WM Record File 3406.3.3

WM Project 1
Docket No.
PDR ✓
LPDR
MAY 1 0 1983

PRINTDUP
- 1 -
(Return to WM, 623-SS)

Central Docket Section (A-130)
Environmental Protection Agency
ATTN: Docket No. R-82-3
Washington, DC 20460

Distribution:
✓WM file: 3406.3.3
WMHL r/f
NMSS r/f
REBrowning
MJBell JWolf
MRKnapp & r/f PAComella
HJMiller DBMausshardt
JOBunting JGDavis
PSJustus PDR
JTGreeves

The Nuclear Regulatory Commission (NRC) is pleased to respond to the request by the Environmental Protection Agency (EPA) for comments on the EPA's proposed environmental standards for management and disposal of spent nuclear fuel, high-level and transuranic radioactive wastes (47 FR 58196). Our principal comments are highlighted below, while detailed comments and responses to EPA's six specific questions are contained in the enclosure.

The NRC considers the management, storage, and containment requirements of the proposed standards to be a reasonable approach for a HLW standard and considers that (with some recommended changes) they can be implemented and achieved under the procedures and technical criteria of NRC's 10 CFR Part 60. With respect to recommended changes, two points, which are elaborated in Enclosure 1, are important:

1. The numerical probabilities in the definitions of "reasonably foreseeable releases" and "very unlikely releases" would require a degree of precision which is unlikely to be achievable in evaluating a real waste disposal system. The NRC considers that identification of the relevant processes and events affecting a particular site will require considerable judgment and will not be amenable to accurate quantification, by statistical analysis, of their probability of occurrence. Alternative definitions of "reasonably foreseeable releases" and "very unlikely releases" are recommended that will be consistent with the Commission's regulations. We note that this same comment has been provided previously to the EPA as a result of reviews of early drafts of the HLW standards. We trust that our repetition of the concern is a strong indication that the proposed definitions will be unworkable.

2. We believe the definition of "high-level radioactive wastes" should be made compatible with the Nuclear Waste Policy Act of 1982 (NWPA). Since the NWPA contemplates that the Commission will define the term to apply to highly radioactive wastes that require permanent isolation, it would be inappropriate to include any contrary provision in 40 CFR Part 191. Accordingly, we recommend that the standards be revised to apply to high-level radioactive wastes as

OFC	NMSS/WMHL	NMSS/WMHL	NMSS/WM	NMSS	NMSS		
NAME	M R KNAPP	M J BELL	R E BROWNING D MAUSSHARDT	J G DAVIS			
DATE	4/ /83	4/ /83	4/ /83	4/ /83	4/ /83		

PRINTDUP

MAY 10 1983

will be defined by the Commission in 10 CFR Part 60 under the provisions of the NWPA, and that Table 1 be deleted.

We also wish to highlight an observation in response to the request for comment on alternative options. In responding to EPA's questions, the NRC has considered standards based on individual doses and standards covering times longer than 10,000 years as potential alternatives to the proposed EPA containment requirements. The NRC believes that these alternatives would be unlikely to produce any significant additional protection of public health and safety and that they would be more difficult to implement in a licensing proceeding.

In addition to the enclosed comments, a general concern of ours is that the proposed assurance and procedural requirements deal with means of implementation. As they do not set limits on radiation exposures or levels, or concentrations or quantities of radioactive material in the general environment, we do not believe they should be included in 40 CFR Part 191. The Commission will be issuing a separate letter addressing this concern.

In summary, the NRC considers the management, storage, and containment requirements of the proposed standards to represent a reasonable approach for a HLW standard and considers that (with the recommended changes) they can be implemented and achieved. We encourage EPA to promulgate these standards in final form as soon as practical. The NRC staff will be pleased to consult with the EPA staff on these comments or on other matters that will assist in early publication of final standards.

Commissioner Ahearne's additional comments are attached as Enclosure 2.

