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January 14, 1982

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Secretary of the Commission  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

ATTN: Docketing and Service Branch



94  
-2 et al  
(46 FR 38081)  
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-61  
(46 FR 51776)

Subject: Arkansas Nuclear One - Units 1 & 2  
Docket Nos. 50-313 and 50-368  
License Nos. DPR-51 and NPF-6  
Additional Comments on Proposed Rules  
on Licensing Requirements for Land  
Disposal of Low-Level Radioactive Waste  
(File: 3905, 2-3905)

Gentlemen:

The purpose of this letter is to submit additional comments to those contained in our October 21, 1981, letter (ØCAN1Ø81Ø7) on the Proposed Rulemaking on Land Disposal of Low-Level Radioactive Waste which was published in the Federal Register on July 24, 1981. The comment period was extended to January 14, 1982. Comments 1, 2 and 3 are contained in the October 21, 1981, letter.

COMMENT NO. 4 - TRANSURANICS

For most alpha-emitting transuranic (TRU) nuclides, the maximum allowable concentrations were calculated to be in the range of 10 nanocuries per gram. As was acknowledged in the proposed rule, the calculation was conservative in that it did not allow credit for dilution by other wastes. We feel that proper consideration of this factor alone could realistically increase the above allowable concentration by an order of magnitude or more. It must be recognized that the maximum allowable concentration of 10 nanocuries per gram limits the options available to the utility industry to reduce the volume of waste to be shipped by using incineration or other waste concentration technologies.

COMMENT NO. 5 - CHELATING AGENTS

In Table 1 of the Waste Classification Section 61.55, it states that wastes containing chelating agents in concentrations greater than 0.1% are not permitted except as specifically approved by the Commission.

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Generally speaking, we feel that this limit is itself overly restrictive. Also, the rationale for whatever quantitative limit is ultimately used should not be arbitrary, i.e., it should have a specifically delineated scientific basis.

COMMENT NO. 6 - THEORETICAL MAXIMUM SPECIFIC ACTIVITY

This term needs to be defined as to its meaning with regards to this proposed rulemaking.

COMMENT NO. 7 - LABELING

Differences between DOT and NRC regulations regarding to labeling need to be resolved prior to implementation to avoid confusion.

COMMENT NO. 8 - DE MINIMUS WASTE CLASSIFICATION

In the section "Class C - Intruder Waste", there is a discussion of a "De Minimus" classification for wastes which would be exempt from 10CFR Part 61. We understand from this section that the NRC in the next two years will work to define these wastes and "to provide for additional waste exceptions as appropriate." Arkansas Power and Light Company supports the need for a "De Minimus" concept and encourages the expeditious establishment of suitable criteria for this concept. A "De Minimus" classification would result in the conservation of valuable disposal site burial space while at the same time protecting the health and safety of the public. With this in mind, we urge the Commission to permit case by case reviews of requests for specific applications of the "De Minimus" concept during the period criteria are being developed.

COMMENT NO. 9 - ALARA IMPACTS

As has been previously stated, Table 1 in Section 61.55 has a footnote eliminating wastes containing chelating agents in concentrations greater than 0.1% except as specifically approved by the Commission. This requirement would eliminate most routine decontamination techniques to reduce occupational exposures and thus would adversely affect ALARA programs. Again, since at least one disposal site presently accepts wastes containing chelating agents in excess of 1% by volume, (a restriction which is a factor of 10 greater than that proposed in Part 61), it is not clear to us why this greater restriction is being proposed. Guidance on acceptable packaging and disposal techniques for these agents is needed.

COMMENT NO. 10 - NEED FOR REEVALUATION OF THE CONCENTRATION LIMITS  
IN TABLE 1 OF PART 61.55

Table 1 is a specific listing of radioisotopes with their respective concentration limits for three waste classifications. While it appears that some of the concentration limits shown are reasonable, demonstrating compliance for others would be most difficult because of problems in sampling, e.g., taking measurements with long delay periods for offsite transport which would then inevitably result in additional increases in personnel radiation exposures and increases in disposal costs.

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Additionally, the actual measurement of TRU in the 10 nanocurie per gram range while in the presence of other interfering radionuclides would be very difficult with today's technology. We do recognize that detection of 10 nanocuries per gram can be readily accomplished, however, if transuranic isotopes are the only ones present. Furthermore, it should be recognized that the present policy of volume reduction does increase the concentration of radionuclides in the waste and could cause the waste to exceed the Table 1 concentration limits. For these reasons, we feel that the concentration limits in Table 1 should be reevaluated to determine their ability to be achieved in a realistic situation and in a cost effective manner. Simply put, implementable technology does not exist at this time to realistically determine the concentrations characteristic of a given isotope, especially in dry trash.

COMMENT NO. 11 - SUPPORT OF AIF COMMENTS

Arkansas Power and Light Company endorses the comments prepared by the Atomic Industrial Forum Working Group on 10CFR61, Proposed Rulemaking on Licensing Requirements for Land Disposal of Radioactive Waste and on the Environmental Impact Statement - NUREG 0782. The AIF comments are hereby incorporated into ours by reference.

Sincerely,

*David C. Trimble*

David C. Trimble  
Manager, Licensing

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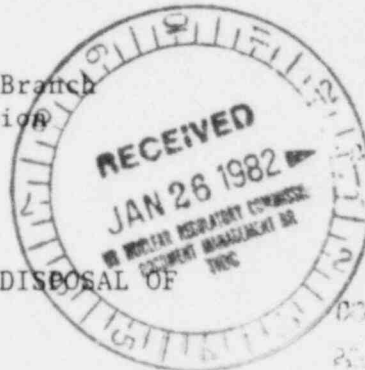
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Secretary of the Commission  
Attention Docketing and Service Branch  
U. S. Nuclear Regulatory Commission  
Washington, DC 20555

January 12, 1982

Dear Sir:

LICENSING REQUIREMENTS FOR LAND DISPOSAL OF  
RADIOACTIVE WASTE, 10CFR61  
46FR38081, JULY 24, 1981  
46FR51776, OCTOBER 22, 1981



PROJECT NUMBER  
46FR38081

PROJECT NUMBER  
46FR51776

(95)  
PR-2 et al  
(46 FR 38081)  
-61 (29)  
(46 FR 51776)

We are pleased to submit our comments on the subject proposed rule. We generally concur with the philosophy and recommended approach embodied in the proposed rule and believe the proposed rule to be appropriate in that it will serve to increase the consistency of practices and requirements imposed by various disposal sites.

V. Summary of Rule. On page 46FR38087, in the paragraph entitled "Operational Phase," it is stated that a license renewal application would be submitted every 5 yr after issuance of the license. We suggest that the first 5-yr interval should commence after the Commission authorizes the licensee to receive waste, since the license is issued prior to construction and the operational phase does not begin until construction is complete.

