



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

21 NOV 1974

Dr. James L. Liverman
Assistant General Manager
for Biomedical and Environmental
Research and Safety Programs
U.S. Atomic Energy Commission
Washington, D.C. 20545

Dear Dr. Liverman:

We have reviewed the draft environmental impact statement for the Management of Commercial High-Level and Transuranium-Contaminated Radioactive Waste (WASH-1539) and our detailed comments are enclosed. The draft statement discusses programmatic actions to be taken by the AEC regarding commercially generated radioactive waste, specifically, the interim retrievable storage of solidified high-level waste, permanent geological disposal of this waste, and the management of long-lived transuranium-contaminated waste.

We believe that questions surrounding the management of high-level and transuranic wastes should be explored in the context of an overall waste management program that includes a vigorous effort towards ultimate waste disposal. The draft statement concentrates, to a large degree, on the facet of interim storage--covering topics such as the short-term suitability of technical containment, the Federal responsibilities for custody of radwaste, and the proper treatment of transuranium-contaminated waste. Although these topics are reasonably treated in the draft statement, the question of ultimate disposal is not.

In our opinion, and as evidenced by the degree of engineering detail and refinement presented for the RSSF concept, the AEC has reversed the importance of the overall program (with its primary goal being the development of an ultimate disposal method) and the decision to construct a centralized Retrievable Surface Storage Facility (RSSF) (only one of the several feasible interim storage methods). In light of this situation, we feel that the AEC's waste management program,

as reflected in this draft statement, has not adequately addressed the high-level waste disposal problem. This has resulted in the overall program being given a lower priority than that of the RSSF interim storage concept. While we agree that investigation of interim storage methods is important, such methods, if utilized, should be viewed only as a means to insure against an unavoidable delay in achieving an ultimate disposal program, not against a failure to devise such a program. Consequently, we recommend that the overall program be given the highest priority and that the final statement concentrate on this aspect.

Although EPA believes that an ultimate disposal method for high-level radioactive waste might well be devised, failure to settle on a concept in the reasonable future could place nuclear energy in a rather unfavorable light. We realize that a productive program will involve extensive research and development efforts in considering promising alternative disposal methods. However, we should not lose sight of the fact that in resolving technical uncertainties some failures are to be expected. The occurrence of failures, such as with the previously proposed salt bed disposal concept, should not result in abandoning or curtailing the program. Regardless of the amount of commercially generated waste that may be produced over the next few years, the existence of the current volume of waste from other AEC controlled programs alone provides a compelling reason for pursuing, as rapidly as possible, a program for developing an ultimate disposal method.

In light of our review and in accordance with EPA procedure, we have rated the draft statement Category 3 (Inadequate). Although we fully support your intent to assure Federal control of high-level and transuranium-contaminated wastes, the draft statement does not adequately address the overall program that this entails or the important goal of ultimate waste disposal. Should you or your staff have any questions concerning our rating or comments, we will be happy to discuss them with you.

Sincerely yours,



Sheldon Meyers

Director

Office of Federal Activities (A-104)

Enclosure

U.S. Environmental Protection Agency
Washington, D.C. 20460

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Environmental Impact Statement Comments

D-AEC-A00107-00

Management of Commercial High-Level
and
Transuranium-Contaminated Radioactive Waste
(WASH-1539)

INTRODUCTION AND CONCLUSIONS

This report summarizes the results of EPA's review of the AEC draft environmental statement, "Management of Commercial High-Level and Transuranium-Contaminated Radioactive Waste" (WASH-1539). The means by which high-level and long-lived radioactive wastes are managed constitutes one of the most important questions upon which the public acceptability of nuclear power, with its social and economic benefits, will be determined. While the generation of power by nuclear means offers certain benefits from the environmental viewpoint, the question of how to properly manage the hazardous waste produced during such power generation remains one of the major unresolved issues. EPA is especially concerned with the long-term nature of the potential environmental hazards presented by these wastes. Complicating this problem is the fact that physical and administrative controls for this waste will have to be exercised over time periods which are extremely long in comparison to the relatively brief history of human social institutions. EPA's review of the AEC evaluation of the overall problem was made within that perspective.