Sincerely,

/s/

John G. Davis, Director
Office of Nuclear Material
Safety and Safeguards

Enclosures: 2, as stated

OFC	NMSS/WMHL	NMSS/WMHL	NMSS/WM	NMSS	NMSS		
NAME	M R KNAPP	M J BELL	R E BROWNING	D MAUSSHARDT	J G DAVIS		
DATE	5/10/83	5/10/83	5/10/83	4/ /83	4/ /83		

DETAILED NRC COMMENTS ON THE PROPOSED EPA HIGH-LEVEL WASTE STANDARDS

The NRC comments are organized into three sections. The first amplifies the NRC comments made in the transmittal letter concerning reasonably foreseeable and very unlikely releases. The second section addresses other aspects of the containment requirements. The third section consists of responses to the six questions asked by EPA.

Section I - Reasonably Foreseeable and Very Unlikely Releases

The numerical probabilities in the definitions of "reasonably foreseeable releases" and "very unlikely releases" would require a degree of precision which is not likely to be achievable in evaluating a real waste disposal system. The current definitions would presumably require the use of numerical risk analysis techniques, such as fault tree analyses, to identify potential sequences of events or processes. A numerical probability estimate would then be made for each of these sequences. It is this latter step which the NRC considers to be both unworkable and unnecessary for determining the acceptability of a proposed waste disposal system. We note that this same comment has been provided previously* to the EPA, and we are very concerned that our comment has not been addressed in the proposed standards.

The NRC recognizes the merit in using a risk analysis approach -- to the extent that data are available -- as one of the bases for evaluating disposal system performance. However, as the EPA itself recognizes in the supporting documentation for the proposed standards (e.g., page 96 of EPA-520/3-80-006), numerical estimates of the probabilities or frequencies of some future events may not be meaningful. The NRC considers that identification and evaluation of such events and processes will require considerable judgment and therefore will not be amenable to quantification by statistical analyses without the inclusion of very broad ranges of uncertainty. These uncertainty ranges will make it difficult, if not impossible, to combine the probabilities of such events with enough precision to make a meaningful contribution to a licensing proceeding.

As an implementing agency, the NRC is particularly concerned that the licensing process, while providing for protection of health and safety, should be designed to facilitate timely decisionmaking. The NRC therefore

*See letter from R. B. Minogue to W. Mills dated December 27, 1978 (Attachment A), and letter from J. M. Hendrie to D. M. Costle dated June 22, 1979 (Attachment B).

considers that two changes are necessary to make it practical to implement the proposed standards. First, the definitions of release categories must be stated qualitatively rather than quantitatively, and, second, the standard for very unlikely releases must be applied to releases from specific scenarios, considered individually, rather than to releases from a combination of all very unlikely scenarios.

The first point can be addressed by modifying the definitions of the release categories as follows to conform to the definitions of "anticipated processes and events" and "unanticipated processes and events" in 10 CFR Part 60.

(g) "Reasonably foreseeable releases" means the cumulative release caused by processes and events which are reasonably likely within 10,000 years assuming that processes operating in the disposal system during the Quaternary Period were to continue to operate but with the perturbations caused by the presence of emplaced waste superimposed thereon.

(h) "Very unlikely releases" means releases caused by processes and events which are not anticipated to occur within 10,000 years, but which are sufficiently credible to warrant consideration. Such processes and events include those which were not evidenced during the Quaternary Period or which, though evidenced during the Quaternary, are not reasonably likely to occur within 10,000 years.

The second point can be resolved by revising §191.13(b) as follows:

§191.13(b) "Any very unlikely release of waste to the accessible environment is projected to be less than ten times the quantities calculated according to Table 2 (Appendix)."

The NRC considers that the definition of very unlikely releases and §191.13(b) combine to address only the incremental release resulting from the very unlikely event or process itself. However, the total impact on the accessible environment associated with a very unlikely process or event would nevertheless consist of both the release resulting from the event itself and the cumulative release from the reasonably foreseeable events and processes that also occur. The NRC recommends that the EPA include in its statement of considerations appropriate language which documents this interpretation.