Section 61.24(g). We suggest this paragraph be replaced with the following:

Prior to completion of the construction of the facility, the licensee will make available for Commission inspection any information necessary to assure the Commission that the facility has been constructed in accordance with the applicable requirements established in the application. At or about the time of completion of construction, the applicant will submit an attestation to the Commission that the facility meets the applicable requirements of the license.

The attestation shall state the name of the applicant, the name and location of the facility, the time when the facility is expected to be ready to commence operation, and shall contain a statement that the facility meets the applicable requirements of and conforms to the application for a license for such facility.

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Within 10 days of receipt by the Commission of such attestation, notice thereof shall be published in the Federal Register. Thirty days following receipt by the Commission of such attestation, the licensee may commence waste disposal activities unless the Commission issues an order prohibiting or limiting such actions and explaining the reasons therefor.

Section 61.24(h). The Commission should not make any change to a license unless that change is first justified via the performance of a value/impact analysis.

Section 61.56(a)(1). This section requires that the waste package presented for disposal comply with NRC and DOT transportation regulations. This implies that the disposed package could or must be a Type A, Type B, or Large Quantity package including all related shielding and other transportation-related requirements. While it is unlikely that this is NRC's intent, the wording of the paragraph can be interpreted in this manner. NRC should clarify and reword this requirement.

Section 61.56(b)(1). The requirement that waste packages presented for disposal retain 95 percent dimensional stability after burial is inconsistent with the capability of most solidification processes. A solidified material can be packaged in a degradable container. Most solidification processes cannot fill a container 95 percent full. Therefore, when the container degrades, the waste form can compress to less than 95 percent of the original package volume.

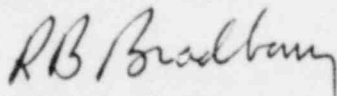
The 95 percent stability requirement as written, therefore, implies or requires the use of high integrity containers for solidified materials. The option of using a high integrity container in lieu of solidification then becomes no option at all.

Section 2.764(e). The initial issuance of the license and any amendments to the license should be justified via the performance of value/impact statements.

Section 20.311(b). The shipment manifest should also indicate the "radiation level" of the waste container to be buried as well as the other waste characteristics noted.

We appreciate the opportunity to assist in the development of this rule, and hope that the above comments will assist you in its finalization.

Very truly yours,



R. B. Bradbury  
Chief Licensing Engineer

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## HEALTH PHYSICS SOCIETY

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CHARLES B. MEINHOLD, President

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Telephone: (516) 282-4209

January 18, 1982

Secretary

U.S. Nuclear Regulatory Commission

Washington, D.C. 20555

Attention: Docketing and Service Branch

Re: Licensing Requirements for Land Disposal of Radioactive Waste;  
Proposed Rule 10 CFR Parts 2, 19, 20, 21, 30, 40, 51, 61, 70,  
73, and 170; 46 FR 38081, July 24, 1981

Gentlemen:

The Health Physics Society is a National organization of approximately 5,000 scientists and professionals engaged in the practice of radiation protection. The Society's primary objective is the development of scientific knowledge and practical means for the protection of man and his environment from the harmful effects of radiation while encouraging the optimum utilization for the benefit of mankind. It is in the sense of this objective that we offer, for your consideration and action, the following comments on the proposed rules referenced above.

These comments were developed by the Society's Committee on State and Federal Legislation and are offered on behalf of the Society by the Committee and the Society's Officers. We wish to acknowledge the cooperation of NRC's staff in providing some initial information on the proposed rules changes and the Environmental Impact Statement.

In general, we agree with the efforts by the Commission to develop the new Part 61 specifically addressing land disposal of radioactive wastes.

A common aspect of the proposed rules is the matter of how such radioactive wastes are classified (for use by shippers, i.e., waste generators; by processors, who consolidate shipments; and by the recipients, i.e., licensed land disposal facilities). The Health Physics Society members would be most affected by the proposed rules which apply primarily to generators, although we are also interested in the health physics practices expected of facility licensees to protect the employees, the "intruder," and the general public during several phases of the life cycle of the facility.

We therefore believe and recommend that NRC clearly separate the rules with which the generator must comply in separating, identifying, classifying, packaging, labeling, and shipping wastes from rules which are to be uniquely met by the licensed disposal facility. There is an obvious overlap in the system for classifying wastes as shipped and as received, to provide primarily for long-term

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protection from the operation of the facility. But the burdens of certification of packaging, etc. which fall on the shipper (or processor) should be clearly spelled out from those which fall on the facility licensee. We have attempted to address this fundamental issue in our comments below.

#### Waste Classification

Under the proposed rules, wastes are to be classified as either Class A Segregated Waste; Class B Stable Waste; and Class C Intruder Waste. Implied is a classification below Class A, a de minimis category, and a classification above Class C, for wastes which have concentrations in excess of Class C. Essentially, there are these five categories that both the generator, the processor, and the facility operator need to consider.

The Health Physics Society applauds the effort by the NRC to develop, at least for these proposed rules, a de minimis classification that would be exempt from Part 61 (and other parts of 10 CFR that relate to low level radioactive wastes). These wastes would be considered to be a negligible hazard of no regulatory concern and could be disposed of perhaps in a sanitary landfill. We encourage the use of such exemptions such as was done in 46 FR 16230 for specified waste forms and concentrations, and recommend that an exemption (or de minimis) category be included in the Part 61 classification system.

We are concerned that Table 1 (46 FR 38097) has too many requirements crammed in the columns and footnotes, setting forth both the classification requirements and waivers and other key provisions in one table. We urge NRC to dismantle this table and express the requirements for each classification in both tabular and narrative form, with a separate table for each class (from exemptions through above Class C). Each separate table should define a range of concentrations or quantities that fall within that classification, and include the waivers that may apply to that group. Certainly, the matter of disposing of radioactive wastes containing chelating agents deserves more attention than a non-referenced footnote to the current Table 1. Similarly, beta-emitting nuclides with little or no gamma radiation, beta-emitting nuclides with significant gamma radiation, and alpha-emitting isotopes other than radium should have been clearly listed in the table, and not buried in a footnote. It appears that the concentration limits for such beta emitters, those not specifically listed, are unduly restrictive. Since the classification system has great impact on the shipper in the packaging and also the use of the manifest system (see below), the separate subparts of 10CFR61 must be easily understood side by side. The current conglomerate shown as Table 1 cannot permit an easy understanding as currently written.

To properly use the classification system proposed within Table 1, and the various footnotes and waivers, the generator will be required to perform monitoring and analysis of each container during waste separation and packaging. A major sampling problem could result if the generator-licensee had to prove that each container met the classification requirements stated on the labels or in the manifest. Recognition of the limits of instrumentation would assist NRC in the final development of suitable concentrations within each classification in the recommended expansion of Table 1 and footnotes. The instruments limit the ability of generators of such wastes to carry out the classification process. We understand that detection of TRU at 10 nCi/g is possible when only TRU isotopes are present. We suggest that the figure for Class C limits for TRU wastes of 10 nCi/g be increased to perhaps

100 nCi/g, which would still provide protection for the health and safety of workers, intruders, or the public.