The stated purpose of the draft statement is to assess the environmental consequences: (1) of developing an engineered surface storage facility for commercial high-level waste; (2) of evaluating geologic formations and sites for the purpose of developing a repository for permanent disposal of these wastes; and (3) of providing retrievable storage for commercial transuranium-contaminated waste pending availability of permanent disposal. Although it is possible to discuss these topics separately, it must be recognized that they are all interdependent parts of one overall AEC radioactive waste management program. As such, it is important, in our opinion, that any discussion of these individual topics be preceded by an overview consideration of the total program. A brief outline of what EPA believes should be contained in such a program plan is presented in Figure 1. It is the lack of such a detailed overview, with its associated discussion of alternatives and cost/benefit analyses, which constitutes the major weakness of this draft statement. The final statement should correct this situation and clearly show how timing and budgetary restraints are expected to affect the proposed actions and the practical alternatives to them.

The principal conclusions reached by EPA are as follows:

1. We concur in the desirability of Federal ownership and control of commercially-generated high-level and transuranium-contaminated waste.

We also concur in the decision to develop a Federally controlled permanent disposal system for these wastes. We further agree that the cost of this waste handling should be passed on as a cost of power production.

2. The development of an environmentally acceptable system for the permanent disposal of commercially generated radioactive waste would appear to be a high priority program that is essential for the development of nuclear power. However, the draft statement does not contain an adequate description of a program to develop such a permanent disposal system, nor does it reflect either the priority attached to this overall program by the AEC nor an indication of the resources required. Because of the overwhelming need to develop an environmentally acceptable ultimate disposal method and the realization that there is a risk of failure in any research and development effort, we believe that work on promising alternatives should be pursued concurrently.

3. It appears likely that an acceptably engineered Retrievable Surface Storage Facility (RSSF) could be designed and sited if one is determined to be required. However, the draft statement does not contain sufficient information to support the recommended decision to develop and build a RSSF since it lacks an adequate consideration of other available alternatives. The draft statement is noticeably deficient in its lack of any meaningful cost/benefit analysis supporting the RSSF option as opposed to even the other alternatives which were introduced.

4. A major concern with the employment of the RSSF concept is the possibility that economic factors could later dictate utilization of the facility as a permanent repository, contrary to the stated intent to make the RSSF interim in nature. These economic factors would consist mainly of the fiscal investments attendant to its construction and the activities which arise in the commercial segment of the economy to support its operation. Since there are controlling environmental factors that must be considered before final disposition of the RSSF, it is important that these factors never be allowed to become secondary to economic factors in the decision making process. Vigorous and timely pursuit of ultimate disposal techniques would assist in negating such a possibility.

Figure 1Contents of an Acceptable Program Plan:

- I. Analysis of alternate R&D programs to develop at least one environmentally acceptable method of ultimate disposal of high-level waste as soon as possible to demonstrate that ultimate disposal (U.D.) is possible and has finite, predictable costs.
 - A. Alternative methods for ultimate disposal
 1. Cost of R&D
 2. Probability of success
 3. Cost of implementation and operations
 4. Effectiveness of pursuing each method
 - B. Alternate cost-effective concurrency programs
 1. Maximum concurrent R&D program
Implication of following all reasonable methods simultaneously to achieve maximum probability of successfully finding at least one suitable ultimate disposal method.
 2. Parallel versus sequential R&D programs
 3. Selected high probability pay-off alternative
 4. Analysis showing trade-offs of cost versus probability of success versus time to achieve success
- II. Analysis of what to do with wastes while awaiting development of an environmentally acceptable ultimate disposal process
 - A. Limitations on waste production
 1. Commitments relative to present waste (including government)
 2. Alternatives for decreasing future wastes (including reducing levels of power production)