Section II - Containment Requirements

The NRC staff and contractors have completed extensive analyses of the achievability of the release limits of the proposed standards as we have construed them, using models and data independent of those used by the EPA. The results of these analyses (documented in NUREG/CR-3235 which has been transmitted separately) demonstrate that the proposed release limits should be achievable for reasonable ranges of geologic repository parameters and conditions.

These analyses used information available in the literature to define hypothetical repository systems in three types of rock: basalt, tuff and bedded salt. Parameters describing the disposal system were defined by ranges of data, and uncertainty analyses of repository performance were performed by sampling data values over the entire ranges. Thus, these analyses give both a "best estimate" of the achievability of the proposed release limits and an estimate of the likelihood that the limits would be exceeded.

The results of these analyses show that both "normal" releases and the releases following several different disruptive scenarios are quite likely to comply with the release limits of the proposed standards. A few releases which failed to meet the release limits were caused by selecting very pessimistic values from the input data ranges. These data values represent conditions (e.g., low radionuclide retardation) which would generally be regarded as tending to make a site unsuitable for repository licensing. The NRC therefore concludes that the proposed release limits are both achievable and appropriately restrictive to "weed out" poor waste disposal systems.

We note that judgment is needed when determining compliance with standards such as the proposed containment requirements. In order to explain this point, the NRC will include the following statement in 10 CFR Part 60 regarding the performance objectives of that regulation:

> While these performance objectives and criteria are generally stated in unqualified terms, it is not expected that complete assurance that they will be met can be presented. A reasonable assurance, on the basis of the record before the Commission, that the objectives and criteria will be met is the general standard that is required. For §60.112, and other portions of this subpart that impose objectives and criteria for repository performance over long times into the future, there will inevitably be greater uncertainties. Proof of the future performance of engineered barrier systems and the geologic setting over time periods of many hundreds or many thousands of years is not to be had in the ordinary sense of the word. For such long-term objectives and criteria, what is required

is reasonable assurance, making allowance for the time period, hazards, and uncertainties involved, that the outcome will be in conformance with those objectives and criteria. Demonstration of compliance with such objectives and criteria will involve the use of data from accelerated tests and predictive models that are supported by such measures as field and laboratory tests, monitoring data and natural analog studies.

The NRC believes that the proposed standards, if adopted, would need to be applied in accordance with these principles -- i.e., that there must be reasonable assurance, on the basis of the record, that the outcome will be in conformance with the limits specified by EPA. NRC would construe the standards so as to accommodate this approach. Nevertheless, EPA may want to amplify its discussion so as to eliminate unnecessary ambiguity.

Section III - Responses to EPA Questions

The following comments present the NRC's responses to the six questions for which the EPA specifically solicited public comment.

1. "Is our definition of high-level waste, which excludes any material with concentrations below the values specified in Table 1, a proper approach to distinguish between wastes which require maximum isolation (as in a geologic repository) and wastes which may be disposed of in less secure facilities?"

We believe the definition should be made compatible with the Nuclear Waste Policy Act of 1982 (NWPA). Since the Act contemplates that the NRC will define the term to cover highly radioactive wastes that require permanent isolation, it would be inappropriate to include any contrary provision in 40 CFR Part 191. In this regard, it should be noted that §121(a) of NWPA contemplates that EPA shall "promulgate generally applicable standards for protection of the general environment from offsite releases from radioactive material in repositories" without regard to the kind of radioactive material concerned. Accordingly, we recommend that the standards be revised to apply to high-level radioactive wastes as defined by the Commission under the provisions of the NWPA, and that Table 1 be deleted.

