PDR

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

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Dr. Alvin L. Young, Chairman
Committee on Interagency Radiation
Research and Policy Coordination
U.S. Department of Agriculture
Administration Building, Room 321A
14th & Independence Ave., SW.
Washington, DC 20250

Dear Dr. Young:

I am enclosing comments on the CIRRPC draft report, "Naturally Occurring and Accelerator-Produced Radioactive Materials (NARM)," as requested in your June 6, 1990 letter. These comments were developed based on a review by and with the approval of Offices of the Commissioners and the Executive Director for Operations of the Nuclear Regulatory Commission. They therefore represent the Agency position on the draft report.

We recognize the contribution by the CIRRPC Working Group to date in addressing issues related to regulation of NARM and fully understand that resolution of our comments will entail considerable additional effort. We think it is essential, though, that the report respond in a more definitive manner to issues identified in the referral to CIRRPC, particularly regarding the characterization of public health, safety and environmental concerns associated with discrete sources of NARM. However, we would find it most useful to have this important document completed within the next 4 to 6 months. We appreciate CIRRPC's involvement in addressing the NARM issue and look forward to your timely response.

Sincerely,

Bill M Morris

Bill M. Morris, Director
Division of Regulatory Applications
Office of Nuclear Regulatory Research

Enclosure:
Comments on CIRRPC NARM Report

cc: Dr. William A. Mills, CIRRPC/ORAU

NRC COMMENTS ON DRAFT CIRRPC POLICY REPORT ON "NATURALLY OCCURRING AND ACCELERATOR-PRODUCED RADIOACTIVE MATERIALS (NARM)"

General Comment

The Committee on Interagency Radiation Research and Policy Coordination's (CIRRPC's) draft Policy Report on Naturally Occurring and Accelerator-Produced Radioactive Material (NARM) needs to be revised to more clearly address the issues that originally prompted the Commission to refer the NARM issue to CIRRPC. The report, when properly revised, would provide a basis for assuring that Federal radiation protection programs, in conjunction with State programs, adequately protect the public and the environment. It would also provide a firmer basis for resolution of NARM issues at the Federal level.

To achieve this, the report must respond in a more definitive manner to Items 2 and 3 of the scope of referral regarding the characterization of public health and safety or environmental concerns associated with discrete sources of NARM. Compared to earlier Federal and State efforts to characterize these concerns, the Working Group report presents a more benign view of the radiation hazards associated with possession, use, and disposition of discrete NARM sources. CIRRPC should either refute the conclusions of these comprehensive studies on this subject or propose specific initiatives to improve public protection from the hazards associated with NARM. In addition, it would be helpful to the Commission if the report discussed the nature of the risks associated with discrete sources of NARM and to the extent feasible, provided estimates of their magnitudes. Comparison with the criteria in the Commission's Below Regulatory Concern (BRC) policy and with other risks associated with NRC regulated byproduct, source, and special nuclear materials would be useful in this regard.

Specific Comments

1. Page 5, NARM Waste Disposal

The report states that EPA is developing regulations to require disposal of discrete radium sources at low-level waste sites authorized under the Atomic Energy Act (AEA) or at special NARM-waste disposal sites. While the Commission would note that Section 3(a)(2) of the LLRWPAA prohibits the Federal Government from requiring States to accept NARM at low-level waste disposal sites, the Commission supports the option to allow safe disposal of these sources in special NARM waste disposal facilities. As a practical matter, however, discrete NARM sources will probably be disposed of in waste facilities licensed by NRC under the AEA (or by Agreement States). If disposal in NRC licensed sites is necessary, there will also be a need to establish standards and a regulatory program to implement the standards for packaging, waste form, long-term isolation, and other aspects of NARM waste disposal to assure that these wastes do not constitute a hazard to the health and safety of the public and to assure that there is no impact on the safe disposal of the AEA wastes at these sites. We would appreciate CIRRPC's view on what alternatives can be identified to accomplish this.

2. Page 7, Control of Accelerator-Produced Radionuclides

The report states that radionuclides produced by accelerators should be controlled to the same degree of protection as required for byproduct materials under the AEA. However, the report does not recommend any specific approaches to assure this objective. In addition, the report does not assess whether this level of protection is a goal or is being attained by existing Federal and State regulatory programs. The report should be revised to assess whether radionuclides produced by accelerators are controlled to the same degree as byproduct materials under the AEA and, if not, to provide specific recommendations for how to improve these controls to attain this objective.

3. Page 7, Processed Uranium and Thorium

Add at the end of the first paragraph: "...except where uranium and thorium have been processed and are present as a diffuse source in a material such as soil, the NRC has jurisdiction."

4. Pages 8 and 11, Health Concerns

The report provides a brief overview of potential health and safety concerns associated with discrete sources of NARM materials. Although the report states that certain types of NARM sources can cause acute and chronic health problems if mishandled, it does not characterize the risks associated with a representative range of NARM materials. This overview is not sufficient to respond to Items 2 and 3 of the scope of referral for the NARM study, which included

> "...[to] characterize the public health and safety or environmental concerns associated with...discrete sources [of NARM]."

Part of the insufficiency appears to have been caused by delays in development of a report by the Conference of Radiation Control Program Directors (CRCPD). Nevertheless, the report concludes that no public health and safety problem has been identified. This conclusion, however, is based on anecdotal information about the risks posed by NARM to the public health and safety rather than on a systematic and comprehensive discussion of the pertinent considerations.