- B. Storing wastes where produced until ultimate disposal method is available
 - 1. Store fuel without reprocessing at the reactor, reprocessing plant, or spent fuel storage facility
 - 2. Store wastes after reprocessing at the reprocessing plant
 - C. Interim centralized storage alternative comparisons
 - 1. Above ground (base on present WASH-1539 analysis)
 - 2. Underground
 - D. Cost-effective analysis of these
- III. Development of alternate, more effective, environmentally acceptable ultimate disposal methods after an initial one has been identified (having determined U.D. feasible more time can be allowed in this phase)
- A. Alternative methods and programs - (Follow outline of I on more limited basis)
 - B. Cost-effectiveness of delaying implementation of first acceptable ultimate disposal method for development of more effective methods
- IV. Documentation of selected plan
- A. Program steps and milestones
 - B. Time and resources
 - C. Budget estimates
 - D. Decisions points, review procedures, and contingencies

GOVERNMENT OWNERSHIP AND MANAGEMENT

An AEC regulation, 10 CFR Part 50, Appendix F, requires the transfer of all high-level waste to a Federal repository within ten years after separation at a fuel reprocessing plant. In its comments on this rule in 1969, a predecessor agency to EPA basically concurred with this concept. Because of the extremely hazardous nature of this waste and very long periods during which the hazard will persist, EPA believes that it is absolutely essential that the waste be managed in a manner which will provide maximum assurance that there will not be any unacceptable risk to the public health or environment either now or in the future. To provide this assurance, EPA supports the AEC's policy that ownership and management of high-level radioactive waste should be functions of the Federal Government.

The management of transuranium-contaminated waste is the subject of a current rule-making activity by the AEC (39 F.R. 32921). While this waste does not appear to present the same high heat and intense radiation hazard as the high-level waste, it remains highly toxic over an extremely long time period and may constitute a relatively larger volume. Based on reasoning similar to that expressed above, EPA believes it is also imperative that this long-lived waste be transferred to the control of the Federal Government. The justification for permitting storage of this waste for five years at the site of generation should be discussed in more detail. With the possible exception of spent fuel hulls and other small volume miscellaneous waste from reprocessing plants, it would appear that little is to be gained, in terms of a reduction of potential personnel exposure, by interim storage of this waste for this long a period. It would appear practicable and reasonable to require the transfer of the majority of this waste to the Federal Government as soon as practicable after generation, possibly within one or two years after it is separated.

INTERIM STORAGE vs. FINAL DISPOSAL

The draft statement contains relatively long discussions about the selection of a suitable site and an environmentally acceptable method for the interim storage of solidified commercial high-level waste. While this information is necessary, and it appears that an acceptable site and method can be found if this course of action is decided upon, we believe some very important environmental issues relative to the choice of this management concept have not received adequate consideration.

There appear to be three basic options available to the AEC for the management of the high-level waste during the interim period until a final disposal method is found acceptable. These options include: (1) storage of the solidified high-level waste at a Federal repository (as proposed by the AEC); (2) storage of the solidified high-level waste at fuel reprocessing plants; and (3) storage of the spent fuel at either government, or privately owned facilities, with no reprocessing until a final disposal method is found acceptable. While these options are discussed briefly in the draft statement, they are not developed to such an extent that, together with the necessary detailed cost-benefit analyses, an independent decision based on the necessary environmental perspective can be reached.

Analyses of the environmental impacts and costs for each of the three RSSF concepts and for the other two basic alternatives discussed above should have been presented. In our opinion, the AEC has not presented sufficient information to clearly justify their choice of interim storage of solidified high-level waste as opposed to the other available alternatives, especially the alternative of an expanded and accelerated program leading to the early development of an environmentally acceptable permanent disposal concept.