#### Waste Characteristics (61.56)

Paragraph (a) states that the requirements are intended to facilitate handling "at the disposal site" and "provide protection of health and safety" presumably all the way from the generator's facilities via transportation to the disposal facility. Yet, subparagraphs (1), (2), (3), (6), and (7) emphasize packaging requirements while subparagraph (8) refers to treatment of biological, etc. wastes. Subparagraphs (4) and (5) also apply primarily to the generator of the waste, who has the most control over toxicity or explosive problems. These sections place a heavy burden on licensees disposing of radioactively-contaminated biological or infectious material, particularly medical licensees, if the infectious concentrations are not known.

Paragraph (b) translates these requirements (which are primarily within the control and responsibility of the generator) into requirements for handling at the site to provide stability of the waste for 150 years or more. Hence the structural stability requirement becomes the long-term responsibility of the generator, as does the requirements for keeping liquids low and void spaces to a minimum. Does "practicable" in 61.56(b)(3) imply compaction or solidification? Would continued land disposal of liquid scintillation fluids be permitted?

We are concerned that a generator will be held responsible for certifying that his waste, at the time of shipment, has been packaged so as to meet the stability requirements (of maintaining physical dimensions within 5% and its form under 50 psi and other factors for over 150 years). A separate rulemaking on the stability requirements for containers, as shipped by generators, would be useful. Perhaps these requirements could be identified clearly as shipper responsibilities and included in the revision of 10 CFR 71.

#### Labeling (61.57)

The labeling of each container is the responsibility of the waste generator and requires an understanding and use of the classification system lumped into Table 1. Does NRC intend to require standards labels, warning signs, or other markings to supplement or replace current DOT labels? A clear set of classification markings would facilitate the land disposal operations and assist radiological emergency personnel who may have to respond to accidents involving low level waste en route to disposal facilities. Generators have some correct concerns over the precision with which they are expected to analyze the nuclide content. This is virtually impossible to do in a quantitative manner so the "less than" statements are usually employed.

#### Protection (61.41, 61.42, 61.43)

The Society recognizes the need to assure radiation protection for employees, possible intruders, and the general public during land disposal facility operations and beyond. We recommend that each of these groups be properly protected using limits in 10 CFR 20, as currently written or as proposed, rather than proposing a system of new and unique limits related to waste disposal. The establishment of a unique system of dose limits for a separate area of the nuclear fuel cycle seems unnecessary and may imply a special need for protection in the minds of the public; thereby exacerbating an already confused public perception of radioactive waste disposal issues.



Specific Technical Information and Technical Analysis (61.12, 61.13)

We concur that applicants for a facility license should include in the standard technical specifications a radiation protection program (item k) and an environmental monitoring program (item l). Much of the future success of a national land disposal operation for radioactive waste lies in achieving proper radiation protection for employees, intruders, and the public. All would be adequately safeguarded by emphasis on thoroughly planned and implemented radiation protection and environmental control programs. Obviously, these programs require proper analysis of instrumentation readings, maintenance of disposal logs, etc. to verify meeting of applicable requirements of Parts 20 and 61. Monitoring and analytical requirements for occupational exposures should be consistent with the criteria for ALARA.

Transfer for Disposal and Manifests (20.311)

The purpose of this section is described as being designed to control transfer of waste and establish a manifest tracking system. On the face of it, the need for a manifest system follows automatically from the increased emphasis on a new classification system for waste, on new packaging and labeling requirements, and on placing responsibility for compliance with these new requirements on the waste generator.

We therefore recommend that the proposed manifest system requirements be included in revision to 10 CFR 71, Packaging of Radioactive Material for Transport ... and be applicable to the wide range of radioactive material shipments for the sake of consistency. The manifest system for radioactive wastes should be identical to the manifest system for any other radioactive material - or to any other hazardous material during transport.

There is clearly a need to establish a labeling system for packages intended for land disposal of radioactive wastes that is consistent with labels for packages containing other radioactive material - or other hazardous material. The labels and manifest information must obviously be identical and consistent with any label or manifest for any shipment of radioactive material.

With regard to the specific requirements of the proposed manifest system, we concur that, to be meaningful, there must be clear identification of each package on the package exterior and in the manifest papers, whether the package is labeled by the generator or a processor. The proposed content of the manifest papers and the number of copies seems to be good business practice which should be followed even in the absence of Federal regulations, as well as good health physics practice. 46 FR 38086 indicates that using the manifest system and improving the data base on waste disposal "will improve the credibility of decision-makers..." among other stated benefits. Perhaps NRC could clarify this statement. Whose credibility needs to be improved; to whom; how much credibility will be improved and at what cost? If the proposed manifest system is, as stated, compatible with current DOT requirements, but "...somewhat more specific..." why not simply require generators to comply with slightly modified DOT requirements?

The new manifest system is described as being "...inspectable..." presumably by NRC's inspection staff. Yet, NRC staff currently inspects against DOT requirements applicable to radioactive material.

As indicated above, the entire responsibility for classification and conformance to waste characteristics falls upon the generator not just during the initial transportation but for the next 150 years (61.56(b)(1)). We suggest that such a warranty be either specifically required in writing on each manifest or that a system of shared responsibility between generator and facility licensee be permitted. The generator will warranty that, to the best of his knowledge and efforts, the packages being shipped will meet the long-term, 150-year criteria at the time and place of shipment. The facility licensee will warranty to NRC or the State that, to the best of his knowledge and efforts, the packages as buried will meet the same criteria. The form of quality assurance programs by both the generator or processor to meet these criteria may need to be spelled out in more detail.

#### Regulatory Impact

The NRC sets forth the basis for the proposed rules and refers interested parties to NUREG-0782, the draft EIS, Volumes 1,2,3 and 4, issued September 1981. In the preparation of these comments, no detailed study of NUREG-0782 has been attempted. The following comments are based on discussions with persons who have made that effort and in response to issues raised in 46 FR 38088.

The proposed rule changes will have an impact on significant numbers of persons including organizations licensed by NRC and agreement States and users of non-licensed radioactive material who offer such material as wastes for final land disposal. Much of this impact will be positive providing clear and consistent criteria for the safe disposal of such wastes and thereby encouraging the optimum utilization of radiation for the benefit of mankind, as a result of resolving the land disposal issue. Proper standards for licensing land disposal facilities are urgently needed to permit additional sites to be developed and offered to generators.

The Health Physics Society Committee on State and Federal Legislation has not specifically addressed the process through which future land disposal facility applicants will have to go to achieve a license. We note briefly, with concern, that the opportunities for hearings, through Atomic Safety and Licensing Boards, with further appeals, etc., may result in excessive delays in achieving new sites unless issues that might be contended are limited to those identified in the proposed rule and discussed in the accompanying draft EIS, including the final EIS. Reasonable time limits may have to be set for ASLB hearings for specific sites.

