NUCLEAR WASTE FACILITY SITING

OVERSIGHT HEARING

BEFORE THE

SUBCOMMITTEE ON ENERGY AND THE ENVIRONMENT

OF THE

COMMITTEE ON INTERIOR AND INSULAR AFFAIRS HOUSE OF REPRESENTATIVES

NINETY-SIXTH CONGRESS

FIRST SESSION

ON

PUBLIC PARTICIPATION AND EQUITY IN NUCLEAR WASTE FACILITY SITING

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PUBLIC PARTICIPATION AND EQUITY IN NUCLEAR WASTE FACILITY SITING

THURSDAY, JUNE 28, 1979

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON ENERGY AND THE ENVIRONMENT,
COMMITTEE ON INTERIOR AND INSULAR AFFAIRS,
Washington, D.C.

The subcommittee met, pursuant to notice, at 9:45 a.m., in room 1324, Longworth House Office Building, Hon. Morris Udall (chairman) presiding.

The CHAIRMAN. The subcommittee will please come to order.

Today our hearing will cover a broad range of social and political issues. We are trying to answer one simple question: Can we overcome the understandable and devasting hostility toward our nuclear waste management program?

The Federal Government has left a trail of technical negligence; misguided policies toward the States, local governments and private citizens, and misinformation that stretches back 35 years, and meanders through the country from New York to New Mexico.

We on the periphery of waste management policy have watched the time slip for construction of a waste repository at the rate of about a decade every 2 years for the past 5 years.

We have seen the responsible agencies finally admit, after denying it for 30 years, that there still remain important unresolved issues that must be settled before we will know for sure whether we can safely accomplish this crucial task.

I think that public pressure and a committed administration may have finally broken the disastrous course we were on.

Admitting that there are important technical questions to be answered has made it possible to begin to address them in a serious fashion.

Today we hope to make a positive contribution toward resolution of the social and political issues that are stalemating waste management.

I think the first step we have to take here is to acknowledge that we will not construct waste management repositories anywhere in this country unless the citizens of the area feel the repository will be safe and that the risks and benefits of waste management are balanced, and distributed among the different regions of the country.

One approach I have been interested in exploring, is the notion that we might put together a package of assistance and incentives for private citizens, interest groups, and State and local governments that will reduce the mysterious and villainous aspects of waste facilities.

Such a package could promote public understanding by giving groups the ability to make their own educated judgments about waste repository safety.

It could promote public confidence by assuring that they will have statutorily protected substantive decisionmaking authority that need not involve protracted litigation and procedural nit-picking.

We might also provide economic or environmental benefits for communities which decide repositories are acceptable in order to balance the unavoidable costs of land use impacts and new strains on public services.

Any system of incentives must not, of course, be so designed as to muddy the health and safety issues related to nuclear waste disposal.

These wastes are dangerous; and they will remain so for hundreds of thousands of years.

No amount of cajolery should induce our citizens to levy risks on future populations.

Our witnesses today will offer some cautions and some encouragements on these issues.

Congressman Seiberling wanted to go first, and he is not yet here, so in the meantime let us go on to the remainder of the witness list.

Mr. LUJAN. Mr. Chairman, I have a small statement, I would like to pick up on something which you mentioned, and that is the acceptance of sort of a solution on a regional basis.

As you know, we in New Mexico get kind of tired of being dumped on, in effect, by the policies of other States.

In California, they have all kinds of laws that say we will not go on with this until the problems of waste are solved.

The problems of waste are being solved in my home State of New Mexico, and I think there ought to be some responsibility on the part of those States that generate that waste.

In addition to that, because they will not build any additional powerplants of any kind, we have to build them in New Mexico. Coal-fired powerplants, which contribute to the pollution of our air, so there is no sharing of responsibility.

We come to this committee meeting, and we talk about the problems of West Valley, the citizens of New York saying get this thing out of here, take it somewhere else, and so the implication is take it down to Carlsbad, N. Mex., and we are kind of tired about that.

