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UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001  
June 2, 1997

Mr. Lawrence Weinstock, Acting Director  
Office of Radiation and Indoor Air  
U.S. Environmental Protection Agency  
Washington, DC 20460

Dear Mr. Weinstock:

I am responding to the November 15, 1996, Advance Notice of Proposed Rulemaking, "Decision to Certify Whether the Waste Isolation Pilot Plant Complies with the 40 CFR Part 191 Disposal Regulations and the 40 CFR Part 194 Compliance Criteria." Part 191 applies to sites not characterized under Section 113(a) of the Nuclear Waste Policy Act, [i.e., geologic disposal of spent nuclear fuel, high-level and transuranic radioactive wastes at sites other than Yucca Mountain (YM)]. Although the U.S. Environmental Protection Agency (EPA) is authorized to certify whether the Waste Isolation Pilot Plant (WIPP) complies with Part 191, under the WIPP Land Withdrawal Act, the U.S. Nuclear Regulatory Commission may eventually need to license other facilities that must comply with 40 CFR Part 191, as well as YM, which may have to comply with requirements similar to those found in Part 191. We recognize that EPA's decision on the certification of the WIPP will reflect the record before EPA and note that the record will be influenced by the contents of 40 CFR Parts 191 and 194; the Compliance Application Guidance; and the characteristics of both the WIPP site and of the waste to be disposed. These factors necessitate that EPA decisions on specific elements of the U.S. Department of Energy application, and the decision on whether to certify WIPP, need to be considered as being applicable only to WIPP. Therefore, NRC considers that decisions made by EPA during this rulemaking, particularly decisions concerning how compliance with Part 191 standards will be demonstrated, establish no precedent of any kind for NRC licensing actions.

In a related matter, the staff considers it worthwhile to restate concerns previously provided to EPA regarding aspects of the environmental standards with which WIPP must comply. NRC commented extensively during the development of these standards, including its April 12, 1993, comments on the proposed standards published at 58 FR 7824. Specifically, NRC noted that the technical community has raised significant concerns regarding the scientific basis for, and the appropriateness of, EPA's 1985 standards. EPA chose, in its 1993 rulemaking, not to accept comments -- including those from NRC -- on those portions of the standards that were legislatively reinstated. The August 1995 National Academy of Sciences (NAS) recommendations on the technical bases for YM standards reiterated some of these concerns. NRC remains concerned about the technical basis of some requirements in Part 191. Enclosure 1 provides detailed comments describing NRC's concerns with Part 191.

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Further, as you know, EPA and NRC have been unable to agree on the need to include separate groundwater protection criteria in high-level waste (HLW) disposal standards. Separate groundwater protection requirements are a component of Part 191. NRC believes that individual protection criteria, which take into account all pathways, are sufficiently protective of the groundwater pathway, and represent a more uniform and comprehensive approach to protecting public health and safety. Further, NRC continues to believe that the use of maximum contaminant levels (MCLs) for water in HLW disposal is fundamentally incompatible with the technical basis EPA employed to derive these levels, and is a continuation of EPA's practice of applying the MCLs found in 40 CFR Part 141 to other activities (e.g., HLW disposal) without appropriate justification, in particular:

- (1) The current MCL values result in inconsistent levels of protection (e.g., less than 0.1 mrem/yr to over 30 mrem/yr) and do not include all radionuclides (e.g., uranium). EPA has not explained why this disparity is acceptable when the MCLs are used to regulate remediation or disposal activities.
- (2) The MCLs are a technology-based requirement for public water systems that are to be applied after treatment and EPA is applying these MCLs to untreated groundwater:
- (3) This use of MCLs is inconsistent with the concept of "endangerment" as used in the Safe Drinking Water Act:
- (4) In deriving the MCLs, EPA did not consider the potential impacts of applying the MCLs as relevant and appropriate criteria to other activities (e.g., site cleanups under Superfund); and

NRC has raised similar concerns with EPA's application of MCLs in draft standards applicable to HLW disposal at YM.

The staff has been working with EPA to examine implementation issues associated with the NAS recommendations and the draft environmental standards for YM, Nevada. I believe that these discussions have led to the EPA staff's increased awareness of the NRC concerns related to the implementation of EPA HLW standards. I am providing a list of interactions between NRC and EPA related to the current environmental standards for sites other than YM, the compliance criteria for WIPP and the draft environmental standards for YM

L. Weinstock

- 4 -

Jun 2, 1997

in Enclosure 2, which includes these most recent interactions. To further this understanding, I would be pleased to meet with you regarding the staff's positions on Part 191 and groundwater protection for HLW facilities.

Sincerely,

(Original signed by)  
Carl J. Paperiello, Director  
Office of Nuclear Material Safety  
and Safeguards

Enclosures: 1. SECY-97-073  
2. List of NRC and EPA Interactions

cc: Docket No. A-93-02 (two copies)  
Air Docket, Room M-1500 (LE-131)  
U.S. Environmental Protection Agency  
401 M. Street, S.W.  
Washington, DC 20460

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OFC	PAHL*		PAHL*		PAHL*		DWM*		NMSS
NAME	JFirth/kv		KMcConnell		MBell		MFederline		CPaperiello
DATE	5/29/97		5/29/97		5/29/97		5/29/97		6/2/97
OFC	<del>DEDR</del>		<del>EDQ</del>						
NAME	<del>HThompson</del>		<del>LCallan</del>						
DATE	<del>/ / 197</del>		<del>/ / 197</del>		/ / 197		/ / 197		/ / 197

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L. Weinstock

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OFC	PAHL*	PAHL*	PAHL*	DWM*	NMSS
NAME	JFirth/kv	KMcConnell	MBell	MFederline	CPaneriello
DATE	5/29/97	5/29/97	5/29/97	5/29/97	/ /97
OFC	DEDR	EDO			
NAME	HThompson	LCallan			
DATE	/ /97	/ /97	/ /97	/ /97	/ /97

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\* SEE PREVIOUS CONCURRENCE

OFC	PAHL	PAHL	PAHL	DWM	NMSS
NAME	nth/kv SA f	KMcDonnell	MBe11 M/S		CPaperiello
DATE	5/24/97	5/22/97	5/29/97	5/29/97	1/19/97
OFC	DEDR	EDO			
NAME	HThompson	LCallan			
DATE	1/19/97	1/19/97	1/19/97	1/19/97	1/19/97

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ACNW: YES  NO   
IG : YES  NO   
PDR : YES  NO

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## POLICY ISSUE

April 2, 1997

(NEGATIVE CONSENT)

SECY-97-073

FOR: The Commissioners

FROM: L. Joseph Callan  
Executive Director for Operations

SUBJECT: COMMENTS ON THE U.S. ENVIRONMENTAL PROTECTION AGENCY'S  
ADVANCE NOTICE OF PROPOSED RULEMAKING FOR THE DECISION ON  
WHETHER THE WASTE ISOLATION PILOT PLANT COMPLIES WITH THE  
40 CFR PART 191 DISPOSAL REGULATIONS AND THE 40 CFR PART 194  
COMPLIANCE CRITERIA

### PURPOSE:

To advise the Commission of the staff's intention to transmit to the U.S. Environmental Protection Agency (EPA) the attached letter providing staff comments on the Advance Notice of Proposed Rulemaking (ANPR) for the decision on whether the Waste Isolation Pilot Plant (WIPP) complies with the 40 CFR Part 191 disposal regulations and the 40 CFR Part 194 compliance criteria.