An appropriate change to the proposed standards to implement this recommendation is to change Section 191.02 (b) to read (additional text is underlined):

"(b) 'High-level radioactive wastes' <u>means (1) the highly radioactive material resulting from the reprocessing of spent</u>

nuclear fuel, including liquid waste produced directly in reprocessing and any solid material derived from such liquid waste that contains fission products in sufficient concentrations; and (2) other highly radioactive material that the Nuclear Regulatory Commission, consistent with existing law, determines by rule requires permanent isolation." means-any-of-the-following-that contain-radionuclides-in-concentrations-greater-than-those identified-in-Table-1-(Appendix):--(1)-liquid-wastes-resulting-from the-operation-of-the-first-cycle-solvent-extraction-system;or equivalent;-in-a-facility-for-reprocessing-spent-nuclear-fuel;-(2) the-concentrated-wastes-from-subsequent-extraction-cycles;-or equivalent;-(3)-solids-into-which-such-liquid-wastes-have-been converted;-or-(4)-spent-nuclear-fuel-if-disposed-of-without reprocessing:"

or

"(b) 'High-level radioactive wastes' means high-level radioactive waste as defined by the Nuclear Waste Policy Act of 1982."

2. "In choosing the proposed level of protection provided by the standards, have we taken an appropriate approach with regard to the long-term residual risks we may pass on to future generations?"

The NRC believes that the EPA's approach is an appropriate reflection of the Congressional finding in §111(a)(7) of the NWPA that

> "High-level radioactive waste and spent nuclear fuel have become major subjects of public concern, and appropriate precautions must be taken to ensure that such waste and spent fuel do not adversely affect the public health and safety and the environment for this or future generations."

In the draft EIS for 40 CFR Part 191, the EPA presents estimates of the levels of health effects expected from natural background radiation exposure, unmined uranium ore deposits, nuclear power generation and nuclear weapons fallout, and compares these levels with the impacts expected under the proposed standards (1000 health effects over 10,000 years from 100,000 MTHM). This comparison shows that the level of risk allowed by the proposed standards is comparable to the risks of unmined uranium ore, and is much lower than the other reference risk levels. The NRC considers this an appropriate approach for establishing risk levels for the EPA high-level waste standards, one that is consistent with the statutory direction.

Although the approach EPA has taken is a reasonable one, some of its underlying evaluation is open to question. We have several observations in this regard.

First, the NRC staff and its contractors have independently evaluated the relationship between the release limits of the proposed standards and the resulting level of health effects anticipated over 10,000 years. The results of these analyses indicate that EPA's environmental transport analyses may overestimate the number of expected health effects per curie of radioactivity released to the environment. We have not identified any systematic or gross over-conservatisms in the models or data used by EPA. However, it appears that a number of marginally conservative assumptions (e.g., cancer risk estimates, fraction of river flow used for irrigation, etc.), when considered together, may result in the acceptance of overly conservative estimates of health effects per curie released. We encourage EPA to reevaluate its environmental transport models and release limits in light of more recent information such as that used in NUREG/CR-3235.

The NRC agrees with the interval which EPA has selected to address long-term risks. However, the NRC believes that EPA's rationale for selecting an interval of 10,000 years should be strengthened. To that end, we recommend that EPA review the analyses in NUREG/CR-3235 in which the behavior of an undisturbed system is modeled for intervals up to 50,000 years, and it is seen that no dramatic degradation in performance occurs in any 10,000 year interval between 10,000 and 50,000 years.

3. "Have we chosen an appropriate approach with regard to the degree of protection that should be anticipated from active and passive institutional controls?"

4. "Should we adopt our proposed requirements to avoid siting disposal systems where there may be scarce or easily accessible resources -- a requirement which could rule out sites which might be advantageous in meeting all of our other requirements?"

5. "Should we adopt our proposed requirement that recovery of most of the wastes should be feasible if unforeseen events require this in the future--a requirement which might rule out some alternatives to mined geologic disposal?"

These questions address the "procedural" and "assurance" requirements which concern matters for which the NRC is responsible, and they will be addressed by the Commission in a separate letter.

6. "Is our choice of limits on total radioactivity released an appropriate approach to protecting the environment from these long-lived wastes? Or should we develop standards that limit maximum exposures to individuals instead?"