If the States are going to take this selfish attitude, I don't know, Mr. Chairman, how we can go into a veto power of the States in this manner, because it has been demonstrated that the States, when the decision is left to them, are not responsible, and although I am in favor of good strong negotiations, and making it as safe as possible, I just worry that those States that will take the reasonable attitude, will be at a disadvantage when you start facing the selfishness of the power hungry States that say we will take the benefits, but you States out there in the hinterlands, you take all of the junk that goes along with it.

Thank you, Mr. Chairman.

The CHAIRMAN. I thank the gentleman. We will proceed now with Mr. William Dircks, Director, Office of Nuclear Material Safety and Safeguards, Nuclear Regulatory Commission.

Mr. Dircks, we have your prepared statement, and you may proceed in whatever way you think best.

[Prepared statement of Hon. William Dircks may be found in the appendix.]

STATEMENT OF HON. WILLIAM DIRCKS, DIRECTOR, OFFICE OF NUCLEAR MATERIAL SAFETY AND SAFEGUARDS, U.S. NUCLEAR REGULATORY COMMISSION

Mr. DIRCKS. I will try to go through it as briefly as I can, Mr. Chairman.

I appreciate the opportunity to discuss the Nuclear Regulatory Commission program for public and State involvement in waste management decisionmaking process.

Appearing with me today is Mr. Jack Martin, Director of the Division of Waste Management.

When I speak of public participation, I mean participation by all non-Federal agency groups and individuals. I will limit my discussion to high-level waste as requested.

I do not at this time, intend to review the responsibilities of NRC for waste management, unless you of course want to get into that.

Rather, I intend to address public participation in NRC decisionmaking, State participation in NRC decisionmaking, and the Commission's views on State veto.

The Commission recently submitted to the Congress a report on "Means for Improving State Participation in the Siting, Licensing, and Development of Federal Nuclear Waste Facilities," NUREG–0539, dated March 1979.

This report covers the area of State participation in depth and provides specific findings and recommendations for improving this participation.

Some of the points I am addressing here are included in this report.

There are two key points at which public participation is most important and affects NRC decisionmaking.

The first is during development of regulations and the second is during the licensing process.

The public has been involved in our efforts to develop regulations.

In November of 1978, the Nuclear Regulatory Commission published for comment a proposed general statement of policy (GSP) outlining procedures for licensing geologic disposal of high-level radioactive wastes (HLW).

At the same time, a draft rule consisting of specific requirements which would implement the procedures of the general statement of policy was circulated to the State governments for their review.

Comments were received on the general statement of policy from 30 groups and individuals.

Fourteen States commented on the draft rule. As a result of these comments and the Interagency Review Group's report to the President, the staff has modified the draft licensing procedure and is planning to forward it to the Commission for approval to publish for comment in the Federal Register as a proposed rule (10 CFR 60).

In addition, the staff is planning to request Commission approval to publish for comment in the Federal Register an advanced notice of rulemaking which describes the status of technical criteria which will

ultimately be included in 10 CFR 60 and identifies the staff's current thinking on important issues which have not yet been resolved.

In addition to seeking early public comments on the proposed rule via the Advanced Notice of Rulemaking, we will publish results of technical work in support of the technical criteria to be included in the rule.

Notice of this will be made in the Federal Register and comments will be requested.

There have been some changes in what we proposed and comment in what we will be proposing to the Commission.

In light of comments received and further staff evaluation, the staff will propose to the Commission licensing procedures which are somewhat different from those outlined in the proposed general statement of policy sent out for comments.

I wish to stress that the Commission has not focused on this point, that no Commission decision has been reached on which procedures will be adopted.

These are principally staff proposals.

As we in the staff presently conceive it, the proposed rule will involve the NRC and the public during the actual license process in four stages as follows.

The first stage begins when DOE has formulated plans for a prospective repository to the extent that it wishes to begin subsurface characterization of a specific site or sites.

At this point, DOE will be required to submit a site characterization plan to NRC.

The plan will address the process by which the media and site were selected and DOE's program for further development of alternative media and sites.

At this time, NRC will notify affected States of this proposed action.

