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(59FR 4868)

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E.I. DU PONT DE NEMOURS & CO. (INC.)
MEDICAL PRODUCTS DEPARTMENT

'94 FEB -4

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Secretary.
U.S. Nuclear Regulatory Commission
Wasnington, DC. 20555

2/24/94
Attention: Docketing and Service Branch
Subject: Draft Radiological Criteria for Decommissioning, 1/27/94.

Dear Mr. Chilk,

These comments are submitted on behalf of NEN Products, Medical Products/Imaging Systems, E.I. DuPont de Nemours and Company. NEN Products is a major supplier of radioactive materials for biomedical and industrial research applications.

Although we have a decommissioning plan specific to our operations this proposal applies to us since we are often involved in assisting our thousands of customers to enhance their radiation protection programs.

We have participated in this decommissioning rule making process and are encouraged that the NRC is taking the steps to ensure full involvement of all interested parties. We do recognize that there is a wide range of opinion concerning appropriate decommissioning criteria. Because of this we believe it to be of utmost importance for the NRC to closely follow international and national technical consensus and NCRP and ICRP recommendations. We believe that this is also the intent of the NRC but notice that the proposed standards are more stringent than ICRP recommendations. We believe that an ALARA goal of 30 mrem/year will provide adequate protection of the public and ensure compliance with the ICRP recommendation to limit frequent exposure of individual members of the public to 100 mrem/year.

We also urge that the NRC consider the compatibility of these regulatory proposals with those of other regulatory agencies with the view to conserve federal resources, simplify the regulatory process and provide local and state agency responsibility for funding decommissioning activities beyond those needed to provide adequate protection of the public.

We thank you for the opportunity to comment on this proposal. Please call me if you need clarification or further information.

Yours sincerely,

Leonard R. Smith
Radiation Protection Consultant

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REVISION OF 10 CFR PART 20 PROPOSED BY THE NRC STAFF

For the reasons set out in the preamble and under the authority of the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974, as amended, and 5 U.S.C. 553, the NRC is proposing to adopt the following amendments to 10 CFR Part 20.

PART 20 - RADIOLOGICAL CRITERIA FOR DECOMMISSIONING

Subpart A

20.1003 Definitions

The definition of "background radiation" is revised to read as follows:

Background radiation means radiation from cosmic sources; naturally occurring radioactive material, including radon (except as a decay product of source or special nuclear material); and global fallout as it exists in the environment from the testing of nuclear explosive devices or from past nuclear accidents like Chernobyl which contribute to background radiation and are not under the control of the licensee. "Background radiation" does not include radiation from source, byproduct, or special nuclear materials regulated by the Commission.

Critical Group means the group of individuals reasonably expected to receive the greatest exposure to residual radioactivity for any applicable set of circumstances.

Decommission means to remove a facility or site safely from service and reduce residual radioactivity to a level that permits (1) release of the property for unrestricted use and termination of the license, or (2) release of the

property under restricted conditions and termination of the license.

Readily Removable means removable using non-destructive, common, housekeeping techniques (e.g., washing with moderate amounts of detergent and water) that do not generate large volumes of radioactive waste requiring subsequent disposal or produce chemical wastes that are expected to adversely affect public health or the environment.

Residual Radioactivity means radioactivity in structures, materials, soils, groundwater, and other media at a site resulting from activities under the licensee's control. This includes radioactivity from all licensed and unlicensed sources used by the licensee, but excludes background radiation. It also includes radioactive materials remaining at the site as a result of previous burial at or discharged from the site in accordance with 10 CFR Part 20.

Site Specific Advisory Board (SSAB) means a committee constituted by the licensee to provide advice to the licensee on decommissioning.