The proposed waste characteristics (61.56) imply there will be the development of new containers. While 46 FR 38088 states that "... very few small entities" generate wastes subject to the new requirements. It must be recognized that the larger entities (nuclear power plants, major research laboratories, hospitals, radio-pharmaceutical companies, etc.) would be greatly impacted by new waste packaging criteria that result in the need for entirely new waste containers.

Regarding federal rules which overlap the new proposed requirements, particularly those impacting on generators, if there is to be no conflict with existing rules, i.e., for manifests, we recommend that NRC determine that a further regulatory need exists for such manifests, at least for a unique system for manifests for radioactive wastes. The entire perception of the casual reader to the proposed

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rules and the EIS would be that a major long-term public and occupational health problem is created by the operation of land disposal facilities for low level radioactive wastes. Hence, the NRC has proposed rules which, according to the Federal Register notice, are compatible with, and possibly duplicative of, existing Federal regulations, but with an increasing intensity and specificity to a perceived unique problem. Not only are rules proposed for the disposal facility, but more and different NRC rules are proposed for the packaging and labeling of each container; presumably on the argument that if each container meets the classification requirements, the sum of all containers (the disposal facility contents) will meet health and safety criteria for at least 150 years. The scope of the new rules imply a regulatory deficiency that requires a program of 150-year stability, to be certified in advance as being able to meet health physics objectives over the future. We believe the need for land disposal facilities is imperative and that the new proposed rules should reflect a less deficient and less desperate current practice.

Sincerely yours,

Charles B. Meinhold  
President



# State of California

GOVERNOR'S OFFICE  
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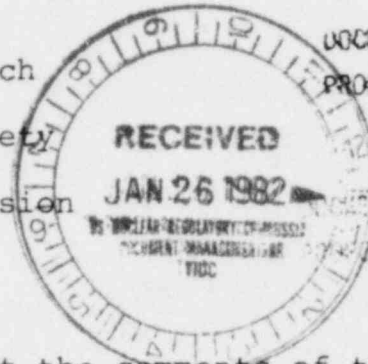
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January 12, 1982

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R. Dale Smith, Chief  
Low-Level Waste Licensing Branch  
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U.S. Nuclear Regulatory Commission  
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DOCUMENT NUMBER  
PROPOSED RULE PR-2etal (93)  
(46 FR 38081)  
DOCUMENT NUMBER PR-61 (26)  
PROPOSED RULE (46 FR 51776)

Dear Mr. Smith:

We are pleased to transmit the comments of the State of California on the Nuclear Regulatory Commission's proposed rulemaking on land disposal of low-level radioactive waste (10 CFR Part 61) and the related draft environmental impact statement (EIS). Because these two documents are closely related, this letter transmits comments on both. However, to facilitate differentiation of the issues, each will be discussed separately.

## PROPOSED RULEMAKING ON LAND DISPOSAL OF LOW-LEVEL RADIOACTIVE WASTE (10 CFR Part 61)

The comments of various State agencies on the proposed rulemaking are included below. I would like to raise the following additional points.

1) Part 61.52(a)(6) states that the "waste must be placed and covered in a manner that limits the gamma radiation at the surface of the cover to levels that are within a few percent above the natural background levels of the site" (emphasis added). This terminology is unnecessarily vague. We recommend that the term "a few percent" be replaced with a specific number.

2) Part 61.55. With regard to waste classification, we share the view that segregating waste into different classes can be beneficial from the standpoints of protecting public health and maximizing disposal economies. However, the language of the rulemaking does not appear to definitively rule out the possibility of a "low-level" disposal site for transuranic-contaminated waste. Part 61.55(d) states that waste with a concentration exceeding the values shown in the accompanying table is not acceptable for near-surface disposal

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"without specific Commission approval pursuant to Part 61.58 of this Part". Part 61.58 is one very brief paragraph which appears to permit the Commission to authorize "other provisions for the classification and characteristics of waste on a specific basis" measured against criteria and an evaluation process which are not specified in any way. It is therefore unclear to us under what conditions the Commission would exercise its authority under Part 61.58 and whether or not waivers could be granted for waste that exceeds the concentrations in Column 3 of Table 1. Our view is that transuranic-contaminated waste should under no circumstances be considered low-level waste and should not be included in low-level waste disposal sites. Rather, this material should be disposed of at the specifically-designated sites operated by the federal government to receive and dispose of transuranic-contaminated waste.

3) Part 61.54, similarly, in one brief paragraph appears to permit the Commission to authorize provisions other than those set forth in detail in Parts 61.51 through 61.53 of the proposed rulemaking without any discussion of the considerations that would go into such a decision. One can only wonder why the specific elements of this rulemaking are included if the Commission is empowered at the same time to unilaterally change the requisite requirements for segregation and disposal of waste on the basis of what appears to be an arbitrary finding. This part should be clarified or deleted.

4) Part 61.62 -- Funding for disposal site closure and stabilization. The financial arrangements, while on the right track, do not appear to us to be sufficiently comprehensive. It is unclear whether the annual review by the Commission of the financial arrangements would include the requirement that the size of the post-closure funding be increased on an annual basis to account for inflation and unforeseen problems and costs. The financial surety arrangements mentioned in subparagraph (g) (surety bonds, cash deposits, certificate of deposits, etc.) are not instruments which increase in value over time to compensate for the effects of inflation. We suspect that a device such as a sinking fund would be a preferable vehicle, but this receives no mention. Additionally, there is no mention whatsoever of the funds that would be required or the source of such funds if problems should occur at the site which would require considerably greater post-closure expense than that budgeted on an assumption of normal operation. Surely the experience of the State of Kentucky with Maxey Flats testifies to the importance of making contingency funds available in the event that serious problems occur. This issue should be addressed and the rule-making changed accordingly.

5) Subpart F -- Participation by state governments and Indian tribes. We are disturbed by the tenor of Subpart F. As drafted, it appears to set up an adversary relationship



between the states and the federal government. Rather there should be full cooperation between state government and federal agencies in all phases of low-level waste management. This rulemaking as drafted does not lay the groundwork for that cooperation. For example, the state proposal for participation required under Part 61.72(b) and (c) calls for a submission by the state of various specific items of information at a time so early in the process that all the state's concerns may not yet be apparent because of lack of information. While we understand the Commission's desire to avoid an unnecessarily protracted participation by a hostile state, nonetheless the legitimate interests of state governments should be accommodated in a more thorough and flexible manner. The regulations as drafted do not accomplish this. Note also in Part 61.71 the statement that "upon request of a state or federal government body, the director may make available Commission staff to discuss with representatives of the state..." (emphasis added). As a first step in the right direction, surely the word "may" should be replaced with "shall." This section should be completely revised to facilitate collegiality between the federal government and the states.

6) Part 61.82 -- Commission inspections of land disposal facilities. We thoroughly endorse the notion that the Commission should be afforded an opportunity at all reasonable times to inspect radioactive wastes and the premises, equipment, etc. An explicit provision should be added that host states enjoy a similar right.

