



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

CR - 02-01

**SSR/10 CFR 34.20 COMPATIBILITY RESOLUTION**  
**REQUIREMENT TO USE COLLIMATORS IN INDUSTRIAL RADIOGRAPHY**

**ISSUE:**

The Mississippi Regulations and Suggested State Regulations (SSR) for industrial radiography require, in part, that "except when physically impossible, collimators shall be used in industrial radiographic operations that use radiographic exposure devices that allow the source to be moved out of the device." There is no comparable requirement in 10 CFR 34, "Licenses for Industrial Radiography and Radiation Safety Requirements for Industrial Radiographic Operations."

**DISCUSSION:**

The requirement to use collimators, whenever possible, in the SSR and State regulations dates back 15, or more, years. Many States, principally those who have large numbers of radiography licensees and significant regulatory experience with radiography operations, have adopted this requirement either by regulation or by license condition.

The rationale used by State regulatory authorities to require the use of collimators is based on, in part, the concept of decreasing worker exposure by limiting the projected beam's direction and area. Although NRC has known of the State's use of this ALARA requirement for many years, NRC has not adopted an equivalent requirement. During the major revision of 10 CFR Part 34 in the mid-1990's, NRC considered, but decided not to include use of collimators in Part 34, and it appears no comments were received to include this requirement in Part 34. NRC understands that use of collimators is "good" practice and did not see a health and safety need to add such usage as a prescriptive requirement.

At issue is the difference between the State of Mississippi's requirement to use collimators when performing radiography and NRC's radiography regulations which do not. There is no NRC equivalent to the Mississippi requirement. Mississippi's requirement is a use condition found in Section 801E15(c), "Conducting Industrial Radiographic Operations." The NRC equivalent for Section 801E15(c) is 10 CFR 34.41 with a Compatibility Category "B," indicating a program element with significant direct transboundary implications. The State's program element should be essentially identical to that of NRC. Also, the Mississippi regulations are based on the SSR for radiography.

No undue burden is placed on licensees as a result of the SSR or Mississippi requirement. There is no undue "transboundary" impact on Mississippi licensees who operate under reciprocity in NRC or other jurisdictions, or for licensees from NRC or other jurisdictions operating in Mississippi. The low cost of collimators, about \$150, hardly presents an undue or un-necessary operating cost to a licensee.

**OBSERVATIONS/CONCLUSION:**

1. The use of collimators, either voluntary or required, is a good ALARA practice. The use of collimators reduces worker exposure.
2. The use of collimators permits radiography operations in smaller areas.
3. The use of collimators is not cost prohibitive. A small tungsten collimator costs between \$100 to \$200. It is not an undue burden to purchase one, or several, and use them.
4. Today, the use of collimators is generally accepted as "good" practice in radiography operations. The use of collimators is an integral part of safe operations and is routinely used in industry. As part of the license application process, NRC licensees address the use of collimators in training and operating procedures as part of the effort to maintain worker and public exposure ALARA.
5. The staff notes that the requirement for collimators does not result in a regulation which is less restrictive than NRC's regulation and does not result in any significant transboundary impact.

Because of the above, especially the wide spread use of collimators in industry, we find that there is no compatibility issue associated with the difference between NRC's regulations, the State of Mississippi's requirement and the current version of the SSR on use of collimators.

4/4/02  
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