constant surveillance of the licensee.

DATES: The comment period expires October 15, 2003. Comments received after this date will be considered if it is practical to do so, but the NRC is able to assure consideration only for comments received on or before this date.

ADDRESSES: You may submit comments by any one of the following methods. Please include the following number (RIN 3150-AH06) in the subject line of your comments. Comments on rulemaking 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. 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

website at <http://ruleforum.llnl.gov>.

Address questions about our rulemaking website to Carol Gallagher at (301) 415-5905; e-mail cag@nrc.gov.

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

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

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 O1F21, One White Flint North, 11555 Rockville Pike, Rockville, Maryland. Selected documents, including comments, can be reviewed and downloaded electronically via the NRC rulemaking website 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's PDR Reference staff at 1-800-397-4209, 301-415-4737 or by e-mail to pdr@nrc.gov.

FOR FURTHER INFORMATION CONTACT:

Lydia Chang, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, telephone (301) 415-6319, e-mail lwc1@nrc.gov.

SUPPLEMENTARY INFORMATION:

Background

Uses of Licensed Material in Portable Gauges

Portable gauges are devices containing licensed material that are used to determine physical properties (such as density and moisture content of soil, concrete, and other materials) in a field setting. The most typical portable gauges in use today contain two encapsulated sources of radioactive materials. The first is a sealed gamma source containing 0.30 to 0.37

gigabecquerels (8 to 10 millicuries) of cesium-137 (Cs-137) used to measure density. The second source is a sealed neutron source containing 1.48 to 1.85 gigabecquerels (40 to 50 millicuries) of americium-241/beryllium (Am-241/Be) used to measure moisture content. Other radioactive materials have also been used in portable gauges. Under the Atomic Energy Act of 1954, as amended, NRC regulates byproduct, source, and special nuclear material used in portable gauges. NRC does not, however, regulate naturally occurring radioactive material such as radium-226 (Ra-226) used in portable gauges because it is not a byproduct, source, or special nuclear material. Gauges containing Ra-226 may be regulated by individual States.

Portable gauges are of many different designs based on their intended use. Two basic methods of measuring the property of materials with these gauges are direct transmission and backscatter. For the direct transmission method, the source is located on a source rod. When the gauge is in use, the rod is extended and inserted beneath the surface material through an access hole. Radiation emitted by the source beneath the surface material is measured by a detector in the base of the gauge. For the backscatter method, both the source and the detector remain on top of the surface material to be tested. Radiation is directed into the surface and some is reflected back to the gauge detector by the surface material.

When not in use, portable gauges are generally stored in a permanent storage location within a licensed facility. However, portable gauges are often also stored at a temporary jobsite if the job requires more than one day. When transporting a portable gauge from a licensed facility to a temporary jobsite in a vehicle, the gauge is often placed in a transportation case, and then is secured in or onto the vehicle. Sometimes, portable gauges are stored at a temporary storage location or on a vehicle.

NRC and Agreement States Licenses

As authorized by section 274(b) of the Atomic Energy Act of 1954, as amended, 32 States have assumed responsibility for regulating certain activities related to radioactive material by entering into agreements with the NRC. The activities regulated by these "Agreement States"

include the use of byproduct material in portable gauges. Each Agreement State issues licenses to persons who use radioactive material in portable gauges in that State. The NRC issues licenses to persons using radioactive material in portable gauges in non-Agreement States. Requirements that are specific to the safe use of portable gauges are included as license conditions.

NRC and Agreement States issue specific licenses and certain general licenses. General licenses do not include an individual license document, and usually authorize only small quantities of licensed material. The subject of this rulemaking is for portable gauges that are specifically licensed. There are approximately 1100 NRC portable gauge specific licensees and an additional 4000 Agreement State specific licensees. Portable gauge licensees often possess multiple portable gauges under the same license, and may conduct business outside of their home States under the reciprocity provisions of 10 CFR 150.20 or equivalent Agreement State regulations. There are an estimated 22,000 to 25,000 portable gauges in use in the United States.

Current Regulatory Practices

Specific licenses for portable gauges are governed by NRC regulations in 10 CFR Part 30, "Rules of General Applicability to Domestic Licensing of Byproduct Material." However, other NRC requirements in 10 CFR parts 2, 19, 20, 21, 71, 150, 170, and 171 also apply to a portable gauge licensee. In addition, all such portable gauge licensees must also comply with other applicable Federal, State, and local regulations (e.g., Department of Transportation (DOT) regulations, local zoning requirements for a storage location, etc.). At present, NRC reviews a licensee's program as described in the license application, and incorporates certain requirements into the license as license conditions. Equivalent State regulations apply to Agreement State portable gauge licensees. Agreement States follow a similar approach. In addition, certain Agreement States, such as Florida, have specific additional requirements in their regulations for the possession and use of sealed sources in portable gauges. Other States, including Texas and Washington, have issued orders imposing specific additional requirements for their portable gauge licensees.

Storage and Control of Licensed Material

NRC regulations in 10 CFR part 20, "Standards for Protection Against

Radiation," contain requirements applicable to activities conducted under licenses issued by the NRC. Subpart I of Part 20 addresses storage and control of licensed material. Specifically, § 20.1801, "Security of stored material," requires licensees to secure from unauthorized removal or access licensed materials that are stored in controlled or unrestricted areas. Section 20.1802, "Control of material not in storage," requires licensees to control and maintain constant surveillance of licensed material that is in a controlled or unrestricted area and that is not in storage. Despite these requirements, theft of portable gauges, as described below, continues.

Theft of Portable Gauges

Reports in the NRC's Nuclear Materials Events Database (NMED) reveal that there have been approximately 450 gauges stolen since 1990. More than two-thirds of these stolen gauges were taken from vehicles while parked at locations other than the licensees' storage facilities or temporary jobsites. In most of these incidents, the gauge was in a DOT "Type A" transportation case, which was then secured with a metal chain to the open bed of a pickup truck. Frequently, the chain was cut and the gauge was stolen along with its transportation case. The remaining one-third of the gauges were stolen from a licensed facility or a temporary jobsite, stolen along with a vehicle, or taken by a disgruntled employee.

It is true that the number of incidents reported per year is small when compared to the total number of gauges in use, that the amount of radioactive material used in a portable gauge is relatively small, and that the radioactive material is encapsulated in stainless steel. Nevertheless, the theft of portable gauges still poses a concern if the gauge is abandoned in the environment, is recycled in a steel mill, or is used inappropriately.

In light of these concerns, NRC has issued several "Information Notices" (IN-2001-11, IN-98-01, IN-93-18, IN-88-02, IN-87-55, and IN-86-67) to remind licensees of their responsibilities concerning the security of portable gauges. However, the yearly number of reported incidents has not significantly decreased in response to these notices and the potential still exists for public health and safety risks. In addition, given the heightened sensitivity following the events of September 11, 2001, it is necessary to enhance security for portable gauges by reducing the opportunity for theft. Therefore, NRC is proposing additional

security requirements for specifically licensed portable gauges in addition to the general requirements for security and control of licensed material in 10 CFR 20.1801 and 20.1802. A working group was formed in August 2002 to explore various options and requirements for the rulemaking. Personnel from the Agreement States of Florida and Arkansas represented the Organization of Agreement States and participated as members of the working group along with NRC staff in formulating this proposed rule. The proposed rule language was coordinated with DOT hazardous material transportation staff due to the intrinsic portability (i.e., transportation) of the portable gauge during the course of its utilization by licensees.

Discussion of Proposed Amendment

NRC is proposing to amend its regulations in § 30.34, Terms and conditions of licenses, to impose specific security requirements for portable gauges to reduce the opportunity for theft. Specifically, NRC proposes revising this section by adding § 30.34(i) to the list of terms and conditions of licenses issued pursuant to 10 CFR part 30, "Rules of General Applicability to Domestic Licensing of Byproduct Material." This paragraph would require persons using portable gauges under specific licenses to use a minimum of two independent physical controls that form tangible barriers to secure portable gauges from unauthorized removal, whenever portable gauges are not under the control and constant surveillance of the licensee.

This rule would apply to a licensee with a portable gauge regardless of the location, situation, and activities involving the portable gauge. At all times, the licensee would be required to either maintain control and constant surveillance of the portable gauge or use a minimum of two independent physical controls to secure the portable gauge. The NRC staff expects that the physical controls would be designed and constructed of material suitable for securing the gauges from unauthorized removal. In addition, the NRC staff's expectation is that both of these controls must be defeated for the portable gauge to be removed to deter a theft by requiring a more determined effort to remove the gauge.

Securing a Portable Gauge at a Licensed Facility

Long term storage of a portable gauge is usually at a permanent facility listed in the license or license application. Routine storage of a portable gauge in a

vehicle or at temporary or permanent residential quarters is usually reviewed and may be authorized by NRC or the applicable Agreement State during the licensing process. Under the proposed regulation, when a portable gauge is stored at a licensed facility, the licensee would be specifically required to use a minimum of two independent physical controls to secure the gauge. Examples of two independent physical controls to secure a portable gauge when stored at a licensed facility are—

1. The portable gauge or transportation case containing the portable gauge is stored inside a locked storage shed within a secured outdoor area, such as a fenced parking area with a locked gate;

2. The portable gauge or transportation case containing the portable gauge is stored in a room with a locked door within a secured building for which the licensee controls access by lock and key or by a security guard;

3. The portable gauge or transportation case containing the portable gauge is stored inside a locked, non-portable cabinet inside a room with a locked door if the building is not secured;

4. The portable gauge or transportation case containing the portable gauge is stored in a separate secured area inside a secured mini-warehouse or storage facility; or

5. The portable gauge or transportation case containing the portable gauge is physically secured to the inside structure of a secured mini-warehouse or storage facility.

Securing a Portable Gauge in a Vehicle

Licensees commonly use a chain and a padlock to secure a portable gauge in its transportation case to the open bed of a pickup truck while using the vehicle for storage. Because the transportation case is portable, a theft could occur if the chain is cut and the transportation case with the portable gauge in it is taken. If the licensee simply loops the chain through the handles of the transportation case, a thief could open the transportation case and take the portable gauge without removing the chain or the case. Because the transportation case is also portable, it must be protected by two independent physical controls if the portable gauge is inside. A lock on the transportation case or a lock on the portable gauge source rod handle would not be sufficient under the proposed requirements because the case and the gauge are portable.

A vehicle should be used for storage only for a short period of time when a gauge is in transit. A portable gauge

should only be kept in a vehicle overnight if it is not practicable to provide temporary storage in a permanent structure. Under the proposed regulation, when a portable gauge is being stored in a vehicle, the licensee would be specifically required to use a minimum of two independent physical controls to secure the gauge. Examples of two such independent physical controls to secure portable gauges in these situations are—

1. The locked transportation case containing the portable gauge is physically secured to a vehicle with brackets, and a chain or steel cable (attached to the vehicle) is wrapped around the transportation case such that the case can not be opened unless the chain or cable is removed. In this example, the locked transportation case would count as one control because the brackets would prevent easy removal of the case. The chain or cable looped only through the transportation case handle is not acceptable;

2. The portable gauge or transportation case containing the portable gauge is stored in a box physically attached to a vehicle, and the box is secured with (1) two independent locks; (2) two separate chains or steel cables attached independently to the vehicle in such a manner that the box cannot be opened without the removal of the chains or cables; or (3) one lock and one chain or steel cable is attached to the vehicle in such a manner that the box cannot be opened without the removal of the chain or cable; or

3. The portable gauge or transportation case containing the portable gauge is stored in a locked trunk, camper shell, van, or other similar enclosure and is physically secured to the vehicle by a chain or steel cable in such a manner that one would not be able to open the case or remove the portable gauge without removal of the chain or cable. In this example, the transportation case would not count as one control because it could be easily removed.

Securing a Portable Gauge at a Temporary Jobsite or at Locations Other Than a Licensed Facility

When a job requires storage of a portable gauge at a temporary jobsite or at a location other than a licensed facility, the licensee should use a permanent structure for storage if practicable to do so. When storing a portable gauge in temporary or permanent residential quarters, the licensee should limit access by storing the gauge in a separate room away from residents and other members of the public. The licensee must also meet the

radiation exposure limits specified in 10 CFR part 20.

Under the proposed regulation, when a portable gauge is stored at a temporary jobsite or at a location other than an authorized facility, the licensee would also be required to use a minimum of two independent physical controls to secure the gauge. Examples of two independent physical controls to secure portable gauges at these locations are—

1. At a temporary job site, the portable gauge or transportation case containing the portable gauge is stored inside a locked building or in a locked non-portable structure (*e.g.*, construction trailer, sea container, *etc.*), and is physically secured by a chain or steel cable to a non-portable structure in such a manner that an individual would not be able to open the transportation case or remove the portable gauge without removing the chain or cable. A lock on the transportation case or a lock on the portable gauge source rod handle would not be sufficient because the case and the gauge are portable;

2. The portable gauge or transportation case containing the portable gauge is stored inside a locked room within temporary or permanent residential quarters, and is physically secured by a chain or steel cable to a permanent or non-portable structure (*e.g.*, large metal drain pipe, support column, *etc.*) such that an individual would not be able to open the transportation case or remove the portable gauge without removing the chain or cable;

3. The portable gauge or transportation case containing the portable gauge is stored in a locked garage, and is within a locked vehicle or is physically secured by a chain or steel cable to the vehicle in such a manner that an individual would not be able to open the transportation case or remove the portable gauge without removing the chain or cable; or

4. The portable gauge or transportation case containing the portable gauge is stored in a locked garage, and is within a locked enclosure or is physically secured by a chain or steel cable to a permanent or non-portable structure in such a manner that an individual would not be able to open the transportation case or remove the portable gauge without removing the chain or cable.

Controlling and Maintaining Constant Surveillance of a Portable Gauge

Under the proposed regulation, when a portable gauge is not secured with a minimum of two independent physical controls, the licensee would be required to control and maintain constant

surveillance of the gauge. This proposed rule would more specifically address the current requirements in 10 CFR 20.1801 for security, and satisfy the requirements of 10 CFR 20.1802, which states that the licensee shall control and maintain constant surveillance of licensed material that is in a controlled or unrestricted area and that is not in storage. Control and constant surveillance is required when the gauge is not in storage, *e.g.*, is in use or undergoing maintenance. The NRC staff interprets "control and maintain constant surveillance" of portable gauges to mean being immediately present or remaining in close proximity to the portable gauge so as to be able to prevent unauthorized removal of the gauge.

