



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

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DEC 16 1988

OFFICE OF
AIR AND RADIATION

Mr. Bill Morris, Director
Division of Regulatory Applications, (NL-007)
Office of Nuclear Regulatory Research
Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Morris:

Until his recent reassignment, Robert Alexander served as an active member of an inter-agency Work Group, chaired by the Environment Protection Agency (EPA), that was established to develop guidance for acceptable levels of residual radioactivity at decommissioned facilities. (Hal Peterson has served as Bob's alternate, and contributed effectively at several of the Work Group meetings.)

The enclosed letter (sent when we decided to expand the Group to include a larger number of agencies), when read in conjunction with the enclosed Advanced Notice of Proposed Rulemaking, explains the tasks of the Group. As you are no doubt aware, we shall also need to consider how to resolve issues identified by an ad hoc group of the Committee on Interagency Radiation Research and Policy Coordination concerning the EPA draft transuranium element ("TRU") guidance.

We would be appreciative if you would designate the current representative (and an alternate, if you wish) of the Nuclear Regulatory Commission to this important Work Group. The next meeting will take place Wednesday, January 11, 1989, at EPA. For further information, your designee should contact the Chairman of the Work Group, Allan C.B. Richardson, Chief, Guides and Criteria Branch (ANR-460), Office of Radiation Programs, U.S. Environmental Protection Agency, 401 M Street, S.W., Washington, D.C. 20460, (202) 475-9620.

Sincerely yours,

J. William Guenter
J. William Guenter, Director
Criteria and Standards Division (ANR-460)
Office of Radiation Programs

2 Enclosures

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SEP 22 1986

Honorable Richard T. Kennedy
Ambassador at Large
S/NP Suite 7531
Department of State
2201 C Street, N.W.
Washington, D.C. 20520

Dear Mr. Ambassador:

I am writing to advise you of an ongoing effort by the Environmental Protection Agency (EPA), in conjunction with other Federal agencies, to develop guidance for acceptable levels of residual radioactivity at decommissioned facilities, and to invite your Agency to participate in this effort.

Radioactive materials have been used at more than 20,000 facilities and sites of widely differing kinds in the United States. Most of these will at some point be decommissioned, cleaned up, and made available for other uses. Public health and environmental radiation protection guidance for such programs, however, does not exist. The EPA has therefore convened an interagency working group, consisting of interested Federal agencies, to address this problem. We are carrying out this interagency effort under Executive Order 10831, which directs the Administrator to "...advise the President with respect to radiation matters, directly or indirectly affecting health, including guidance for all Federal agencies in the formulation of radiation standards." The working group will develop recommendations for uniform Federal radiation protection guidance specifying levels at which decommissioned lands, buildings, equipment, and materials may be used without further need for restrictions based on residual radioactivity. An Advance Notice of Proposed Rulemaking (ANPR) describing this effort is enclosed.

Also, guidance for residual radioactivity must be consistent with general Federal radiation protection guidance for limiting exposure of workers and of the public. Development by EPA of revisions to Federal guidance for U.S. workers, reflecting changing national and international practices, has been underway for a number of years, and revised guidance for

radiation protection of workers is now in the final stages of Federal approval. The working group has agreed that some aspects of the existing general guidance for the public, which was issued in 1960, should also be reviewed to assure that it also reflects current thinking and practice. The working group will, therefore, consider recommendations needed for such revisions and additions to the 1960 general guidance, that relate to protecting the public from exposure to radiation from residual radioactivity.

We now wish to extend involvement in this program to other Federal agencies that may also be interested in its output. I, therefore, invite your comments on the enclosed ANPR and encourage your Agency's participation in the interagency working group. If you choose to join us, please designate a staff member to serve as a single point of contact with your Agency for this work.

I look forward to a productive relationship in developing recommendations to deal with this important national problem. Please contact Mr. Sheldon Meyers (475-9600), Director of the Office of Radiation Programs, if we can assist you in any way.

Sincerely,

/s/
J. Craig Potter
Assistant Administrator
for Air and Radiation

Enclosure

cc: Sheldon Meyers, ORP (ANR-458)

bcc: W. Alexander Williams, OFA (A-104)

Federal Register

261 71
Wednesday,
June 18, 1986

U.S. GOVERNMENT PRINTING OFFICE

16-72205

Price: \$2.50

U.S. GOVERNMENT PRINTING OFFICE

16-72205

Part V

Environmental Protection Agency

40 CFR Part 194

Radiation Protection Criteria for Cleanup
of Land and Facilities Contaminated With
Residual Radioactive Materials; Advance
Notice of Proposed Rulemaking

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 104

IOAR-PRL-2089-31

Radiation Protection Criteria for Cleanup of Land and Facilities Contaminated With Residual Radioactive Materials**Agency:** Environmental Protection Agency.**Action:** Advance notice of proposed rulemaking.