In particular, the AEC's program for the development of final disposal methods is not presented in the detail necessary for an independent decision on this important alternative course of action. The current level of funding for the geological disposal evaluation program for fiscal year 1975, according to the AEC, is 2.5 million dollars. It is not apparent from the draft statement that this funding level is consistent with the importance or priority of achieving an environmentally acceptable long-term management method, especially when compared to the large commitment inherent in the total waste management program. We believe that the AEC should present, in the final statement, a more complete description of their program plan for the development of geological disposal techniques, including funding levels required through the period in which assessment of the concept is carried out. In this description, the AEC should present detailed work schedules and their existing plans for the development of a geologic disposal site (including target completion dates for the completion of exploration, construction, and beginning operations) so that reviews and comments may be obtained from other qualified or interested government and private sources. Since one of the stated purposes of the draft

environmental statement is to assess the environmental consequences of evaluating geological formations and sites for the purpose of developing a repository for permanent disposal, the program plan for such development, as mentioned above, would appear to be a necessary part of that assessment.

We are also concerned that, if the proposed RSSF approach is followed, the interim storage technique finally chosen may, for a variety of reasons including economic, eventually become or be considered as an ultimate disposal facility for the waste it contains. We fear that the initial construction costs of an RSSF, together with its support facilities and peripheral industries, may comprise such an investment that the potential economic impact attendant to its cancellation, after two or three decades of operation, may overshadow the environmental advantages of decommissioning. In our view it is highly unlikely that any of the RSSF concepts discussed will prove to be an acceptable ultimate disposal technique for this waste. Therefore, the AEC should detail the steps that will be taken to assure that this will not occur.

One of the alternatives for the disposition of plutonium produced in LWR's discussed in a recently issued draft statement (Generic Environmental Statement Mixed Oxide Fuel - WASH-1327) was storage of the spent fuel for later recovery and recycle of uranium and plutonium. Another possible disposition was storage of the spent fuel for ultimate disposal, without consideration of later reprocessing and recovery of either uranium or plutonium. The choice of either of these two options would preclude the management of the waste as proposed in this draft statement. An additional consideration is that, notwithstanding permission by the AEC to recycle plutonium, the nuclear power industry may find that the recycle of plutonium would be only marginally attractive from an economic standpoint. In any of these three cases the result would be the same: the AEC would be forced to proceed with either program option B or a combination of program options A and B, which are presented on pages 9.1-4 and 9.1-15. Program option B involves the storage of the spent fuel itself and would, therefore, add a third major waste management element to the total picture. Since the storage of spent fuel or other alternative dispositions cannot be excluded from consideration at this time, we believe that an analysis of the environmental impact resulting from such storage should be included in the final statement. The option of storing the solidified high-level waste at reprocessing plants for longer periods than the currently allowable ten years should also be discussed in more depth in the final statement.

HIGH-LEVEL vs. TRANSURANIUM-CONTAMINATED WASTE

The draft statement discusses the development of both interim storage facilities and final disposal methods for both high-level and long-lived transuranium-contaminated waste. It is not clear, however, whether the AEC's intent is to consider separate storage sites and final disposal methods for each type of waste, or whether they are considering the storage of both types of waste at the same site and eventually using the same final disposal method for both types of waste. The immediacy of the need for interim storage for transuranium-contaminated waste should be taken into consideration in reaching such a decision. It currently appears that an interim storage facility, if deemed necessary for high-level waste, may not be needed for over ten years. However, because States have already taken actions to prohibit the burial of transuranium waste in commercial burial grounds licensed by them, there is a more immediate need to provide interim storage for this waste. Any delays in providing interim storage for long-lived transuranium waste may only serve to intensify the problems which States, commercial burial ground operators, and producers of transuranium waste are currently experiencing with this issue.