Criminal Penalties

For the purpose of Section 223 of the Atomic Energy Act (AEA), the Commission is proposing to amend 10 CFR Part 30 under one or more of Sections 161b, 161i, or 161o of the AEA. Willful violations of the rule would be subject to criminal enforcement.

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), this proposed rule would be a matter of compatibility between the NRC and the Agreement States, thereby providing consistency among the Agreement State and NRC requirements. The NRC staff analyzed the proposed rule in accordance with the procedure established within Part III, "Categorization Process for NRC Program Elements," of Handbook 5.9 to Management Directive 5.9, "Adequacy and Compatibility of Agreement State Programs" (a copy of which may be viewed at <http://www.hsr.d.ornl.gov/nrc/home.html>). The NRC staff has determined that proposed 10 CFR 30.34(i) is classified as Compatibility Category "C." An Agreement State should adopt the essential objectives of the Compatibility Category "C" program elements to avoid conflict, duplication, gaps, or the conditions that would jeopardize an orderly pattern in the regulation of agreement material on a nationwide basis.

The NRC determined that the essential objective of proposed 10 CFR 30.34(i) is to reduce the opportunity for theft of a portable gauge by requiring a portable gauge licensee to provide a minimum of two independent physical controls that form tangible barriers to

secure portable gauges from unauthorized removal whenever portable gauges are not under the control and constant surveillance of the licensee.

The NRC believes that the proposed rule does not conflict with any existing State regulatory requirement. Personnel from Agreement States of Florida and Arkansas represented the Organization of Agreement States and participated as members of a working group along with NRC staff in the development of this proposed rule.

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. This memorandum was published June 10, 1998 (63 FR 31883). 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.

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 revise 10 CFR part 30 to add certain requirements for the security of portable gauges containing byproduct material. This action does not constitute the establishment of a standard that contains generally applicable requirements.

Environmental Assessment and Finding of No Significant Environmental Impact

The Commission has determined under the National Environmental Policy Act of 1969, as amended, and the NRC's regulations in Subpart A of 10 CFR part 51, that this proposed rule, if adopted, would not be a major Federal action significantly affecting the quality of the human environment; therefore, an environmental impact statement is not required. The Commission has concluded on the basis of an environmental assessment that these requirements would not have any effects on the environment in which portable gauges are currently regulated under 10 CFR part 30. The proposed rule would increase requirements to prevent the theft of portable gauges containing byproduct material.

The determination of this environmental assessment is that there

will be no significant impact on the public from this action. However, the general public should note that the NRC is seeking public participation. Comments on any aspect of this environmental assessment may be submitted to the NRC as indicated under the **ADDRESSES** heading.

The NRC has sent a copy of the environmental assessment and this proposed rule to every State Liaison Officer and requested their comments on the environmental assessment. The environmental assessment may also be examined at the NRC Public Document Room, Public File Area O1F21, One White Flint North, 11555 Rockville Pike, Rockville, Maryland. Single copies of the environmental assessment are available from Lydia Chang, Office of Nuclear Material Safety and Safeguards, telephone (301) 415-6319, e-mail lwc1@nrc.gov.

Paperwork Reduction Act Statement

This proposed rule does not contain new or amended information collection requirements subject to the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 *et seq.*). Existing requirements were approved by the Office of Management and Budget, approval number 3150-0017.

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.

Regulatory Analysis

The Commission has prepared a draft regulatory analysis on this proposed regulation. The analysis examines the costs and benefits of various alternatives. In addition to the proposed regulation, the NRC staff also considered alternatives such as: prohibiting unattended storage of portable gauges in or on vehicles; prohibiting unattended storage at locations other than licensed facilities; or requiring use of a metal enclosure and a lock with a shielded/protected shackle. However, these alternatives were found to be overly prescriptive and excessively burdensome for most NRC licensees. The option selected is requiring a minimum of two independent physical controls whenever the portable gauge is not under the control and constant surveillance of the licensee. This proposed rule would enhance the current level of security and control (*e.g.*, the requirements in 10 CFR

20.1801 and 20.1802) of portable gauges while providing sufficient flexibility for licensees to implement the requirements without an unreasonable burden.

The Commission requests public comment on the draft regulatory analysis specifically on the costs to licensees. Comments on the draft analysis may be submitted to the NRC as indicated under the **ADDRESSES** heading. The draft regulatory analysis is available for inspection in the NRC Public Document Room, Public File Area O1F21, One White Flint North, 11555 Rockville Pike, Rockville, Maryland. Single copies of the draft regulatory analysis are available from Lydia Chang, Office of Nuclear Material Safety and Safeguards, telephone (301) 415-6319, e-mail *lwc1@nrc.gov*.

Regulatory Flexibility Act Certification

As required by the Regulatory Flexibility Act of 1980, 5 U.S.C. 605(b), the Commission certifies that this rule, if adopted, will not have a significant economic impact upon a substantial number of small entities. The proposed rule would affect about 1100 portable gauge specific licensees and an additional 4000 Agreement State specific licensees. These licenses are issued principally to companies involved in road constructions and maintenance. Many portable gauge licensees would 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. Based on the draft regulatory analysis conducted for this action, the costs of the proposed amendments for affected licensees are estimated at \$200 per gauge. 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. The draft regulatory analysis also notes that the proposed requirements would result in potential cost savings for portable gauge licensees, particularly for the replacement of stolen gauges. These savings would offset the implementation costs for portable gauge licensees. The NRC staff also notes that several Agreement States have imposed similar or more stringent requirements on their portable gauge licensees either by rule, order, or license condition.

Because of the widely differing conditions under which portable gauge users operate, the NRC is specifically requesting public comment from licensees concerning the impact of the proposed regulation. The NRC particularly desires comment from such licensees, who qualify as small

businesses, 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. 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.

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

Backfit Analysis

The NRC has determined that the backfit rules (§§ 50.109, 70.76, 72.62, or 76.76) do not apply to this proposed rule because this amendment would not involve any provisions that would impose backfits as defined in 10 CFR Chapter 1. Therefore, a backfit analysis is not required.

List of Subjects in 10 CFR part 30

Byproduct material, Criminal penalties, Government contracts, Intergovernmental relations, Isotopes, Nuclear materials, Radiation protection, Reporting and recordkeeping requirements.

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 part 30.

PART 30—RULES OF GENERAL APPLICABILITY TO DOMESTIC LICENSING OF BYPRODUCT MATERIAL

1. The authority citation for part 30 continues to read as follows:

Authority: Secs. 81, 82, 161, 182, 183, 186, 68 Stat. 935, 948, 953, 954, 955, as amended, sec. 234, 83 Stat. 444, as amended (42 U.S.C.

2111, 2112, 2201, 2232, 2233, 2236, 2282); secs. 201, as amended, 202, 206, 88 Stat. 1242, as amended, 1244, 1246 (42 U.S.C. 5841, 5842, 5846).

Section 30.7 also issued under Pub. L. 95-601, sec. 10, 92 Stat. 2951 as amended by Pub. L. 102-486, sec. 2902, 106 Stat. 3123 (42 U.S.C. 5851). Section 30.34(b) also issued under sec. 184, 68 Stat. 954, as amended (42 U.S.C. 2234). Section 30.61 also issued under sec. 187, 68 Stat. 955 (42 U.S.C. 2237).

2. In § 30.34, paragraph (i) is added to read as follows:

§ 30.34 Terms and conditions of licenses.

* * * * *

(i) *Security requirements for portable gauges.* Each portable gauge licensee shall use a minimum of two independent physical controls that form tangible barriers to secure portable gauges from unauthorized removal, whenever portable gauges are not under the control and constant surveillance of the licensee.

Dated at Rockville, Maryland, this 28th day of July, 2003.

For the Nuclear Regulatory Commission.

Annette Vietti-Cook,

Secretary of the Commission.

[FR Doc. 03-19588 Filed 7-31-03; 8:45 am]

BILLING CODE 7590-01-P

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. 2002-CE-57-AD]

RIN 2120-AA64

Airworthiness Directives; Cessna Aircraft Company Models 402C and 414A Airplanes

AGENCY: Federal Aviation Administration, DOT.

ACTION: Notice of proposed rulemaking (NPRM); extension of the comment period.

SUMMARY: This document provides additional time for the public to comment on a proposal to supersede Airworthiness Directive (AD) 2000-23-01, which applies to all Cessna Aircraft Company (Cessna) Model 402C airplanes. AD 2000-23-01 currently requires repetitive inspections of the forward, aft, and auxiliary wing spars for cracks, and repair or replacement as necessary. Cessna has performed fatigue and crack growth analyses of the wings of these airplanes, and the Federal Aviation Administration (FAA) has evaluated this information and determined that a wing spar

ATTACHMENT 3
Federal Register Notice

NUCLEAR REGULATORY COMMISSION

10 CFR Part 30

RIN: 3150-AH06

Security Requirements for Portable Gauges Containing Byproduct Material

AGENCY: Nuclear Regulatory Commission.

ACTION: Final rule.

SUMMARY: The Nuclear Regulatory Commission (NRC) is amending its regulations governing the use of byproduct material in specifically licensed portable gauges. The final rule requires a portable gauge licensee to use a minimum of two independent physical controls that form tangible barriers to secure portable gauges from unauthorized removal whenever the portable gauges are not under the control and constant surveillance of the licensee. The primary intent of this rulemaking is to increase licensees' control of portable gauges to reduce the opportunity for unauthorized removal or theft.

EFFECTIVE DATE: This final rule is effective on **(insert 180 days from date of publication)**.

FOR FURTHER INFORMATION CONTACT: Lydia Chang, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, telephone (301) 415-6319, e-mail lwc1@nrc.gov.

SUPPLEMENTARY INFORMATION:

Background

Portable gauges are devices containing licensed material that are used to determine physical properties (such as density and moisture content of soil, concrete, and other materials) in a field setting. The most commonly used portable gauges contain two encapsulated sources of radioactive material. The first is a sealed gamma source containing 0.30 to 0.37 gigabecquerels (8 to 10 millicuries) of cesium-137 (Cs-137) used to measure density. The second source is a sealed neutron source containing 1.48 to 1.85 gigabecquerels (40 to 50 millicuries) of americium-241/beryllium (Am-241/Be) used to measure moisture content. When not in use, portable gauges are generally stored in a permanent storage location within a licensed facility. Sometimes, portable gauges are stored at a jobsite, at a temporary storage location, or on a vehicle. When transporting a portable gauge in a vehicle, the gauge is often placed in a transportation case, and then is secured in or onto the vehicle.

Under the authority of the Atomic Energy Act of 1954, NRC together with the 33 Agreement State regulates byproduct material used in portable gauges. There are approximately 1100 NRC specific licensees for portable gauges in non-Agreement States and approximately 4000 State specific licensees for portable gauges in Agreement States. There are an estimated 22,000 to 25,000 portable gauges in use in the United States.

Subpart I of 10 CFR Part 20 addresses storage and control of licensed material. Specifically, § 20.1801, "Security of stored material," requires licensees to secure from unauthorized removal or access licensed materials that are stored in controlled or unrestricted areas. Section 20.1802, "Control of material not in storage," requires licensees to control and maintain constant surveillance of licensed material that is in a controlled or unrestricted area

and that is not in storage. Despite these requirements, the theft of portable gauges continues at a rate of approximately 50 gauges per year with a less than 50-percent recovery rate based on reports in NRC's Nuclear Materials Events Database (NMED). More than two-thirds of the stolen gauges were taken from vehicles parked outdoors. In most of these incidents, the gauge was in a U. S. Department of Transportation (DOT) "Type A" transportation case, which was then secured with a metal chain to the open bed of a pickup truck. Frequently, the chain was cut or the transportation case was broken, and then the gauge was stolen. NRC has issued several "Information Notices" to increase licensees' awareness of security concerns regarding portable gauges. However, the yearly number of reported incidents has not changed in response to these notices.

Although the amount of radioactive material used in a portable gauge is relatively small, and the radioactive material is encapsulated in stainless steel, unauthorized removal of portable gauges still poses a potential public health and safety concern. A portable gauge that is not under the controlled of a licensee poses a potential radiation hazard to individuals that may come into close contact with the source. It also creates a concern if the portable gauge that is removed without authorization is abandoned in the environment, recycled in a steel mill, or used inappropriately.

Discussion

To reduce the potential risk to public health and safety, a working group with participation of personnel from the Agreement States of Florida and Arkansas developed the proposed rule to impose security requirements for portable gauges to increase licensees' control, which would reduce the opportunity for unauthorized removal of the gauges. The security requirements would require that the portable gauge licensees must use a minimum of

two independent physical controls that form tangible barriers to secure portable gauges from unauthorized removal whenever the portable gauges are not under the control and constant surveillance of the licensee. The primary intent of this rulemaking is to increase the control of portable gauges and thereby reduce the opportunity for and the number of unauthorized removals or thefts of portable gauges and, as a result, reduce the potential impact to public health and safety. NRC published a notice of proposed rule (68 FR 45172; August 1, 2003) in the Federal Register with the opportunity for comment on the proposed amendment in 10 CFR § 30.34.

After considering all comments received on the proposed rule and evaluating recommended alternative methods to increase the control of portable gauges, NRC finds that the requirements in the proposed rule are the preferred alternative because they provide the most flexibility for licensees (permitting a choice from a wide range of physical controls) without imposing excessive costs in implementing the controls. Therefore, the final rule contains the same requirements as the proposed rule.

Summary of Public Comments on the Proposed Rule

NRC received eleven comment letters on the proposed rule. The commenters included a member of the public, members of an industry advisory group, three licensees, a radiation service company, two manufacturers, and three States. Copies of the public comments are available for public inspection and copying for a fee at the NRC Public Document Room, 11555 Rockville Pike, Rockville, MD.

Among the eleven comment letters, six state that they fully support the goal to reduce lost or stolen gauges; two state that current requirements are adequate; one indicates that the

rule is well intended; one expresses the view that a double lock requirement may be excessive; and one believes that the current practice of using a chain to secure a portable gauge in an open-bed pickup truck is not adequate. Among comments from the three States, one indicates that the NRC proposed measures do not go far enough; one states that the current regulatory requirements are adequate; and one supports the goal of the rule but believes the proposed rule to be impractical. A discussion of the comments and NRC's responses follow:

Current Requirements Adequate.

Comment: One commenter believes the security procedures to be adequate, but is confident that he can also comply with the language of the proposed change.

Response: Although certain licensees may have adequate procedures for securing the portable gauges, NRC does not believe the current practice of having one physical control is sufficient to reduce the current rate of portable gauge theft.

