

U.S. NUCLEAR REGULATORY COMMISSION
FINAL FINDING OF NO SIGNIFICANT IMPACT AND AVAILABILITY OF THE
ENVIRONMENTAL ASSESSMENT REGARDING TROXLER ELECTRONIC
LABORATORIES, INC. REQUEST FOR EXEMPTION FROM 10 CFR 32.14

I. Introduction

NRC is considering the granting of an exemption from the provisions in 10 CFR 32.14, to allow Troxler Electronic Laboratories, Inc. (hereafter Troxler) to manufacture and distribute the Model CoreReader density gauge as an exempt product. The NRC staff performed an Environmental Assessment (EA) in support of its review of Troxler's request, in accordance with the requirements in 10 CFR Part 51. The conclusion of the EA is a Finding of No Significant Impact (FONSI) for the proposed licensing action.

II. Supplementary Information

Background

Troxler has requested a license to manufacture and distribute an ionizing measuring instrument for density readings (CoreReader) as an exempt product. This licensing action requires an exemption from the provisions of 10 CFR 32.14, which specify that licensees can incorporate byproduct material into products that meet the requirements found in 10 CFR 30.15.

The CoreReader is an ionizing radiation measurement instrument that determines the specific gravity of a compacted asphalt sample. The construction of the CoreReader is all metal housing and includes lead shielding around the source. It is a bench top laboratory instrument containing eight exempt-quantity cesium-137 sources (10 microcuries/0.37 MBq

each) installed in plexiglass which is filled and sealed with an epoxy. The sources are held in a subassembly inside the device which is mounted inside the lower third of the device below the sample chamber. It is not removable and is completely inaccessible to the user. The total activity is 80 microcuries (3 MBq).

Troxler has requested an exemption from 10 CFR 32.14, to allow it to distribute the CoreReader as an exempt device instead of a generally licensed device. The use of the CoreReader would be one element in the implementation of the Strategic Highway Research Program (SHRP), established by Congress in 1987 to develop and evaluate innovative technologies for roadway construction, maintenance, and operations. The SHRP program produced Superpave, a more reliable asphalt-mix design, analysis, and quality control methodology that utilizes an advanced technology approach to pavement design.

Implementation of the Superpave-mix design has resulted in superior performing asphalt pavements. However, the coarser mixtures resulting from Superpave-mix designs have caused problems with the accuracy and precision to measure the specific gravity of laboratory specimens and pavement core samples. The overestimation of density results in premature pavement distress and permeability related problems. Troxler's CoreReader is a technology improvement that overcomes the shortcomings of current water displacement methods for measuring the specific gravity of asphalt samples. Unlike current methods, the CoreReader uses radiation from a distribution of sources to probe the entire volume of an asphalt sample. By doing so, it can accurately measure the coarser Superpave-mixes. The CoreReader reduces operator dependence, improves accuracy and precision, and reduces laboratory differences in measurements to produce better pavement designs.

Troxler's experience with the distribution of generally licensed gauges shows that despite the CoreReader's advantages, it would be attractive to end-users only if it could be distributed nationally under uniform licensing with low quantities of radioactive material

contained in it. Many potential users have indicated that they are unwilling to deal with additional regulatory burdens associated with generally licensed devices. Therefore, Troxler has asserted in its request that the CoreReader's benefits can be fully realized only if it is licensed for exempt distribution.

Summary of the Environmental Assessment

The NRC staff performed an appraisal of the environmental impacts associated with the exemption, in accordance with 10 CFR Part 51, Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions. The exemption would authorize Troxler to manufacture and distribute the CoreReader as an exempt product.

The results of the staff's assessment of potential environmental impacts are documented in an EA which, as noted above, has been placed in the Publicly Available Records component of NRC's document system (ADAMS). Based on its review, the NRC staff has concluded that there are no significant environmental impacts associated with the proposed action.

Alternatives to the Proposed Action

The proposed action that the NRC is considering is to issue an exemption from 10 CFR 32.14. The proposed action allows Troxler to distribute the CoreReader density gauge as an exempt device. The alternatives available to the NRC are:

1. Approve the exemption request as submitted; or
2. Deny the request.

Based on its review, the NRC staff has concluded that the environmental impacts associated with the proposed action do not warrant denial of the exemption request. The staff considers that Alternative 1 is the appropriate alternative for selection.

Conclusion

The NRC staff considered the risk to human health from distribution and transportation, routine use, disposal, and accidents and misuse, as well as the environmental consequences of approving an exemption from 10 CFR 32.14 for the Troxler CoreReader, and has determined that the approval of this exemption is (1) authorized by law; (2) will not endanger life or property or the common defense and security; and (3) is otherwise in the public interest.

III. Finding of No Significant Impact

The NRC staff has prepared an EA for the proposed exemption from 10 CFR 32.14. On the basis of the assessment, the NRC staff has concluded that environmental impacts associated with the proposed action would not be significant and do not warrant the preparation of an Environmental Impact Statement. Accordingly, a Finding of No Significant Impact is appropriate.

IV. Further Information

The EA and the documents related to this proposed action are available for public inspection at NRC's Public Electronic Reading Room at <http://www.nrc.gov/reading-rm/adams.html>. The accession number of the electronic file for the related documents is ML023190183; the direct accession number of the EA within this file is ML023450624. Documents may also be examined and/or copied for a fee, at the NRC's Public

Document Room, located at One White Flint North, 11555 Rockville Pike, Rockville, MD 20854.
Any questions regarding this action can be directed to Dr. John P. Jankovich at (301) 415-7904
or by e-mail at JPJ2@nrc.gov.

Dated at Rockville, Maryland, this 13th day of December , 2002.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Thomas H. Essig, Chief
Materials Safety and Inspection Branch
Division of Industrial and Medical Nuclear Safety
Office of Nuclear Material Safety and Safeguards

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