



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

PDR

July 1, 1985

MEMORANDUM FOR: Those on Attached List

FROM: Phillip F. McKee, Chief
Operating Reactor Programs Branch
Division of Inspection Programs
Office of Inspection and Enforcement

SUBJECT: REQUEST FOR COMMENT ON DRAFT IE INFORMATION NOTICE,
"SURVEYS OF WASTES BEFORE DISPOSAL FROM NUCLEAR
REACTOR FACILITIES"

The subject draft information notice is enclosed for your review.

The enclosed draft is a revision of an earlier draft that was discussed during a teleconference involving IE, NRR, and regional staff members on May 8, 1985. The enclosed draft also has been discussed with the Director, IE, during a briefing on June 14, 1985.

We do not believe the current draft information notice is a backfit; however, CRGR will be given an opportunity to review the information notice before it is issued.

Comments received by July 15, 1985 will be carefully considered. If you have no comments, or minor comments, a telephone call will suffice.

Phillip F. McKee, Chief
Operating Reactors Program Branch
Division of Inspection Programs
Office of Inspection and Enforcement

Enclosure:
Draft Information Notice

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CONTACT: John Buchanan, ORPB/IE
(492-9657)

8507160369 850701
PDR I&E
MISC PDR

Date 7-8-85 From John L. Buchanan

Addressees for Memorandum dated: July 1, 1985

R. R. Bellamy, Chief
Emergency Preparedness and Radiological Protection Branch
Region I

D. M. Collins, Chief
Emergency Preparedness and Radiological Protection Branch
Region II

C. J. Paperiello, Chief
Emergency Preparedness and Radiological Protection Branch
Region III

R. E. Hall, Chief
Emergency Preparedness and Radiological Protection Branch
Region IV

F. A. Wenslawski, Chief
Emergency Preparedness and Radiological Protection Branch
Region V

F. Congel, Chief
Radiological Assessment Branch
Division of Systems Integration
Office of Nuclear Reactor Regulation

L. B. Higginbotham, Chief
Low-Level Waste Licensing Branch
Division of Waste Management
Office of Nuclear Material Safety and Safeguards

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(492-9657)

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JUN 20 1985

UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT
WASHINGTON, DC 20555

IE INFORMATION NOTICE NO. 85-XX: SURVEYS OF WASTES BEFORE DISPOSAL FROM
NUCLEAR REACTOR FACILITIES

Addressees:

All production and utilization facilities, including nuclear power reactors and research and test reactors, holding an operating license (OL) or Construction permit (CP).

Purpose:

The purpose of this information notice is to update the guidance of IE Circular 81-07 as it applies to surveys of solid waste materials before disposal from nuclear reactor facilities. It is expected that recipients will review the information for applicability to their facilities. No specific action or licensee response is required.

Description of Circumstance:

Some questions have arisen concerning acceptable methods of surveying solid waste materials before releasing them as non-radioactive (i.e., as wastes that do not contain NRC-licensed material).

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Discussion:

As emphasized in IE Information Notice 83-05¹, existing NRC regulations, with one exception, provide no minimum level of radioactivity in waste from a licensee's facility that may be disposed of in a manner other than as normal radioactive waste in accordance with 10 CFR Section 20.301. The one exception is the provision in 10 CFR Section 20.306 that certain levels of tritium and carbon-14 in certain materials may be disposed of without regard to its radioactivity. Also, as emphasized in IE Information Notice No. 83-05, licensees may request NRC approval of alternative methods of disposal in accordance with 10 CFR Section 20.302. A practical consequence of these current regulations is that a licensee who does not have specific NRC approval to dispose of materials by alternative methods must dispose of material contaminated with detectable licensed material at a licensed waste burial site. However, material that is contaminated with licensed material at detectable levels may be disposed by other methods if NRC approval has been obtained in accordance with 10 CFR section 20.302. Requests for approval may be either for disposal of a particular quantity of a particular material on a one-time basis or the request may be for continuing disposal of specific types of wastes on an annual basis using approved procedures and systems. Requests from reactor licensees for approval of alternative methods of disposal should be directed to the Office of Nuclear Reactor Regulation (NRR). The Office of Inspection and Enforcement and the NRC Regional Offices have no authority to approve such requests.