The NRC strongly supports the current form of the containment requirements (section 191.13) which limit the total amount of radioactivity projected to be released to the environment over 10,000 years. This approach would appropriately protect the environment while limiting the consideration of speculative and unnecessary dosimetry-related issues in a repository licensing review. A standard which specified maximum dose limits to individuals would have two major adverse effects:

- It would encourage dilution rather than containment of wastes (e.g., by siting repositories near prolific aquifers or large rivers), which the NRC considers to be an inappropriate approach to waste disposal, and

- It would needlessly inject into a licensing review questions of individual and societal lifestyles far into the future. These are difficult predictions to make even a few years into the future, and predictions over 10,000 years would be highly speculative. The approach adopted by EPA in developing these standards (limiting total activity released to the environment) would avoid this difficulty while still ensuring that a waste disposal system would achieve its intended function, i.e., long-term isolation of wastes from the environment.

COPY

DEC 27 1978

Dr. William Mills, Acting Deputy Assistant
Administrator for Radiation Programs
Office of Radiation Program (ANR-458)
U.S. Environmental Protection Agency
401 M Street, S. W.
Washington, D. C. 20460

Dear Dr. Mills:

We have been in close contact with your staff since last August, in discussions of the HLW standards which EPA and NRC are scheduled to issue soon. I believe it would be useful at this time for me to set down some of our ideas on the specific structure and implementation of regulatory standards.

There are three important regulatory elements for HLW disposal: (1) the EPA environmental radiation standard for HLW, (2) the NRC regulation for disposal of HLW, and (3) the NRC review and licensing process by which a specific repository is authorized. The NRC elements must be based on the EPA standard or, if they precede it, must be brought into conformity with it when it is promulgated. The NRC regulation and licensing action must implement the specific requirements of the EPA standard. This close relationship between the EPA standard and the NRC regulation and licensing actions makes us especially sensitive to the structure of the EPA standard and its explicit requirements.

We feel strongly that a deterministic method should be used to regulate nuclear facilities. We are aware that you are considering a substantially different type, a probabilistic standard which requires quantitative risk assessment. Based on our understanding of the virtues and the weaknesses of quantitative risk assessment, we are convinced that it can and should be used to provide insight on the quality and effectiveness of HLW disposal regulation, but it cannot be the explicit basis of the regulation which requires rigorous satisfaction because:

1. The analytical techniques are complex and there are many areas in them which are the subject of wide disagreement in the technical community.

Attachment A

2. These quantitative techniques are greatly dependent on the quantity and quality of the data upon which they are based.

3. In most cases where one confronts the analysis of low probability events, statistical uncertainties make rigorous use of the quantitative results impossible.

Standards for protecting public health and safety can be expressed as limiting levels of physically meaningful parameters, such as materials released, radiation dose, health effects (a deterministic standard), or as a probability of certain parameter levels being reached or exceeded (a probabilistic standard). In the first instance, the implementor is required to demonstrate compliance with physical limits on consequences, taking into account the effect of important potentially disruptive events such as floods, faulting, etc. Compliance in the second instance hinges on demonstration of the probability of occurrence (as well as the consequences, i.e., risk) of those events. Although there are no laws of science which preclude the possibility of performing such risk assessments on the long-term isolation of radioactive waste, the capability to perform such risk assessments in a manner sufficiently rigorous to serve as the primary basis for licensing decision does not now exist and there is no assurance that it will (or can) be developed in the next several years.

In the past two weeks we have been working on possible forms for a deterministic EPA standard which would be consistent with your analyses and with our need to implement its specific requirements. I suggest that we meet soon to discuss this matter further.