7) Part 2, Subpart 2.764 (a)(b)(e). The intent and consequences of these parts are unclear. They appear to authorize an initial decision by the Commission that would preclude effective appeal by either a concerned party or state. Immediate effectiveness, as it has been implemented by the Commission in reactor licensing, has had the effect of denying states effective participation, discouraging cooperative efforts between state and federal governments, and rendering state's appeals ineffectual, since a facility would commence operation before appeals had run their course. The implications of these sections should be clarified.

Below you will find additional detailed comments of various State agencies on the proposed rulemaking.

THE RESOURCES AGENCY

With regard to site suitability described in Section 61.50(a)(5), the criteria should be changed to require a lower risk of flooding. Currently, the section would allow waste disposal in a floodplain that is likely to be flooded less than once every 100 years. The current ratings of flood risks are crude at best. For example, in California we have had floods rated as a 100-year flood and as a 300-year flood, both within the last 25 years. This experience has led many people to suggest that our estimates of flooding potential are much too low.

Based on the California experience, we would suggest that the 100-year floodplain discussed in the regulation should be increased to at least a 300-year floodplain and, preferably, to a 500-year floodplain. Where the purpose of the disposal site is to keep the wastes isolated for a period of at least 500 years, surface flooding of that site should be avoided within our best estimates of what would be likely to happen within that 500-year period. The experience at Maxey Flats, Kentucky, should convince people that flooding of the disposal site should be avoided.

Third, the performance objective in Section 61.2 concerning protection of individuals from inadvertent intrusion should be strengthened. Some kind of permanent sign or warning device should be in place at the perimeter of the site. The warning sign or symbol should be designed to last 500 years and to remain effective as a communicator, even if the language spoken in the area changes within that period. An example could be a combination of the skull and crossbones and the symbol for nuclear radiation.

Fourth, although the regulations describe minimum requirements for waste characteristics to be accepted at a disposal site, the regulations do not appear to require some kind of checking of the condition of the materials at the site. A site could experience the problems found in the past when sealed steel drums were delivered for disposal and no one knew what the drums contained. If there is no program for checking the contents of the drum, either at the site of origin or at the disposal site, the requirements for waste characteristics may well be ignored by many of the waste generators.

#### OFFICE OF EMERGENCY SERVICES

Following closure, the draft assumes the State becomes the site owner (pp. 3-36 of NUREG-0782, V-2.). However, paragraph 61.59 of Part 61 states either the state or the federal government shall become the site owner. Governmental ownership is certainly desirable; however, the apparent conflict should be clarified.

Paragraphs 61.1 and 61.3 indicate that licenses will be issued by the NRC. In paragraph 61.70 through 61.73, provision is made for a state or tribal government to participate in the licensing process, yet it is quite clear the NRC retains sole authority to issue the license. This suggests that a local jurisdiction has neither a voice in determining whether or not a site is established in their locale nor the conditions under which it is established and operated. The NRC should take steps to facilitate participation by affected local governments, including consideration of funding such participation.

If the State government has little or no real control during the functional life of the site, there is some question whether it would wish to assume responsibility for the site when it was closed. This would be especially questionable if the new site owner (i.e., the State) was expected to fund the cost for maintenance and monitoring.

Although several methods are mentioned for providing funds to the institutional authority, the rule makes no provision for it. In fact, the Commission admits it has no authority to "...require land disposal facility licensees to provide financial responsibility for activities occurring after the original licensee's responsibilities have ceased and the license has been transferred to another party." We would suggest the Commission ask Congress for authority to require financial assurances for licensees for the active institutional control period.

For additional comments please see Part 7.2 below of the comments on the environmental impact statement.

DEPARTMENT OF CONSERVATION

The California Department of Conservation (CDC) has reviewed the subject document for its geotechnical and procedural aspects. We . . . feel Section 61.72 is very important, providing for State participation in the review of any license application that affects the State. These procedures are very important to assure a real opportunity for the states, and thereby any affected local government, to have an effective input in the low-level waste (LLW) disposal process and specific site decisions which inevitably will impact all "host" states.

However, we believe that there is a significant defect in Subpart D, Subsection 61.50, Disposal site suitability requirements for land disposal. These requirements will not provide adequate protection to usable groundwater or to the environment from radionuclides that could be transported from the site by groundwater.

None of the stipulations in the disposal site criteria refer specifically to preventing migration of radionuclides into usable groundwater. Item (7) in Subsection 61.50 states, "The disposal site must provide sufficient depth to the water table that groundwater intrusion, perennial or otherwise, into the waste, will not occur. The Commission will consider exceptions to this requirement if it can be conclusively shown that disposal site characteristics will result in diffusion being the predominant means of radionuclide movement and the rate of movement will result in the performance objectives of Subpart C of this part being met."

Our concern is that the above-quoted stipulation is concerned only with groundwater intrusion into the facility and, furthermore, would allow diffusion of radionuclides in groundwater as an acceptable concept in the disposal of waste.

What is lacking in these criteria is the fail-safe approach to planning and design. The uncertainties inherent in geologic, design, and operational factors for any LLW site cast serious doubt on the assumption that the wastes can be guaranteed to be isolated for the prescribed time. If radionuclides should prematurely escape from their confinement at the site, it would be difficult and expensive, if not impossible, to prevent their contaminating the groundwater. Therefore, CDC recommends that Item (7) in Subpart D, Section 61.50 be rewritten as follows:

Department of Conservation (continued)

The disposal site must not be located 1/ within basins containing usable groundwater or their recharge areas, or 2/ within geologic formations which will permit the diffusion of radionuclides to the environment, or their transport by groundwater to a degree exceeding the performance objectives of Subpart C.

We recognize that the adoption of this recommendation will have the effect of decreasing the number and size of the search areas which would be eligible for consideration as potential LLW sites. Nevertheless, we believe that the seriousness of the risk of any radioactive contamination of groundwater warrants this degree of effort to assure that even if radionuclides were to escape, they could not contaminate any usable aquifer.

The regulations also fail to specify in Subpart G, Subsection 61.81 the nature and extent of Records, Reports, Tests and Inspections which will be required to ensure compliance with Subpart D - Technical Requirements for Land Disposal Facilities. Greater specificity is necessary regarding geologic, hydrologic, and other types of surveys and/or research to determine that potential sites comply fully with the regulations.



DRAFT ENVIRONMENTAL IMPACT STATEMENT  
ON 10 CFR PART 61 "LICENSING REQUIREMENTS  
FOR LAND DISPOSAL OF RADIOACTIVE WASTE"

The Draft Environmental Impact Statement is an important accompanying document, without which the proposal rule-making would be difficult to assess. Comments from several state agencies are included below. First, however, I would like to make a few additional points.

1) Part 2.3 -- Alternative Disposal Methods. The EIS discusses briefly ocean disposal of low-level wastes. Although this disposal alternative is not addressed in detail within the EIS, we want to express our opposition to the use of the oceans for disposal of low-level wastes.