Comment: The Virginia Department of Transportation (VDOT) has not had any gauges stolen in the past 8 years, and believes that the current security measures are adequate.

Response: NRC disagrees that current security measures are adequate. Although no portable gauge has been reported stolen from VDOT for the past 8 years, NRC notes that there were two incidents of stolen gauges in the Commonwealth of Virginia as recently as 2003. To reduce the overall rate of unauthorized removal or theft of portable gauges, NRC believes it is necessary to increase controls for portable gauges.

Malevolent Use of Portable Gauges.

Comment: Four commenters stated that portable gauges are not likely to be used for malevolent purposes. One commenter stated that no credible study supports the conclusion that portable gauges might be used for malevolent purposes or that gauges are a substantial risk of such use. That commenter also stated that there is no identifiable pattern to support the idea that individuals are stealing portable moisture/density gauges for malevolent use. One

commenter questioned what resulted in the need for a very prescriptive rule for increased security of these gauges since a report to Congress indicated that sources in a single portable gauge are small, and unlikely to be suitable for an effective radiological dispersion device (RDD). Another commenter stated that the potential for the stolen gauges to be used in a radiological dispersion device is minute because it takes such a significant effort to steal a large number of gauges and remove the radioisotopes to manufacture a “dirty bomb.” Another commenter indicated that there has not been an increase in gauge thefts in recent years, and that there is no evidence that thefts are for malevolent purposes, but rather it is likely that thefts are more for personal or monetary gain.

Response: NRC agrees. As stated in the regulatory analysis for the proposed rule: “Because of the small quantity of radioactive material in a portable gauge, the potential for its malevolent use is small.” Due to the quantity and physical characteristics of the radioactive material used, portable gauges do not pose a substantial risk for malevolent purposes such as a “dirty bomb.” Similarly, NRC has not identified any trend or information indicating that reported thefts of portable gauges containing licensed material over the last 2 years resulted in a substantial health and safety consequence. However, NRC is still concerned about the continued loss of control of the licensed materials due to unauthorized removal or theft of portable gauges, the multiple resource impacts in response to such events, and the potential exposure to an individual, who come into close contact with the source in the portable gauge. NRC believes that these additional requirements are needed to improve the control of the licensed material and thus better protect the public from a potential health and safety risk.

Comment: One commenter stated that the International Atomic Energy Agency (IAEA) has published guidance on the security of radioactive sources, on categorization of radioactive sources, and on graded security measures based on potential hazard, vulnerability of the source or device, and potential consequences of malevolent acts. In the interim guidance

document on security of radioactive sources, the IAEA has categorized portable gauges as Security Group C. Security measures that the IAEA recommended for Group C include one technical measure that separates the source from unauthorized personnel. The commenter stated that NRC's proposed rule exceeds the security measures recommended by the IAEA, and believes that one technical measure is sufficient.

Response: In addition to one technical measure separating the source from unauthorized personnel for Security Group C material (such as portable gauges), the IAEA also recommends access control at the source location as sufficient security measure based on potential hazard, vulnerability of the device, and potential consequences of malevolent acts. This final rule is not based on common defense and security, but is based on protecting public health and safety from potential of radiation exposure as a result of unauthorized removal or theft of portable gauges. Instead of one technical measure and access control as recommended by IAEA, NRC believes that two technical measures are needed to sufficiently control the portable gauge from unauthorized removal or theft in the United States. The IAEA guidance on the Security of Radioactive Sources (TECDOC-1355) is an interim guidance for comment by its Member States, and has not been accepted by the United States. In general, NRC may modify IAEA standards, as necessary, before adoption to meet NRC's regulatory needs. NRC's current regulatory framework already requires the licensees to use one measure of control in securing the portable gauges and has concluded that an additional measure is necessary to reduce the number of unauthorized removal or theft of portable gauges. NRC has issued several Information Notices to portable gauge licensees to emphasize the importance of adequate control of the portable gauges; however, the number of unauthorized removals or thefts of portable gauges has not decreased. NRC believes that an additional measure of control is needed to reduce the current number.

Rule Will not Prevent Thefts.

Comment: Although several commenters support the NRC's security concerns, one commenter stated that licensees are already required to secure gauges, but that does not prevent carelessness in their control. Securing gauges with two layers of security will not prevent thefts.

Response: NRC agrees that the requirements would not necessarily prevent carelessness in the control of gauges or human error, or ensure compliance by all licensees. Although NRC also agrees that additional security measures can not totally prevent the unauthorized removal or theft of the portable gauges, requiring an additional layer of physical control should deter the likelihood of the unauthorized removal or theft.

Comment: One commenter stated that the rule requirements would not deter insider or opportunistic thefts that occur because of lapses such as leaving the keys in a vehicle that contains a gauge.

Response: Although background checks and hiring practices could potentially deter theft by insiders, NRC does not believe that the very small number of thefts committed by insiders warrants such additional requirements. Requiring licensees to use two independent physical controls should reduce the risk of unauthorized removal or theft of portable gauges from a variety of causes.

Comment: One commenter stated that licensees are already required by regulations to maintain "adequate security." However, the current practice of leaving the gauge in the open bed of a pickup truck chained to the side of the truck is not "adequate security," because gauges have been stolen from the open bed of a pickup truck after the chain was cut.

Response: NRC agrees that all licensees are required to maintain adequate security and control of the licensed material. It appears that the current practices are not sufficient for control of portable gauges. NRC evaluated various alternatives in developing the proposed

rule. Based on the cost/benefit analysis in the regulatory analysis, NRC believes that adding one additional layer of control would make it more difficult for a thief to defeat, and the total cost impact would be acceptable.

Comment: One commenter believes that not all licensees would strive to comply with the new requirements. The portable gauge theft rate will not change because the new requirements would not affect these types of licensees, who will ignore the new regulation.

Response: NRC expects the rate of unauthorized removal or theft of portable gauges to decrease once the amendment becomes effective. Not all of the unauthorized removals or thefts of portable gauges are caused by lack of compliance by licensees with security requirements, but are also due to defeating the current security measures allowing the use of one locking device to secure the portable gauge. NRC believes that adding an additional measure would reduce the number of unauthorized removals or thefts by making it more difficult and more time-consuming to defeat the security measures. Requiring two independent physical controls is the most effective alternative based on cost and flexibility to licensees in implementing the rule.

Comment: One commenter stated that additional regulations are unlikely to significantly reduce the number of [stolen] gauges. The commenter believes that a large percentage of the gauges reported stolen were probably left unsecured, and the loss occurred as a “theft of opportunity,” rather than a “determined thief.” The gauges that were stolen by defeating one security measure would most likely be stolen regardless of the number of independent security systems because a “determined thief” is just as likely to defeat two security systems as one.

Response: NRC believes that increasing physical controls provides a delay and deterrent mechanism making it more difficult for a thief to defeat. At a minimum, two controls would delay the thief by drawing attention from bystanders, which may deter the thief.

Comment: One commenter believes that gauges will continue to be stolen from

careless gauge owners and by persistent thieves, regardless of the increased security requirements and that the new requirements adversely affect the diligent and vigilant gauge owner.

Response: NRC agrees that no measure is absolute in stopping persistent and determined thieves, but increasing the security controls would make theft more difficult. NRC believes that the financial impact on gauge owners from enhancing security requirements is small when compared to: the financial consequences to the gauge owners due to unauthorized removal or theft of the portable gauges; the potential health and safety risk to the public from these incidents; and the resource impacts on law enforcement and regulatory agencies.

Not Commensurate with Risk

Comment: One commenter stated that the double-lock requirement may be excessive from a security standpoint. Another commenter stated that the proposed rule is inconsistent with a risk-informed approach to regulation because it imposes tighter security requirements on low-activity portable gauges than high-activity devices such as radiography cameras, which pose far greater hazards. It would be far easier and more likely for someone with malevolent intent to steal a single, high-activity radiography device than many low-activity portable gauges, and much less likely to raise suspicions. The commenter does not believe that moisture-density gauges merit security requirements more restrictive than those required for higher-activity portable devices.

Response: NRC disagrees with the commenters. Since the terrorist attacks of September 11, 2001, NRC has issued Orders to enhance security measures for certain licensed facilities. Based on the IAEA Code of Conduct on the Safety and Security of Radioactive Sources and IAEA Categorization of Radioactive Source (TECDOC-1344), NRC considers that portable gauges are not high risk sources if used for malevolent purposes. NRC is still concerned with the number of unauthorized removals or thefts of portable gauges. Even

though a typical portable gauge contains much lower activity than a radiography camera, unauthorized removal or theft of such gauge still poses a potential health and safety risk to the public. As for higher-activity devices, NRC is taking appropriate actions to enhance security and protect the common defense and security.

Comment: One commenter stated that even if the stolen gauge rate is reduced from approximately 50 gauges per year to 25 gauges per year, it would not represent a meaningful reduction in risk in the absence of any evidence that any harm has ever occurred to any individual from a stolen portable gauge.

Response: NRC disagrees with the comment that the reduction would not represent a meaningful reduction in risk. On an average, 50 portable gauges are stolen per year. Every gauge that is not recovered from unauthorized removal or theft poses a potential hazard to the public. It is true that severe radiation injury has not been associated with unauthorized removal or theft of portable gauges. Because the recovery rate is low, the number of unrecovered gauges will continue to grow, posing potential risk to the public.

Change in Gauge Design.

Comment: One commenter indicated that if grocery-cart manufacturers can make the wheels of their grocery carts lock if the cart is taken off the property, then portable gauge manufacturers could make it easier for licensees to secure their gauges.

Response: NRC agrees that perhaps portable gauge manufacturers could make it easier for licensees to secure the gauges, but it is not an NRC requirement that such changes take place. Manufacturers are required to design the sealed sources and the devices to operate safely. Because portable gauges are used by licensees in different situations and stored in various locations, the licensees are in a better position to select the security measures best suited for their situation.

Comment: One commenter stated that manufacturers must be required to make gauges “idiot-proof” and less attractive to thieves. The commenter suggests the portable gauges be designed so that if a gauge is stolen, the radioactive material portion is sequestered.

Response: With the current portable gauge design, the sealed sources are inaccessible and can not be readily removed by a member of the public when the gauge is in its locked configuration. Because the commenter did not provide any details on the “sequestering” technology, it is uncertain if it is feasible to implement or sufficient to protect the public health and safety.

Comment: One commenter suggested the gauge be designed so that the source rod has to be removed and stored separately.

Response: NRC does not believe that it is necessary to remove and store the source rod separately. With the current design, the sealed sources are kept within a shielded compartment inside the portable gauge providing protection for the workers. If the sealed source and the source rod would have to be removed and stored separately, it would greatly increase the radiation exposure to workers from removal of the source rods and from having multiple storage sites. Additionally, the removed sealed source and the source rod would present a greater risk to the public if the licensee were to lose control of the material. Therefore, NRC does not believe there would be sufficient benefit from requiring removal of the sealed source or the source rod.

Comment: A commenter suggests that a “secured key” be required for locks.

Response: NRC does not believe that it is necessary to require a secure key for locks. Based on the NMED data, stolen gauges are not linked to a stolen key. Therefore, it would not be cost effective to incorporate a secured key system as means to reduce the opportunity for unauthorized removal or theft of a gauge.

Comment: One commenter stated that “there’s some psychology to be reckoned with” because merely the suggestion for redesign of an important engineering tool might make management much more amenable to require employees/authorized users to ensure that gauges were secure.

Response: NRC’s regulatory requirements are based on technical information and are not based on psychological reactions of certain individuals. NRC believes that having two independent physical controls is a tangible requirement that can be easily inspected and evaluated.

More Enforcement.

Comment: Three commenters stated that stricter enforcement action against non-compliant licensees would be better than more rules and would dramatically reduce the number of gauges stolen. One commenter stated that rules are only as effective as their enforcement and that current rules already require that gauges be secured against unauthorized removal. Those licensees that are diligent about security do not have gauges stolen. The annual stolen gauge rate is extremely low (about 0.2 percent), so most licensees are doing a good job. Those licensees that are not diligent or vigilant are unlikely to change as a result of a new rule. Only increased emphasis on inspection and enforcement of the security requirements is likely to cause those licensees to change their ways.

Response: NRC disagrees that more frequent inspections and increased enforcement of current requirements would be better than more rules. NRC also disagrees that licensees, who are diligent about security, do not have gauges stolen. Many gauges were stolen from compliant licensees by thieves defeating current security measures. NRC does not believe that the existing security requirements are sufficient, and therefore, enforcement alone will not dramatically reduce the number of unauthorized removals or thefts of portable gauges. NRC believes that it is necessary to increase the current security measures to reduce the opportunity

for unauthorized removal or theft. NRC does agree that more frequent inspections and increased enforcement would reduce licensees' future security lapses, but would not affect thefts where all procedures were followed and the thief still defeated the security measures. NRC has and will continue to enforce security requirements for portable gauges.

Information Notice.

Comment: One commenter recommended that NRC rescind the rule and use Information Notices to reduce the number of stolen gauges.

Response: NRC disagrees with the suggestion to use Information Notices as a means to reduce the number of unauthorized removals or thefts of portable gauges. As indicated in the notice of proposed rule (68 FR 45172; August 1, 2003), NRC has issued several Information Notices in the past to remind licensees of their responsibilities concerning the security of portable gauges, and there has been no change in the number of reported incidents annually.

Root Cause Not Addressed.

Comment: One commenter claimed the proposed rule has not effectively addressed the root cause of the problem nor is it consistent with a risk-informed, performance-based approach to regulation.

Response: NRC disagrees with the comment. The NRC working group evaluated various alternatives in developing and evaluating the proposed rule in light of comments. Although certain alternatives might be more effective than the chosen one, the associated cost impacts to the licensees' operations from such alternatives would be immense. For example, the alternative of prohibiting the storage of portable gauges in vehicles might be more effective, but the total resource impact on licensees is estimated to be more than \$200 million per year. This assumes each portable gauge operator would spend an additional 2 hours daily in transporting the portable gauge to and from the licensed facility. NRC believes that requiring

two independent physical controls will reduce the likelihood of unauthorized removal or theft of portable gauges while minimizing cost impacts to the licensees.

Visibility Issue.

Comment: Four commenters suggested that the rule should address the visibility of the gauge (e.g., thief sees it, thinks it's valuable, and steals it). One of the commenters also stated that methods that reduce the visibility of devices are just as important as tangible barriers in preventing theft because most thefts occur when gauges are in highly visible (i.e., in open-bed trucks). Keeping a gauge inside a box where it is not visible is an effective physical control.