For example, the report states that the misadministration rate of NARM radionuclides in nuclear medicine is apparently less than that of radionuclides licensed under the AEA. The report, however, does not provide the information necessary to support this conclusion. Even NUREG-1310 is insufficient in this regard because its conclusion about misadministration rates of NARM radionuclides was based on incomplete information. Licensees are only required to report certain misadministrations of NARM materials to NRC (e.g., when a NARM radionuclide was inadvertently substituted for a byproduct material). Consequently, the misadministration data base could underestimate the NARM misadministration rate because it omits reports of the types of misadministrations that commonly occur with byproduct materials (e.g., administration to the wrong patient, administering the wrong dose, administering to the wrong organ or body part). In addition, the report does not assess the likelihood or significance of excess radiation exposures that may be associated with misadministrations of NARM radionuclides. Overall, the Working Group report should include a more comprehensive characterization and

discussion of the public health concerns associated with medical misadministrations of NARM radionuclides and provide the necessary information to support this conclusion.

Earlier assessments of NARM, which were prepared by NRC and the CRCPD, relied on anecdotal information to reach conclusions about the need for additional Federal regulatory control of discrete NARM sources. The Commission concluded in 1988 that such information was not sufficient to merit proposals to Congress for expanding NRC's authority under the AEA to regulate discrete sources of NARM. It was this type of information about the risks posed by discrete NARM sources that motivated the Commission to refer the issue of NARM regulation to CIRRPC for characterization of the risks associated with NARM and appropriate designation of NARM responsibilities.

Based on the same types of anecdotal and incomplete information, the Working Group report on NARM reaches conclusions about the absence of health and safety concerns. Further, the report does not characterize the public health significance of the mishandling of NARM materials, nor address environmental concerns associated with NARM. Therefore, the report as written does not respond to the heart of NRC's referral: does the possession, use, or disposition of NARM pose risks to humans and the environment sufficient to warrant additional regulatory control at the Federal level. The report should be revised either to refute the conclusions of the earlier assessments of the risks associated with NARM materials or to propose specific initiatives to improve public protection from the hazards associated with NARM.

5. Page 9, Regulatory Infrastructure

The report notes the existence of a substantial regulatory infrastructure for protecting the public health and safety from radiation sources under the AEA and other authorities. The report also states that this infrastructure is necessary and sufficient to control NARM sources. These two observations would seem to suggest that public health and safety could be benefited by expanding the same regulatory infrastructure that already exists for other radioactive materials. One option would be to expand the AEA to provide NRC with authority to control NARM. Other options might involve expansion or greater exercise of other authorities. See Item 7 which follows. However, the report concludes that no such expansion is necessary. The revised report should provide a basis and rationale consistent with any conclusion. Specifically, the report should indicate how well the existing non-AEA infrastructure is achieving a sufficient level of control of NARM sources.

6. Page 10, Definition of Discrete Sources

The first task of the scope of referral to CIRRPC was to "...develop a definition of discrete sources of [NARM] that might be regulated by the Federal Government." In response, the Working Group developed a characterization of discrete sources of NARM which uses the terms "source," "radionuclide component," and "significantly above background levels." For example, using this definition, gypsum wall board and other high-volume, low-activity sources could be defined as a discrete source of NARM, yet most Federal agencies would not generally consider such items to be discrete sources. The report should be

revised to provide a definition or characterization of discrete sources of NARM that can be the basis for attaining consistency in future actions and decisions related to NARM regulation.

7. Page 10, Definition of Regulatory Gaps

The second task of the referral to CIRRPC was to characterize the nature of public health or environmental concerns that are going unaddressed by Federal controls and to recommend appropriate remedies. Although we believe the report's assessment of public health and environmental concerns needs to be enhanced as noted above, the report should include a profile of existing Federal regulatory controls over NARM sources. In order to identify regulatory gaps, a comprehensive review of what authorities and programs currently exist to control NARM sources needs to be summarized. This review is important to clarify how each agency interprets its authority to regulate NARM and what programs have been implemented to effect appropriate control. Thus, the report should be revised to provide a comprehensive profile of Federal authorities and regulatory programs as the starting point for identifying gaps in the regulation of NARM that require remedies. If the Working Group concludes that sufficient authority exists but that additional agency actions are warranted to control NARM sources, the report should document to the extent known why the agencies have not implemented appropriate controls (e.g., competing priorities, higher threshold for regulatory controls) to mitigate or reduce the risks.

8. Page 11, EPA Authority

Revise the last sentence of the first paragraph to read: "Federal authorities and responsibilities (principally in the EPA) appear..."

9. Page 11, Possible Results of Future Studies

It was noted that the report concludes (page 11) that "no public health and safety problem has been identified...." We believe that this statement should be modified to recognize the possibility that public health and safety problems may emerge as a result of future studies or through unforeseen developments. In this regard, we encourage the early completion of the report "on the health and safety problems that are attributable to discrete NARM sources" referred to on page 8 of the report.

10. Page 12, Recommendations

The report provides three recommendations to NRC and the other Federal agencies. The report's recommendations may need to be revised to reflect the results of further work in responding to our comments.

In addition, we urge the Working Group to strive to ensure that the final recommendations are specific and, therefore, of practical value to the agencies. For example, recommendation number 3 would be more useful if it identified the type of technical assistance that the States may need, suggest which agency should provide such assistance depending on the subject of the request, and provide a specific course of action and a schedule for following the progress of the CRCPD's efforts to improve NARM regulation at the State level.