Subpart E Radiological Criteria for Decommissioning

20.1401 Scope

(a) The criteria in this subpart apply to the decommissioning of facilities licensed under Parts 30, 40, 50, 60, 61, 70, and 72, as well as other facilities subject to the Commission's jurisdiction under the Atomic Energy Act and the Energy Reorganization Act. For high-level and low-level waste disposal facilities (10 CFR Parts 60 and 61), the criteria apply only to ancillary surface facilities that support radioactive waste disposal activities. For uranium mills, the criteria apply to decommissioning of the

facility but not to the disposal of uranium mill tailings (Appendix A of 10 CFR Part 40).

(b) The criteria in this subpart do not apply to sites already covered by a decommissioning plan approved by the Commission before [insert effective date of rule].

(c) Once a site has been decommissioned and the license terminated in accordance with the criteria in this proposed rule, the Commission would require additional cleanup only if, based on new information, it determines that residual radioactivity remaining at the site could result in significant public or environmental harm.

20.1402 Concepts

The *Goal* for decommissioning a site is to reduce the concentration of each radionuclide which could contribute to residual radioactivity at the site to a level which is indistinguishable from background. Since this may not be achievable in all situations, due, for example, to instrument capabilities, the Commission will consider that the decommissioning goal has been met if the cumulative Total Effective Dose Equivalent (TEDE) to the average member of the critical group from all radionuclides that could contribute to residual radioactivity and are distinguishable from background does not exceed 3 mrem (0.03 mSv) per year.

The *Limit* for release of a site is 15 mrem/y (0.15 mSv/y) TEDE for residual radioactivity distinguishable from backg nd. If doses from residual radioactivity are less than 15 mrem/y TEL the Commission will terminate the license and authorize release of the site for unrestricted use following the licensee's demonstration that the residual radioactivity at the site has been reduced to as close to the goal as reasonably achievable.

The Commission expects the licensee to make every reasonable effort to reduce residual radioactivity to levels which will allow unrestricted release of the site. However, the Commission will consider terminating a license in cases where restrictions must be imposed on the use of the site to assure that public doses are maintained below the 15 mrem/y (0.15 mSv/y) TEDE limit, provided the licensee:

(1) can demonstrate that residual radioactivity at the site is ALARA and that further reductions in residual radioactivity necessary to comply with the 15 mrem/y TEDE limit for unrestricted use are not technically achievable, would be prohibitively expensive, or would result in net public or environmental harm,

(2) has made adequate provisions for institutional controls to reduce annual TEDE from residual radioactivity distinguishable from background to the average member of the appropriate critical group to 15 mrem (0.15 mSv) TEDE,

(3) has provided sufficient financial assurance to enable an independent third party to assume and carry out responsibilities for any necessary control and maintenance of the site, and

(4) has reduced the residual radioactivity at the site so that the TEDE from residual radioactivity would not exceed 100 mrem (1 mSv) per ye even if the restrictions applied in the termination were no longer effective in limiting the possible scenarios or pathways of exposure.

The Commission will not normally consider terminating a license under circumstances where the TEDE to the average member of the critical group from residual radioactivity at the site would exceed 100 mrem (1 mSv) per year if the site were to be released for unrestricted use.

20.1403 General Provisions

(a) When calculating TEDE, the licensee shall base estimates on the greatest annual TEDE dose expected within the first 1000 years after decommissioning. Estimates shall be validated using actual measurements to the maximum extent practical.

(b) When determining ALARA under 20.1404(b) or 20.1405(a), the licensee shall consider all significant risks to humans and the environment resulting from the decommissioning process (including transportation and disposal of radioactive wastes generated in the process), and from residual radioactivity remaining at the site following termination of the license.

(c) During decommissioning, all readily removable residual radioactivity shall be removed from the site or disposed of on site in accordance with 20.2002 of this part.

20.1404 Radiological Criteria for Unrestricted Release

(a) The goal for decommissioning is to reduce the residual radioactivity in structures, materials, soils, groundwater, and other media at the site to meet the following conditions:

(1) the concentration of a radionuclide that could contribute to residual radioactivity is indistinguishable from the background radiation concentration for that radionuclide; and

(2) for all radionuclides that could contribute to residual radioactivity and are distinguishable from background radiation, the cumulative TEDE to the average member of the critical group from all

such radionuclides does not exceed 3 mrem (0.03 mSv) per year.