### BACKGROUND:

On October 30, 1992, Congress passed the WIPP Land Withdrawal Act (LWA) (Public Law 102-579). The WIPP LWA altered EPA's authority over the development of high-level waste (HLW) standards in several ways:

- (1) EPA was given certain oversight responsibilities for WIPP;
- (2) EPA's 1985 remanded radiation protection standard (Part 191) was reinstated for disposal sites other than Yucca Mountain (YM), Nevada, except for the individual and groundwater protection criteria that were the subject of the 1987 Federal Court Remand;

CONTACT: James R. Firth, NMSS/DWM  
415-6628

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- (3) EPA was directed to promulgate final disposal regulations;
- (4) EPA was directed to promulgate compliance criteria for the certification of compliance with the final disposal regulations; and
- (5) EPA was required to certify, by rule, whether the WIPP facility will comply with the final disposal regulations.

On February 10, 1993, EPA published proposed amendments to the "Environmental Radiation Protection Standards for the Management and Disposal of Spent Nuclear Fuel, High-Level, and Transuranic Radioactive Wastes" (58 FR 7924). These standards apply to HLW and transuranic (TRU) radioactive waste disposal sites not characterized under Section 113(a) of the Nuclear Waste Policy Act (i.e., sites other than YM). Staff comments on the amended standards were provided to the Commission in SECY-93-073, and formal comments were submitted to EPA on April 12, 1993 (Attachment 1). EPA published final amendments on December 20, 1993 (58 FR 66398).

On February 22, 1994, staff informally provided EPA with comments on the January 28, 1994, working draft of the compliance criteria for WIPP. Subsequently (January 30, 1995), EPA formally published for comment its proposed "Criteria for the Certification and Determination of the Waste Isolation Pilot Plant's Compliance with Environmental Standards for the Management and Disposal of Spent Nuclear Fuel, High-Level, and Transuranic Wastes" at 60 FR 5766. Draft staff comments on the compliance criteria were developed and, with Commission approval, staff briefed EPA on the draft comments on June 14, 1995. These comments were provided to the Commission in SECY-95-217. Subsequent to the development of the comments, but before Commission action on SECY-95-217, the National Academy of Sciences (NAS) published its findings on the technical bases for YM standards, in August 1995, and a bill to amend the Nuclear Waste Policy Act of 1982 (HR 1020) received increased attention in the House of Representatives. These developments caused significant uncertainty in many aspects of HLW disposal. Therefore, the staff believed it appropriate to withdraw its comments and, in October 1995, SECY-95-217 was returned to the staff. EPA published the final compliance criteria on February 9, 1996 (61 FR 5223).

#### DISCUSSION:

On November 15, 1996, EPA published for comment the ANPR, "Decision to Certify Whether the Waste Isolation Pilot Plant Complies With the 40 CFR Part 191 Disposal Regulations and the 40 CFR Part 194 Compliance Criteria" at 61 FR 58499 (Attachment 2). The ANPR addresses the rulemaking process for certifying whether WIPP complies with Parts 191 and 194. The comment period closed on March 17, 1997. After the receipt and evaluation of comments and an evaluation of the compliance certification application, EPA will propose for comment its decision on whether to certify WIPP.

The staff is following EPA certification of WIPP to identify issues of relevance to potential NRC activities. In the context of the WIPP certification and because of continuing NRC concerns related to EPA standards for HLW disposal, the staff has reviewed the ANPR and believes that several

comments should be transmitted to EPA (Attachment 3). The principal staff comment is that EPA's decisions during the certification process do not set a precedent for future NRC licensing activities. This comment is necessary so as to retain NRC regulatory flexibility for potential licensing actions related to HLW or TRU disposal (e.g., YM).

In addition, NRC may have to make determinations of compliance with Part 191 for sites other than WIPP. Therefore, the staff believes that it is both relevant and important to reiterate earlier comments it made on Part 191 and restate Commission policy on groundwater protection as expressed in the February 7, 1997, letter from Chairman Jackson to Administrator Browner. Therefore, the staff proposes to comment to EPA that:

- The technical community has raised significant concerns regarding the scientific basis for, and the appropriateness of, the Part 191 environmental standards. The NAS recommendations on the technical bases for standards applicable to the proposed repository at YM reiterated some of these concerns. NRC remains concerned about the technical basis of some requirements in Part 191.
- NRC remains concerned about the EPA approach to implementing groundwater protection, including:
  - The need for separate groundwater protection requirements in environmental standards for HLW disposal; and
  - The use of maximum contaminant levels (MCLs) for HLW disposal, as found in 40 CFR Part 141, is fundamentally incompatible with their derivation and a continuation of EPA's practice of using MCLs without appropriate justification.

#### RESOURCE IMPACTS:

There are no resource impacts associated with the proposed action.

#### INFORMATION TECHNOLOGY IMPACTS:

There are no information technology impacts associated with the proposed action.

The Commissioners

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COORDINATION:

The Office of the General Counsel has reviewed this paper and has no legal objection.

RECOMMENDATION:

The staff intends to send the attached letter and comments to EPA within ten working days from the date of this paper, unless instructed otherwise by the Commission.

  
L. Joseph Callan  
Executive Director  
for Operations

- Attachments: 1. NRC's letter dated 4/12/93  
on ANPR  
2. ER notice dated 11/15/96  
3. Proposed ltr. to R. Trovato  
from C.J. Paperiello

SECY NOTE: In the absence of instructions to the contrary, SECY will notify the staff on Friday, April 18, 1997 that the Commission, by negative consent, assents to the action proposed in this paper.

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APR 12 1993

Ms. Margo T. Oge, Director  
Office of Radiation and Indoor Air  
U.S. Environmental Protection Agency  
Washington, D.C. 20460

Dear Ms. Oge:

Enclosed are U.S. Nuclear Regulatory Commission (NRC) comments on the February 10, 1993, U.S. Environmental Protection Agency (EPA) proposal to adopt certain environmental standards applicable to transuranic (TRU) and high-level radioactive waste (HLW) disposal facilities other than Yucca Mountain.

NRC notes, with regret, EPA's intent not to accept comments on those portions of its standards that were legislatively reinstated. As EPA is well aware, significant concerns have been raised within the technical community regarding the scientific basis for, and the appropriateness of, EPA's 1985 standards. Some of those concerns will be addressed in the National Academy of Sciences' (NAS) study of appropriate standards for the candidate HLW repository site at Yucca Mountain. When the NAS review has been completed, NRC believes it would be appropriate for EPA to review its non-Yucca-Mountain standards to determine whether additional amendments are warranted.

EPA solicits comments on the two specific questions shown below. NRC's views on these questions follow.

(1) Are there reasons for adopting a different regulatory time frame for the individual and ground-water protection requirements than the 10,000-year period of analysis associated with the containment requirements of 40 CFR 191.13?