Several important factors should be considered in making decisions on developing separate sites and/or disposal techniques. These factors include the physical, chemical, and radiological characteristics of the wastes, predicted volumes to be disposed of, costs, and the urgency of the need. These factors may well define different acceptance criteria for storage or disposal sites for the two different classes of waste. The final statement should include more information concerning these factors, and the details of economic and environmental analyses which compare the major options. These analyses may indicate valid reasons for developing joint sites, separate sites, or for pursuing interim storage for one type of waste and final disposal for the other.

THE GEOLOGICAL DISPOSAL PILOT PLANT (GDPP)

One of the three basic purposes of the draft statement is to assess the environmental consequences of evaluating geological formations and sites for the purpose of developing a repository for permanent disposal of commercial waste. The draft statement contains little evaluation of geological formations in other than a general way. It is suggested that the final statement be expanded to include such information. Because of the seriousness of the potential environmental effects and its importance to the public acceptability of the entire commercial nuclear power question, it may be both prudent and cost-effective to pursue more than one specific final disposal technique.

In particular, we are concerned about the retrievability of the various physical forms of waste which will be placed in the GDPP during the demonstration phase. We assume that the draft statement, which will be written preceding the construction of the GDPP, will discuss the measures to be taken to assure retrievability of the waste from the geological media, since it is absolutely essential that all waste must be retrievable from the GDPP.

The question of assuring that man's future activities will in no way be allowed to compromise the confinement security of any disposal site must be addressed. It appears that measures that would have to be taken to prevent any activities by man which could violate the confinement of a geological disposal method would be of equal importance to the acceptance of the method as any natural phenomena which might cause such a violation. With regard to this issue, it is important to recognize that protection from man's activities will have to be provided for as long as the waste retains its hazardous properties. Therefore, the AEC should describe in the draft statement for the GDPP what steps will be taken to assure preemption of exploration and exploitation of a disposal site and the period over which these steps would be effective.

THE PHYSICAL FORM OF THE HIGH-LEVEL WASTE

It is not clear what the AEC's intentions are relative to the conversion of the high-level waste to a form suitable for final disposal in geological formations. There appear to be two basic options available to accomplish this conversion. The first option would permit the fuel reprocessor to convert the high-level waste to any solidified form found acceptable for transportation to the storage facility. Sometime before the waste is placed in a final disposal site, it would be converted in a Calcine Conversion Facility (CCF) to a form suitable for final disposal. The second option would entail the development of regulations requiring industry (the fuel reprocessor) to convert the high-level waste to a form suitable for final disposal before shipping it to the storage facility.

A short discussion is presented in the draft statement concerning the AEC's tentative plan to provide a CCF to convert the solidified high-level waste to a suitable form for final disposal. Very little information is presented relative to the second option discussed above. However, in discussing the need for a CCF, the statement is made that this facility would provide conversion through some transition date, estimated to be 1985, after which industry would provide the conversion. Thus, it appears the second option is currently favored by the AEC.

Since assurance that the high-level waste is in a form suitable for final disposal is mandatory for protection of public health and the environment, we believe this issue should be discussed in more detail. Both options have advantages and disadvantages that should be thoroughly considered before a decision can be made.

WASTE CLASSIFICATION

In recent reviews of AEC draft statements for various generic nuclear power activities or programs, EPA has noted a general lack of consistency regarding precise definitions of radioactive waste. We believe it is important to develop a consistent classification system which can be used in assessing the relative hazard of various categories of radioactive waste.

The wastes of largest volume are those wastes formerly known as "low-level" wastes. These "low-level" wastes in the past have included everything other than those specifically defined as "high-level" wastes. In the LMFBR and GESMO draft environmental statements, the AEC has used the term, "other-than high-level" wastes for these "low-level" wastes. "Other-than" wastes were further subdivided into low-level Beta-Gamma waste, low-level plutonium bearing (or alpha or transuranic) waste, and fuel cladding hulls. This proposed classification of "other-than" wastes gives no indication of the activity, content, or hazard potential of the waste, except that it is not "high-level" waste, and whether it is alpha contaminated, or is specifically cladding hulls. Under this classification system, highly radioactive ion exchange resins and evaporator sludges fall into the same category as lightly soiled wipe rags and coveralls, yet the hazard potentials, handling requirements, and retention times for these two wastes differ greatly. We believe that a discussion should be added to the final statement indicating what steps are being taken to develop such a better waste classification system.