SUMMARY: There are thousands of sites in the United States where radioactive materials have been used. Most of these sites will eventually be decommissioned. The U.S. Environmental Protection Agency (EPA) is developing public health and environmental radiation protection criteria for cleanup of the residual radioactivity on land or facilities so that such sites may be used without needing any restrictions based on residual radioactivity.

This Notice requests comments and information related to developing radiation protection criteria for residual radioactivity at decommissioned sites. These criteria would apply to licensees of the Nuclear Regulatory Commission or its Agreement States, to sites owned or used by the Department of Energy, the Department of Defense, the former Atomic Energy Commission, and the former Manhattan Engineering District; and to sites where naturally occurring or accelerator-produced radioactive materials have been used.

We will announce additional opportunities for public participation in the development of these criteria; we are considering workshops during the early stages and hearings after publication of proposed criteria.

DATE: Responses received by September 18, 1986, will be of maximum value.

ADDRESS: Responses should be submitted to Docket No. A-83-41, which is located at the EPA, Central Docket Section (A-130), West Tower Lobby, 401 M Street, SW., Washington, DC 20460. Docket A-83-41 will contain the records of the development of these criteria. The docket will be available for public inspection between 9:00 a.m. and 4:00 p.m., Monday through Friday. A reasonable fee may be charged for copying.

FOR FURTHER INFORMATION CONTACT: Dr. Stanley Lichtman, Guides and Criteria Branch (ANR-460), Office of Radiation Programs, U.S. Environmental

Protection Agency, Washington, DC 20460; telephone number 202-475-6820.

SUPPLEMENTARY INFORMATION: The EPA is developing public health and environmental radiation protection criteria for cleanup of contaminated land and facilities so that such sites may be used without needing any restrictions because of residual radioactivity. Most sites that may eventually require cleanup criteria may be grouped into three main categories: (1) Licensees of the Nuclear Regulatory Commission (NRC) or its Agreement States,¹ (2) Department of Energy (DOE) and Department of Defense (DOD) sites, and (3) other sites where naturally-occurring or accelerator-produced radioactive materials have been used.

The NRC and its Agreement States have licensed over 22,000 facilities for production or handling of radioactive materials. More than 95 percent of these facilities are licensed to use sealed radionuclide sources or small quantities of radionuclides in research or medicine that result in little or no contamination of land or facilities. Of more concern are approximately 300 facilities with larger inventories of radioactive materials, such as nuclear power plants, other components of the nuclear fuel cycle, and research reactors.

The DOE controls about 25 large complexes, including national laboratories and nuclear weapons research and testing sites. There are several hundred facilities in the DOE Surplus Facilities Management Program scheduled for decommissioning over the next 20 years. They include reactors, waste burial grounds, fuel reprocessing facilities, radiochemical laboratories, and waste treatment plants. The DOE also has responsibility for certain privately-owned sites that were contaminated when they were used for the former Atomic Energy Commission and the Manhattan Engineering District, 25 of which are now in the Formerly Utilized Sites Remedial Action Program (FUSRAP). Many FUSRAP sites involved research with, processing of, and storage of uranium and thorium ores, and, therefore, are contaminated primarily with naturally-occurring radionuclides. The Department of Defense sites vary widely in function and size. They include hospitals, laboratories, proving grounds, bombing and gunnery practice ranges, missile launch sites, weapons manufacturing and storage facilities, and reactors. These sites may contain small enclosed

radiation sources, such as radium and tritium instruments; larger sources, such as research reactors; and dispersed sources, such as laboratory waste storage areas and test ranges contaminated with plutonium and fission products.

The third category consists of sites neither under license by NRC or Agreement States nor controlled by DOE or DOD. Included in this category are about 1,000 particle accelerator sites that generally contain only small amounts of short-lived residual radioactivity after shutdown. Other sites contain long-lived naturally-occurring radionuclides varying from small packaged radiation sources to large areas of mostly low-level dispersed contamination, including tailings from rare earth ore processing, depleted uranium from armor piercing shell tests, and residues from university or commercial research activities. The EPA has separate programs, however, for buildings affected by naturally-occurring radioactive materials that people have not altered, such as radon from *in situ* rocks and soils.