2) Part 4.6.1 -- Institutional Control Requirements. We support the concept of permitting disposal of low-level wastes only on land owned by the federal government or by the states, since the need for control of near-surface disposal facilities will last, in some cases, for several hundred years.

3) Part 5.5.1.2(2) -- Site Characteristics. With regard to the location of future sites, we believe the criteria should be changed to require a lower risk of flooding. We reiterate our comment (see comments above from The Resources Agency) that the 100-year floodplain may not be conservative enough. We suggest that a 300-year floodplain or, preferably, a 500-year floodplain be required to avoid surface flooding of a site.

4) Part 5.5.1.3(2) -- Design and Operations. We share the view that prior to any license application, the applicant shall gather information concerning "the ecology, meteorology, climate, hydrology, geology, and seismicity of the site." However, we disagree with the requirement that "for those characteristics that are subject to seasonal variation, data shall cover at least one full year." We believe this should be strengthened. Any locale's susceptibility to changing environmental factors requires that an attempt be made to gather historical data so as to try to accurately reflect how a proposed site has changed over time. We suggest that this section be amended to require collection of historical data going back a reasonable period of time, to the degree such collection is feasible.

5) Part 7.2 -- Waste Classification Based Upon Consideration of a Potential Inadvertent Intruder. The discussion of financial requirements during the operation of the

postclosure period touches on most of the relevant issues. However, there is a lack of depth to the analysis, and adequate solutions are not suggested for problems that have been identified. For example, per our comments above, it is clear that a sinking fund or some similar financial assurance mechanism would be the most preferable alternative for ensuring that necessary funds will be available for the lifetime of the site (i.e., including postclosure lifetime). Steps should be taken by the Commission to seek the authority to explicitly require that a sinking fund be established. Instead, the document endorses less satisfactory alternatives while at the same time the Commission recognizes the shortcomings of this approach. Additionally, the EIS, like the draft rulemaking, fails to account for the possibility of serious problems occurring at the site. It does not make contingencies for such problems or for the costs which a state would no doubt incur if such problems occurred. This is a major failing of the document and should be rectified. Costs and cost estimates should reflect the possibility of a serious failure of the site -- a failure of greater consequence than those that have already occurred at existing sites.

6) Part 7.2.6 -- Transuranic Isotopes. We support the retention of the 10 nanocurie per gram limit for surface disposal of low-level waste. We believe that wastes that exceed this limit should not be considered low-level waste and should not be buried at commercial low-level waste disposal sites.

7) Part 8.4 -- State, Tribal, and Public Participation. We would like to reiterate our point made earlier in Part 61.71 of the proposed rulemaking that there should be full cooperation between the state and federal governments in all phases of low-level waste management. This cooperation will strengthen the working relationship between the states and the federal government and thereby facilitate the safe establishment of necessary new disposal sites.

Below you will find additional detailed comments of several state agencies on the draft Environmental Impact Statement.

STATE WATER RESOURCES CONTROL BOARD

General Comments:

1. In California, disposal to land of all but very low level radioactive wastes is prohibited by state law (California Administrative Code, Title 17, Section 30288, attached).
2. The entire document fails to emphasize the need to prevent significant movement of pollutants from the disposal site to underlying ground water. The placement of an impervious cap over the waste will not preclude gravity drainage of liquid pollutants through a pervious trench bottom. Further, if the trench walls contain pervious beds (even lenses or "stringers"), water from precipitation or other nearby sources can move laterally into the trench, leach out pollutants, and then percolate vertically to underlying ground water. These ground water pollution threats can be essentially precluded by requiring disposal trenches to have impervious bottoms and sides. An engineered impervious barrier such as a clay liner could be required for each disposal trench. Better yet, the trench site should be in an area having a substantial thickness of clay. (See Class I Disposal Site Criteria, California Administrative Code, Title 23, Section 2510.)

Specific Comments:

1. Summary, Page 11. - The abbreviations, "PWR" and "BWR" should be interpreted (re Report Page 3-10, bottom).
2. Report, Pages 10-6 and 13 et seq. - The southwest "hypothetical regional site" is described as serving the western half of the country. The "High Plains" location, however, is far from the significant concentration of nuclear generating facilities on the west coast. It would be more appropriate for the western hypothetical site to be located near the west coast facilities.
3. Proposed Rule 10 CFR Part 61:
  - A. Section 61:40 sets standards to avoid excessive exposure to humans. Excessive exposure to animal life should be avoided also.
  - B. Section 61:50 should include criteria requiring impervious material (natural or "engineered") beneath and along the sides of all disposal trenches.

(b) Excreta from individuals undergoing medical diagnosis or therapy with radioactive material shall be exempt from any limitations contained in this section, provided that the user provides for appropriate radiological monitoring whenever any waste line in the user's installation which may carry such excreta is opened.

30288. Disposal by Burial in Soil. (a) No user shall dispose of radioactive material by burial in soil unless:

- (1) the total quantity of radioactive material buried at any one location and time does not exceed, at the time of burial, 1,000 times the amounts specified in Section 30356, Appendix B, and
- (2) burial is at a minimum depth of four feet; and
- (3) successive burials are separated by distances of at least six feet and not more than 12 burials are made in any year.

(b) The department will not approve any application for license to receive radioactive material from other persons for disposal on land owned by the Federal or State Government.

30289. Treatment or Disposal by Incineration. No user shall treat or dispose of radioactive material by incineration except as specifically approved by the department pursuant to Section 30345.

NOTE: Authority cited, Sections 102, 308, 25811, Health and Safety Code

History: 1. New section filed 7-22-71, effective thirtieth day thereafter (Register, No. 30).

#### Article 6. Records, Reports and Notifications

30293. Records. (a) Each user shall maintain accurate and complete written records, as follows:

- (1) The results of each required calibration, survey and test.
- (2) Each receipt, transfer, and disposal of a source of radiation.
- (3) Radiation exposures of all individuals for whom personnel monitoring is required under Section 30276. Exposure records shall be kept on department Form RH-2365 or in a manner which includes all the applicable information required on said form. Each entry shall be for a period of time not exceeding one calendar quarter.
- (4) Results of medical examinations and bio-assays pursuant to Section 30277.

(b) Each required record of dose received by individuals and of medical examination and bioassay shall be preserved indefinitely or until the Department authorizes their disposal. Each other required record shall be preserved for a period of three years following the date of the occurrence that is the subject of such record.