It is expected that there will be a large difference in the burial charges for transuranium-contaminated wastes sent to the Federal repository as compared to the wastes sent to land burial sites. Because of this situation, it may become economically attractive to dilute the transuranium-contaminated waste to a concentration below the level specified in the proposed rule. The AEC is encouraged to develop policies or other actions which can be implemented to prevent this possible subversion of the intent of the proposed rulemaking for economic reasons.

VALIDATION OF COMMERCIAL BURIAL GROUNDS

EPA has reviewed the engineering and hydrogeological reports prepared for the licensing of the existing commercial burial grounds. In our view these were preliminary reports suitable for identifying potentially acceptable burial sites. The AEC should present or directly reference in the final statement the results of any studies which have been conducted at these commercial burial sites, subsequent to the beginning of burial operations, which corroborate or validate the conclusions reached in the original evaluation and which demonstrate that ". . . after burial the radioactive material in the waste will be retained at the site and not migrate from the vicinity of the burial location," and which show that, "to date, there has been no indication of migration of radioactivity from any commercial burial site."

Monitoring data or other evidence which confirms that the plutonium now buried has remained immobile at the place of burial and does not constitute a threat to man or the biosphere should also be submitted or directly referenced. Due to the large volumes and activities of waste which are destined for disposal in these land burial sites, such validation studies are vital to assess their current and potential environmental impact. It should be pointed out that the supporting rationale for the policy which would not require the removal of already buried transuranium-contaminated waste from burial grounds may require review in the future, since data indicating the actual or potential off-site migration of these long-lived materials may arise as on-going or planned studies are concluded at the commercial burial sites.

RADIATION PROTECTION CONSIDERATIONS

In Section A.1.2 Standards - generating organizations and their procedures, no recognition is given to the Federal guidance function assigned to the former Federal Radiation Council and to the transfer of these functions to the Environmental Protection Agency. AEC regulations must be consistent with Federal guides as approved by the President. Thus, the statement in Section A.1.2.3 that the AEC has relied on the NCRP and ICRP recommendation for the establishing of primary standards is somewhat misleading. For completeness, a more detailed discussion is required of the various Federal responsibilities in the establishment of radiation protection standards in the U.S.

In Section A.1.5 The linear theory of radiation effects, the discussion appears to be directed to the nonapplicability of the linear nonthreshold approach rather than to its prudent use in the establishment of standards. We believe the Federal position in standards-setting is the acceptance of this model for the establishment of standards, recognizing the uncertainties in its use at low doses and low dose rates.

In Section A.1.8 The matter of "health effects," it is not clear what the purpose of this discussion is with respect to the draft statement. The AEC is commended for its present policy of considering health effects and this Section is misleading in that it implies a condemnation of this policy.

In Section A.2 Terms and concepts relating to radioactive materials, we would suggest an established reference or nuclear glossary be used rather than the definitions given in this Section. This could lead to a considerable shortening of this Section and would be consistent with the international usage adopted by most organizations.

OTHER COMMENTS

1. The discussion of sea disposal of wastes in the draft statement should be corrected or expanded to consider the following items:

-- The first full paragraph on page 2.6-13 should be deleted or rewritten to better convey the idea of the quantities of specific naturally-occurring radionuclides in the oceans as related to present and potential artificially-produced quantities. The first sentence in this paragraph is misleading since it encompasses all radioactive materials although the last sentence in the preceding paragraph and the first sentence in the paragraph immediately following talk only of naturally-occurring radioactive materials. It should be made clear that the major component of radioactivity in the sea is potassium-40 with secondary contribution from rubidium-87, radium-226, thorium, and uranium and that such nuclides as cobalt-60, strontium-90, cesium-137, and plutonium are man-induced contaminants.