Response: NRC agrees that portable gauges are often stolen because the thief perceives that the transportation case contains valuable commercial equipment. NRC also agrees that there could be benefits from keeping the portable gauge and its transportation case out of sight or covered any time they are not under the control of the operator. NRC considered this and other various approaches to address the visibility issue, but rejected them as costly, impractical, or contrary to other regulatory requirements, and of questionable effectiveness. For example, NRC considered requiring that the gauge and its transportation case be covered, but the DOT staff informed the NRC staff that such covering of portable gauges during transport would be inconsistent with DOT regulations and defeats the intent of the requirements for labels and markings of portable gauges containing radioactive materials. Requiring the use of a cover to conceal the portable gauge and its transportation case could place licensees in non-compliance with DOT requirements. NRC also considered requiring use of an "enclosure" as a means to address the visibility problem. However, requiring the use of an enclosure would have significant cost impact on licensees that might not be commensurate with the potential benefit gained. Because the rule does not prescribe specific methods for physical control, a licensee will have the flexibility to select an enclosure as one of the two independent physical controls if it were deemed beneficial for its situation. NRC believes it is necessary to have this

flexibility for licensees because of the high number of licensees affected, each of which may vary in its operating and financial conditions.

There are many methods that could be used to secure the gauge and its transportation case, which could also keep the gauge and its transportation case out of sight. NRC does not believe it is cost-effective to require additional requirements for such purpose. NRC believes that regulations should provide sufficient flexibility to allow licensees to select the two independent physical controls to prevent the unauthorized removal of the portable gauges that best fit a licensee's needs.

Accessibility Issue.

Comment: According to an Agreement State, it requires portable gauges to be returned to an approved storage location after work when the temporary job-site is within 93 kilometers (50 miles) of an approved storage location.

Response: NRC considered requiring the return of portable gauges to an approved storage location daily. However, NRC believes that making it a requirement applicable to all licensees would not be feasible and would not be cost efficient due to the time spent transporting the gauges back and forth from licensed facilities. In the regulatory analysis performed for the proposed rule, NRC evaluated several options including the option of daily return of portable gauges to a permanent storage location. Based on the estimated cost impact of this option, NRC determined that the cost would be excessive considering potential benefits gained from such a requirement.

Comment: One commenter stated that the rule is not likely to be effective because it does not address the critical factors that lead to theft. Clearly, two key factors in the theft of gauges are visibility (open-bed truck) and accessibility (parking location). The fact that chains are frequently cut indicates that physical controls alone are not sufficient to deter a determined individual. The NRC rule does not address visibility or accessibility, but focuses on tangible

barriers. NRC states that having to defeat two tangible barriers will deter thefts by requiring a more determined effort to remove the gauge. However, if a thief is able cut one chain or lock, a second chain or lock hardly seems like much of an additional deterrent.

Response: NRC agrees that using two metal chains as physical barriers instead of one may not be the most effective means of control. Although the use of metal chains is not the most desirable control method, NRC does want to give licensees flexibility to select the controls that are suitable for them. NRC encourages licensees to store gauges in a permanent location and not in vehicles, but NRC does not want to make it a requirement because of the potential economic impacts on licensees. NRC believes that having two physical barriers, such as metal chains, will have a deterrent value by making unauthorized removal or theft of portable gauges more difficult and more time-consuming.

Too Prescriptive and Not Performance-Based.

Comment: Three commenters indicated that the rule is too prescriptive. Specifically, one commenter stated that the rule would not be effective in all cases and would lead to misunderstandings about what is being required. Another commenter stated that the rule dictates too much detail and would severely limit the licensees' ability to be creative in controlling portable gauges. Another commenter stated that the rule is inconsistent with the NRC's performance-based regulatory philosophy. The rule is far more prescriptive than the existing rules in 10 CFR 20.1801 and 20.1802, which address the security of radioactive material in a performance-based manner without specifying the methods to be used. This rule specifies both the method of control and the number of controls required, which prescriptively limits the licensee's choice of methods for complying with the rule. The commenter suggested that other methods, such as reducing the visibility of devices are just as important. Keeping a gauge inside a box where it is not visible is an effective physical control. Audible and visual alarms are also effective physical controls for deterring theft. Security experts recommend

layers of protection involving a variety of methods, such as these. By narrowly prescribing that tangible barriers as the only method of compliance, the rule may reduce a licensee's incentive to use other effective means to deter thefts. Deterrence of theft is largely a matter of common sense, which cannot be mandated by rule or regulation. The situations under which portable gauges may be used and stored vary so widely that no prescriptive rule will be practical or effective for all situations.

Response: NRC disagrees with the commenters that the rule is too prescriptive. This rule does not prescribe a specific physical control that needs to be used to secure portable gauges. Licensees have options in selecting from a wide range of physical controls. Of course, there are some physical controls that are more effective than others. Although options such as storing gauges inside a building or in an enclosure may be effective control methods, factors such as cost impact and variation in licensees' operations must also be considered when considering the control methods. Therefore, requiring "a minimum of two physical controls" affords a licensee the flexibility to choose the appropriate independent physical controls to meet its situation, and at the same time provide sufficient security for the portable gauges. Licensees can use more controls in addition to the requirements of the rule. While developing the rule, the working group considered various control methods including audible and visual alarms for vehicles. NRC believes that it would not be cost effective to make these requirements when considering that: (1) a small percentage of unauthorized removals or thefts of portable gauges was associated with vehicles being stolen; (2) the public tends to ignore alarms; and (3) the alarms would have no, or limited, impact on unauthorized removal or theft of portable gauges from open-bed trucks.

Requirements Not Practical.

Comment: One commenter stated that methods proposed for securing gauges in vehicles are impractical or costly. Portable gauges must be loaded and unloaded from vehicles

frequently; therefore, methods of securing the gauge must be simple and quick. Most portable gauges are transported in open-bed pickup trucks. Any method that requires permanent installation of boxes or attachment would not be practical. The commenter also stated that it is almost impossible to secure a gauge transportation case with a chain or cable without running it through the case handles, which can be removed with ordinary hand tools. In addition, wrapping chains around cases may stress and damage the case requiring replacement to comply with DOT rules for Type A containers.

Response: NRC disagrees with the commenter that methods proposed for securing gauges in vehicles are impractical and/or costly. A licensee is free to choose any physical control methods best suited for its purposes regarding cost and ease of use. The rule does not impose use of a specific physical control such as a metal box or metal chains to secure the gauge. For example, a licensee could use as a tangible barrier the cab area of an open-bed truck for storage of the portable gauge. Although many licensees have chosen to use a metal enclosure as one of the physical controls, it is only one of many possible options that a licensee can select. The use of metal chains as an additional means of physical control may be more practical for certain licensees than other options. Based on the regulatory analysis, NRC believes that requiring two physical controls to secure portable gauges from unauthorized removal would not significantly increase the current burden or be cost prohibitive to implement.

Regarding the comment that wrapping chains around cases may stress and damage the case, NRC notes that transportation boxes are designed to be robust enough to safely transport the intended material. The DOT has design and testing requirements for Type A packages such as portable gauge transportation cases. Among the general design requirements, DOT has stated that each lifting attachment that is a structural part of the package must be designed with a minimum safety factor of three against yielding when used to lift the package in the intended manner. Type A packaging, with contents, must be capable of withstanding the water-

spray, free-drop, stacking, and penetration tests. For example, for a stacking test, packaging must be subjected for a period of at least 24 hours to a compressive load equivalent to the greater of: (1) five times the mass of the actual package; or (2) the equivalent of 13 kilopascals (1.9 pounds per square inch) multiplied by the vertically projected area of the package. For a penetration test, a bar of 3.2 centimeters (1.25 inches) in diameter with a mass of 6 kilograms (13.2 pounds) must be dropped and directed to fall onto the center of the weakest part of the case. Based on the rigorous testing requirements, it would appear that the transportation boxes for portable gauges are designed to withstand various stresses.

Comment: One commenter stated that the prescriptive procedures are not practical for the wide variety of vehicles used for nuclear gauges.

Response: NRC disagrees that the rule contains prescriptive procedures. The rule only requires the licensee to use two independent physical controls and does not prescribe what methods or procedures for control must be used. The licensee may choose from a wide range of physical controls to meet its specific needs as long as the controls form tangible barriers to secure the portable gauge. Physical controls may include, but are not limited to, metal chain with a lock, steel cable with a lock, a secured enclosure, a locked tool box, a locked camper, a locked trailer, locked trunk of a car, a locked vehicle, a locked shelter, a secured fenced-in area, a locked garage, a locked cabinet, a locked room, or a secured building.

Comment: One commenter stated that California requirements for electronic security systems and alarms are impractical in trucks on construction sites. They are damaged and rendered useless by travel over uneven surfaces.

Response: NRC is not requiring the use of electronic security systems nor alarms as one of the independent physical controls. Each licensee has the flexibility to select any two independent physical controls based on its operation, condition of its facilities, financial capability, and degree of control desired.

Comment: Licensing authorities are making and enforcing rules that could only be done by trained security experts or mechanical engineers, even if they were justified.

Response: NRC does not believe that the additional security requirements will call for security experts or engineers to implement. However, licensees and their operators are required to have proper training to safely manage the nuclear materials including properly securing and controlling the portable gauges.

Cost Implications.

Comment: One commenter stated that the NRC estimates of savings resulting from the rule are speculative. The saving estimates from implementing the rule are based on the optimistic assumption of a 50 percent reduction in the stolen gauges. This is speculative, as there is no way to predict the actual reduction that may be achieved.

Response: The percent reduction will be dependent, in part, on the type of physical controls that licensees elect to use. If more enclosures are used to secure gauges, a higher reduction in the percentage of unauthorized removal or theft of portable gauges would most likely be achieved. In any event, NRC believes that adding one more tangible barrier as a physical control will reduce the opportunity for unauthorized removal or theft. Given the wide range of physical controls available for the licensees to select, NRC believes that an assumption of a 50 percent reduction is reasonable.

Comment: One commenter stated that the cost is greater than what NRC proposes.

Response: Because the commenter did not provide any basis for higher cost, NRC cannot perform a comparison. NRC's cost estimate is based on the actual price of an item listed by the vendors. The regulatory analysis for the proposed rule contains the assumptions and unit costs used in calculating the total cost impact on licensees. Because the commenter did not provide any data in support of a higher cost impact, NRC is unable to compare the commenter's cost estimate against NRC's estimate.

Comment: Two commenters believe that the rule would have a negative economic impact. One commenter believes that increased regulatory requirements and costs will have a negative impact on the sales and use of portable gauges. The other commenter believes that the economic impact on the construction material testing industry will be wide-spread. The commenter stated that the use of portable gauges provides significant benefits in terms of the quality, safety, and longevity of roads. No other technology is as effective for measurement of the properties of materials in road construction as nuclear gauges.

Response: NRC disagrees with the comment. In determining viable options, NRC considered cost to industry versus any potential benefit. The rule would be unlikely to have a major impact on sales and use of portable gauges due to the increased security requirements. Based on estimates, a \$200 average increase in the cost of portable gauge use per licensee is relatively small when compared to the cost of a gauge of approximately \$7000. A reduction in the number of unauthorized removals or thefts of portable gauges might have a small impact on sales because licensees may need to replace a smaller number of gauges. Throughout this rulemaking, NRC has remained mindful of cost impacts on licensees. NRC's goal in this rulemaking is not to decrease portable gauge use. This regulation may slightly increase the cost of portable gauge use, but this cost must be balanced against improving the security and control of portable gauges.

Comment: One commenter stated that additional regulations represent an undue hardship to portable gauge licensees. A financial burden to a large licensee at a cost of \$114 thousand is unacceptable given the limited potential in reducing the number of stolen gauges.

Response: The NRC disagrees with the comment. With the estimated cost impact of about \$200 per gauge, NRC does not believe the increased cost would result in an undue hardship for portable gauge licensees. There are more than 5,000 portable gauge licensees. If the cost impact on the largest licensee is only approximately \$114 thousand, it demonstrates

that the additional requirements would not appear to create an undue hardship, especially when licensees have flexibility in selecting the method of physical controls.

Comment: A State commenter indicated that making changes to meet the new requirements would result in a large expenditure to taxpayers.

Response: NRC disagrees with the comment. An average of \$200 increase per gauge is small when compared to the resources spent by State and Federal law enforcement and regulatory personnel in response to, and in investigating, incidents involving unauthorized removal or theft of portable gauges.

Comment: One commenter predicts an increase in reporting of lost and stolen gauges as licensees find they cannot afford either compliance with the proposed rules or lawful disposal of the gauge sealed source.

Response: NRC disagrees with the commenter's prediction of increased reporting due to cost to comply with the rule requirements or to dispose of the source material. NRC does not believe that the increased costs will force licensees to dispose of the devices improperly. Depending on the physical control selected, the cost impact may be as low as \$100 per gauge for using a chain/cable with a lock or \$500 per gauge for use of a secured metal enclosure. The disposal cost for each gauge is about \$450 and is waived by one of the manufacturers with the purchase of a new gauge.

Impact on Landfills, Steel Mills, Scrap Yard, and the Environment.

Comment: Three commenters indicated it is unlikely that a stolen gauge would be smelted in scrap-steel processing facilities. According to one commenter, there is no evidence that stolen gauges are more likely to end up at these facilities than gauges which are not stolen. NRC claims that most stolen gauges would be abandoned by the thief and are likely to end up in such places as scrap yards and smelters. In fact, the majority of gauges (51 percent) are recovered according to NRC figures for the last 2 years (SECY-03-0060). That the remainder

are likely to end up in smelters, scrap yards, or incinerators is speculative. The other commenter believes that most nuclear devices end up in scrap yards due to the difficulty of disposing of the equipment and the associated cost. Another commenter stated that it is unlikely that a discarded moisture/density gauge would be smelted down because of the use of sensitive monitoring systems.

