REGULATORY ANALYSIS

REGULATORY GUIDE 5.80
"PRESSURE-SENSITIVE AND TAMPER-INDICATING DEVICE SEALS FOR MATERIAL CONTROL AND ACCOUNTING OF SPECIAL NUCLEAR MATERIAL"

Proposed Revision to Regulatory Guides 5.10 and 5.15.

Statement of the Problem

The U.S. Nuclear Regulatory Commission (NRC) published Regulatory Guide (RG) 5.10 "Selection and Use of Pressure-Sensitive Seals on Containers for Onsite Storage of Special Nuclear Material,"[1] in July 1973, and revised RG 5.15, "Tamper-Indicating Seals for the Protection and Control of Special Nuclear Material,"[2] in March 1997, to provide general guidance for an acceptable program using tamper-indicating devices (TIDs) and Pressure-Sensitive (PS) seals to assist in assuring that the diversion or theft of special nuclear material (SNM) from containers in temporary onsite storage has not occurred. The TID seals should assist in assuring the validity of previously made measurements and should give particular consideration to the composition, seal properties, method of affixing, seal control, and quality assurance.

With the recent changes in the threat environment since 9/11, the NRC recognizes the need for significant revision of these guides to address newer technology, equipment, and measurement control procedures affecting material control and accounting (MC&A) activities. Furthermore, recent changes to Title 10, of the *Code of Federal Regulations* (10 CFR) required revision of these guides to provide information concerning compliance with the rules as currently stated in 10 CFR.

Objective

The objective of this regulatory action is to provide a more useful and up-to-date version of the MC&A guidance for managing and controlling SNM activities using TID and PS seals that indicate whether unauthorized tampering or entry has occurred in accordance with the current regulations in 10 CFR Part 74. The original July 1973 regulatory guide and the revised 1997 regulatory guide also addressed the same concerns in the pre-9/11 environment.

Alternative Approaches

The NRC staff considered the following alternative approaches:

- Do not revise RG 5.10 or 5.15
- Update RG 5.10 and 5.15 separately
- Update RG 5.10 but do not update RG 5.15

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[1] Regulatory Guide 5.10, "Selection and Use of Pressure-Sensitive Seals on Containers for Onsite Storage of Special Nuclear Material," U.S. Nuclear Regulatory Commission, Washington, DC, July 1973.

[2] Regulatory Guide 5.15, "Tamper-Indicating Seals for the Protection and Control of Special Nuclear Material," Revision 1, U.S. Nuclear Regulatory Commission, Washington, DC, March 1997.

- Do not update RG 5.10 but update RG 5.15

- Update both RG 5.10 and 5.15 and reissue them as one regulatory guide.

Alternative 1: Do Not Revise Regulatory Guide 5.10 or 5.15

Under this alternative, the NRC would not revise either regulatory guide, and the original version of RG 5.10 and the 1997 version of RG 5.15 would continue to be available. This alternative is considered the baseline or "no action" alternative and, as such, involves no value/impact considerations.

Alternative 2: Update Regulatory Guide 5.10 and 5.15 Separately

Under this alternative, the NRC would revise RG 5.10 and RG 5.15 separately and independently of each other. Both guides would be updated to reflect post-9/11 security requirements and current regulations contained in 10 CFR. However, as PS seals represent one type of TID seal and RG 5.10 and RG 5.15 reference each other, much of the discussion concerning proper use of TIDs and PS seals would be repeated in each guide or available only in one of the RGs. This would require licensees to follow the guidance of two separate guides for implementing one program concerning the use of TID seals for the protection of SNM.

Alternative 3: Update Regulatory Guide 5.10 but Do Not Update Regulatory Guide 5.15

Under this alternative, The NRC would revise RG 5.10 but not RG 5.15. This would provide the benefits of updating RG 5.10 to reflect post-9/11 security requirements and current regulations contained in 10 CFR as well as current best practices performed in industry. It would not provide a current and up to date version of RG 5.15, which would leave some of the guidance concerning TIDs, of which PS seals represent one type, out of date.

Alternative 4: Do Not Update Regulatory Guide 5.10 but Update Regulatory Guide 5.15

Under this alternative, The NRC would revise RG 5.15 but not RG 5.10. This would provide the benefits of updating RG 5.15 to reflect post-9/11 security requirements and current regulations contained in 10 CFR as well as current best practices performed in industry. It would not provide a current and up to date version of RG 5.10, which would leave some of the guidance concerning PS seals out of date.

Alternative 5: Update Both Regulatory Guides 5.10 and 5.15 and Reissue Them as One Guide

Under this alternative, the NRC would revise both Regulatory Guide 5.10 and RG 5.15 and reissue them as a single guide covering all aspects of TID and PS seal use. The single revised guide would be updated to reflect both post-9/11 security requirements and current regulations contained in 10 CFR. The single guide would reference TID and PS seals currently in general use, including improved seals that have been recently developed. This guide distinguishes between genuine and non-genuine manufactured seals and stresses serial identification to aid in the control of commercial theft or to alert shipping and warehousing personnel to containers that have been opened in transit. This guide provides a single and concise reference for determining how TID and PS seals can be used for the protection of SNM.

Conclusion

Based on this regulatory analysis, the staff recommends that the NRC revise RG 5.10 and RG 5.15 and reissue them together as a single regulatory guide. This guide is not mandatory for licensees. The requirements for the use of seals are contained in 10 CFR Part 71, "Packaging and Transportation of Radioactive Material"[3]; 10 CFR Part 73, "Physical Protection of Plants and Materials"[4]; and 10 CFR Part 74, "Material Control and Accounting of Special Nuclear Material."[5] The question of whether licensees are using the specific seals described in this RG has not been examined. If licensees are using these specific seals, the guide serves primarily to document current practice. If licensees are using older seal technologies, the guide offers them an opportunity to consider whether a change would improve regulatory performance and reduce costs. Therefore, the impact of this RG may be either negligible or favorable to licensees, but it is not expected to increase the costs of license compliance in any instance.

[3] 10 CFR Part 71, "Packaging and Transportation of Radioactive Material," U.S. Nuclear Regulatory Commission, Washington, DC.

[4] 10 CFR Part 73, "Physical Protection of Plants and Materials," U.S. Nuclear Regulatory Commission, Washington, DC.

[5] 10 CFR Part 74, "Material Control and Accounting of Special Nuclear Material," U.S. Nuclear Regulatory Commission, Washington, DC.