-- The second sentence in this paragraph, comparing the radium-226 inventory in the oceans with an equivalent amount of plutonium-239, provides no meaningful conclusion or at worst seems to imply a seriously misleading conclusion.

-- In the next paragraph on page 2.6-13, the first sentence should be modified to read, "An understanding of the presence of this natural inventory is important but should not be used to justify dumping." The original statement could be interpreted to imply that the presence of the natural inventory could be used to justify restricted dumping, a statement with which we do not agree.

-- The second paragraph on page 2.6-14 should be rewritten to more accurately present the facts concerning countries actually conducting sea disposal. The most recent formal report of the OECD Nuclear Energy Agency, Paris, 1973, lists only four countries actually contributing wastes for disposal. Also, although there has been no viable commercial sea disposal operation in the U.S. for over ten years, this has been due also to the additional constraints of the CEQ report of four years ago, referenced on page 2.6-15, and the EPA ocean dumping regulations and criteria issued on October 15, 1973.

-- The last sentence of Section 2.6.4, including the quotation and reference, should be expanded to adequately present the complete U.S. policy and regulations governing ocean disposal of radioactive wastes. The EPA ocean dumping regulations and criteria issued on October 15, 1973, should be added, since these are the applicable Federal regulations. In these EPA regulations, the policy of prohibiting the sea disposal of high-level radioactive waste is codified. In addition, as a general policy, radioactive wastes must be containerized and these containerized wastes must decay to negligible levels within the life expectancy of the container.

2. The discussion of routine radioactivity releases or exposures on page 3.1-16 should be modified to indicate that control systems for limiting such releases or exposures will be specified based on cost-effective analyses using the "as low as practicable" guidance of the Federal Radiation Council. The arbitrary definition of "as low as practicable" as ten percent of the applicable numerical limits is not acceptable.

3. The discussion of design objectives for abnormal operations and for upper limit accidents on pages 3.1-16 and 3.1-17 appears acceptable from the conceptual standpoint but is unacceptable as presented since no probabilities of occurrence were assigned to abnormal operations or to upper limit accidents. Probabilities of occurrence must be assigned to these conditions to make the analysis complete and useful.

4. The analysis of transportation accidents appears incomplete since no quantitative information is presented for either the probability of an accident in which radioactive material is released or the consequences of such an accident. The primary reference used to support the AEC conclusion that the radiation risk is small is WASH-1238 which suffers from a similar lack of quantitative information. In particular, with regard to the probability of an accident involving a release, there is no analysis relating the shipping container test conditions to the severity of the accident. Thus, the conclusion that the container should withstand a Category 3 (severe) accident without being breached is not substantiated. With regard to the consequences of an accident involving a release, no estimate of the radiation dose to emergency crews, onlookers and nearby residents is presented, and no discussion is included which addresses the ongoing disagreements among workers in this field concerning the quantity of fission products, especially cesium, which may be released. An estimate of the external exposure to humans from released radioactive materials was made in WASH-1238, however, it appears that the dose to humans from inhalation of the released material may be much greater than the dose received externally.

5. We commend the AEC in acknowledging that radionuclides other than those covered by this draft statement should be considered and may be the subject of future rulemaking actions. The radionuclides currently considered by EPA as being in this group include tritium, Kr-85, C-14, and I-129.

6. At any of the principal sites under consideration, the RSSF would be built somewhere within the AEC reservation boundaries remote from the public. This should result in essentially no annoyance of the public by noise. However, since there will be escalation of the noise level on the site, the OSHA occupational noise regulations should be taken into consideration to protect the health and welfare of the construction people and the other employees in the AEC reservation. It is recommended that estimates of the maximum construction noise generated, the length of construction time, noise abatement and control measures, and noise levels of equipment be detailed in the final statement.