In 1987, a Federal court found that EPA had provided an adequate explanation for the 10,000-year time limit for the containment requirements of the 1985 standards. At that time, EPA argued that a 10,000-year period was long enough to distinguish repositories with relatively good capabilities to isolate waste from those with relatively poor capabilities, and yet short enough so that major geologic changes were unlikely and repository performance might reasonably be projected. In our view, the same reasoning would apply for protection of individuals and of groundwater. While we see no obvious reason why different regulatory periods should be adopted for different parts of EPA's standards, the appropriateness of the 10,000-year period of analysis will likely be a major focus of the NAS review. Thus, EPA adoption of this time period in any generally applicable environmental standard may warrant reconsideration once the NAS review is completed.

(2) In subpart C, the Agency [EPA] proposes to prevent radioactive contamination of "underground sources of drinking water" beyond the limits found in 40 CFR part 141--the National Primary Drinking Water Regulations. The Agency is aware, however, that there could be some types of ground water that warrant additional protection either because

Attachment 1

they are of unusually high value or are more susceptible to contamination. Should the Agency adopt non-degradation requirements for especially valuable ground water? If so, what types of ground water warrant this extra level of protection?

EPA's current proposal is, in effect, a non-degradation requirement. EPA's maximum contaminant levels (MCLs) are so low that even very minor releases from an otherwise very good repository could cause groundwater concentrations to approach the MCLs. Any further restrictions on groundwater concentrations would be unnecessary for protection of public health, would likely prove unachievable for some disposal facilities, and should not be adopted by EPA. As a related matter, the NRC is concerned about EPA's proposal to establish a "moving target" for allowable contaminant levels in groundwater. Under EPA's proposal, design of a disposal facility would be very difficult since EPA could revise the environmental standards for the facility at any time for reasons that have nothing to do with waste disposal. We strongly urge EPA to establish a fixed environmental standard for contaminant levels in groundwater near a disposal facility.

Specific NRC comments regarding EPA's proposed rule of February 10th are enclosed. Initial comments on EPA's draft "Background Information Document" and "Economic Impact Analysis" are also enclosed. From the NRC staff's preliminary review, however, it appears that the "Background Information Document" employs a highly-simplified conceptual model. The analyses based on this model should not be viewed as a sound indication of whether EPA's release limits are achievable at any real repository site. Additional comments on these supporting documents may be submitted after the NRC staff has had an opportunity to thoroughly review them.

Sincerely, *RS*

Robert M. Bernero, Director  
Office of Nuclear Material Safety  
and Safeguards

Enclosure:  
Comments on 58 FR 7024,  
February 10, 1993

cc: (two copies)  
Docket No. R-89-01  
Air Docket, room M-1500 (LE-131)  
U.S. Environmental Protection Agency  
401 M Street, SW  
Washington, DC 20460

NRC COMMENTS ON EPA'S PROPOSED  
INDIVIDUAL AND GROUNDWATER PROTECTION STANDARDS

GENERAL

1. The Environmental Protection Agency's (EPA's) description of the legal basis for Nuclear Regulatory Commission (NRC) licensing authority (58 FR 7929) notes (NRC's) licensing role for Yucca Mountain under the Nuclear Waste Policy Act (NWPA), as amended. However, NRC's authority is broader than this and has a different genesis. The Energy Reorganization Act of 1974 (P.L. 93-438), which established NRC, is the fundamental authority for NRC licensing of facilities for storage (including disposal) of both defense- and commercially generated high-level wastes (HLW). Thus, NRC would have licensing authority for any repository for commercially generated HLW, including Yucca Mountain, that might be developed. In addition, NRC would have licensing authority for any defense-only HLW facility that might be pursued separate from the provisions of NWPA. Finally, the Low-Level Radioactive Waste Policy Amendments Act of 1985 (P.L. 99-240) authorized NRC licensing of disposal facilities for commercially-generated "greater-than-Class C" wastes, including any such wastes containing transuranic radionuclides. Thus, there exists a significant potential for NRC implementation of these proposed EPA standards, even though they do not apply to Yucca Mountain.

2. EPA proposes to define "radioactive material" as "...matter composed of or containing radionuclides, with radiological half-lives greater than 20 years, subject to the Atomic Energy Act of 1954, as amended." This proposed definition is contrary to common usage, since most people refer to all radioactive material as "radioactive material." More importantly, the qualifying terms seem to serve no purpose. EPA proposes to use "radioactive material" to define environmental standards for limiting individual doses and groundwater contamination. EPA's proposed criteria would apply to "disposal systems for waste and any associated radioactive material." However, the specific language proposed by EPA (sections 191.15 and 191.24) seems to refer to the impacts of all radionuclides, including those with short half-lives and those not subject to the Atomic Energy Act. NRC recommends that EPA delete this term altogether as it will only add confusion. If EPA is concerned about Greater-than-Class-C waste disposal then the standards should be specific to Greater-than Class-C waste, and not try to encompass a wide range of materials or waste.

3. Significant concerns have been raised within the technical community regarding the scientific basis for, and the appropriateness of, EPA's 1985 standards. Some of those concerns will be addressed in the National Academy of Sciences' (NAS) study of appropriate standards for the candidate HLW repository site at Yucca Mountain. When the NAS review has been completed, NRC believes it would be appropriate for EPA to review its non-Yucca-Mountain standards to determine whether additional amendments would be appropriate.

### 10,000-Year Time Limit

4. EPA proposes to adopt a 10,000-year time period for application of the individual and groundwater protection standards, and solicits comment on whether there are reasons for adopting a different time period. In 1987, a federal court found that EPA had provided an adequate explanation for the 10,000-year time limit for the containment requirements of the 1985 standard. At that time, EPA argued that a 10,000-year period was long enough to distinguish repositories with relatively good capabilities to isolate waste from those with relatively poor capabilities, and yet short enough so that major geologic changes were unlikely and repository performance might reasonably be projected. In our view, the same reasoning would apply for protection of individuals and of groundwater, and there would be no obvious reason why different regulatory periods should be adopted for different parts of EPA's standards.

While we see no obvious reason why different regulatory periods should be adopted for different parts of EPA's standards, the appropriateness of the 10,000-year period of analysis will likely be a major focus of the NAS review. Thus, EPA adoption of this time period in any generally applicable environmental standard may warrant reconsideration once the NAS review is completed.

### Individual Dose Limits

5. In 1985, EPA established individual protection requirements of 0.25 mSv/yr (25 mrem/yr) for the whole body or 0.75 mSv/yr (75 mrem/yr) for other organs. At that time, EPA did not provide a convincing basis of support for those dose limits. In 1985, EPA equated its dose limits to a lifetime risk of  $5E-4$ . However, EPA did not argue that  $5E-4$  was the maximum level of risk that could be considered acceptable, nor did EPA demonstrate that its dose limits were reasonably achievable. In addition, EPA never proposed its individual protection requirements for public comment. (EPA's 1982 proposed standards solicited comment on whether individual doses should be regulated, but did not propose specific dose limits.) Because of the sketchy history of the dose limits in EPA's 1985 standards, it is inappropriate for EPA now to defend its current proposal on the basis of "consistency" with those dose limits. Instead, EPA should defend the current proposal on its own merits. Specifically, EPA should identify the maximum individual dose rate that EPA would consider acceptable for future exposures of individuals (e.g., that suggested in the following comment).