#### 30358. Appendix B.

##### APPENDIX B

Radionuclide	Microcuries	Radionuclide	Microcuries	Radionuclide	Microcuries
Americium-241	100	Iodine-134	10	Silver-105	10
Antimony-122	100	Iodine-135	10	Silver-110m	10
Antimony-124	10	Iridium-192	10	Silver-111	10
Antimony-126	10	Iridium-194	100	Sodium-22	10
Arsenic-74	100	Iron-55	100	Sodium-24	10
Arsenic-76	10	Iron-59	10	Strontium-85	10
Arsenic-78	10	Krypton-85	100	Strontium-89	10
Arsenic-79	100	Krypton-91	10	Strontium-90	10
Barium-131	10	Lanthanum-140	10	Strontium-91	10
Barium-133	10	Lead-210	0.1	Strontium-92	10
Barium-140	10	Lutetium-177	100	Sulphur-35	10
Beryllium-7	100	Manganese-52	10	Tantalum-182	10
Bismuth-210	1	Manganese-54	10	Technetium-96	10
Bromine-82	10	Manganese-56	10	Technetium-97m	10
Cadmium-109	10	Mercury-197m	100	Technetium-99m	10
Cadmium-115m	10	Mercury-201	10	Technetium-99	10
Cadmium-115	100	Molybdenum-93	100	Tellurium-125m	10
Calcium-45	10	Neodymium-147	100	Tellurium-127m	10
Calcium-47	10	Neodymium-149	100	Tellurium-129m	10
Carbon-14	100	Nickel-59	100	Tellurium-130m	10
Cerium-141	100	Nickel-63	10	Tellurium-131m	10
Cerium-143	100	Nickel-65	100	Tellurium-132	10
Cerium-144	1	Nickel-66	10	Tellurium-134	10
Cerium-131	1,000	Nickel-67	10	Tellurium-136	10
Cerium-134m	100	Nickel-68	10	Thallium-200	10
Cerium-134	1	Nickel-69	10	Thallium-201	10
Cerium-135	10	Nickel-70	10	Thallium-202	10
Cerium-137	10	Osmium-191m	100	Thallium-204	10
Chlorine-36	10	Osmium-194	100	Thorium (natural)	10
Chlorine-38	10	Osmium-197	100	Thorium-232	10
Chromium-51	1,000	Palladium-103	100	Thorium-234	10
Cobalt-55m	10	Palladium-105	100	Thorium-230	10
Cobalt-58	10	Phosphorus-32	10	Tin-113	10
Cobalt-60	10	Platinum-191	100	Tin-125	10
Copper-64	1	Platinum-193m	100	Tungsten-181	10
Dysprosium-165	100	Platinum-193	100	Tungsten-185	10
Dysprosium-167	100	Platinum-197m	100	Tungsten-187	10
Erbium-169	100	Plutonium-239	100	Uranium (natural or depleted)	10
Erbium-171	100	Polonium-210	0.1	Uranium-233	10
Europium-152 9.2 h	100	Potassium-42	10	Uranium-234—Uranium-235	10
Europium-152 13 yr	1	Praseodymium-147	100	Vanadium-48	10
Europium-154	1	Praseodymium-143	100	Xenon-131m	10
Europium-155	10	Praseodymium-144	100	Xenon-133	10
Fluorine-18	1,000	Protactinium-233	10	Xenon-135	10
Gadolinium-153	10	Protactinium-234m	10	Ytterbium-175	10
Gadolinium-159	100	Radium-226	10	Ytterbium-177	10
Gallium-72	10	Rhenium-186	100	Yttrium-90	10
Germanium-71	100	Rhenium-187	100	Yttrium-91	10
Gold-198	100	Rhodium-101m	100	Yttrium-92	10
Gold-199	100	Rhodium-105	100	Yttrium-93	10
Hafnium-181	10	Ruthenium-86	10	Zinc-65	10
Holmium-165	100	Ruthenium-87	10	Zinc-69m	10
Hydrogen-3	1,000	Ruthenium-97	100	Zinc-69	10
Iodine-113m	100	Ruthenium-103	10	Zirconium-93	10
Iodine-114m	10	Ruthenium-105	10	Zirconium-97	10
Iodine-115m	100	Ruthenium-106	1		
Iodine-115	10	Samarium-151	10		
Iodine-125	1	Samarium-153	100		
Iodine-128	1	Scandium-45	10		
Iodine-129	0.1	Scandium-47	100		
Iodine-131	1	Scandium-49	10		
Iodine-132	10	Selenium-75	10		
Iodine-133	1	Silicon-31	100		

NOTE: For purposes of Sections 30275, 30278, 30287 and 30289 where there is involved a combination of radionuclides in known amounts the limit for the combination should be derived as follows: Determine for each radionuclide in the combination, the ratio between the quantity present in the combination and the limit otherwise established for the specific radionuclide when not in combination. The sum of such ratios for all the radionuclides in the combination may not exceed "1" (one, "unity").

EXAMPLE: For purposes of Section 30284, if a particular batch contains 20,000  $\mu\text{Ci}$  of Au-198 and 50,000  $\mu\text{Ci}$  of C-14, it may also include not more than 200  $\mu\text{Ci}$  of I-131. This limit was determined as follows:

$$\frac{20,000 \mu\text{Ci Au-198}}{20,000 \mu\text{Ci limit}} + \frac{50,000 \mu\text{Ci C-14}}{50,000 \mu\text{Ci limit}} + \frac{200 \mu\text{Ci I-131}}{200 \mu\text{Ci limit}} = 1$$

Sent by Bill Friedman, Dept. Health 5-0931  
3-2757



## SUBCHAPTER 15. WASTE DISPOSAL TO LAND

### Article 1. General Provisions

2500. **Definition of Terms.** (a) "Disposal site" means any place used for the disposal of solid or liquid wastes. It does not include any part of a sewage treatment plant or point of discharge of sewage effluent or land drainage from pipes or ditches into waters of the state.

(b) "Disposal area" is that portion of the site which has received or is receiving wastes.

(c) "Leachate" is drainage from the waste or fluid resulting from the percolation of liquid through a waste substance.

(d) "Usable" ground or surface water includes potentially usable water.

(e) "Hydraulic continuity" is a condition existing when fluid occupying an interstice of a saturated material is able to move under a head differential to adjoining interstices or surface channels containing fluid.

(f) "Capillary fringe" is the partly saturated zone immediately above the water table in which water is held by capillary forces.

(g) "Toxic" means lethal, injurious, or damaging to man or other living organisms including plants, domestic animals, fish and wildlife.

(h) "Active life" is the period of time required to achieve stabilization of decomposing waste in a site such that leachate or the rate of generation of gases is no longer a threat to water quality.

*Note:* Authority cited: Sections 1053, 13140, 14040, Water Code.

*History:* 1. New Subchapter 15 (§§ 2500, 2510-2513, 2520-2522, 2530-2536, 2540, 2541, 2546) filed 3-10-72, effective thirtieth day thereafter (Register 72, No. 11).

### Article 2. Classification of Waste Disposal Sites

2510. **Class I Disposal Sites.** Class I disposal sites are those at which complete protection is provided for all time for the quality of ground and surface waters from all wastes deposited therein and against hazard to public health and wildlife resources. The following criteria must be met to qualify a site as Class I:

(a) Geological conditions are naturally capable of preventing vertical hydraulic continuity between liquids and gases emanating from the waste in the site and usable surface or groundwaters.

(b) Geological conditions are naturally capable of preventing lateral hydraulic continuity between liquids and gases emanating from wastes in the site and usable surface or groundwaters, or the disposal area has been modified to achieve such capability.