Response: NRC agrees that the probability is small for a portable gauge obtained by unauthorized removal or theft to be smelted down and contaminate a steel processing plant. However, the potential does exist. Based on historical data, less than half of the unauthorized removals or thefts of portable gauges are recovered. After the September 2001, terrorist events, more resources have been spent in recovery efforts to retrieve portable gauges from unauthorized removal or theft due to heightened security concerns about loss of control of radioactive materials. As a result, the recovery rate for portable gauges may have improved slightly over the past 2 years, but it is still low. Most gauges from unauthorized removal or theft are abandoned or resold. This raises a concern about the potential public health and safety risk. In past years, there have been cases where gauges were found in the environment and in landfills, scrap yards, or recycling plants. For example, in June 2002, a portable gauge containing a Cs-137 source was found at a steel mill's scrap-metal stream, and, in May 2002, a portable moisture gauge containing Am-241 was discovered at a landfill by landfill personnel sorting through the refuse. In both cases, the gauges were removed for proper disposition. Many facilities are now equipped with radiation monitors, and sources are often detected and removed early in the process. Nonetheless, the potential for radioactive material to enter a metal recycling plant still exists. In fact, in 2001, a radioactive source was melted in a steel mill in Florida. The total cost of the cleanup was more than \$10 million. The State of Florida suspected that the contamination was from a sealed source from a fixed gauge. Once the radioactive source is melted, it is extremely difficult to determine the type of device that may

have contained the source. Although steel mill contamination has never proven to be caused by a portable gauge from unauthorized removal or theft, an abandoned portable gauge still poses a potential concern if it ever gets into a steel mill melt.

Comment: One commenter stated that if an abandoned gauge is deposited in a landfill, the environmental impact would be insignificant.

Response: NRC disagrees with the comment. All licensed materials are required to be properly controlled to ensure protection of public health and safety and the environment. Any uncontrolled licensed material abandoned in the environment or disposed of in a landfill not designed for managing licensed material poses a potential hazard to public health and safety and to the environment. In accordance with 10 CFR Part 61, an Am-241 source used in a portable gauge would be classified as a “greater than Class C waste” and is not generally acceptable for near-surface disposal (e.g., landfill). Given the amount and long half-life (432 years) of Am-241 used in a portable gauge, the potential impact would not be insignificant.

X-Ray Fluorescence.

Comment: One commenter is concerned about controlling lost or stolen generally licensed devices because there are more in circulation than specifically licensed portable devices. There are hundreds, perhaps even thousands, of portable X-Ray Fluorescence (XRF) analyzers that have been distributed as generally licensed devices.

Response: Based on the NMED database, the number of reported incidents of lost or stolen XRF analyzers is extremely low. In general, the amount of radioactive material used in XRF analyzers is much smaller than the amount used for portable moisture/density gauges. Because XRF analyzers are very small and are usually hand-held units, they can be easily stored in the glove compartment or trunk of a vehicle. The XRF analyzers stored in this manner are not visible or easily accessible, which reduces the possibility of opportunistic theft. For these reasons, NRC does not believe that additional security requirements are needed for

generally licensed XRF analyzers at this time; therefore, this comment is not within the scope of this rulemaking.

Comment: An Agreement State commenter indicated that it specifically licenses all portable nuclear gauges including lead paint analyzers.

Response: Whether a nuclear device is specifically or generally licensed depends on the design of the device and other factors. In general, most moisture/density gauges are specifically licensed whereas most chemical detectors and lead paint analyzers are generally licensed by either NRC or the Agreement States. NRC regulations establish the basic requirements. Depending on the compatibility categories, individual Agreement States may impose more stringent requirements depending on their specific needs.

The Final Rule

§ 30.34 Terms and conditions of licenses.

After considering public comment and continuing informal discussion with the DOT staff, it was decided that no changes would be made to the proposed rule. The final rule contains the exact same requirements as the proposed rule. Therefore, the requirements state that each portable gauge licensee shall use a minimum of two independent physical controls that form tangible barriers to secure portable gauges from unauthorized removal, whenever portable gauges are not under the control and constant surveillance of the licensee.

Criminal Penalties

For the purpose of Section 223 of the Atomic Energy Act (AEA), the Commission is amending 10 CFR Part 30 under one or more of Sections 161b, 161i, or 161o of the AEA. Willful violations of the rule would be subject to criminal enforcement.

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), this final rule is a matter of compatibility between NRC and the Agreement States, thereby providing consistency among the Agreement State and NRC requirements. The NRC staff analyzed the final rule in accordance with the procedure established within Part III, “Categorization Process for NRC Program Elements,” of Handbook 5.9 to Management Directive 5.9, “Adequacy and Compatibility of Agreement State Programs” (a copy of which may be viewed at <http://www.hsrdo.org/nrc/home.html>). The NRC staff has determined that amendment to 10 CFR 30.34(i) is classified as Compatibility Category “C.” An Agreement State should adopt the essential objectives of the Compatibility Category “C” program elements to avoid conflict, duplication, gaps, or the conditions that would jeopardize an orderly pattern in the regulation of agreement material on a nationwide basis.

NRC determined that the essential objective of 10 CFR 30.34(i) is to reduce the opportunity for unauthorized removal or theft of a portable gauge by requiring a portable gauge licensee to use a minimum of two independent physical controls that form tangible barriers to secure portable gauges from unauthorized removal whenever portable gauges are not under the control and constant surveillance of the licensee.

NRC believes that the final rule does not conflict with any existing State regulatory requirement. Personnel from the Agreement States of Florida and Arkansas participated as

members of a working group along with the NRC staff in the development of this final rule and the earlier corresponding proposed rule.

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 final rule, NRC is revising 10 CFR Part 30 to add certain requirements for the security of portable gauges containing byproduct material. This action does not constitute the establishment of a standard that contains generally applicable requirements.

Finding of No Significant Environmental Impact: Availability

The Commission has determined under the National Environmental Policy Act of 1969, as amended, and the Commission's regulations in Subpart A of 10 CFR Part 51, that this rule is not a major Federal action significantly affecting the quality of the human environment; therefore, an environmental impact statement is not required. The Commission has concluded on the basis of an environmental assessment that these requirements would not have any effect on the environment in which portable gauges are currently regulated under 10 CFR Part 30. The final rule would increase requirements to reduce opportunity for unauthorized removal or theft of portable gauges containing byproduct material.

NRC requested the views of the States on the environmental assessment for this rule. No comments were received on the environmental assessment. Because no changes were

made in the requirements from the proposed rule to the final rule, the environmental assessment has not been changed. The environmental assessment and finding of no significant impact are available for inspection at the NRC Public Document Room, Public File Area O1F21, One White Flint North, 11555 Rockville Pike, Rockville, Maryland. Single copies of the environmental assessment and finding of no significant impact are available from Lydia Chang, telephone (301) 415-6319, e-mail lwc1@nrc.gov, of the Office of Nuclear Material Safety and Safeguards.

Paperwork Reduction Act Statement

This final rule does not contain new or amended information collection requirements subject to the Paperwork Reduction Act of 1995 (44 U.S.C. 3501, et seq.). Existing requirements were approved by the Office of Management and Budget (OMB), approval number 3150-0017.

Public Protection Notification

NRC may not conduct nor 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.

Regulatory Analysis

In the proposed rule, the Commission requested public comment on the draft regulatory analysis specifically on the costs to licensees. No comments were received on the draft

regulatory analysis. However, one of the comments received on the proposed rule indicated that the cost per unit in most cases will be substantially greater than NRC's estimate. Because a licensee has flexibility in selecting the physical controls to be used in securing a portable gauge, the actual cost would depend on the controls selected. The cost per unit could range from \$100 for a metal cable to \$400 for a simple metal tool box, to even a higher cost for a more elaborately designed metal enclosure. In the regulatory analysis, an average of \$200 was used.

The Commission has finalized the regulatory analysis on this regulation. The analysis examines the costs and benefits of the alternatives considered by the Commission. The analysis is available for inspection in the NRC Public Document Room, Public File Area O1F21, One White Flint North, 11555 Rockville Pike, Rockville, MD. Single copies of the regulatory analysis are available from Lydia Chang, telephone (301) 415-6319, e-mail, lwc1@nrc.gov, of the Office of Nuclear Material Safety and Safeguards.

Regulatory Flexibility Certification

As required by the Regulatory Flexibility Act of 1980, 5 U.S.C. 605(b), the Commission certifies that this rule will not have a significant economic impact on a substantial number of small entities. The final rule would affect about 1100 portable gauge specific NRC licensees and an additional 4000 Agreement State specific licensees. These licenses are issued principally to companies involved in road constructions and maintenance. Many portable gauge licensees would qualify as small business entities as defined by 10 CFR 2.810. However, the final rule is not expected to have a significant economic impact on these licensees. Based on the regulatory analysis conducted for this action, the costs of the final rule for affected licensees are estimated at \$200 per gauge. Among various alternatives considered, NRC believes that

this final rule is the least burdensome and most flexible means of accomplishing NRC's regulatory objective. The regulatory analysis also notes that the requirements would result in potential cost savings for portable gauge licensees, particularly for the replacement of portable gauges due to unauthorized removal or theft. These savings would offset the implementation costs for portable gauge licensees. The NRC staff also notes that several Agreement States have imposed similar or more stringent requirements on their portable gauge licensees either by rule, order, or license condition.

In the published proposed rule (68 FR 45172; August 1, 2003), NRC specifically requested public comment from licensees concerning the impact of the proposed regulation because of the widely differing conditions under which portable gauge users operate. NRC particularly was seeking comment from licensees, who qualify as small businesses, as to how the proposed regulation would 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. However, no comments were received on these issues.

Backfit Analysis

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

Small Business Regulatory Enforcement Fairness Act

In accordance with the Small Business Regulatory Enforcement Fairness Act of 1996, NRC has determined that this action is not a major rule and has verified this determination with the Office of Information and Regulatory Affairs of OMB.

List of Subject Terms for Part 30

Byproduct material, Criminal penalties, Government contracts, Intergovernmental relations, Isotopes, Nuclear materials, Radiation protection, Reporting and recordkeeping requirements.

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. 552 and 553, NRC is adopting the following amendments to 10 CFR Part 30.

PART 30-RULES OF GENERAL APPLICABILITY TO DOMESTIC LICENSING OF BYPRODUCT MATERIAL

1. The authority citation for Part 30 continues to read as follows:

AUTHORITY: Secs. 81, 82, 161, 182, 183, 186, 68 Stat. 935, 948, 953, 954, 955, as amended, sec. 234, 83 Stat. 444, as amended (42 U.S.C. 2111, 2112, 2201, 2232, 2233, 2236, 2282); 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).

Section 30.7 also issued under Pub. L. 95-601, sec. 10, 92 Stat. 2951, as amended by Pub. L. 102-486, sec. 2902, 106 Stat. 3123 (42 U.S.C. 5851). Section 30.34(b) also issued under sec. 184, 68 Stat. 954, as amended (42 U.S.C. 2234). Section 30.61 also issued under sec. 187, 68 Stat. 955 (42 U.S.C. 2237).

2. In § 30.34, paragraph (i) is added to read as follows:

§ 30.34 Terms and conditions of licenses.

* * * * *

(i) *Security requirements for portable gauges.*

Each portable gauge licensee shall use a minimum of two independent physical controls that form tangible barriers to secure portable gauges from unauthorized removal, whenever portable gauges are not under the control and constant surveillance of the licensee.

Dated at Rockville, Maryland, this _____ day of _____, 2004.

For the Nuclear Regulatory Commission.

Annette Vietti-Cook,
Secretary of the Commission.

ATTACHMENT 4

Final Regulatory Analysis

REGULATORY ANALYSIS
for
AMENDMENT to
10 CFR 30: RULES OF GENERAL APPLICABILITY TO DOMESTIC LICENSING OF
BYPRODUCT MATERIAL
for
SECURITY REQUIREMENTS FOR PORTABLE GAUGES

I. STATEMENT OF THE PROBLEM AND OBJECTIVE:

Portable gauges are devices containing licensed material that are used to determine physical properties such as density and moisture content of soil, concrete, and other materials in a field setting. The most typical specifically licensed portable gauge in use today contains two sources of radioactive materials: a sealed gamma source containing 0.30 to 0.37 gigabecquerels (8 to 10 millicuries) of cesium-137 (Cs-137) used for density measurement and a sealed neutron source containing 1.48 to 1.85 gigabecquerels (40 to 50 millicuries) of americium-241/beryllium (Am-241/Be) used for moisture content measurement. Other radioactive materials have also been utilized in portable gauges.

There are approximately 1100 U.S. Nuclear Regulatory Commission (NRC) portable gauge specific licensees and an additional 4000 Agreement State specific licensees. Since portable gauge licensees often possess multiple portable gauges under the same license, there are an estimated 22,000 to 25,000 portable gauges in use in the United States. Reports in the NRC's Nuclear Materials Events Database (NMED) reveal that there have been approximately 450 gauges stolen since 1990. It is true that the number of incidents reported per year is small when compared to the total number of gauges in use, that the amount of radioactive material in a portable gauge is relatively small, and that the radioactive material is encapsulated in stainless steel. Nevertheless, unauthorized removal or theft of a portable gauge still poses a concern for public health and safety and/or the environment, especially, if the gauge is abandoned in the environment, is recycled in a steel mill, or is used inappropriately.

Under the proposed action, NRC would amend its regulations to include specific security requirements for handling portable gauges in order to reduce the opportunity for unauthorized removal or theft of gauges. The final rule would require a minimum of two independent physical controls that form tangible barriers to secure portable gauges from unauthorized removal whenever portable gauges are not under the control and constant surveillance of the licensee.

This rule would apply to a licensee with a portable gauge regardless of the location, situation, and activities involving the portable gauge. At all times, the licensee would be required to either maintain control and constant surveillance of the portable gauge or use a minimum of two independent physical controls to secure the portable gauge.

II. EXISTING REGULATORY FRAMEWORK:

Specific licenses for portable gauges are governed by NRC regulations in 10 CFR Part 30, "Rules of General Applicability to Domestic Licensing of Byproduct Material." However, other NRC requirements in 10 CFR Parts 2, 19, 20, 21, 71, 150, 170, and 171 also apply to a portable gauge licensee. In addition, all such portable gauge licensees must also comply with other applicable Federal, State, and local regulations (e.g., Department of Transportation regulations, zoning requirements for a storage location, etc.). At present, NRC reviews a licensee's program as described in the license application, and incorporates certain requirements into the license as license conditions. Equivalent State regulations apply to Agreement State portable gauge licensees. Agreement States follow a similar approach as NRC. In addition, certain Agreement States, such as Florida, have specific additional requirements in their regulations for the possession and use of sealed sources in portable gauges. Other States, including Texas and Washington, have issued orders imposing specific additional requirements for their portable gauge licensees.

III. IDENTIFICATION AND PRELIMINARY ANALYSIS OF ALTERNATIVES:

A working group was formed in August 2002 to explore various options and requirements for the rulemaking. Personnel from the Agreement States of Florida and Arkansas participated as members of the working group along with NRC program offices and one Regional representative. The working group has discussed and evaluated various options such as: no action, only issue guidance, require physical controls, prohibit unattended storage of portable gauges in or on vehicles, prohibit unattended storage at locations other than licensed facilities, and require use of a metal enclosure and a lock with a shielded/protected shackle. These options were grouped into three major alternatives.