6. The International Commission on Radiological Protection (ICRP) has recommended radiation protection standards for radioactive waste disposal in its Publication No. 46. The ICRP recommends that no individual in the future should be exposed to more than 1 mSv/yr (100 mrem/yr) attributable to non-medical man-made radiation sources (or an equivalent level of risk if exposures are unlikely), and that each source of potential exposure should be allocated a portion of the overall limit. (The basis for the ICRP recommendation is comparison with risks now accepted by society.) The fundamental idea is to restrict each potential source of long-term exposure (e.g., a HLW repository) so that the total dose rate from all sources is

unlikely to exceed the recommended limits of the ICRP. EPA should do two things: a) endorse the overall dose limit of 1 mSv/yr (100 mrem/yr) recommended by the ICRP, or explain why EPA prefers a different limit, and b) explain how EPA's proposed HLW and TRU standards are derived from an overall dose (or risk) limit for all sources of future human radiation exposures.

7. EPA's proposed individual protection standards would restrict potential doses to "any member of the public." This seems to mean the most highly exposed member of the public. In contrast, the ICRP has recommended that dose limits should be applied to the average dose within a "critical group" of the most highly exposed members of the public. The Federal Register notice does not provide the reasons for EPA's rejection of the ICRP's critical group concept. EPA should clearly describe its reasons for restricting doses to the maximally-exposed individual rather than the average dose within a critical group.

8. EPA states (page 7929) that use of groundwater within the controlled area need not be considered when evaluating compliance with the individual protection requirements. EPA reasons that the geologic media within the controlled area are an integral part of the disposal system. NRC agrees with this view, but is concerned that the wording of EPA's standards might permit other interpretations. Specifically, if withdrawal of groundwater from within the controlled area does not "disrupt" the disposal system, such withdrawal might be considered to be part of "undisturbed performance." To ensure that there is no ambiguity about this point, the existing (1985) definition of the term "undisturbed performance" should be altered to read:

"Undisturbed performance" means the predicted behavior of a disposal system, including consideration of the uncertainties in predicted behavior, assuming no withdrawal of groundwater from within the controlled area, and assuming if the disposal system is not disrupted by human intrusion or the occurrence of unlikely natural events.

Note also that the word "unlikely" should be deleted from this definition. EPA's existing definition of "undisturbed performance" is confusing because it includes disturbed performance to the extent that natural disruptions are likely to occur. Alternatively, if EPA wishes to apply the individual protection requirements to performance following likely disruptions, the term "undisturbed performance" could be replaced with "anticipated performance" or some similar term.

9. In sections 191.15(c) and 191.24(b), it would be helpful to substitute "performance assessment" for "compliance assessment." The term "compliance assessment" is sometimes used to refer to a licensing agency's determination that an applicant's performance assessment is an adequate demonstration of compliance with a regulatory requirement.

#### Groundwater Protection Standards

10. EPA proposes to require a disposal facility to comply with the provisions of whatever EPA drinking water standards are in effect at the time

when compliance is demonstrated. This constitutes a "moving target" that will make it difficult to design a disposal facility. It is also impossible to evaluate the stringency of the proposed standards or the technical or economic practicality of achieving compliance with them. Instead of a "moving target," EPA should determine the level of groundwater protection appropriate for HLW and TRU disposal and should codify that level of protection in these standards.

11. EPA proposes to require that groundwater adjacent to a TRU or HLW disposal facility be protected to the maximum contaminant levels (MCLs) developed by EPA under the Safe Drinking Water Act (SDWA). In our October 16, 1992, comments on EPA's proposed drinking water standards, we stated:

EPA should evaluate the indirect impact of the proposed MCLs. There are other activities, such as environmental restoration, to which the MCLs will be applied as default values for groundwater and surface water protection. EPA has consistently adopted MCLs as groundwater protection criteria for high-level waste management and uranium mill tailings (and draft standards for low-level waste disposal) because the MCLs are established to protect humans in accordance with the Safe Drinking Water Act. Minimal justification has been provided by EPA in these individual rulemakings to adopt the MCLs as relevant criteria other than the fact that they have already been established as MCLs in 40 CFR Part 141. These criteria include the MCLs for radium, gross alpha, and uranium, as well as the 4 mrem/year dose standard for beta and gamma emitters. Although the \$/rem impact for the proposed standards is acceptable to EPA for municipal treatment, since EPA has chosen to rely on the drinking water standards as sufficient justification for adopting these MCLs in other contexts, EPA is obligated to consider the potential impacts associated with establishing or changing the MCLs in 40 CFR Part 141. In addition, this analysis should consider potential impacts on other activities to which the MCLs will likely be applied as relevant and appropriate criteria (e.g., for site cleanups under CERCLA), in the absence of alternative health-based criteria.

EPA's current proposal is a continuation of EPA's practice of using the MCLs without appropriate justification.

12. EPA proposes to require that radionuclide levels in offsite underground sources of drinking water not exceed such MCLs as EPA might determine to be appropriate. EPA's past derivation of MCLs has been based on consideration of the technical capabilities of water treatment plants and of the cost-effectiveness of various types of water treatment. Specifically, EPA's MCLs have been derived to apply to public water supplies after treatment in a water treatment plant. EPA now proposes to apply the same MCL levels to groundwater supplies before treatment. In other words, EPA proposes to obviate use of the very water treatment technologies EPA has previously found to be technically practical and cost-effective. Not only is this use of the MCL levels incompatible with their derivation, it is inconsistent with the concept of "endangerment," as used in the SDWA. EPA notes (page 7930) that:

"Endangerment" occurs if an underground injection "may result in the

presence [in] underground water which supplies or can reasonably be expected to supply any public water system of any contaminant, and if the presence of such contaminant may result in such system's not complying with any national primary drinking water regulation or may otherwise adversely affect the health of persons."

Setting aside the question of whether repository disposal constitutes underground injection, "endangerment" would seem to occur only if contaminant levels in groundwater are high enough so that treatment by a public water system cannot reduce those levels to MCLs.

The NRC does not object to use of MCLs as general goals for groundwater protection. However, EPA should further consider the potential costs associated with a rigid regulatory requirement for prevention of contamination above MCLs. In some cases, the technical or economic practicality of water treatment may be much more favorable than the practicality of prevention of groundwater contamination that only moderately exceeds EPA's MCLs. As EPA notes (page 7933), the technology for treating groundwater with high levels of "total dissolved solids" (i.e., salts) is advancing. The same technology would presumably be effective in removing dissolved radionuclides from groundwater. EPA should not require the expenditure of billions of dollars to prevent potential contamination of groundwater that would require treatment prior to use anyway. Instead, EPA's standards should permit a decision to spend much smaller sums for water treatment in the event that such contamination should occur.

13. EPA's proposed rule implies that the MCLs have already been implemented in standards to protect groundwater for uranium mill tailings sites and hazardous waste disposal facilities. However, there are flexibilities associated with MCL compliance in other programs that EPA has not provided for in the TRU and HLW standards. Specifically, in the hazardous waste and uranium mill tailings disposal program, EPA has provided flexibility in meeting MCLs through the use of alternate concentration limits (ACLs) (cf. 40 CFR 264.94). ACLs may be applied in situations when compliance with MCLs is not feasible, provided that the environment is sufficiently protected and other conditions are met. Additionally, in accordance with SDWA sections 1415(a)(1)(A) and 1416(a), respectively, EPA or a State may grant a variance or issue an exemption to a public water system from any MCL requirement. EPA concluded in each of these programs that such flexibility was necessary and appropriate. To the extent allowed by the legal authority under which EPA is proposing these standards, EPA should provide comparable flexibility in implementing drinking water MCLs in the TRU and HLW standards or justify why it is not necessary for TRU and HLW disposal facilities.