The plan will be reviewed by NRC staff with opportunity for State and public comment on both the plan and a staff analysis of the report.

It is also anticipated that the NRC will hold local public meetings in the immediate area of the sites to be characterized. These meetings are both to disseminate information and to obtain public input which will be factored into the final version of the staff analysis. NRC fully expects that DOE will involve State and local governments in its site selection programs. We will require that this involvement will be described in the site characterization plan.

The second stage begins with the submission by DOE of an application for construction authorization at a particular site. At this point, several sites will have been characterized from which one site will have been selected. Formal licensing proceedings will begin at this stage.

A licensing board will be appointed and the license application and accompanying environmental report will undergo the first review. Public hearings will be held prior to deciding whether to permit construction.

The third stage commences with an application by DOE to receive wastes at the repository. Although not specifically required, public hearings may be held and the public would have an opportunity to participate.

The fourth stage is the closure of the repository. Once all the wastes have been emplaced, an application will be made by DOE to close the repository, and the final review of the repository will begin. The public will have an opportunity to participate in this stage.

It should be noted that our contacts with the States to date indicate that each State will probably have different ideas regarding the extent to which they desire to participate in the licensing process. Thus, the proposed rule is structured so that each has the flexibility to participate in the process to the extent it desires or has the capability to do so. The staff intends to develop guidance to assist the States in planning for their participation.

In coordination with the Office of State Programs, my office, for the last 2 years, has had an active program to bring about greater State participation in waste management decisionmaking and to exchange ideas with State officials. We participated in State legislative and administrative hearings and meetings on waste management and sponsored a series of three regional workshops in September 1977 to solicit ideas from State officials on siting and licensing of high-level waste repositories. The workshops were attended by 170 State executives and legislators from 46 States.

A smaller meeting was held in Atlanta, Ga., in January 1979, to discuss with State representatives means for improving State participation in siting, licensing, and development of waste disposal facilities.

In addition, based on the draft procedures, and in response to a report from the State of New Mexico, we started discussions with the New Mexico officials to reach an agreement on how the State would participate in a review of the waste isolation pilot plant in the event DOE submits an application to NRC and NRC has authority to regulate the facility.

As some first steps in establishing that relationship, we have been exploring with the State agencies concrete ways in which the State can interact with NRC. Some of the ways States can participate which are being explored with New Mexico could also be applicable to State participation on licensing of a high-level waste repository.

For example:

(1) States could participate in regulatory development especially in reviewing the basis of our regulations.

(2) States could assist NRC in the review of specific portions of license applications.

(3) States could perform other technical assistance work, particularly in the area of environmental studies.

(4) States could perform environmental and radiation monitoring throughout the operational period and after closure.

(5) States could participate by assignment of State employees to NRC or NRC contractors or by using an NRC employee on assignment to the State during the licensing process.

In summary, States will be provided with the opportunity to participate in the licensing process. As recommended in NUREG–0539, Federal funding should be provided to assist the States. I should like to note that legislation would be required to authorize NRC to provide such funding.

You asked specifically for our views on the State veto question. I should note at the outset that the Commission believes it appropriate

to give statutory recognition to the legitimate concerns of States in which waste facilities may be located.

The Commission made several recommendations in NUREG–0539 for legislation to improve the capabilities for improved State participation in the Federal waste management program and should provide additional recognition of State concerns. The recommendations requiring legislation include:

1. Establishment of a federally financed planning council composed of Federal and State officials;

2. Federal funding of an independent technical review capability under the direction of the planning council;

3. And establishment of a Federal grant program to allow host States to participate more fully in the Federal waste management program.

Up to this point, I have described ways that States might participate as active members in the process of siting and licensing nuclear waste facilities. When we come to the question of concurrence or veto, the issue becomes much more complex. In the Commission's NUREG–0539 report, a number of factors bearing on this question are identified:

1. The practical consequences of failure to achieve concurrence or the practical consequences if the State vetoes the project. If the State did so, would this require a complete halt to the process at the time of the nonconcurrence? Or would activities of siting, licensing and development be allowed to continue pending resolution of the State's concern?