Alternative (1) -- No rulemaking alternative. Under the no rulemaking alternative, the NRC would rely on the current regulations on domestic licensing of byproduct material and specific guidance on portable gauge licenses. This alternative would require no current resources to conduct a rulemaking. However, resources for reporting, recovery, and investigation of stolen gauges will continue to be expended by the licensee, and local, state, and federal regulatory and law enforcement agencies. Within this alternative, NRC may issue a policy statement or revise existing guidance to emphasize the need for securing portable gauges. Resources for issuing a policy or guidance would be much less than for a rulemaking. It is estimated to be less than 0.5 full-time equivalent (FTE). However, this approach would not be as effective as rulemaking because policy and guidance are not legally binding. In addition, Agreement States are not required to adopt such policy or guidance into their regulatory programs.

Alternative (2) -- Amend NRC regulations to adopt more specific and more prescriptive requirements such as the use of a permanently installed enclosure and locks with shielded/protected shackle to secure specifically licensed portable gauges. Another example would be to prohibit the unattended storage of portable gauges in or on vehicles or at locations other than licensed facilities. These more prescriptive requirements would clearly delineate exactly what is required for the security and control of portable gauges. For these prescriptive requirements, licensees may be required to modify their existing vehicles used for transporting portable gauges and to purchase new locks for securing these gauges. If unattended storage would be prohibited, licensees may be required to return the portable gauge each day to a licensed facility or to an alternate location for storage. Specific requirements would be applied uniformly to licensees without consideration of differing practices and operating situations that may exist. Although alternative (2) provides less degree of flexibility than alternative (3), it is anticipated that it would further reduce the number of stolen gauges than alternative (3).

This alternative would require the development of a proposed rule followed by a final rule. Public involvement would be through the publication of the proposed rule in the Federal Register for notice and comment as provided by the Administrative Procedure Act. The resources needed in the development of a rulemaking would be higher than the current staff resources. NRC staff resources needed for this alternative are estimated to be 1.7 FTE staff years.

Alternative (3) -- Amend NRC regulations in 10 CFR 30.34 to require licensees to use a minimum of two independent physical controls that form tangible barriers to secure specifically licensed portable gauges from unauthorized removal, whenever the portable gauges are not under the control and constant surveillance of the licensee. This alternative would be consistent with the NRC goal of a performance-based regulatory approach. Under this alternative, each licensee would have the flexibility of selecting the two controls that are most suitable for its current practices. If necessary, a licensee could use different controls that are more appropriate for its specific job operations.

Although the term “unauthorized removal” can describe situations other than theft, the estimated benefit of the rulemaking is primarily focused on the reduction of theft of portable gauges. This alternative, similar to alternative (2), would require the development of a proposed rule followed by a final rule. Public involvement would be through the publication of the proposed rule in the Federal Register for notice and comment as provided by the Administrative Procedure Act. The resources needed in the development of a rulemaking would be higher than the current staff resources. NRC staff resources needed for this alternative are estimated to be 1.7 FTE staff years.

IV. ESTIMATION AND EVALUATION OF VALUES AND IMPACTS OF ALTERNATIVES:

The NRC staff has evaluated each attribute listed in Chapter Five of the Regulatory Analysis Technical Evaluation Handbook, NUREG/BR-0184. Alternative (1) would have no or minimal impact to the current situation and is considered as a baseline for comparing with other alternatives. Both alternatives (2) and (3) would require controls to reduce the opportunity for unauthorized removal or theft of specifically-licensed portable gauges. Alternatives (2) and (3) would also amend existing regulations through a rulemaking process that would have cost impacts. With the number of stolen gauges expected to decrease, alternatives (2) and (3) would have some positive impacts. Each attribute is summarized in Table 1 below, and then followed by a more detailed discussion on the impacted attributes.

Table 1: List of Attributes and their Impacts

Attribute	Potential Impact for Alternatives (2) and (3)
Public Health (Accident/Event)	May reduce the number of stolen gauges that an individual may be exposed to.
Public Health (Routine)	No impact.
Occupational Health (Accident)	No health impact expected to workers due to stolen gauges or consequent recovery operations.
Occupational Health (Routine)	No impact.
Offsite Property	May reduce the number of stolen gauges that may be abandoned and could potentially damage property.
Onsite Property	No impact.
Industry Implementation	Cost increase to install added controls. Cost avoidance due to reduction in number of stolen gauges requiring recovery operations, replacement, or potential cleanup.
Industry Operation	For alternative (3), slight cost increase due to the use of additional physical controls. For alternative (2), larger cost increase due to the use of more stringent controls and due to the need to return gauges to a storage location each day.
NRC Implementation	Cost associated with rulemaking activities.
NRC Operation	No significant impact to routine inspection due to added controls. Certain cost avoidance due to potential reduction in number of stolen gauges that need investigation and recovery operations.
Other Government	Cost impact to Agreement States due to the need to adopt the essential objectives of the program elements. Certain cost avoidance to various agencies due to potential reduction in number of stolen gauges that need investigation and recovery operations.

Attribute	Potential Impact for Alternatives (2) and (3)
General Public	No significant impact.
Improvements in Knowledge	May improve general knowledge of licensees and the public through rulemaking process where examples and expectations are addressed.
Regulatory Efficiency	May improve general knowledge of licensees will enhance regulatory efficiency.
Antitrust Consideration	No Impact.
Safeguards and Security Consideration	Not a safeguard concern.
Environmental Consideration	Reduction in the number of stolen gauges may also reduce the number of gauges being abandoned in the environment.

COSTS

The two primary costs associated with alternative (2) or (3) are -- (1) implementation cost to the industry in installing the required physical controls for the portable gauges; and (2) resources spent by both NRC and Agreement States on development and implementation of the rule. Additionally, for alternative (2), there would be costs to the industry if a licensee were required to return portable gauges to the licensed facility every day.

Cost for Industry Implementation and Operation -- Both alternatives (2) and (3) would result in a one-time cost increase to the industry in providing physical controls for existing portable gauges and a smaller annual cost increase in providing physical controls for any new gauges. In addition, alternative (2) would have an increased burden on industry resources if unattended overnight storage of portable gauges in or on vehicles or at locations other than licensed facilities were prohibited. It is expected that alternatives (3) would result in a slight increase in cost to industry operations since the industry may alter its current security practice for portable gauges. Alternative (2) is expected to result in greater impact to industry operations due to more stringent security controls and the need to return gauges to a storage location each day.

There are approximately 1100 NRC licenses in non-Agreement States and 4000 State licenses in Agreement States authorizing the use of portable gauges containing radioactive material. Multiple portable gauges may be included on a single license. It is estimated that there are approximately 22,000 to 25,000 specifically licensed gauges in service and that the industry will acquire and put in service an additional 1,000 new gauges every year.

Alternative (2) Cost: For prescriptive requirements, staff assumed that all licensees would be required to install enclosures and a lock with shielded/protected shackle for each existing gauges in service. Based on a survey from several vendors, the unit cost for an enclosure ranges between \$100 to \$900 with a typical cost of about \$300. It is assumed that the cost to install the enclosure onto the vehicle is about \$100. The unit cost for a lock is about \$15 based on prices from two hardware stores.

As shown in Table 2, the one-time cost for installing the additional controls on the existing portable gauges as required by the prescriptive requirements of alternative (2) would be around nine to ten million dollars. The cost for installing the controls on new gauges would be around \$415,000 per year.

Table 2: Cost Summary to Portable Gauge Licensees due to Prescriptive Requirements

One-Time Cost for Adding Enclosure and Lock to 22,000 to 25,000 Existing Gauges					
Unit Cost for An Enclosure		No. Gauges	Additional Cost	No. Gauges	Additional Cost
Typical Cost	\$300	22,000	\$6,600,000	25,000	\$7,500,000
Installation Cost	\$100	22,000	\$2,200,000	25,000	\$2,500,000
Lock	\$15	22,000	\$330,000	25,000	\$375,000
<i>One-time Cost Impact for Existing Gauges Ranges from \$9,130,000 to \$10,375,000</i>					
Annual Cost for Adding Enclosure and Lock for 1,000 New Gauges					
Unit Cost for An Enclosure		No. Gauges	Additional Cost		
Typical Cost	\$300	1,000	\$300,000		
Installation Cost	\$100	1,000	\$100,000		
Locks	\$15	1,000	\$15,000		
<i>Annual Cost Impact for New Gauges is \$415,000</i>					

For prohibiting unattended overnight storage of portable gauges in or on vehicles or at locations other than licensed facilities, the licensee would have to pick up the portable gauges from the licensed facility before going to temporary jobsites and would have to return the gauges to the licensed facility at the end of each day. It is estimated that a licensee could spend an additional 2 to 5 hours each day driving back and forth between the licensed facility and the temporary jobsites. There are also costs associated with wear and tear of the vehicle and gasoline when additional time is spent traveling in the vehicle. Further, such a prohibition may limit the licensee in conducting business located at greater distances. For ease of calculation, only the added time is included in cost impact to the industry due to the storage prohibition of alternative (2), and the estimated cost impact is calculated based on the assumption of an hourly rate of \$20 and 250 working days per year. Cost may be lowered if locations other than the licensed facilities (e.g. private residence, motel, or a leased self-storage unit) were permitted for storage.

Table 3: Cost Summary for Prohibiting Unattended Storage in or on Vehicles

Annual Cost for Additional Time Spent Traveling Between Licensed Facility and Jobsites						
Rate	Time	Days	No. Gauges	Additional Cost	No. Gauges	Additional Cost
\$20/hr	2 hrs	250	22,000	\$220,000,000	25,000	\$250,000,000
\$20/hr	5 hrs	250	22,000	\$550,000,000	25,000	\$625,000,000
<i>Annual Cost Impact Ranges from \$220,000,000 to \$625,000,000</i>						
Annual Cost for Additional Time Spent Transporting Gauges to Storage Facilities and Leasing Cost for a Self-Storage Unit						
Storage Location		Percent Assumed		Cost Range		
Licensed Facilities-2 hrs at \$20/hr for 250 days		30% of 22,000 to 25,000 gauges		\$66,000,000 to \$75,000,000		
Other Locations-no cost, and no added travel time		50% of 22,000 to 25,000 gauges		0		
Other Leased Locations-\$30/month for 12 months		20% of 5,100 licensees		\$367,200		
<i>Annual Cost Impact Ranges from \$66,367,200 to \$75,367,200</i>						

Table 3 shows the estimated cost impact to the industry of prohibiting unattended overnight storage of portable gauges in or on vehicles. Cost may vary depending on locations allowed for storage. If storage in only licensed facilities is permitted, the potential cost impact for the licensees to transport the gauges back to the licensed facility each day would be around \$220 to \$625 million per year. If locations other than the licensed facilities are allowed for storage, the cost impact would be around \$66 to \$75 million dollars.

Alternative (3) Cost: Under this alternative, each licensee would be required to use a minimum of two independent physical controls that form tangible barriers to secure portable gauges from unauthorized removal, whenever these portable gauges are not under the control and constant surveillance of the licensee. A wide range of cost increases is anticipated for licensees depending on the type of controls the licensee will utilize.

It is assumed that for 20 percent of the gauges, the licensee would use existing systems and equipment to meet the new security control requirements. Therefore, no cost increase would be incurred by these licensees. It is assumed that for 40 percent of the gauges, the licensee would use an additional independent chain, steel cable, or bolt to secure the transportation case. A unit cost of \$15 for a lock and \$100 for 40 feet of chain or steel cable is based on a survey from two hardware stores and is used for this analysis. No installation cost is anticipated. For the remaining 40 percent of the gauges, it is assumed that the licensee would install an enclosure and a lock with shielded/protected shackle. Based on a survey from several vendors, the unit cost for an enclosure ranges between \$100 to \$900 with a typical cost of about \$300. It is assumed that the cost to install the enclosure onto the vehicle is about \$100.

With the assumed ratios, Table 4 shows the one-time cost impact associated with existing gauges that are currently in service. Table 5 shows the cost impact associated with new gauges that are estimated to come into service per year in the future.

Table 4: One-Time Cost Summary to Portable Gauge Licensees for Adding Two Controls

No Changes Needed for 20% of 22,000 to 25,000 Existing Gauges					
Unit Cost		No. Gauges	Additional Cost	No. Gauges	Additional Cost
No Change	\$0	4,400	\$0	5,000	\$0
Adding Lock/Chain/Cable for 40% of 22,000 to 25,000 Existing Gauges					
Unit Cost		No. Gauges	Additional Cost	No. Gauges	Additional Cost
Lock	\$15	8,800	\$132,000	10,000	\$150,000
Chain/Cable	\$100	8,800	\$880,000	10,000	\$1,000,000
Adding Enclosure and Lock for 40% of 22,000 to 25,000 Existing Gauges					
Unit Cost		No. Gauges	Additional Cost	No. Gauges	Additional Cost
Enclosure	\$300	8,800	\$2,640,000	10,000	\$3,000,000
Installation Cost	\$100	8,800	\$ 880,000	10,000	\$1,000,000
One-time Cost Range from \$4,532,000 to \$5,150,000					

Table 5: Annual Cost Impact to Portable Gauge Licensees for New Gauges

No Changes Needed for 20% of 1,000 New Gauges			
Unit Cost		No. Gauges	Additional Cost
No Change	0	200	\$0
Adding Lock/Chain/Cable for 40% of 1,000 New Gauges			
Unit Cost		No. Gauges	Additional Cost
Lock	\$15	400	\$6,000
Chain/Cable	\$100	400	\$40,000
Adding Enclosure and Lock for 40% of 1,000 New Gauges			
Unit Cost		No. Gauges	Additional Cost
Enclosure	\$300	400	\$120,000
Installation Cost	\$100	400	\$40,000
Annual Cost Impact \$206,000			

Under this alternative, each licensee would also be required to control and maintain constant surveillance of portable gauges whenever portable gauges are not secured with a minimum of two physical controls. This portion of the revised requirements is consistent with the existing requirement in 10 CFR 20.1802; therefore, no cost impact to the licensees is anticipated for such control and surveillance.

