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Information Notice No. 97-86: Additional Controls for Transport of the Amersham Model No. 660 Series Radiographic Exposure Devices

UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF NUCLEAR MATERIAL SAFETY AND SAFEGUARDS
WASHINGTON, D.C. 20555

December 12, 1997

Information Notice No. 97-86: ADDITIONAL CONTROLS FOR TRANSPORT OF THE
AMERSHAM MODEL NO. 660 SERIES RADIOGRAPHIC
EXPOSURE DEVICES

Addressees

Registered users of the Model No. 660 series packages, and Nuclear Regulatory Commission industrial radiography licensees.

Purpose

The U.S. Nuclear Regulatory Commission (NRC) is issuing this notice is to alert addressees to additional controls for transport that have been added to Certificate of Compliance No. 9033, for the Amersham Model No. 660 series radiographic exposure devices. It is expected that recipients will review the information for applicability to their operations. However, suggestions contained in this information notice are not NRC requirements, therefore, no specific action nor written response is required.

Description of Circumstances

In October 1997, Amersham Corporation of Burlington, Massachusetts, performed physical testing of the Model No. 660 series radiographic exposure devices. During the tests, one of the test units experienced an unexpected failure and did not meet the external radiation standards specified in 10 CFR Part 71.

Amersham subjected four Model No. 660 test specimens to the hypothetical accident test sequence described in 10 CFR 71.73. The test sequence consists of a 9-meter (30-foot) free drop, a 1-meter (40-inch) drop onto a puncture bar, and a thermal (fire) test. Because of damage sustained in the drop and puncture tests, the depleted uranium radiation shielding in one test unit was partially exposed during the subsequent thermal test. The exposed depleted uranium shield experienced significant oxidation and

degradation during the thermal test. As a result, the test unit no longer provided shielding sufficient to meet the post-accident radiation limit specified in 10 CFR 71.51(a)(2).

Discussion:

Certificate of Compliance No. 9033, for the Model No. 660 series packages, has been revised to specify additional controls to be used in transport. These controls are needed to ensure that the package does not sustain damage that may reduce its effectiveness in the event of a transportation accident including a fire. These controls apply to radiographic exposure devices identified as Model No. 660, 660E, 660A, 660AE, 660B, or 660BE. The additional controls are noted below:

1. For transportation in private carriage, the package must be either:
 - (a) properly secured within a box attached to the vehicle for the purpose of transporting or storing radiography devices. The package must be properly blocked, braced, and supported to prevent shifting within the box during transport; or
 - (b) properly secured within a steel box of welded construction or a steel drum. The package must be properly blocked, braced, and supported to prevent shifting within the steel box or steel drum during transport. The steel box or drum must be blocked, braced, and secured against movement within the vehicle.
2. For transportation by common carrier, the package must be properly secured within a steel box of welded construction or a steel drum. The package must be properly blocked, braced, and supported to prevent shifting within the steel box or steel drum during transport. The steel box or steel drum must be blocked, braced, and secured against movement within the vehicle.

These controls are temporary measures pending the development and testing of package design modifications. These controls must be implemented until they are removed from the Certificate of Compliance.

This information notice requires no specific action nor written response. If you have any questions about the information in this notice, please contact one of the technical contacts listed below or the appropriate regional office.

signed by
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Office of Nuclear Material Safety and Safeguards

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