14. In the "Supplementary Information" (page 7932), EPA references its groundwater protection strategy and indicates that the strategy recommends use of MCLs as "reference points" for protection of water resources that are potential sources of drinking water. EPA should explain why it has proposed to apply MCLs in these standards as absolute limits rather than more flexible reference points.

15. EPA's proposed groundwater protection standards restrict the combined

concentrations of natural and man-made radionuclides from all sources. Thus, a site with natural radionuclide concentrations exceeding EPA's MCL levels could not be used for waste disposal (unless groundwater cleanup were practical). This is a substantial departure from EPA's 1985 standards, which restricted the incremental increase in groundwater concentrations caused by a disposal facility. Arguably, rather than risking contamination of pristine aquifers, EPA should encourage siting waste disposal facilities at locations where groundwater is already unsuitable for consumption without treatment. EPA provides no explanation for the change from the 1985 standards, nor does EPA even identify the change in the Federal Register notice. EPA should allow an incremental increase, above natural levels, unless EPA can demonstrate that doing so would unacceptably endanger the health of the public.

16. The proposed standards require (section 191.23(b)) that the analytical methods in 40 CFR Part 141 be used "...to determine the levels for comparison with the limits in 40 CFR part 141." This requirement is inappropriate, since compliance with Subpart C (the groundwater protection criteria) must be demonstrated before a facility is placed in operation. A determination of compliance with Subpart C is to be made before a disposal facility is operated, not after wastes have been emplaced. To the extent that Part 191 is being proposed under Atomic Energy Act authority, specification of use of particular analytical methods is also inappropriate since such specification does not constitute a "generally applicable environmental standard."

#### Appendix B

17. Appendix B appears to be based on ICRP Publication 60. This is inconsistent with current Federal guidance and the consensus developed in a Federal Interagency Working Group. The consensus of that group (chaired by EPA) is that the incremental benefit associated with adoption of ICRP 60 methodology is not sufficient to justify the associated cost and regulatory burden. Thus, EPA's proposed Appendix B should be rewritten, based on ICRP-26 methodology, to be consistent with current Federal guidance and the practices of other Federal agencies.

18. The symbols used in the equations of the proposed Appendix B ("Calculation of Annual Committed Effective Dose") cause confusion. In the second equation,  $H_T$  is used to denote the equivalent dose in tissue T. Then, in the third equation, the same symbol is used for both the integrated 50-year equivalent dose and the equivalent dose rate. The right-hand side of the third equation should use a symbol that clearly indicates the dose rate (i.e., the derivative of  $H_T$  with respect to time).

#### Background Information Document (BID)

19. EPA's proposed standards would restrict radionuclide concentrations in groundwater and potential doses to individuals outside a "controlled area" that is allowed to extend up to five kilometers from a disposal facility. The analyses of EPA's draft BID evaluate potential concentrations and doses at a 2-kilometer distance, rather than the full 5-kilometer distance allowed by EPA's standards. In EPA's analyses, an individual is assumed to withdraw groundwater for drinking at a distance of 2-kilometers from a deep geologic

repository containing transuranic wastes. In general, EPA's analyses show that no impacts occur, even at the 2-kilometer location, until about 50,000 years after disposal. Then, doses to the individual are estimated to range from several tens of millirem/year to several rem/year, and to remain relatively constant until the end of EPA's analyses at 100,000 years after disposal. Had EPA estimated impacts at the 5-kilometer boundary of the controlled area, rather than at a 2-kilometer distance, few releases would have occurred within 100,000 years and estimated doses would have been reduced by radioactive decay and dispersion during transport through the controlled area. Thus, it would be inappropriate to interpret the results of EPA's analyses as a demonstration that a 10,000-year regulatory period is inadequate and as a rationale for extending the regulatory period for longer times.

20. EPA uses essentially the same conceptual model for all four hypothetical repositories considered in its BID. Using the NEFTRAN-S code, EPA uses a single "pipe" to simulate transport of radionuclides from a repository to an overlying or underlying aquifer, and then uses a second "pipe" to simulate transport to a groundwater well located 2 kilometers away. The coarseness of this model precludes simulation of fractures, failures of borehole or shaft seals, or other inhomogeneities in the geologic media. NEFTRAN-S may not be adequate for such purposes anyway, and a computer program implementing mathematical models of the appropriate processes would have to be used. Thus, EPA is unable to determine whether relatively rapid transport of small amounts of waste might occur, leading to potential violations of the proposed individual and groundwater protection standards.

21. Some of EPA's simplifying assumptions may be causing EPA to be underestimating doses. For example, Table 7.5-15 postulates an aquifer thickness of 2400 meters at a tuff site. Even if the physical thickness of an aquifer were this great, the effective thickness within which radionuclides would be mixed and transported would be much less. Thus, EPA may have overestimated dilution of releases (and underestimated doses) by 1 to 2 orders of magnitude.

22. EPA uses retardation factors originally developed for the National Academy of Sciences' 1983 Waste Isolation Systems Panel's HLW report. The waste form for EPA's current analyses is transuranic waste, which includes organic trash, chelating agents, etc. EPA should explain why it thinks the retardation factors developed for HLW would be appropriate for transuranic wastes with much different chemical characteristics.

23. The reinstated criteria of 40 CFR Part 191 define "undisturbed performance" as "...the predicted behavior...if the disposal system is not disrupted by human intrusion or the occurrence of unlikely natural events." As noted in comment 8, use of the term "undisturbed performance" is confusing because it includes disturbed performance to the extent that natural disruptions are likely to occur. Comment 8 recommends that EPA drop the word "unlikely" from the definition of undisturbed performance. However, if EPA retains the current wording, EPA should demonstrate that the limits of its standards are achievable for likely disturbances. EPA's draft BID makes no attempt to even identify likely disturbances, let alone estimate their effects on repository performance. If EPA is to provide a convincing demonstration

that its proposed standards are technically achievable, EPA needs to identify likely disruptions and to evaluate the effects of those disruptions on the performance of disposal facilities.

24. Section 7.6.2 of EPA's BID seems to endorse use of elicited expert judgment in a performance assessment for demonstration of compliance with the proposed standards. While we recognize that use of expert judgment will be a necessary part of any demonstration of compliance with these standards, NRC staff believe that it is inappropriate to substitute judgment for data unless data are not reasonably obtainable.

Reliance on expert judgment is a matter of implementation of the standards. It would be more appropriate for EPA to offer its views regarding reliance on elicited judgments in conjunction with development of EPA's compliance criteria for WIPP rather than as part of these generally applicable environmental standards.

25. As noted in our cover letter, additional comments may be provided to EPA after the NRC staff has had an opportunity to thoroughly review the BID.

