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 to10 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.