As these sites and facilities are converted to other uses, public health and environmental radiation protection criteria are needed to determine appropriate requirements under which there will be no further need for regulatory control based on residual radioactivity. Uniform Federal public health and environmental protection residual radioactivity criteria are needed because the many sites and facilities to be decommissioned are administered by different Federal agencies, States, and private entities. These criteria will be useful to the owners, operators, and regulators of radiation facilities because a uniform set of criteria will simplify and reduce the cost of planning and evaluating cleanup operations. The General Accounting Office, Federal agencies, States, and environmental and industrial organizations have stressed the urgency of developing such criteria.

This program will not address sites already covered by Pub. L. 92-314, which established a remedial action program for contaminated buildings in Grand Junction, Colorado, and Pub. L. 95-604, the Uranium Mill Tailings Radiation Control Act of 1978. Radioactive waste disposal sites that are not intended for unrestricted public access are also excluded. Note, however, that EPA has disposal standards for radioactive wastes in various rulemaking stages: final standards for uranium mill tailings (48 FR 590, January 5, 1983, and 48 FR 45926,

¹ As section 274 of the Atomic Energy Act provides, 27 States currently license nuclear materials under agreements with the Nuclear Regulatory Commission.

October 7, 1983); final standards for spent fuel and high-level and transuranic radioactive waste (50 FR 38005, September 19, 1985); an advance notice of proposed rulemaking for low-level radioactive waste (48 FR 39563, August 31, 1983). Management and disposal of naturally radioactive mineral mining and processing wastes, such as phosphate and gypsum piles, and uranium mining wastes, which are being studied under EPA's Resource Conservation and Recovery Act program, are also not addressed here.

EPA administers two broad types of authority for providing radiation protection criteria. The first is the authority of the Administrator, under Executive Order 10831 and the Atomic Energy Act of 1954, as amended (AEA), to recommend Federal guidance to the President for use by Federal agencies. Federal guidance, which may consist of general principles, specific policies, or numerical criteria, guides Federal agencies in developing and implementing their own regulations and procedures. Although such guidance does not directly apply to materials regulated exclusively by the States, States generally have voluntarily followed previous Federal guidance.

Under the second type of authority, EPA may directly establish environmental radiation standards under several authorities. For example, EPA may issue generally applicable environmental standards under the AEA, which include enforceable numerical standards that may apply to any radioactive materials regulated under the AEA.² However, certain types of naturally-occurring and accelerator-produced radionuclides are not encompassed by the AEA. EPA may use other authorities for such radionuclides, such as the Resource Conservation and Recovery Act, the Toxic Substances Control Act, and the Clean Air Act.

To ensure that the criteria are founded on a broad base of practical experience and satisfy both existing and anticipated needs, EPA will consult knowledgeable and interested parties during the development of these criteria.

² EPA's authority to issue generally applicable radiation standards under the Atomic Energy Act is intended to protect public health and the environment, and generally does not extend on-site while a facility is under license. This restriction, however, does not bar EPA from setting standards for the post-license period when previously licensed sites are to be made available to the general public without restrictions based on residual radioactivity.

To this end, EPA is consulting with other interested Federal agencies. In addition, public workshops and hearings will be conducted to encourage public participation. As an initial step, we request written opinions and information related to developing these radiation protection criteria for residual radioactivity. In particular, we need detailed information and thoughtful views in the following areas:

1. *Basis for the criteria:* What relative importance should be assigned to various factors in determining criteria for unrestricted public access, now and in the future, to sites that contain residual radioactive materials? Among the factors we plan to consider are magnitudes of current and future individual risks, cumulative effects on populations now and in the future in relation to the half-life and environmental mobility of the residual contamination, and the technical and economic practicality of implementation of cleanup. Should other factors be considered?

2. *Form of the criteria:* (a) Contamination of sites where radioactive materials have been used may exhibit widely varying characteristics. The materials may be well contained or widely dispersed, manmade or natural, low or high in radioactivity, short- or long-lived, and in a variety of chemical forms. Different criteria could be devised for different types of contamination, or some general criteria might be developed that can be applied differently to different circumstances. EPA needs information for determining whether different forms of radiation protection criteria are necessary and appropriate for different types of contamination. (b) Cleanup costs for previously closed or abandoned sites may be much higher than for operating sites. Similarly, costs may be lower for future sites, because of better planning for efficient decommissioning. Should EPA consider whether such cost differences might justify different criteria for previously closed or future sites than for presently operating sites?