2. The grounds on which a nonconcurrence is made. The procedure might allow an interested State to exercise a veto without any reasons at all or the procedure might require a State to base its actions, using the record of the Commission's proceedings, on its determinations that specific environmental or safety concerns have been violated.

3. The form in which a State might invoke a veto. Should it be on the action of the Governor, the legislature or some other body within the State?

4. The point at which the veto might be invoked. We would prefer that the NRC licensing review be allowed to run its course in an orderly and untrammeled manner. This process is designed to provide for extensive State participation and we feel that it should not be interrupted as a result of a State veto. Thus, if a State veto were to be allowed we believe that such a veto should only occur after the NRC has assembled a fully developed factual record and a statement of the Commission's conclusions. Such a record would then be available and could be used in the resolution of the remaining differences.

5. The authority to resolve the differences. A veto provision should include a means to resolve differences between an affected State and Federal agencies concerned. This might take the form of action on the part of Congress or a congressional committee.

6. The extent to which a decision, other than that of the Commission would be subjected to review.

In summary, we believe, that if provision for a State veto were to be made, that provision should be carefully drafted to clarify the circumstances under which the veto can be exercised. This should include requiring the State to exercise all reasonable means to resolve its difficulties.

In closing, the NRC's high-level waste program is an evolving one. We recognize that there are unresolved issues in how to best achieve public involvement and will continue to explore additional ways to increase the productive involvement of the public and the State in the licensing and regulatory process.

The CHAIRMAN. Thank you, Mr. Dircks. You have addressed the major issues we were to touch on today.

The latter part of your statement pinpoints the difficulties we are going to have when we come to writing a State veto or State insurance provision, because you make two points, I thought, rather well.

We have to decide when this veto is exercised, can the State of Utah or Arizona in advance of any planning, of any study, say, "We veto it, do not call us, we will call you," or should the States be required to go through this process and give reasons for giving the veto, but require it be on specified grounds.

I think your testimony is helpful. I will defer at this point to Mr. Weaver, and then to my other colleagues who have questions.

Mr. WEAVER. Thank you, Mr. Chairman.

Mr. Dircks, has the United States solved the waste disposal problem?

Mr. DIRCKS. It is too early to say.

Mr. WEAVER. Yes or no.

Have we solved it as of today, as of 10:15, June 28, 1979.

Mr. DIRCKS. No; we have not solved it.

Mr. WEAVER. Can you think of any other activities that, when we deal directly with the State, we forbid the State to have a decision, a conclusive decision on whether they want something in the State, for instance, dams.

Our Department of Engineers said, if the State does not want the dam, we will not build it there, although that is not involved.

Can you give us any precedence for this, where the Federal Government has to force something on the State?

Mr. DIRCKS. No; I cannot think of any, unless it is some defense-related activity.

The CHAIRMAN. In the military field, the Government says we need an airbase, and it will be here, without consulting the State.

Mr. LUJAN. And as well for an interstate highway.

Mr. WEAVER. Actually the State highway must be done in part with State funds, therefore the State obviously has a veto.

Should we have the State put up part of the money to build one of these waste disposal sites?

It might not be a bad idea, 10 percent financing by the State, to get this nuclear facility within their confines.

I believe very strongly in the States' right to determine whether or not we should have a waste disposal within the State, but I believe you certainly worked out a method by which if it is to be resolved we can move forward with it.

Mr. Chairman, I reserve my time.

The CHAIRMAN. Mr. Lujan?

Mr. LUJAN. Thank you, Mr. Chairman.

Mr. Dircks, you heard in my opening statement that my concern is with some of the States that show a certain selfishness; that is, taking the benefits of electrical power production, but not wanting to take any kind of responsibility.

Let us take a scenario, for example, of a Governor that might have high political ambitions.

The CHAIRMAN. This is hypothetical?

Mr. LUJAN. Yes.