Based on the 20 percent, 40 percent, and 40 percent assumed ratio of control methods selected by the licensees as discussed above, the estimated national impact for implementing alternative (3) would range from \$4.5 to \$5.1 million. There are approximately 5100 affected NRC and Agreement State licensees. Licensees may have as little as one gauge or as many as ten or more gauges, with a national average of about five gauges per licensee. Depending on the security control method selected, each licensee may incur between \$0 to \$4000 to ensure implementation for all of its licensed portable gauges. Based on the assumptions stated above, an average one-time unit cost on a national basis will be around \$200 per gauge with a corresponding national average of about \$1000 per licensee assuming five gauges per licensee for implementing alternative (3). Total annual costs for providing security for new gauges is estimated at \$206,000 assuming the same ratio for control methods selected as for the existing gauges.

Cost for NRC Implementation and Operations -- Both alternatives (2) and (3) would result in NRC implementation costs. Specifically, NRC would incur costs to develop a rule and to revise the existing guidance on portable gauges. NRC staff resources needed for developing the proposed rule, completing the final rule, and revising the guidance is estimated to be 1.7 FTE staff years at \$77/hr and 1,776 hrs/FTE for an estimated total cost of \$232,000. No increase in NRC resources is anticipated for implementation of the revised requirements. The staff also anticipates no significant impact on NRC resources expended on routine inspection for compliance with the new requirements.

Cost for State Implementation --Both alternatives (2) and (3) would result in Agreement States adapting their regulations to the NRC revised rule. The final rule would have compatibility category “C” requirements; therefore, an Agreement State should adopt the essential objectives of the rule. The compatibility category “C” requirements would be needed to avoid conflict, duplication, gaps, or the conditions that would jeopardize an orderly pattern in

the regulation of agreement material on a nationwide basis. Adoption of the essential objectives can be done through promulgating a comparable rule, issuing orders, revising state guidance, or adding or revising individual license conditions. Since each of the 32 Agreement States may choose different implementation mechanisms, it is difficult to estimate the implementation costs for each Agreement State. However, it is anticipated that implementation costs for each state would be much lower than the implementation cost for the NRC because the Agreement States do not need to spend resources in developing and evaluating various alternatives to come up with the revised requirements. It is assumed that 75 percent of the Agreement States would promulgate state regulations with an average expenditure of one quarter FTE, and the remaining Agreement States would use other mechanisms at 0.1 FTE per state on average. The total estimated state implementation costs would be around \$680,000 using an assumed hourly rate of \$50 and 250 working days per year.

Calculation:

$$[(32 \text{ states} \times 75\% \times 0.25 \text{ FTE} + 32 \text{ states} \times 25\% \times 0.1 \text{ FTE}) \times \$50/\text{hr} \times 2,000 \text{ hrs}] = \$680,000$$

BENEFITS

By requiring additional controls, it is expected that both alternatives (2) and (3) would reduce the number of unauthorized removals or thefts of portable gauges. Although the term “unauthorized removal” can describe situations more than “theft,” the regulatory analysis took a more conservative approach and only considered the estimated benefit due to the reduction of theft of portable gauges. The primary categories of the benefits attained by reduction in theft of portable gauges are economic benefits and exposure aversion benefits. In addition, there are less tangible benefits. Since incidents involving theft occur in the public domain, incidents to be averted have a significant impact on the public’s perception of the risks associated with the use of radioactive material. This, in turn, can improve the credibility of NRC and the Agreement States. Therefore, this rulemaking could further the goal of increasing the confidence of the public.

Summary of Economic Benefits -- Economic benefits result from reduction in costs associated with the theft of portable gauges through reduction in the incidence of theft. These costs are--

To licensees: for event notification, recovery operations, follow-up investigations, corrective actions, and leak testing and servicing of recovered sources/gauges or replacing sources/gauges not recovered;

To NRC: for event notification review, follow-up inspections, and enforcement actions, and for investigation upon discovery of abandoned sources/gauges;

To Agreement States: for event notification review, follow-up inspections, and enforcement actions, and for investigation upon discovery of abandoned sources/gauges;

To local law enforcement and fire departments: for investigation upon discovery of abandoned sources/gauges;

To landfill and municipal incinerator operators: for investigation upon discovery of abandoned sources/gauges; and

To the scrap metal industry: for investigation upon discovery of abandoned sources/gauges and for potential cleanup of contaminated material cause by a melted source.

Savings to Affected Industry -- Both alternatives (2) and (3) are expected to save the industry in costs associated with gauge replacement and/or gauge recovery operations. Reports in the NMED reveal that there were approximately 450 cases of stolen gauges since 1990 with an average of about 50 cases per year for the past five years. The recovery rate is estimated at 40 percent. For each incident, it is assumed that an operator, a radiation Safety Officer, and a manager of a licensee will spend around 40 hours at an average hourly rate of \$50 for the reporting, investigation, recovery, and mitigation activities for a stolen gauge incident. The estimated cost would be \$2000 per event. Often times, the licensee will typically offer a reward of \$500 for the return of a stolen gauge. Since no data is available on how often a reward is paid, it is not included in this analysis. Even for a gauge that is recovered, there is an associated cost (e.g., leak test and servicing) of approximately \$50, in order to bring the gauge back to service. A typical gauge costs between \$5200 to \$8400. For every stolen gauge not recovered, the licensee may need to replace it at a cost of approximately \$7000 average per gauge. For the purpose of this analysis, it is assumed that alternative (2) would achieve a 70 percent reduction in stolen gauges while alternative (3) would achieve 50 percent reduction because alternative (2) is expected to be more effective in reducing opportunity for theft by imposing more stringent requirements. The total cost savings per year would be \$217,700 for alternative (2) and \$155,500 for alternative (3).

Calculations:

Alternative (2) projected savings per year = \$70,000 + \$700 + \$147,000 = \$217,700

(50 events/yr x 70% reduction x 40 hrs/event x \$50/hr) = \$70,000/yr for recovery operations

(50 gauges/yr x 70% reduction x 40% recovery x \$50 testing) = \$700/yr

(50 gauges/yr x 70% reduction x 60% not recovered x \$7,000/gauge) = \$147,000/yr for replacement.

Alternative (3) projected saving per year = \$50,000 + \$500 + \$105,000 = \$155,500

(50 events/yr x 50% reduction x 40 hrs/event x \$50/hr) = \$50,000/yr for recovery operations

(50 gauges/yr x 50% reduction x 40% recovery x \$50 testing) = \$500/yr

(50 gauges/yr x 50% reduction x 60% not recovered x \$7,000/gauge) = \$105,000/yr for replacement.

Savings to NRC and the States -- Both alternatives (2) and (3) would result in NRC and Agreement State savings associated with reporting and investigation efforts due to the anticipated lower number of stolen gauges. On average, NRC or an Agreement State spends approximately eight hours at an hourly rate of \$77 and \$50, respectively, for the initial investigation of each stolen gauge. Since follow-up investigation and enforcement action depends heavily on the nature of the incident and the resources spent vary widely, they are not captured for this analysis. Based on the 40 percent recovery rate, it appears that stolen gauges are often abandoned by the thief. NRC or Agreement States are often involved in investigation of the discovery of an abandoned gauge. It is estimated that approximately 4 hours will be spent in investigating an abandoned gauge. With a 70 percent and 50 percent reduction in incidents for alternatives (2) and (3), respectively, there are savings associated with the initial investigation of a stolen gauge and a corresponding savings associated with the discovery of an abandoned gauge. Assuming a split of one-third NRC lead and two-thirds Agreement State lead, the total savings per year would be approximately \$19,820 for alternative (2) and \$14,160 for alternative (3).

Calculations:

Alternative (2) projected savings per year = \$16,529 + \$3,304 = \$19,824

[(50 events/yr x 70% reduction x 8 hrs x (1/3 x \$77/hr + 2/3 x \$50/hr)] = \$16,520/yr

[(50 events/yr x 70% reduction x 40% recovery x 4hrs x (1/3 x \$77/hr + 2/3 x \$50/hr)] = \$3,304

Alternative (3) projected savings per year = \$16,529 + \$3,304 = \$14,160

[(50 events/yr x 50% reduction x 8 hrs x (1/3 x \$77/hr + 2/3 x \$50/hr)] = \$11,800/yr

[(50 events/yr x 50% reduction x 40% recovery x 4hrs x (1/3 x \$77/hr + 2/3 x \$50/hr)] = \$2,360

Savings to Local Law Enforcement and Fire Departments -- Law enforcement and fire department personnel are likely to be the first responders upon discovery by a member of the public of an abandoned gauge, which may have been stolen. By reducing the theft of portable

gauges, the corresponding rate of abandonment should also be reduced. Therefore, less responses would be needed from law enforcement and fire department personnel. For every abandoned gauge discovered, it is assumed that on an average four fire fighters and two policemen would be at the scene for two hours at \$50/hr. For the purpose of this analysis, a 40 percent discovery rate of abandoned gauges is assumed along with a 70 percent reduction for alternative (2) and 50 percent reduction for alternative (3) in stolen gauges. The estimated cost savings due to fewer responses by law enforcement and fire department would be \$8400 and \$6000 for alternatives (2) and (3), respectively.

Calculations:

Alternative (2) projected savings =

$$50 \text{ events} \times 70\% \text{ reduction} \times 40\% \text{ discovery} \times 6 \text{ people} \times 2 \text{ hrs} \times \$50/\text{hr} = \$8400.$$

Alternative (3) projected savings =

$$50 \text{ events} \times 50\% \text{ reduction} \times 40\% \text{ discovery} \times 6 \text{ people} \times 2 \text{ hrs} \times \$50/\text{hr} = \$6000.$$

Potential Cost Savings to Scrap Industry --By reducing the number of stolen gauges, there could be potential cost savings to the scrap metal industry from a reduced possibility that gauges might inadvertently be sent into scrap metal processing. Although quantitative estimates of such savings are not being made in this analysis, some information indicates that avoidance of melting of a gauge could save the scrap metal industry considerable decontamination costs.

In 1995, a joint NRC-Agreement State working group evaluated the issue of the loss of control of radioactive sources. The working group's final report NUREG-1551, "Final Report of the NRC-Agreement State Working Group to Evaluate Control and Accountability of Licensed Devices" (October 1996), included a recommendation to increase the oversight of sources and devices meeting certain criteria. The report also contained cost estimates to the steel industry resulting from the melting of improperly disposed of sources. The cost estimate for decontamination and clean-up from the melting of sources in steel mills was about \$12 million per year from 1983 to 1995 based on experience (as reported by the steel industry) but with high uncertainties. The report included both specifically and generally licensed devices for the risk of source meltings in steel mills. The cost estimates reported did not include incidents at large integrated steel mills for which the resultant clean up could cost as much as \$100 million for a single incident. There was a more recent incident involving a steel manufacturing

company in Baldwin, Florida that spent approximately \$10 million in July 2001 on a clean-up due to melting of a cesium source mixed in with recycled metal scraps.

Since portable gauges have a theft rate of 50 per year and since most stolen gauges would be abandoned by the thief, they are likely to end up in such places as scrap yards and smelters. The radioactive material in the typical portable device to which this rule would apply is similar to the types and quantities of material considered to be contributing to the costs to the steel industry resulting from the inadvertent melting of radioactive sources. Thus, these gauges would be expected to represent a portion of the risk from the loss of control of sources, particularly the significant cost of property damage resulting from the melting of sources. It is noted that the total number of sources in use is increasing, that the relative contribution between generally licensed and specifically licensed sources may have changed, and that the likelihood of a source melting depends on the monitoring effort performed by the metal manufacturers and recyclers. The cost estimates in NUREG-1551 still give an indication of the magnitude of the potential costs for decontamination and clean-up.

However, given the uncertainties involved in estimating the likelihood of portable gauges being sent to scrap metal processing, no cost savings are assumed in this regulatory analysis.

Potential Savings to Landfill and Municipal Incinerator Operators -- A fraction of stolen devices may end up at landfills and municipal incinerators. These facilities currently use monitors to detect the presence of radioactive material in order to prevent the inappropriate disposal of radioactive sources. When a monitor trip occurs, resources are spent to find and identify the source and determine the appropriate means of disposal. If there is a reduction in the number of stolen gauges, the likelihood of such a gauge ending up in these facilities should be reduced, thus reducing any associated costs to the operations.

Other Potential Savings -- Other costs, though less significant, associated with stolen sources also could be reduced by this rulemaking. For example, a stolen gauge may become an “orphaned” source if it is abandoned and its owner cannot be tracked down. By reducing the theft rate, the number of “orphaned” sources could also be reduced. The cost for disposal of orphaned sources often falls on government agencies (e. g., Environmental Protection Agency or Department of Energy, or individuals or organizations). Therefore, there is a potential cost savings to government agencies for managing less “orphaned” sources.

Regulatory Efficiency -- Both alternatives (2) and (3) would require promulgation of an amendment to a rule that would enhance regulatory efficiency. Through the rulemaking process, new requirements for physical controls will be proposed and discussed with specific examples of sufficient controls. There will also be an opportunity for comments from the industry and the public, and the NRC's regulatory expectations for licensee implementation of the rule will be provided in the statements of consideration. All of these steps will increase regulatory consistency, and hence, improve the efficiency of portable gauge licensees in complying with NRC regulations.

Environmental Considerations -- Alternatives (2) and (3) would likely result in the environmental effect of an insignificant reduction in the unnecessary release of radioactive material. Although NMED data show that most of the stolen gauges were abandoned on the roadside or in woods, the potential for a significant release from the radioactive source into the environment is very low because the rate of recovery is high and because the quantity of radioactivity in portable gauge sources is relatively small and robustly encapsulated. Therefore, reducing the number of stolen gauges will only have an insignificant impact on the environment.

Safeguards and Security Considerations -- The goal of this final rule is to enhance the physical control of the portable gauges by reducing the opportunity for unauthorized removal or theft of gauges. Because of the small quantity of radioactive material in a portable gauge, the potential for its malevolent use is small. Unauthorized removal or theft of a large number of gauges would be required to acquire sufficient material to construct a useful radiological dispersion or exposure device. Therefore, there are no safeguards considerations in this rulemaking.

Public Health (Accident) -- Both alternatives (2) and (3) would require improved security controls for portable gauges to reduce the opportunity for unauthorized removal or theft of portable gauges. As a result, the number of stolen gauges would likely be reduced, potentially averting radiation exposure to the public. When a gauge is stolen, it may become available to a member of the general public. Although it is reasonable to assume that a member of the public would not deliberately expose himself or herself or someone else to radiation, in some cases, these individuals might not understand that a gauge is a potential source of radiation. Provided

the radioactive material sealed source remained in the gauge and the shutter mechanism remained closed, no significant radiation exposure could result. If a gauge with a significant source of activity were to end up in the public domain, and a person was unknowingly exposed to the source, a significant exposure could result. However, radiation exposures due to improper handling would not be expected to exceed 1 mSv (100 mrem) in most cases. The improper handling of a limited number of the devices in use could conceivably result in doses on the order of a few rem. However, the likelihood of situations which could result in the highest doses is very low. Nonetheless, as the number of cases of stolen gauges would be reduced, the likelihood of unnecessary accidental exposure to the public would also be reduced.