Sincerely,

Original signed by:
ROBERT B. MINOGUE

Robert B. Minogue, Director
Office of Standards Development

COPY

NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

CHAIRMAN

June 22, 1979

The Honorable Douglas M. Costle
Administrator
Environmental Protection Agency
401 M. Street, S. W.
Washington, D. C. 20460

Dear Mr. Costle: Doug,

Our staffs have been in close contact since last August, examining ways of relating the EPA numerical standard for high-level radioactive waste to the associated NRC regulation which is currently being developed. In this effort we have been using a working draft of the EPA standard which we received informally on January 18, 1979 (Enclosure A). I am writing this letter to provide you NRC staff comments on the technical and the structural aspects of the draft EPA standard.

With regard to the technical aspects, the NRC staff conducted a weeklong peer group review of the supporting technical information for the EPA numerical standard, including the work done by Arthur D. Little, Inc. (ADL). This review was made possible by the active participation and cooperation of the EPA staff with the peer group, which was composed of selected members of the NRC staff and consultants. Enclosure B is a copy of the report of that peer group entitled "Risk Assessment of Radioactive Waste Isolation in Deep Geologic Formations - NRC Review Group Report." We believe that the conclusion of this report should be given your serious consideration.

In summary, the peer review group concluded:

- Although analysis of risk (i.e., product of probability and consequence) can be useful in establishing environmental standards, its use does not necessarily require a standard based upon explicit probability values.

- The material available for review did not provide adequate technical support for the draft EPA standard.

- The degree of conservatism in the resultant risk curves is not known since the ADL work did not include uncertainty analysis (i.e., estimation of error bands for consequences and probabilities). Therefore it is impossible to determine how realistic the "high" and "low" risk estimates actually are.

360 066

Attachment B

7907130 559

- Neither a rigorous sensitivity analysis nor a systematic examination of a comprehensive set of potential repository failure mechanisms were included in the ADL work. The potential risk to public health and safety will depend upon the properties of the site -- including the radionuclides released -- as well as the particular failure mechanism chosen for calculation. Because the ADL repository model considered a limited range of site properties and possible repository failure mechanisms, the EPA conclusion which identified specific nuclides as dominating the risk cannot be confirmed.

As indicated previously, the peer review group used the Enclosure A working draft of the EPA standard to evaluate its structural aspects. This working draft includes explicit probabilities in its requirements. Without careful clarification, these probabilities could be presumed to be either based upon engineering judgment or upon highly sophisticated models -- complete with error band estimates for the probabilities. We are specifically concerned about the analytical precision which may be implied by citing a probability of as low as one in a million over 10,000 years, for releases from the repository exceeding proposed EPA limits. As it is presently drafted, the EPA standard would apparently require NRC to make a formal licensing finding in accordance with these specific probabilities. We have serious doubts that this would be possible because of the paucity of probability data in this field. Our experience, even in areas where the availability of data is significantly greater, convinces us that we must use a deterministic approach for licensing -- at least for the near future. This conclusion was previously conveyed to Dr. Mills by Mr. Minogue. (Letter dated December 27, 1978 -- Enclosure C.) We are particularly concerned that a proposed repository located at a hypothetically ideal site, with all the appropriate engineering barriers, might not qualify for licensing under the draft standard simply because DOE, as the license applicant, will be constrained by the geo-sciences state-of-the-art for predicting repository failures and might not be able to carry the burden of persuasion that the EPA criteria will be met. In this sense the NRC may not be able to implement the draft standard in a licensing context.

In addition to our concern about use of probabilities, the staff seriously doubts that a set of the key nuclide contributors to risk, as deduced from the ADL study with its limitations and as listed in the EPA standard, can be applied generally to determine the acceptability of a specific site since nuclide transport scenarios depend so strongly on the characteristics of the actual site.

In summary, while I feel our staffs have made progress in developing effective standards for the regulation of high level waste repositories, much work on both the technical basis and the form of the standard remains to be accomplished. We are especially concerned because our regulation development effort is proceeding on the assumption that a workable standard will be in place when it is needed. We are firmly committed to continue to assist in this challenging area of developing practical standards that assure protection of the public health and safety.