(c) Underlying geological formations which contain rock fractures or fissures of questionable permeability must be permanently sealed to provide a competent barrier to the movement of liquids or gases from the disposal site to usable waters.

(d) Inundation of disposal areas shall not occur until the site is closed in accordance with requirements of the regional board.

(e) Disposal areas shall not be subject to washout.

(f) Leachate and subsurface flow into the disposal area shall be contained within the site unless other disposition is made in accordance with requirements of the regional board.

(g) Sites shall not be located over zones of active faulting or where other forms of geological change would impair the competence of natural features or artificial barriers which prevent continuity with usable waters.

(h) Sites made suitable for use by man-made physical barriers shall not be located where proper operation or maintenance of such structures could permit the waste, leachate, or gases to contact usable ground or surface water.

(i) Sites which comply with a, b, c, e, f, g, and h but would be subject to inundation by a tide or a flood of greater than 100-year frequency may be considered by the regional board as a limited Class I disposal site.

*History:* 1. Amendment of subsections (a), (b) and (c) filed 12-29-72, effective thirtieth day thereafter (Register 72, No. 53).



RESOURCES AGENCY, DEPARTMENT OF CONSERVATION

The California Department of Conservation, based on review by the Division of Mines and Geology, has considered the Draft Environmental Impact Statement with respect to geo-technical aspects and procedural requirements.

In the DEIS, NRC discusses the use of high-integrity disposal package containers with extended containment life (approximately 300 years) for use in the disposal of high-concentrations wastes, as a waste processing option (DEIS, Ch. 5.2.4.8, App. D.4.3). This section also discusses potential use of similar containers for lower concentration wastes, but usage of this type of containerized disposal is not required by the proposed regulations. Also, for less concentrated wastes, the proposed regulations appear to require that the disposal package containers maintain their integrity only during the operational phase of the disposal site trenches (DEIS, App. D.4.3). However, we feel that because the less concentrated wastes could still release radionuclides similar to, or even the same as, those contained in the waste packages for high-concentration wastes, container integrity is essential to preventing the release of radionuclides into groundwater (prior to adequate confined decay time) to insure that the resultant activity level is low enough to not pose a danger to public health and safety.

As discussed in the DEIS, the proposed regulations in 10 CFR Part 61 assume that in the event of early release of radionuclides from disposal containers, or from decontainerized disposal, the site design, including the geologic setting, should be capable of preventing radionuclide migration out of the disposal trenches and into the surrounding groundwater and environment. However, the proposed regulations provide no fail-safe assurance that this will be the case.

Even if the wastes were to be segregated according to the active life of the different radionuclides and disposed of in containers which could maintain their integrity for the necessary containment time of each of the different classes of radionuclides, there does not appear to be adequate provisions in the proposed regulations for enforcement of this degree of detailed inspection during waste processing. We feel that the potential for migration of radionuclides from the disposal site and subsequent contamination of groundwater in the vicinity of the disposal sites could, coupled with adequate site planning and design, be minimized by containerized disposal of wastes in containers capable of maintaining their integrity for a minimum confinement period of 100 years [10 CFR Part 61, Subpart A, 61.7 (4)]. However, due to the lack of provisions in the regulations to require containerized disposal of all wastes,

Department of Conservation (continued)

along with uncertainty in the capability for adequate enforcement of the regulations relative to proper packaging and disposal, we recommend that item 7 in Subpart D, Section 61.50 of [the proposed rulemaking for] 10 CFR Part 61 be rewritten as recommended above.

DEPARTMENT OF HEALTH SERVICES

We continue to be troubled by the cost issues and their presentation in this EIS draft.

First, we are discouraged to find NRC using their own regions for the waste data bases. The states have been working for more than a year now with regions and waste volume projections based on U.S. Department of Energy (USDOE) studies. Comparison, then, with the USDOE data becomes difficult or impossible. However, because we know something of USDOE's efforts, their strengths and weaknesses, there is a need for careful comparison of data and conclusions on such an important matter as this. The final EIS should facilitate those comparisons.

Secondly, costs are based on the 20-year period from 1980 to 2000. We think it important that costs be shown by year from 1986 (when exclusionary authority may be conferred by Congress) through 2000. For some regions (as defined by current state actions, or the USDOE), initial costs may verge on prohibitive. A review of USDOE data indicates that by 1986 only three regions would generate the volume of waste on which the EIS was based. One, Region 5 (USDOE), would not have the waste volume by the year 2000 (see Table I).

Given the history of some existing disposal sites, one key concern should be the assurance of adequate financial resources on the part of the applicant to construct and operate a disposal facility and to provide adequate financial provisions for site closure and long-term care.

The EIS, although it cites no specific cost figures, appears to underestimate the short- and long-term costs of operating and maintaining a low-level waste disposal site, and fails to recognize the problems small companies (as identified in the EIS) have in meeting financial requirements in operating a waste disposal site. It seems likely that few small companies can raise the necessary capital for plant development, set aside trust funds, cash deposits, purchase surety bonds against short-term financial needs and further set aside additional money for 100-year care costs within the life span of the disposal site. The most careful attention should therefore be paid to the financial resources of any applicant who seeks to develop and/or operate a new site.

The "unanticipated contingencies" not addressed by the EIS (i.e., problems occurring at a site) should, we believe, be explicitly addressed either by the NRC or the Congress. To the extent that all national sites meet or exceed a

Department of Health Services (continued)

common design and performance standard, the Congress might accept such a responsibility. That uniformity might, however, require some special handling as was done for uranium mill tailings.

To summarize, the EIS should contain a section specifically developed for informing the Congress on the impact of its impending action as authorized in PL 96-537. That section would chart waste disposal needs and costs by regions as they actually exist or are planned by the states. The conclusion of such a piece might well be that the implementation date of 1986 is too early in terms of waste volume, and unaffordable. Additionally, given the amount of time necessary to bring new sites into operation (4-7 years), the 1986 date in PL 96-537 may be premature, if safe management and disposal of these materials is to be assured.

TABLE I

Fraction of Representative Site Waste Volume by Region\*

	<u>1986</u>	<u>2000</u>
Region 1	120%	230%
Region 2	46%	97%
Region 3	140%	290%
Region 4	87%	180%
Region 5	19%	40%
Region 6	52%	84%

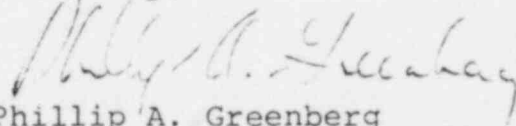
\*Reference: Low-Level Radioactive Waste Management Report, prepared by the U. S. Department of Energy, March 13, 1981.



January 12, 1982

Thank you for affording us the opportunity to comment of these documents. This is a most timely issue, and one which we are sure will benefit from the careful attention and input provided by all interested parties.

Sincerely,

A handwritten signature in cursive script, appearing to read "Phillip A. Greenberg".

Phillip A. Greenberg  
Assistant to the Governor  
for Energy and Environment