Date: October 10, 1996  
 David A. Ulrich,  
 Acting Regional Administrator.  
 [FR Doc. 96-28873 Filed 11-14-96; 8:45 am]  
 BILLING CODE 6820-28-P

[FRL-5460-4]  
 RIN 2060-A045  
 40 CFR Part 194

**Decision to Certify Whether the Waste Isolation Pilot Plant Complies With the 40 CFR Part 191 Disposal Regulations and the 40 CFR Part 194 Compliance Criteria**

**AGENCY:** Environmental Protection Agency (EPA).  
**ACTION:** Advance Notice of Proposed Rulemaking (ANPR).

**SUMMARY:** The Environmental Protection Agency (EPA) intends to certify whether or not the Waste Isolation Pilot Plant (WIPP) will comply with EPA's environmental radiation protection standards for the disposal of radioactive waste. The WIPP is being constructed by the Department of Energy (DOE) near Carlsbad, New Mexico, as a potential repository for the safe disposal of transuranic radioactive waste. Pursuant to the 1992 WIPP Land Withdrawal Act, as amended, EPA must certify that the WIPP will comply with EPA's standards for disposal, and other statutory requirements must be met, before DOE may commence disposal of radioactive waste at the WIPP.

EPA will determine whether the WIPP will comply with EPA's standards for disposal based on the application submitted by the Secretary of Energy. DOE's compliance certification application was received by the EPA on October 29, 1996, and a copy may be found in EPA's public docket (see Additional Docket Information at the end of this notice). The Administrator will make a determination as to the completeness of the application in the near future and will notify the Secretary, in writing, when the Agency deems the application "complete." EPA will evaluate the "complete" application in determining whether the WIPP will comply with the radiation protection standards for disposal. The Agency requests public comment on all aspects of the DOE's application.

**DATES:** Comments in response to today's document and on DOE's compliance application must be received by March 17, 1997. Public hearings will be held in New Mexico during the public comment period. A separate announcement will

be published in the Federal Register to provide public hearing information.

**ADDRESSES:** Comments and requests for public hearings should be submitted, in duplicate, to: Docket No. A-93-02, Air Docket, room M-1500 (LE-131), U.S. Environmental Protection Agency, 401 M Street, S.W., Washington, D.C. 20460. See additional docket information in the SUPPLEMENTARY INFORMATION.

**FOR FURTHER INFORMATION CONTACT:** Mary Kruger or Betsy Fortnaah; telephone number: (202) 233-0310; address: Radiation Protection Division, Mail Code 8602J, U.S. Environmental Protection Agency, Washington, DC 20460.

**SUPPLEMENTARY INFORMATION:** The Waste Isolation Pilot Plant (WIPP) was authorized in 1980, under section 713 of the Department of Energy (DOE) National Security and Military Applications of Nuclear Energy Authorization Act of 1980 (Pub. L. 96-164, 93 Stat. 1259, 1263), "for the express purpose of providing a research and development facility to demonstrate the safe disposal of radioactive wastes resulting from the defense activities and programs of the United States." The WIPP is being constructed by the DOE near Carlsbad, New Mexico, as a potential repository for the safe disposal of transuranic radioactive waste.

The 1992 WIPP Land Withdrawal Act (Pub. L. 102-579) limits radioactive waste disposal in the WIPP to transuranic radioactive wastes generated by defense-related activities. Transuranic waste is defined as waste containing more than 100 nano-curies per gram of alpha-emitting radioactive isotopes, with half-lives greater than twenty years and atomic numbers greater than 82. The Act further stipulates that radioactive waste shall not be transuranic waste if such waste also meets the definition of high-level radioactive waste, has been specifically exempted from regulation with the concurrence of the Administrator, or has been approved for an alternate method of disposal by the Nuclear Regulatory Commission. The transuranic radioactive waste proposed for disposal in the WIPP consists of materials such as rags, equipment, tools, protective gear, and sludges that have become contaminated during atomic energy defense activities. The radioactive component of transuranic waste consists of man-made elements created during

\*The 1992 WIPP Land Withdrawal Act was amended by the "Waste Isolation Pilot Plant Land Withdrawal Act Amendments," which is one part of the National Defense Authorization Act for Fiscal Year 1995.

the process of nuclear fission, chiefly isotopes of plutonium.

The EPA is required by the WIPP Land Withdrawal Act to evaluate and certify whether the WIPP will comply with subparts B and C of 40 CFR part 191—known as the "disposal regulations." These regulations limit releases of radioactive materials from disposal systems for radioactive waste, and require implementation of measures to provide confidence for compliance with the radiation release limits. Additionally, the regulations limit radiation doses to members of the public, and protect ground water resources by establishing maximum concentrations for radionuclides in ground water.

The WIPP Land Withdrawal Act also calls for EPA to establish criteria implementing the disposal regulations at the WIPP. EPA published final criteria (40 CFR part 194) on February 9, 1996. See 61 FR 5224. Thus, EPA will implement its environmental radiation protection standards, 40 CFR part 191, by applying the WIPP compliance criteria, 40 CFR part 194, to the proposed disposal of transuranic radioactive waste at the WIPP. For more information about 40 CFR part 191, refer to Federal Register documents published in 1985 (50 FR 38066-38089, Sep. 19, 1985) and 1993 (58 FR 66398-66416, Dec. 20, 1993). For more information about 40 CFR part 194, refer to Federal Register documents published in 1996 (61 FR 5224-5245, Feb. 9, 1996) and 1995 (60 FR 5766-5791, Jan. 30, 1995).

The DOE may not begin to emplace transuranic waste underground for disposal at the WIPP until EPA certifies that the WIPP will comply with the disposal regulations, and all other requirements of section 7(b) of the WIPP Land Withdrawal Act, as amended, have been satisfied. As required by section 6(d) of the amended WIPP Land Withdrawal Act, EPA's decision on whether the WIPP complies with the disposal regulations will be accomplished by rulemaking in accordance with the notice-and-comment requirements of the Administrative Procedure Act (5 U.S.C. 553). In addition to these general requirements, EPA developed specific provisions for public involvement in the WIPP compliance certification rulemaking. The public participation criteria found in § 194.61, § 194.62, § 194.63, and § 194.67 of the WIPP compliance criteria provide time periods for public comment, allow opportunities for public hearings, and otherwise enable public access to

information specifically related to EPA's certification rulemaking.

With today's document, the Agency announces its intention to commence a public rulemaking to certify whether the WIPP facility complies with the disposal regulations. On October 29, 1996, DOE submitted an application for certification of compliance to EPA. A copy of the application is available for inspection in EPA's public dockets described below. The Agency's comments on draft versions of the compliance certification application are also available in public dockets. The EPA will evaluate the complete application in determining whether the WIPP complies with the radiation protection standards for disposal. In addition, EPA will consider public comment and other information relevant to WIPP's compliance. EPA requests comment on all aspects of the DOE's application.

EPA will make a determination in the near future as to the completeness of the application, as a preliminary step in its more extensive technical review of the application. The EPA may request additional information as necessary from DOE to ensure the completeness of the compliance application. EPA will provide DOE with written notification of its completeness determination. All correspondence between EPA and DOE regarding the completeness of the compliance application will be placed in the public dockets.