3. *Guidance versus standards:* Standards are generally more specific than guidance. Guidance may be numerical, narrative, or both; it may address quantitative radiation protection requirements as well as procedural considerations. Implementing agencies have greater discretion in applying guidance than

standards. Perhaps broad guidance should be formulated initially as a basis for more specific subsequent standards. We request information to help EPA decide whether guidance, standards, or a combination, is the most appropriate form for criteria.

4. *Assessment needs:* EPA needs to evaluate the effects of alternative criteria. Therefore, we solicit information on the health and environmental benefits, costs, and technical feasibility of achieving various levels of residual radioactivity at sites that are to be made available for unrestricted public use. Because DOE- and NRC-licensed sites are relatively well documented, such information is particularly needed for old sites or those that have not been regulated for radioactivity.

5. *Institutional controls:* For some sites it may be possible to reduce occupational radiation exposure and cleanup costs by deferring cleanup until radioactivity levels decline by radioactive decay. In the interim, the use of sites must be restricted by institutional controls. In the recent actions for radioactive wastes cited above, EPA has expressed its preference to not rely primarily on institutional controls for long-term protection from radiation hazards. We request information and comments on the potential effectiveness of various institutional controls to help us decide whether EPA needs to consider a time limit on relying on such controls in decommissioning to assure adequate protection of public health and the environment.

6. *Recycling equipment and materials:* In addition to the fixed entities of lands and buildings, a facility contains equipment and materials that can be decontaminated and recycled into the public domain. There can be significant economic values in these removable items, and there is a need for criteria that specify the conditions under which recycling is acceptable from a public health standpoint. Estimating effects from recycled materials is difficult, because there are few data supporting the assumptions regarding the materials' ultimate uses and exposure pathways. We are planning to develop criteria for land and buildings first, and to address reusable equipment and materials thereafter. We request information and comments to help EPA analyze this problem.

Responses to these and other issues related to the development radiation protection criteria for residual radioactivity should be sent to the location given above under the heading "ADDRESS."

List of Subjects in 49 CFR Part 194:

Intergovernmental relations.
Radiation Protection, Decontamination,
Decommissioning, Residual
radioactivity.

Authority: 42 U.S.C. 2201/AEA 274, 42
U.S.C. 2021/AEA 274.]

Dated: June 11, 1986.

Lee M. Thomas,

Administrator.

[FR Doc. 86-13742 Filed 6-17-86; 8:45 am]

GILLING CODE 0570-02-0

NRC/EPA MEETING-JANUARY 25, 1989

DISCUSSION OF EPA COMMENTS ON THE COMMISSION'S ADVANCE NOTICE OF
PROPOSED POLICY ON EXEMPTIONS FROM REGULATORY CONTROL
(For Practices with Public Health and Safety Impacts
Below Regulatory Concern)

AGENDA

- °Concept of "Below Regulatory Concern" p103 agree with elements, but justification of practice and limits also apply
- °Definition of Practice p104 practice defined in rules
- °Policy vs Rule - Implementation of Exemption Decisions p101, not setting gen. appl. std.
- °Impact of EPA Regulations - override what other standards preclude exemptions under policy p101
- °Criteria For Establishing a "Floor" for Optimization of Protection Efforts
 - °10 mrem/yr/practice Individual Dose Criterion p105 - not too high for total, allow flexibility, not too strict
 - °Individual dose limitation for exemption decisions? p105 - allow flexibility, not too strict
 - °Measure of societal impact - agree
 - °Truncations of collective dose - not decided, tend to agree p107
 - °Risk comparisons to other environmental contaminants
- °Risk Factors - $2 \times 10^{-4} \rightarrow 5 \times 10^{-4}$ p106
- °Bases For Exemption Decisions
 - °Justification - p103
 - °ALARA
 - °Small Individual Impacts vis-a-vis Existing Limits
- °IAEA Safety Series '89 p108 consistency with IAEA SS.
- °1986 Commission Policy - consistency note: 1986 policy procedural. ? p109
- °Interagency Coordination
 - °Exemption policy
 - °Clean air act
 - °Residual radioactivity