V. DECISION RATIONALE:

The no-rulemaking alternative is not preferable because efforts such as issuing Information Notices have not significantly decreased the yearly number of reported incidents of stolen gauges. It is true that the number of incidents reported per year is small when compared to the total number of gauges in use, that the amount of radioactive material in a portable gauge is relatively small, and that the radioactive material is encapsulated in stainless steel. Nevertheless, unauthorized removal or theft of portable gauges still poses a concern if the gauge is abandoned in the environment, is recycled in a steel mill, or is used inappropriately. In addition, given the current heightened sensitivity following the events of September 11, 2001, it is necessary to enhance security of portable gauges by reducing the opportunity for unauthorized removal or theft of portable gauges. The adoption of alternative (2) is not preferred because it would create a large burden to the licensees' current operations. Alternative (3) is selected as the preferred option because the added controls would enhance the security of portable gauges by reducing the opportunity for unauthorized removal or theft of portable gauges, and yet at the same time providing flexibility for the licensees in selecting the controls that are most suitable for them.

It is estimated that adoption of this regulatory action will result in a one-time up-front rulemaking development and implementation costs of \$232,000 to the NRC and of \$680,000 to the Agreement States. No significant impact to NRC or Agreement State resources expended on routine operations is anticipated for this revised requirement. For the industry, there is an

estimated one-time cost of four to five million dollars for installing controls for existing portable gauges currently in service, and an estimated annual cost of \$206,000 for installing controls for new gauges as they come into service in the future.

Although the primary benefit of reduced incidents of unauthorized removal or theft of portable gauges is economically based, there are other benefits such as radiation exposure aversion, reduced public concerns, increased public confidence, and enhanced NRC credibility. It is estimated that the economic benefits for the industry would be around \$155,500 per year for cost avoidance due to a reduced number of incidents requiring recovery operations and/or replacement of stolen gauges. The estimated savings for NRC and the States would be around \$14,160 for the reduced number of incidents requiring investigation or responses. The corresponding savings for local fire department and law enforcement would be around \$6000 for the reduced number of incidents requiring responses. In addition, there are potential cost savings associated with the steel industry due to inadvertent melting of sources, with landfill and incinerator facilities for monitoring improperly disposed of sources, and with government agencies for managing "orphaned" source.

VI. IMPLEMENTATION:

The regulatory action is not expected to present any significant implementation problems. A number of control methods may be utilized by the licensee to best fit its situation. NRC and the Agreement States could monitor compliance through current operations.

ATTACHMENT 5

Final Environmental Assessment

**ENVIRONMENTAL ASSESSMENT AND
FINDING OF NO SIGNIFICANT IMPACT
FOR THE FINAL RULE
AMENDING 10 CFR PART 30
Rules of General Applicability to Domestic Licensing of Byproduct Material**

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

SUMMARY: The U.S. Nuclear Regulatory Commission (NRC) is planning to publish in the Federal Register a final rule amending its regulations that govern the use of byproduct material in specifically licensed portable gauges. The final rule requires a licensee to provide a minimum of two independent physical controls that form tangible barriers to secure the gauges from unauthorized removal whenever the portable gauges are not under the control and constant surveillance of the licensee. NRC has prepared an environmental assessment to support this action.

I. INTRODUCTION

Portable gauges are devices containing licensed material that are used to determine physical properties such as density and moisture content of soil, concrete, and other materials in a field setting. The most typical portable gauges in use today contain two encapsulated sources of radioactive materials. The first is a sealed gamma source containing 0.30 to 0.37 gigabecquerels (8 to 10 millicuries) of cesium-137 (Cs-137). This source is used for density measurement based on the attenuation of gamma radiation due to Compton scattering and photoelectric absorption, which is directly related to the electron density of materials. The second is a sealed neutron source containing 1.48 to 1.85 gigabecquerels (40 to 50 millicuries) of americium-241/beryllium (Am-241/Be). This source is used for moisture content measurement based on the thermalization or slowing down of fast neutron radiation, which is a

function of the hydrogen content of the material. Other radioactive materials besides Cs-137 and Am-241/Be have also been used in portable gauges.

When not in use, portable gauges are generally stored in a permanent storage location within a licensed facility. Portable gauges are often stored at a temporary jobsite if a job requires more than one day. A portable gauge being transported from a licensed facility to a temporary jobsite in a vehicle is first placed in a transportation case, and then is secured in or onto the vehicle. Sometimes, portable gauges are stored at a temporary storage location or on a vehicle.

Specific licenses for portable gauges are governed by NRC regulations in 10 Code of Federal Regulations (CFR) Part 30, "Rules of General Applicability to Domestic Licensing of Byproduct Material." However, other NRC requirements in 10 CFR Parts 2, 19, 20, 21, 71, 150, 170, and 171 also apply to a portable gauge licensee. At present, NRC reviews a licensee's program as described in the license application, and incorporates certain requirements into the license as license conditions. Equivalent State regulations apply to Agreement State portable gauge licensees. In addition, all such portable gauge licensees must also comply with other applicable Federal, State, and local regulations (e.g., Department of Transportation regulations, zoning requirements for a storage location, etc.). Agreement States follow a similar approach as NRC. In addition, certain Agreement States, such as Florida, have specific additional requirements in their regulations for the possession and use of sealed sources in portable gauges. Other States, including Texas and Washington, have issued orders imposing specific additional requirements for their portable gauge licensees.

Reports in the NRC's Nuclear Materials Events Database reveal that there have been approximately 450 cases of stolen gauges since 1990. Although the amount of radioactive materials used in a portable gauge is relatively small and is encapsulated in stainless steel, the

gauge still poses a concern for public health and safety and/or environment whenever it is stolen.

NRC published a proposed rule (68 FR 45172; August 1, 2003) in the Federal Register to amend its regulations in § 30.34 and received eleven comment letters on the proposed rule. After considering all comments and evaluating other control methods, NRC finds that the security requirements in the proposed rule are still the best alternative for providing the most flexibility for licensees to choose from a wide range of physical controls and for bearing the least cost impact to the licensee for implementing the controls. Therefore, the final rule contains the exact same requirements as the proposed rule.

II. PROPOSED ACTION

The proposed action is to amend NRC regulations to include specific security requirements for handling portable gauges in order to reduce the opportunity for theft. The final rule would require a minimum of two independent physical controls that form tangible barriers to secure portable gauges from unauthorized removal whenever portable gauges are not under the control and constant surveillance of the licensee. This final rule will apply to a licensee with a portable gauge regardless of the location, situation, and activities involving the portable gauge. At all times, the licensee will be required to either maintain control and constant surveillance of the portable gauge or use a minimum of two independent physical controls to secure the portable gauge.

III. NEED FOR THE PROPOSED ACTION

The theft of portable gauges poses a potential health and safety concern if the gauge is abandoned in the environment, is recycled in a steel mill, or is used inappropriately. The yearly

number of reported incidents has not significantly decreased in response to NRC guidance reminding licensees of their responsibilities concerning the security of portable gauges. In addition, given the heightened sensitivity following the events of September 11, 2001, it is necessary to enhance security for portable gauges by reducing the opportunities for theft. Therefore, the NRC is proposing security requirements for specifically licensed portable gauges in addition to the general requirements in for security and control of licensed material in 10 CFR 20.1801 and 20.1802.

IV. ALTERNATIVES TO THE PROPOSED ACTION

The NRC considered alternatives to the proposed action including the no rulemaking alternative, and an alternative to adopt more stringent requirements than those included in the final rule. Under the no rulemaking alternative, the NRC would rely on the current regulations in 10 CFR 20.1801 and 20.1802 for security and control of licensed materials and may consider revising existing guidance on portable gauge licenses. The no rulemaking alternative is not preferable because it may not help to reduce the potential risk to public health and safety and the environment due to the theft of portable gauges containing radioactive sources. Under the alternative to adopt more stringent requirements, the NRC would require a licensee to use, for example, a metal enclosure and a lock with a shielded/protected shackle for storage of a portable gauge in a vehicle, or NRC would prohibit a licensee from unattended storage of portable gauges in vehicles. Adoption of these more stringent requirements is not preferable because the NRC desires to allow licensees the maximum flexibility possible in achieving a reduction in the theft of portable gauges. The preferred alternative is to undertake a rulemaking to amend 10 CFR Part 30 regulations to require a minimum of two independent physical controls that form tangible barriers to secure portable gauges from unauthorized removal

whenever portable gauges are not under the control and constant surveillance of the licensee. The preferred alternative would enhance the current level of security and control of portable gauges while providing sufficient flexibility for licensees to implement the requirements.

V. ENVIRONMENTAL IMPACTS OF THE PROPOSED ACTION AND ALTERNATIVES

This rulemaking would not have a significant environmental impact. This action would reduce opportunities for the theft of portable gauges and, therefore, reduce the number of stolen sources. Therefore, potential health and safety hazard to the public may be reduced due to unintentional exposure to the stolen sources. Although most stolen gauges are abandoned on the roadside or in woods, the potential release of radioactive materials into the environment is still small because the rate of recovery is high and because radioactive sources used in portable gauges are relatively small and robustly encapsulated. However, reducing the number of stolen gauges could further reduce the potential impact to the environment. The no rulemaking alternative would not change the potential risk to public health and safety or the potential impact to the environment due to the continued risk of theft. Adoption of a more stringent requirement is expected to have similar environmental impacts to those of the preferred alternative.

VI. AGENCIES AND PERSONS CONSULTED, AND SOURCES USED

Two representatives from the Agreement States of Florida and Arkansas participated in the development of both the proposed rule and the final rule and in drafting of the environmental assessment. In addition, the staff consulted with the U.S. Department of Transportation hazardous material transportation staff. The NRC has sent a copy of the draft environmental assessment along with the proposed rule to every State Liaison Officer and has

requested their comments on the environmental assessment. In the proposed rule published in the Federal Register (68 FR 45172; August 1, 2003), the NRC also requested public comment on the draft environmental assessment. No comments were received from both efforts.

VII. FINDING OF NO SIGNIFICANT IMPACT

The Commission has determined under the National Environmental Policy Act of 1969, as amended, and the NRC's regulations in Subpart A of 10 CFR Part 51, that the final rule, entitled "Security Requirements for Portable Gauges Containing Byproduct Material," is not a major Federal action significantly affecting the quality of the human environment, and therefore, an environmental impact statement is not required. The Commission has concluded on the basis on an environmental assessment that these requirements will not have any effects on the environment in which portable gauges are currently regulated under 10 CFR Part 30. The final rule will strengthen requirements to prevent unauthorized removal or theft of portable gauges containing byproduct material.

ATTACHMENT 6

SBREFA Forms



24722

Submission of Federal Rules Under the Congressional Review Act

President of the Senate

Speaker of the House of Representatives

GAO

Please fill the circles electronically or with black pen or #2 pencil.

1. Name of Department or Agency

U.S. Nuclear Regulatory Commission

2. Subdivision or Office

Office of Nuclear Material Safety and Safeguards

3. Rule Title

10 CFR Part 30: Security Requirements for Portable Gauges Containing Byproduct Material

4. Regulation Identifier Number (RIN) or Other Unique Identifier (if applicable)

RIN 3150-AH06

5. Major Rule Non-major Rule

6. Final Rule Other

7. With respect to this rule, did your agency solicit public comments? Yes No NA

8. Priority of Regulation (fill in one)

Economically Significant; or Significant; or Substantive, Non Significant

Routine and Frequent or Informational/Administrative/Other (Do not complete the other side of this form if filled in above.)

9. Effective Date (if applicable) **180 days from date of publication**

10. Concise Summary of Rule (fill in one or both) attached stated in rule

Submitted by: _____ (signature)

Name: **Dennis Rathbun**

Title: **Director, Office of Congressional Affairs**

For Congressional Use Only:

Date Received: _____

Committee of Jurisdiction: _____



24722

	Yes	No	N/A
A. With respect to this rule, did your agency prepare an analysis of costs and benefits?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
B. With respect to this rule, by the final rulemaking stage, did your agency			
1. certify that the rule would not have a significant economic impact on a substantial number of small entities under 5 U.S.C. § 605(b)?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. prepare a final Regulatory Flexibility Analysis under 5 U.S.C. § 604(a)?	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
C. With respect to this rule, did your agency prepare a written statement under § 202 of the Unfunded Mandates Reform Act of 1995?	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
D. With respect to this rule, did your agency prepare an Environmental Assessment or an Environmental Impact Statement under the National Environmental Policy Actg (NEPA)?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
E. Does this rule contain a collection of information requiring OMB approval under the Paperwork Reduction Act of 1995?	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
F. Did you discuss any of the following in the preamble to the rule?	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
• E.O. 12612, Federalism	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
• E.O. 126630, Government Actions and Interference with Constitutionally Protected Property Rights	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
• E.O. 12866, Regulatory Planning and Review	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
• E.O. 12875, Enhancing the Intergovernmental Partnership	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
• E.O. 12988, Civil Justice Reform	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
• E.O. 13045, Protection of Children from Environmental Health Risks and Safety Risks	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
• Other statutes or executive orders discussed in the preamble concerning the rulemaking process (please specify)			

Submission of Federal Rules Under the Congressional Review Act

 President of the Senate Speaker of the House of Representatives GAO

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Office of Nuclear Material Safety and Safeguards

3. Rule Title

10 CFR Part 30: Security Requirements for Portable Gauges Containing Byproduct Material

4. Regulation Identifier Number (RIN) or Other Unique Identifier (if applicable)

RIN 3150-AH065. Major Rule Non-major Rule 6. Final Rule Other

7. With respect to this rule, did your agency solicit public comments?

Yes No NA

8. Priority of Regulation (fill in one)

 Economically Significant; or
Significant; or
Substantive, Non Significant Routine and Frequent or
Informational/Administrative/Other
(Do not complete the other side of this form
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For Congressional Use Only:

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Submission of Federal Rules Under the Congressional Review Act

 President of the Senate

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RIN 3150-AH06

5. Major Rule Non-major Rule

6. Final Rule Other _____

7. With respect to this rule, did your agency solicit public comments? Yes No N/A

8. Priority of Regulation (fill in one)

Economically Significant; or
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