As you know, the Interagency Review Group Report called for EPA and NRC to develop a Memorandum of Understanding (MOU) on their development of standards for all phases of waste management activities. I would like to take this opportunity to propose that we start immediately to develop this MOU, giving the highest priority to an understanding on high level waste standards. The principal NRC staff contact in this matter is Karl R. Goller, Director of our Division of Siting Health and Safeguards Standards (443-5991).

Sincerely,

Joseph M. Hendrie

Enclosures:
(A) EPA Standard
(B) Peer Review Report
(C) Letter dated 12/27/78

360 068

COMMISSIONER AHEARNE'S ADDITIONAL COMMENTS ON THE PROPOSED EPA HIGH-LEVEL WASTE STANDARDS

I object to portions of EPA's proposal because I believe they go far beyond EPA's authority under Reorganization Plan No. 3 (which is the authority cited by EPA in the Federal Register notice). In particular I object to the "assurance requirements" (§191.14) and the procedural aspects of the variance section (§191.04(b)), and probably the "procedural requirements" (§191.15).

Background

Under Reorganization Plan No. 3 of 1970, EPA was given two functions relating to federal radiation control. First, it was given the standard setting authority of AEC:

> "...to the extent that such functions of the Commission consist of establishing generally applicable environmental standards for the protection of the general environment from radioactive material. As used herein, standards mean limits on radiation exposures or levels, or concentrations or quantities of radioactive material, in the general environment outside the boundaries of locations under the control of persons possessing or using radioactive material." Section 2(a)(6) (emphasis added).

Second, it was given "[a]ll functions of the Federal Radiation Council" (Section 2(a)(7), citing 274(h) of the Atomic Energy Act):

> "The Council shall 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 and in the establishment and execution of programs of cooperation with States." Atomic Energy Act, §274(h) (emphasis added).

In the early 1970's EPA and AEC had a jurisdictional dispute which was presented to the President. It was resolved in a December 7, 1973 memorandum from Roy L. Ash, Director of OMB, to EPA and AEC:

> "[There was a] difference of views between your two agencies as to which should have the responsibility for issuing standards to define permissible limits on radioactivity that may be emitted from facilities in the nuclear power industry.
>
> ....
>
> EPA has construed too broadly its responsibilities, as set forth in Reorganization Plan No. 3 of 1970, to set 'generally applicable environmental standards for the protection of the general environment from radioactive material.'
>
> On behalf of the President, this memorandum is to advise you ... that EPA should discontinue its preparations for issuing, now or in the future, any standards for types of facilities; and that EPA should continue, under its current authority, to have responsibility for

setting standards for the total amount of radiation in the general environment from all facilities combined in the uranium fuel cycle, i.e., an ambient standard which would have to reflect AEC's standards as to the practicability of emission controls."

Clearly, EPA has now gone far beyond setting ambient standards.

I do not go so far as to insist EPA set only ambient standards, primarily because over the last few years the NRC has developed Part 60 on the assumption that EPA would be the agency responsible for developing release limits under its standard setting authority. However, the same is not true for other sections of their proposed "standards."

Procedural requirements (§191.15) and Variances (§191.04)

EPA argues the "procedural requirements" of §141.15 are needed because "some of the procedures [EPA] used in [its] assessments must be retained to insure that the intent of [its] containment requirements is met." 47 FR at 58201. EPA appears to be addressing implementation of its standards, which is NRC's responsibility.

In addition, I specifically object to §191.04(b). I question whether any of the variance section is appropriately issued under EPA's standard setting authority. However, the Commission apparently did not object to a variance provision in Part 190 resembling 191.04(a). But I see absolutely no justification for EPA's prescribing that we publish a Federal Register notice and send a letter to governors of affected states.

Assurance requirement (§191.14)

My basic objection is to the "assurance requirements" in §119.14. In 1980 the Commission was briefed by EPA about its ongoing efforts to develop radiation standards, including those for high level waste. Of relevance to the "assurance requirements" is the following presentation by Mr. Egan, EPA on its high level waste standards:

"MR. EGAN: ...As David [Rosenbaum, EPA] indicated before, we had two authorities to work with in this area. One is to promulgate generally applicable standards like the mill tailings standards. The other is to propose better radiation guidance like the occupational guidance. This package has both types of proposals in it. ...

