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NOV 12 1985

MEMORANDUM FOR: William J. Dircks
Executive Director for Operations

FROM: Robert B. Minogue, Director
Office of Nuclear Regulatory Research

SUBJECT: CONTROL OF NRC RULEMAKING: RES REVIEW OF NEW PROPOSED RES-SPONSORED RULEMAKING

Based on our review of the new proposed RES-sponsored rulemaking entitled, "Safety Requirements for Industrial Radiographic Exposure Devices," RES recommends that NRC should begin this specific rulemaking. This recommendation in draft form has been coordinated with NMSS and SP.

The basis for our recommendation is as follows:

Radiation exposures involving radiographers have been a concern of the NRC and the Agreement States for several years. Although radiography overexposures occur at a rate that is double the rate of radiation workers in other fields, the principal concern involves the potential for serious overexposures from radiography devices that contain radioactive sources strong enough to pose serious health hazards to both radiographers and to the general public. (In general, it is not meaningful to specify an average dose received as a result of a radiography overexposure because the dose could vary from a few millirems to a dose sufficient to produce radiation sickness and even death).

Roughly 90% of the radiography overexposures involve the use of portable crank-out type radiography devices where the chief contributing factor to the overexposures involves the connection between the drive or control cable and the radioactive source assembly. Several of the radiography devices now in use allow the source assembly to be driven from the device without a positive connection having been made, with the result that, when the control cable is retracted, the source assembly remains outside the device, generally in the guide tube. Present regulations require a radiation survey to be made at the end of each radiographic exposure, and this survey would normally detect the presence of the source assembly in the guide tube. The number of overexposures resulting from this kind of incident however indicates that these radiation surveys often are not made and that in some instances the guide tube containing the source assembly is disconnected from the device, coiled up and put in storage. A recent example of this type of incident

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occurred the first week in August 1985 in Wyoming where 3 radiographers received overexposures and at least 3 members of the general public received doses of approximately 0.5 rem each.

The purpose of the rulemaking being proposed here is to reduce the number of such radiography overexposures by establishing performance standards for radiography devices that will require a positive drive cable-to-source assembly connection before the source can be driven from its shielded position in the radiography device. It is anticipated that such performance standards will reduce the number of overexposures by more than one half. Other performance standards under consideration involve a source position indicator on the device and an interlock that will prevent the removal of the drive cable from the device until the radioactive source is properly retracted into its fully shielded position inside the radiography device. Consensus standards that include such performance standards are available for consideration in this rulemaking and these should minimize the costs of the rulemaking. The benefits to be derived from a reduction in potential overexposures by the incorporation of such consensus standards in the regulations are difficult to evaluate on a monetary basis. Based on the work of the Task Force on Equipment Performance Criteria of the Radiography Steering Committee the costs to the radiography industry of any additional requirements likely to result from the rulemaking will probably be small.

The complete RES review package has been sent to OEDO (Attention: DEDROGR) and to the Directors, NMSS and SP.

Original signed by:
ROBERT B. MINOGUE

Robert B. Minogue, Director
Office of Nuclear Regulatory Research

ct 10/17/85 *See previous concurrence

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occurred the first week in August 1985 in Wyoming where 3 radiographers received overexposures and at least 3 members of the general public received doses of approximately 0.5 rem each.

The purpose of the rule being proposed here is to reduce the number of such radiography overexposures by adopting performance standards for radiography devices that will require a positive drive cable-to-source assembly connection before the source can be driven from its shielded position in the radiography device. It is anticipated that such performance standards will reduce the number of overexposures by more than one half. Other performance standards under consideration involve a source position indicator on the device and an interlock that will prevent the removal of the drive cable from the device until the radioactive source is properly retracted into its fully shielded position inside the radiography device. Consensus standards which include most of the performance standards under consideration are available for incorporation by reference into the regulations so that costs to the NRC in developing this rulemaking should be small. It is difficult to provide a monetary figure for the benefits derived from mitigation of the overexposures discussed but it is felt that the costs of meeting the proposed performance standards would have a minimal impact on individual licensees.

The complete RES review package has been sent to OEDO (Attention: DEDROGR) and to the Directors, NMSS and SP.

Robert B. Minogue, Director
Office of Nuclear Regulatory Research

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