EPA will make a final decision certifying whether the WIPP facility meets the disposal regulations after several additional regulatory steps, including technical analysis of the application, issuing a notice of proposed rulemaking in the Federal Register,

providing additional opportunity for public comment, holding public hearings in New Mexico, analyzing public comment, and issuing a final rule in the Federal Register that is accompanied by a document summarizing and addressing significant comments. This "response to comments" document will be available in the public dockets.

#### Additional Docket Information

The Agency is currently maintaining the following public information dockets: (1) Docket No. A-93-02, located in room 1500 (first floor in Waterside Mall near the Washington Information Center), U.S. Environmental Protection Agency, 401 M Street, S.W., Washington, D.C., 20460 (open from 8:00 a.m. to 4:00 p.m. on weekdays); (2) EPA's docket in the Government Publications Department of the Zimmerman Library of the University of

New Mexico located in Albuquerque New Mexico, (open from 8:00 a.m. to 9:00 p.m. on Monday through Thursday, 8:00 a.m. to 5:00 p.m. on Friday, 9:00 a.m. to 5:00 p.m. on Saturday, and 1:00 p.m. to 9:00 p.m. on Sunday); (3) EPA's docket in the Fogelson Library of the College of Santa Fe in Santa Fe, New Mexico, located at 1600 St. Michaels Drive (open from 8:00 a.m. to 12:00 midnight on Monday through Thursday, 8:00 a.m. to 5:00 p.m. on Friday, 9:00 a.m. to 5:00 p.m. on Saturday, 1:00 p.m. to 9:00 p.m. on Sunday); and (4) EPA's docket in the Municipal Library of Carlsbad, New Mexico, located at 101 S. Halogueno (open from 10:00 a.m. to 9:00 p.m. on Monday through Thursday, 10:00 a.m. to 6:00 p.m. on Friday and Saturday, and 1:00 p.m. to 5:00 p.m. on Sunday). As provided in 40 CFR part 2, a reasonable fee may be charged for photocopying docket materials.

#### List of Subjects in 40 CFR Part 194

Environmental protection, Administrative practice and procedure, Nuclear materials, Plutonium, Radiation protection, Radionuclides, Transuramics, Uranium, Waste treatment and disposal.

Dated: November 6, 1996.

Carol M. Brewer,  
Administrator.

(FR Doc. 96-29332 Filed 11-14-96; 8:45 am)  
GWS/CS/MS/MS/MS

#### DEPARTMENT OF THE INTERIOR

##### Bureau of Land Management

#### 43 CFR Part 2820

(WFO-130-1820-00-04 1A)

RIN 1004-AC71

#### State Grants—Alaska

**AGENCY:** Bureau of Land Management, Interior.

**ACTION:** Proposed rule.

**SUMMARY:** The Bureau of Land Management (BLM) proposes to remove the regulations at 43 CFR subpart 2827 addressing grants made to the State of Alaska. This subpart restates statutory requirements and explains how the State of Alaska files selection applications under the Alaska Statehood Act and the Act of January 21, 1920 (University Grant). BLM is proposing to remove 43 CFR 2827 because its provisions are outdated and not necessary for program implementation.

**DATES:** Comments: Commenters must submit comments by January 14, 1997. BLM will consider comments received

or postmarked on or before this date in the preparation of the final rule.

**ADDRESSES:** Comments: You may hand-deliver your comments to the Bureau of Land Management, Administrative Record, Room 401, 1620 L St., NW., Washington, DC; or mail comments to the Bureau of Land Management, Administrative Record, Room 401LS, 1849 C Street, NW., Washington, DC 20240. You may transmit comments electronically via the Internet to WComment@wo.blm.gov. Please include "attn: AC71" and your name and address in your message. If you do not receive a confirmation from the system that we have received your Internet message, contact us directly.

**FOR FURTHER INFORMATION CONTACT:** Erica Petacchi, Regulatory Management Group, Bureau of Land Management, at (202) 452-6064.

#### SUPPLEMENTARY INFORMATION:

I. Public Comment Procedures  
II. Background and Discussion of  
III. Procedural Matters

#### I. Public Comment Procedure

##### Written Comments

Written comments on the proposed rule should be specific, should be confined to issues pertinent to the proposed rule, and should explain the reason for any recommended change. Where possible, comments should reference the specific section or paragraph of the proposal which the commenter is addressing. BLM may not necessarily consider or include in the Administrative Record for the final rule comments which BLM receives after the close of the comment period (see DATES) or comments delivered to an address other than those listed above (see ADDRESSES).

#### II. Background and Discussion of Rule

BLM proposes to remove 43 CFR 2827 because its provisions are no longer necessary or useful, specifically:

1. A substantial portion of these regulations explain requirements the State must follow when filing applications for land under the Alaska Statehood Act. The time period for filing new applications under the Alaska Statehood Act expired on January 2, 1994.

2. A substantial portion of these regulations simply restates the provisions of the Alaska Statehood Act. Congress changed many provisions of the Alaska Statehood Act in Section 906(e) of the Alaska National Interest Lands Conservation Act, but the regulations were never revised to reflect those changes.



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20545-0001

DRAFT

Ms. Ramona Trovato, Director  
Office of Radiation and Indoor Air  
U.S. Environmental Protection Agency  
Washington, DC 20460

Dear Ms. Trovato:

I am responding to the November 15, 1996, Advance Notice of Proposed Rulemaking, "Decision to Certify Whether the Waste Isolation Pilot Plant Complies with the 40 CFR Part 191 Disposal Regulations and the 40 CFR Part 194 Compliance Criteria." Part 191 applies to sites not characterized under Section 113(a) of the Nuclear Waste Policy Act. [i.e., geologic disposal of spent nuclear fuel, high-level and transuranic radioactive wastes at sites other than (Yucca Mountain YM)]. Although the U.S. Environmental Protection Agency (EPA) is authorized to certify whether the Waste Isolation Pilot Plant (WIPP) complies with Part 191, under the WIPP Land Withdrawal Act, the U.S. Nuclear Regulatory Commission may eventually need to license other facilities that must comply with 40 CFR Part 191, as well as YM, which may have to comply with requirements similar to those found in Part 191. We recognize that EPA's decision on the certification of the WIPP will reflect the record before EPA and note that the record will be influenced by the contents of 40 CFR Parts 191 and 197; the Compliance Application Guidance; and the characteristics of both the WIPP site and the waste to be disposed of. These factors necessitate that EPA decisions on specific elements of the U.S. Department of Energy application and the decision on whether to certify WIPP need to be considered as being applicable only to WIPP. Therefore, NRC considers that decisions made by EPA during this rulemaking establish no precedent for NRC licensing actions.

In a related matter, the staff considers it worthwhile to restate concerns previously provided to EPA regarding aspects of the environmental standards with which WIPP must comply. NRC commented extensively during the development of these standards, including its April 12, 1993, comments on the proposed standards published at 58 FR 7824. Specifically, NRC noted that the technical community has raised significant concerns regarding the scientific basis for, and the appropriateness of, EPA's 1985 standards. EPA chose, in its 1993 rulemaking, not to accept comments -- including those from NRC -- on those portions of the standards that were legislatively reinstated. The August 1995 National Academy of Sciences (NAS) recommendations on the technical bases for YM standards reiterated some of these concerns. NRC remains concerned about the technical basis of some requirements in Part 191.