One misunderstanding of NRC requirements is the belief that if a licensee establishes specific release limits in the licensee's operating procedures, these contamination limits become legally acceptable. As discussed above, material contaminated with detectable licensed material may not be released from licensee control without specific NRC authorization. Therefore, in the absence of NRC approval, procedures containing release limits (i.e., procedures allowing the release of material known to be contaminated) would be procedures for activities

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that are contrary to NRC regulations. Plant procedures may, however, incorporate detection limits for survey equipment used to search for and measure radioactive contamination in material being surveyed before release from licensee control.

Minimizing the volume of radioactive waste generated and shipped to commercial waste burial sites is a need recognized by the NRC. Some nuclear power plants have initiated programs to segregate waste generated in radiologically controlled areas. Such programs are encouraged by the Institute for Nuclear Power Operations (INPO) which has included guidance on segregation of materials in its good practice document on low-level radioactive waste management². The INPO guidance on segregation of materials quite properly includes the "caution" that "care should be taken to ensure that no radioactive material is released." As mentioned previously this means in practice that no radioactive material that is detectable can be released. This requires careful surveys and monitoring using appropriate radioactivity detection and measurement equipment and techniques.

In 1981, I.E. Circular No. 81-07³ was issued by the NRC. That circular provided guidance on the control of radioactively contaminated material and identified how hard licensees should look for contamination. These criteria addressed surface contamination levels, were based on the best information available at the time, and were related to the capability of portable survey instruments equipped with thin-window "pancake" G.M. probes. Monitoring of aggregated, packaged material was not addressed. At the time, in 1981, there was no major emphasis on segregating waste from designated contamination areas. As a consequence, large volumes of monitored wastes were not being released for unrestricted disposal. However, today's practices at many nuclear power facilities result in large volumes of segregated, monitored wastes being released as "clean" waste. Under these conditions, it is not appropriate to survey for surface contamination only; in addition, surveys of aggregated wastes should be performed with gamma-sensitive fixed or portable instruments (for example, instruments using sensitive scintillation detectors).

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Guidance:

1. Materials that may be contaminated, and that are to be disposed of without specific NRC approval, should be carefully surveyed using methods (equipment and techniques) for detecting very low levels of radioactivity. These survey methods should provide licensees with reasonable assurance that licensed material is not being released from their control.
2. Surveys conducted with portable survey instruments utilizing "pancake" G.M. probes are more appropriate for small items and small areas because of the loss of detection sensitivity created by moving the probe and the difficulties in completely scanning large areas. This does not preclude their use for larger items and areas if supplemented by other survey equipment or techniques.
3. Final measurements of aggregated wastes should be performed to ensure that there has not been an accumulation of licensed material resulting from a buildup of multiple non-detectable quantities (for example, final measurements using sensitive scintillation detectors in low-background areas).

No specific action is required by this information notice. If you have any questions about this matter, please contact this office or the Radiological Assessment Branch, Office of Nuclear Reactor Regulation (NRR).

Edward L. Jordan, Director
Division of Emergency Preparedness
and Engineering Response
Office of Inspection and Enforcement

Technical Contacts:

John D. Buchanan, IE
(301) 492-9657
Edward E. Branagan, Jr. NRR
(301) 492-7614

Attachments:

1. References
2. List of Recently Issued IE Information Notices

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Attachment 1

IN 85-XX

Page 1 of 1

REFERENCES

1. IE Information Notice No. 83-05, "Obtaining Approval for Disposing of Very Low-Level Radioactive Waste--10 CFR §20.302," February 24, 1983.
2. "Low-Level Radioactive Waste Management," Institute of Nuclear Power Operations (INPO) Good Practice document, INPO 82-001; OEN-09; September 1982.
3. IE Circular 81-07, "Control of Radioactively Contaminated Material," May 14, 1981.

- 5 -
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