(b) A site will be considered acceptable for unrestricted use if the residual radioactivity that is distinguishable from background radiation results in a TEDE to the average member of the critical group that does not exceed 15 mrem (0.15 mSv) per year, and is as close to the decommissioning goal as reasonably achievable.

20.1405 Criteria for License Termination Under Restricted Conditions

A site will be considered acceptable for license termination under restricted conditions if:

(a) The licensee can demonstrate that further reductions in residual radioactivity necessary to comply with the provisions of 20.1404 are not technically achievable, would be prohibitively expensive, or would result in net public or environmental harm; and

(b) The licensee has made provisions for institutional controls that provide reasonable assurance that the TEDE from residual radioactivity distinguishable from background to the average member of the critical group will not exceed 15 mrem (0.15 mSv) TEDE per year. Institutional controls shall be enforceable by a responsible government entity or in a court of law in response to suits by affected parties; and

(c) The licensee has provided sufficient financial assurance to enable an independent third party to assume and carry out responsibilities for any necessary control and maintenance of the site. Acceptable financial assurance mechanisms are: (i) funds placed into an account segregated from the licensee's assets and outside the licensee's administrative control as described in §30.35(f)(1); (ii) surety method, insurance, or other guarantee method as described in §30.35(f)(2); or (iii) a

statement of intent in the case of Federal, State, or local government licensees, as described in §30.35(f)(4); and

(d) Residual radioactivity at the site has been reduced so that if the institutional controls were no longer in effect, the TEDE from residual radioactivity distinguishable from background to the average member of the critical group is as low as reasonably achievable and there is reasonable assurance that the TEDE to that member would not exceed 100 mrem (1 mSv) per year.

20.1406 Notification and Public Participation

(a) Upon the receipt of a decommissioning plan from the licensee, or a proposal by the licensee for restricted release of a site pursuant to 20.1405, or whenever the Commission deems such notice to be in the public interest, the Commission shall:

(1) notify local and state governments in the vicinity of the site and any Indian Nation or other indigenous people that have treaty or statutory rights that could be affected by the decommissioning.

(2) publish a notice in the Federal Register and in a forum, such as local newspapers, which is readily accessible to individuals in the vicinity of the site and solicit comments from affected parties.

(b) For decommissioning where the licensee does not propose to meet the conditions for unrestricted release pursuant to 20.1404, the licensee shall convene a Site Specific Advisory Board (SSAB) as described in 20.1407 for the purpose of obtaining advice from affected parties regarding the proposed decommissioning.

20.1407 Site Specific Advisory Board

(a) The SSAB should provide advice to the licensee, as appropriate, on:

(1) whether there are ways to reduce residual radioactivity to a level necessary to comply with the provisions of 20.1404 which are technically achievable, would not be prohibitively expensive, and would not result in net public or environmental harm;

(2) whether provisions for institutional controls proposed by the licensee:

(a) will provide reasonable assurance that the TEDE from residual radioactivity distinguishable from background to the average member of the critical group will not exceed 15 mrem (0.15 mSv) TEDE per year,

(b) will be enforceable, and

(c) will impose undue burdens on the local community or other affected parties.

(3) Whether the licensee has provided sufficient financial assurance to enable an independent third party to assume and carry out responsibilities for any necessary control and maintenance of the site.

(b) The decommissioning plan submitted by the licensee in accordance with 10 CFR Parts 30.35, 40.42, 50.82, 70.38, or 72.54 shall include the recommendations of the SSAB and the licensee's proposed analysis and disposition of this advice.

(c) Membership of the SSAB shall, to the extent that representatives are

willing to participate:

(1) Reflect the full range of interests in the affected community and region, and be composed of individuals who could be directly affected by residual radioactivity at the decommissioned site,

(2) Be selected from individuals nominated by organizations which represent these interests; and

(3) Include representatives from the licensee; local and state governments; persons residing in the vicinity of the site; citizen, environmental, environmental justice, and other public interest groups; and Indian Nation or other indigenous people that have treaty or statutory rights that could be affected.