Attachment 3

R. Trovato

2

In addition, EPA and NRC have consistently disagreed with respect to the need to include separate groundwater protection criteria in high-level waste (HLW) disposal standards. Separate groundwater protection requirements are a component of Part 191. NRC believes that individual protection criteria, which take into account all pathways, are sufficiently protective of the groundwater pathway, and represent a more uniform and comprehensive approach to protecting public health and safety. Further, NRC continues to believe that the use of maximum contaminant levels (MCLs) in HLW disposal is fundamentally incompatible with the technical basis EPA employed to derive these levels and is a continuation of EPA's practice of applying the MCLs found in 40 CFR Part 141 to other activities (e.g., HLW disposal) without appropriate justification. NRC has raised similar concerns with EPA's application of MCLs in draft standards applicable to HLW disposal at YM.

The staff has been working with EPA to examine implementation issues associated with the NAS recommendations and the draft environmental standards for YM, Nevada. I believe that these discussions have been fruitful, leading to the EPA staff's increased awareness of the NRC concern related to the implementation of EPA HLW standards. To further this understanding, I would be pleased to meet with you regarding the staff's positions on Part 191 and groundwater protection for HLW facilities.

Sincerely,

Carl J. Paperiello, Director  
Office of Nuclear Material Safety  
and Safeguards

cc: Docket No. A-93-02 (two copies)  
Air Docket, Room M-1500 (LE-131)  
U.S. Environmental Protection Agency  
401 M Street, S.W.  
Washington, DC 20460

## Environmental Standards for the Disposal of Spent Nuclear Fuel, High-Level and Transuranic Wastes: Events and Interactions

December 29, 1982

U.S. Environmental Protection Agency (EPA) publishes proposed rule (40 CFR Part 191) in Federal Register (47 FR 58196). The proposed rule does not include individual or groundwater protection requirements for the disposal of spent nuclear fuel, high-level or transuranic radioactive waste.

July 19, 1985

EPA provides U.S. Nuclear Regulatory Commission with working draft #8, which includes individual and groundwater protection requirements applicable for 1,000 years. The release limits, first published in the proposed rule, apply for 10,000 years after disposal.

September 19, 1985

EPA publishes final rule (40 CFR Part 191) in the Federal Register (50 FR 38066).

July 17, 1985

First Circuit court issues ruling: NRDC v. EPA, 824 F. 2nd 1258 (1st Cir. 1987). The court remanded:

- (1) The groundwater protection requirements (§191.16) for:
  - Insufficient notice and comment
  - Failure to either reconcile the high level waste disposal standards to Part C of the Safe Drinking Water Act or to adequately explain the divergence
- (2) The individual protection requirements (§191.15) for:
  - Inadequate explanation of the 1,000-year time frame requirements.
- (3) The rest of 40 CFR Part 191.

January 31, 1990

EPA releases working draft #2 for proposed rule (40 CFR Part 191)

August 27, 1990

NRC staff transmits comments on working draft #2.

Enclosure ?

April 25, 1991

EPA releases working draft #3 for proposed rule (40 CFR Part 191).

July 12, 1991

NRC and EPA staff meet to discuss NRC staff comments on working draft #2.

July 18, 1991

EPA transmits questions related to NRC staff proposals on working draft #2.

September 24-26, 1991

Electric Power Research Institute sponsors a workshop on the technical basis for the EPA high-level radioactive waste disposal criteria (40 CFR Part 191).

October 23, 1991

NRC staff transmits comments related to working draft #3.

December 3, 1991

NRC staff transmits response to EPA questions on proposals related to EPA working draft #3.

December 5, 1991

NRC and EPA staff meet to discuss NRC staff comments on working draft #3.

January 7, 1992

NRC and EPA staff meet to discuss NRC staff comments on working draft #3.

February 4-6, 1992

Electric Power Research Institute sponsors a workshop on the technical basis for the EPA high-level radioactive waste disposal criteria (40 CFR Part 191).

February 19, 1992

NRC and EPA staff meet to discuss NRC staff comments on working draft #3.

March 13, 1992

NRC and EPA staff meet to discuss NRC staff concerns with potential difficulties in implementing the draft EPA standards.

March 27, 1992

NRC and EPA staff meet to discuss NRC staff concerns with potential difficulties in implementing the draft EPA standards.

July 1, 1992

NRC staff transmits preliminary comments on draft reports of technical analyses performed for EPA by U.S. Department of Energy.

September 3, 1992

NRC transmits staff comments on preliminary drafts of the Background Information Document and Regulatory Impact Analysis for amendments to 40 CFR Part 191.

October 30, 1992

Congress enacts Waste Isolation Pilot Plant Land Withdrawal Act, reinstating 40 CFR Part 191 Subpart B (disposal standards) with the exception of those requirements specifically found problematic by the First Circuit court.

February 10, 1993

EPA publishes proposed amendments to 40 CFR Part 191 in Federal Register (58 FR 7924).

April 13, 1993

NRC transmits staff comments on proposed 40 CFR Part 191 amendments and Background Information Document.

December 20, 1993

EPA publishes final amendments to 40 CFR Part 191 in Federal Register (58 FR 66398).

January 1994 (approximate)

EPA and NRC staff meet to discuss final amendments to 40 CFR Part 191.

January 28, 1994

EPA distributes draft compliance criteria for the Waste Isolation Pilot Plant (WIPP)-- 40 CFR Part 194.

February 22, 1994

NRC staff transmits informal staff comments on draft compliance criteria for WIPP (40 CFR Part 194).

January 30, 1995

EPA publishes proposed WIPP compliance criteria in the Federal Register (60 FR 5766).

June 14, 1995

NRC and EPA staff meet to discuss draft NRC staff comments on proposed compliance criteria for WIPP (40 CFR Part 194).

October 12, 1995

NRC and EPA staff meet to discuss the EPA response to the National Academy of Sciences report Technical Bases for Yucca Mountain Standards

December 6, 1995

NRC and EPA staff meet to discuss the EPA rulemaking activities and the appropriate scope for the environmental standards and the implementing regulations for Yucca Mountain.

December 13, 1995

NRC and EPA staff meet to discuss preliminary insights provided by NRC technical analyses on implementation issues related to the recommendations of the National Academy of Sciences on the technical bases for Yucca Mountain standards.

February 9, 1996

EPA publishes final WIPP compliance criteria (40 CFR Part 194) in Federal Register (61 FR 5223).

February 13, 1996

NRC and EPA staff meet to discuss EPA rulemaking activities and the appropriate scope for the environmental standards and the implementing regulations for Yucca Mountain.

March 20, 1996

NRC and EPA staff meet to discuss EPA rulemaking activities and NRC staff positions regarding the appropriate scope for the environmental standards and the implementing regulations for Yucca Mountain.

April 10, 1996

EPA provides NRC with a working draft of 40 CFR Part 197 (environmental standards applicable to Yucca Mountain).

April 25, 1996

NRC staff provides EPA with informal staff comments on Part 197 working draft.

February 21, 1997

Chairman Shirley Ann Jackson (NRC) transmits letter to Administrator Carol Browner (EPA) addressing regulatory consistency between NRC and EPA.