The two parts of the environmental standards would be Subpart A and B. Subpart A would apply to waste management operations and storage of these wastes. ...

What this action will do will just explicitly extend the same dose limitations that are in 40 CFR 190 to these other processes as well.

Subpart B, which is the standards for disposal, are then of course much different than standards we've developed before in 40 CFR 190, or in Part A of this standard. We are here discussing limits on projected releases over a 10,000-year period. ...

....

And of course the other part of the requirements for disposal which we propose to include as an appendix to the CFR language, the Federal Radiation Guidance containing general principles that should be followed for disposal systems. [emphasis added]

This part of the action would be promulgated somewhat differently, as David explained earlier, when we finally make the action final, in that the Federal Radiation Guidance of course would be recommended to the President for issuance as guidance. The Administrator cannot issue it directly by himself; whereas the standards Subpart A and B, say, would in fact be issued directly by the Administrator. [emphasis added]

DR. ROSENBAUM: Let me say one word about that. This complication arose very late in the process when our lawyers, just a month or so ago, decided that we couldn't issue the whole thing as a standard. We had to separate out part of this and issue it as guidance.

....

CHAIRMAN AHEARNE: Have you, on the seven general principles, could you say a few words on what approximately these are?

....

MR. EGAN: The simplest one is that releases from a disposal system should be reduced as low as is reasonably achievable. ...

Another one that is somewhat related but again different, is that the disposal system should use multiple barriers to isolate the waste; and that each of these barriers should be designed to provide substantial protection, even if the other barriers don't work the way they're supposed to. ...

Another would be that we believe that active institutional controls to protect the disposal system should not be relied upon for more than 100 years. ...

... It's an introduction to the next one which says that we believe waste should be disposed of promptly once you've got a system that will do it. ...

Another principle is that you should locate a site away from potential areas of resources -- both resources which are obvious that we now consider to be resources; but also away from areas where there are unique concentrations of materials that may be a resource in the future, even if they're not now. ...

....

> Another principle is just that you should record, and mark, and otherwise warn the future about the repository as well as you possibly can. ...
>
> ....
>
> The last one, and the one that usually requires more explanation than the others, is that we feel the waste should be disposed of what we call 'recoverably.'" Transcript of September 3, 1980 Commission meeting at 85-91.

However, EPA now simply asserts, "Under authorities established by the Atomic Energy Act and Reorganization Plan No. 3 of 1970, we are proposing generally applicable environmental standards for managing and disposing of these wastes." 47 FR at 58197 (December 29, 1982). EPA contends the "assurance requirements [which are a reincarnation of the proposed Federal Radiation Guidance] address and compensate for the uncertainties that necessarily accompany plans to isolate these dangerous wastes from the environment for a very long time." 47 FR at 58200. Thus EPA has changed its jurisdictional basis and is now using a justification which explicitly addresses implementation of the standards, which is clearly within NRC's jurisdiction rather than EPA's.

Some of these principles may be a good idea; with some modifications the NRC might agree with all of them; and EPA (under its FRC function) could recommend to the President that they be adopted as guidance. Thus one might argue we should simply let the issue pass, that raising the issue is simply a bureaucratic turf exercise. However, I disagree.

I believe this raises a question about the best framework for the waste program. Unlike the release limits, much of the discussion duplicates work NRC has done for Part 60, and to some extent EPA's tentative positions are inconsistent with ours. If EPA simply decides on its own what it wishes to do, there are going to be significant problems in the future when a specific application is affected by any differences since it will be difficult to resolve disputes among EPA, NRC and DOE. However, if the President chooses to address the matter and endorse some resolution (as a result of EPA exercising its FRC function), there will be a great deal more certainty when controversy arises at a later time in the context of a particular application.