(d) The SSAB shall consist of approximately 10 members plus an *ex officio* representative selected by the Commission.

(e) Licensee notification to the Commission of intent to decommission in accordance with 30.36(b), 40.42(b), 50.82(a), 70.38(b) or 72.54 shall specify whether the licensee intends to decommission in accordance with 20.1405. Licensees proposing to decommission in accordance with 20.1405, shall submit a plan for establishing and supporting an SSAB.

(f) The licensee shall be responsible for the establishing the SSAB and the developing appropriate SSAB operating procedures with the advice of the SSAB.

(g) The licensee shall provide adequate administrative support for SSAB activities and shall provide the SSAB access to studies and analyses that are readily available to the licensee and are pertinent to the proposed

decommissioning.

(h) Meetings of the SSAB shall be open to the public. The licensee shall provide adequate public notice of the location, time, date, and agenda for the meetings at least two weeks in advance of each meeting. All records generated or reviewed by the SSAB shall become part of the docket, and shall be available for public inspection.

20.1408 Minimization of Contamination

[NOTE: IT MAY BE MORE APPROPRIATE TO PLACE THESE REQUIREMENTS IN PARTS 30, 40, 50, ETC. INSTEAD OF PART 20]

(a) Applicants for licenses after [insert effective date of rule], shall describe in the application how facility design and procedures for operation will minimize contamination of the facility and the environment, facilitate eventual decommissioning, and minimize the generation of radioactive waste.

(b) Applicants for license amendments that involve a substantial modification of the licensed facility or operating procedures after [insert effective date of rule], where applicable, shall describe how the facility or procedural modifications minimize contamination of the facility or the environment, facilitate eventual decommissioning, and minimize generation of radioactive waste.

(c) Each licensee subject to the decommissioning provisions of 10 CFR Parts 30.35, 40,42, 50.82, 70.38, or 72.54 shall, within three years of the effective date of this rule, incorporate into its radiation protection program procedural modifications to minimize contamination of the facility or the environment, facilitate eventual decommissioning, and minimize generation or radioactive waste.

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COMMENTS ON NRC DRAFT RADIOLOGICAL CRITERIA FOR DECOMMISSIONING.

1. We agree with the NCR's proposal to use dose standards for deciding whether to release licensed facilities for restricted or unrestricted use. This proposal is consistent with NRCP and ICRP recommendations for controlling exposure to ionizing radiation and provides a clearly identifiable goal for planning decommissioning.

2. It is inappropriate to use a risk standard for decommissioning because scientific consensus does not support extrapolating risks estimated in the 10-100 rad range to doses in the micro-and millirem range. The ICRP recently recommended that public dose standards cannot be based on considerations of risk at this time due to lack of scientific evidence for any risk at these low dose rates. Instead the ICRP recommends that public dose limits should be set comparable with variations in natural background. The basis for this recommendation is that the public does not take action to avoid or mitigate background radiation in the 100 mrem to 1 rem per year range.

3. We agree that the average dose to the critical exposed group should be the criteria for a public dose standard. This has been recommended by the ICRP since 1959 and has long been adopted in other countries. This and the use of reference man models provides a means for establishing broadly applicable and consistent protection standards. Another advantage in using a critical group is that it will facilitate licensee, regulator and community participation and agreement in setting specific site decommissioning goals. Variations in dose within the critical group is unlikely to cause any individual to exceed three times the standard for the group. It is also expected that those individual within the critical group who receive the highest exposure will most likely obtain the greatest benefit from access to the site.