There may be a couple of powerplants operating, and maybe two or three more under construction. And the proposition is put to him, you ought to take the responsibility in that waste your State is generating. We have an excellent site here, and we need a good proper place to store the waste. Do you have any method by which you would encourage that Governor to take the step in the direction of trying to solve the problem when it is not politically wise; that he might lose a few votes; how do we move such a person?

Mr. DIRCKS. It is very difficult to say, Mr. Lujan.

I do not have the answer to that question. I think what we would like to see from our own regulatory process is that the issue be on the environmental, safety, and health aspects of a facility, no matter where it is located.

Mr. LUJAN. So that the right of veto or concurrence—whatever you want to call it—would be limited to adverse effects of the environment, of health, and of safety, generally?

There may be some other considerations?

Mr. DIRCKS. Generally that is how we would see it.

Mr. BINGHAM. Will the gentleman yield?

I think some of the points the gentleman from New York makes generally had committees which have been very gung ho on nuclear power production.

Maybe the Governors' conference should be presented with a problem the gentleman is proposing, if they are going to be that gung ho on production, let them be somewhat gung ho on waste.

Mr. LUJAN. Or on consumption, not just production, that is another factor.

Mr. CLAUSEN. Will the gentleman yield?

I think some of the points the gentleman from New York makes are right, but I believe what the gentleman from New Mexico states is that you want to enjoy the benefits, you ought to assume the responsibility.

This is essentially the way we have dealt with projects or programs throughout the United States, where there has been a broad interstate interest, and I am convinced we will have to solicit the Governors Association.

Mr. LUJAN. Mr. Dircks, your statement in answer to Mr. Weaver's question, "Have we solved the nuclear waste problems," when you were asked to say yes or no, you said no. You could not say yes. Just no when you only had those alternatives. That is what you could say. But if you were able to expand on your answer, would it still have been a flat no, or do we have some direction that we could be heading in?

Mr. DIRCKS. The statement in the IRG report of March 1979, the staff agrees with, I think we have enough technical confidence to proceed now with looking at some sites and proceeding with the site characterization part of the program.

I think we should move forward into the site area.

Mr. LUJAN. In closing I might say that I do believe in the concurrence of a State in building any kind of a facility like that. But the

problem in this country today is that there is such a selfish attitude and that selfish attitude could lead to our own destruction. I am not just talking about nuclear power now, but the whole gambit of things where we see one group saying, "Don't give priorities to that one, take it away from them and give it to us." We have the taxi strike because they want more gasoline than anybody else. We go down the highway, and have the 55-mile-per-hour speed limit, and, you know, you try to observe it, and yet you see cars going faster than that, with the attitude, well, I will get there faster, no matter that I am using up somebody else's gasoline. It is this whole selfish attitude that is prevailing in this country that concerns me, and that is where we might not be able to get State concurrence too easily.

Mr. WEAVER. Will the gentleman yield?

I agree with the gentleman on the selfish attitude. I wonder if the gentleman would agree to a provision of law, if and when we proceed with this bill, to require the States who benefit from this output of electricity to solve the waste disposal within their own States or close down the plant, would the gentleman agree to that?

Mr. LUJAN. And not import any from any other State, so that you do not pollute the other State.

Mr. MARRIOTT. It seems to me we cannot be quite that narrow-minded, because if one State is utilizing nuclear power, then it is not utilizing something else, which may be of benefit to another State. Is it not true that when one State uses nuclear, many other States are allowed to use a greater supply of something else which they may not have? I wonder if we could be quite so narrow as to say that if the State with the nuclear powerplant solves its problem, the rest of us go home free.

Can you comment on that point?

Mr. LUJAN. Certainly; there is no question that that can be correct. Coupled with what the gentleman from Oregon said, about burying your own wastes in your own State. Then we would say to States like California—and I do not mean to be picking on California, but they use a lot of the electricity that is produced in New Mexico at the cost of our environment—then we will say to them, also you cannot transport that electricity across State lines. If you are not willing to take the bull by the horns and build your own polluting, coal-powered plants, or your own nuclear plants—and we have a prohibition on oil and gas-fired plants—and so if you want to be a hog about using all of this electricity, then you ought to take some responsibility.