4. In setting a dose standard for the critical group we agree that the NRC should follow the recommendations of the ICRP. The ICRP recommends a dose limit of 500 mrem/y for infrequent exposure of individuals who gain a benefit from this exposure. ICRP recommends a dose limit of 100 mrem/y for members of the public who are exposed for numerous years and who do not derive a direct benefit from this exposure. These ICRP recommendations concern the dose from all sources of ionizing radiation excluding uncontrolled sources such as background and excluding medical radiation.

5. It is reasonable that a dose limit lower than 100 mrem/y should be considered for a single decommissioned site. The 3 mrem/y and 15 mrem/y limits proposed by the NRC are unnecessarily low. They will be unachievable in many cases and involve unreasonable cost for insignificant benefit to the public. In practice there are very few members of the public exposed to doses approaching 100 mrem per year from a single site. It is extremely unlikely that such an individual can be simultaneously exposed to similar sources such that their total dose will regularly exceed 100 mrem/y. Because of this practical circumstance it is not necessary to set such low dose standards for a decommissioned site. Instead a dose limit approaching 100 mrem/y will achieve the ICRP goal for limiting the dose to individual members of the public to 100 mrem/y for numerous years.

6. We note that the NRC proposal implies that a lower limit is appropriate for sites that are released for uncontrolled use. Whether or not the dose is controlled or uncontrolled it is the actual dose received that is of concern. In practice potential exposure from such sites will reduce with time due to dilution of residual activity and radioactive decay. Such reductions may not necessarily occur at a controlled site. In those rare occasions where there is a potential for reconcentration of residual radioactivity the proposed NRC regulations contain adequate scope for addressing this issue on a case by case basis.

7. An appropriate ALARA goal should be about one third of the dose limit for unrestricted use. This will be of particular value if the NRC allows compliance with this goal to be demonstrated by using simple dose estimates or radioactivity measurements. An appropriate value for this ALARA goal would, therefore, be about 30mrem/y. To choose a lower goal would cause numerous small sites, with very little potential for public exposure, great difficulty in demonstrating compliance.

8. We do not agree with the NRC's, proposal to use 3 mrem/y as an ALARA goal. We do not agree that 3 mrem/y is comparable with local variations in background dose rate. Radon concentrations typically vary by more than 20 % from year to year at a given location. Individual doses from radon can show even greater variation due to additional changes in personal habits from one year to another. Even greater variation in dose and risk can be experienced between adjacent houses or the decision whether to be a smoker or non-smoker. Variations in local background dose from year to year are more likely to be in the 30 to 100 mrem/y range as is assumed by the ICRP.

9. The "Cleanup Standards" recently proposed by the EPA addresses the compatibility of their standard with other agencies. The EPA requires that other agencies adopt standards that are as least as stringent as the federal standard. The EPA proposes to allow state and local agencies to promulgate more stringent standards provided that they take responsibility for funding the extra cost that this may cause to decommission a site. We recommend that the NRC adopts a similar approach. The NRC federal standards should be set to ensure adequate protection of the public. If local community or state requires a licensee to decommission to a lower standard that does not provide a significant benefit in protection to the public then the applicable state or local community agency should fund this extra effort. This practice will ensure public protection and give the state or local community flexibility to take any extra action that they deem necessary.

10. We are concerned that the EPA and NRC are both developing decommissioning standards. We urge the NRC to work with the EPA to conserve federal resources, develop one standard and agree on one agency responsible for enforcement. The NRC or Agreement State should be the applicable enforcement agency for NRC and Agreement State licensee.

11. We urge the NRC to reconsider the need to provide guidance to small sites on practical means to demonstrate compliance with the decommissioning standards. The draft report NUREG/CR -5849 is far too complex for most licensees. There is an important need for a Regulatory Guide that will allow Radiation Protection Officers at the majority of licensed sites to carry out decommissioning without the need to use

12. We understand the benefit of involving the local community in the acceptance of decommissioning plans that do not meet the standard. The NRC proposal for licensees to establish a Site Specific Advisory Board appears to be a workable method to ensure community participation. The function of this information is protected. This applies to decommissioned sites since proprietary technology and facility design may often be used at or transferred to another site.