Thank you, Mr. Chairman.

The CHAIRMAN. Anybody else to kick California around?

If there are no further questions, Mr. Marriott?

Mr. MARRIOTT. One question. As you look over the States, are there a few States in the country that seem to have all of the qualifications and the characteristics to be just the ideal spot to put these nuclear powerplants? And we would like to know if you have a few picked out.

Mr. DIRCKS. No; we are eagerly awaiting to see what the Department of Energy comes up with.

Mr. MARRIOTT. Would the Utah Salt Flats have some special alert to the gentleman?

Mr. DIRCKS. I have not seen those mentioned yet.

Mr. LUJAN. That is a good suggestion. [Laughter.]

Mr. CLAUSEN. Inasmuch as California has been mentioned in the conversation here, I want you to know we take care of those portions of California where I have an influence. There is always an escape hatch.

We may form our own State up there in the northern part of the State, so we will not be under the influence of the people who do not want to take the responsibility. On a serious note, we all want to realize that we as legislators have a serious responsibility to develop the facts. On an issue of this kind, it is very easy for people to act more on the basis of emotions, or stirring emotions without a foundation of fact. Our time would be better spent if we addressed ourselves to the factual information. You are to be complimented, sir, for focusing in on some of the central issue that will have to be addressed.

Now, would you state for us what you perceive to be the factors that have to be dealt with in the storage of nuclear waste?

Could you delineate them or define them?

Mr. DIRCKS. The approach we are taking, Mr. Clausen, in the Commission, we are looking at an in-depth approach, we are looking at each component of the system, we are trying to build redundant barriers around each part of the system components so that we can get an extremely high level of confidence that the disposal will be safe. This means that if one component fails to work exactly as we think, another component would have the capability to make up for the failed component.

For example, we are looking at waste forms very carefully, we are looking at the combination of waste forms, the canister it is packed in, the overpack that surrounds the waste itself, and we are trying to build into the design of that thing a requirement that it has to last, and Mr. Lujan can correct me, at least 1,000 years. This means the waste will not escape from that form during the lifetime of the extremely hazardous fission products. We are also looking at the geologic media, and trying to build into our criteria a requirement that the repository and site geology serve as a completely satisfactory barrier.

Mr. CLAUSEN. What would be the parameters of the requirements for a system of nuclear waste repositories? What do you think is going to be the ultimate dimensions of waste in the years that this will have to be dealt with?

Mr. DIRCKS. I will let Mr. Martin handle that one, the amount of waste to be dealt with, and I guess that includes both military waste and the waste coming out of the powerplants themselves.

Mr. MARTIN. I think in terms of volume, that is ultimately what it will boil down to is how many canisters, and that sort of thing.

I read some figures the other day that say that in terms of volume by let us say the first decade or two of the next century, projecting ahead the next 30 or 40 years, that in terms of volume about half of it will be the existing military waste, and then the other half will be that generated over the next 30 or 40 years by the civilian program. So if we were to boil it down to canisters of waste, or units of volume, about half of it exists today, and the other half will be generated by the civilian nuclear power.

Mr. CLAUSEN. So that a lay person can get the measure of magnitude of the problem, can you translate that into terms of area. Will

it take half of the State, or will it take an unreasonable amount of space to accommodate this?

Mr. MARTIN. No; I believe from the figures I have seen, if it is spaced conservatively, that probably means one or two repositories having about 3 square miles of area each. It will be in that order.

I may be off, but it is in that general dimension.

Mr. CLAUSEN. Is the technology available to handle this waste and implement it, or is there a lack of technology?

Mr. MARTIN. I think at the present time we would have to say, after going through this R. & D. process and looking at it very hard, there is some more technology that needs to be developed.

We believe there needs to be some work done in this area.

For example, as Mr. Dircks said, one of the approaches we are taking is a very conservative multiple barrier approach to the thing, in that we recognize that anything that you try to design has to last thousands of years, you have great unknowns as to what may happen in the future, so we are attempting to build several barriers here, each one of which should be satisfactory, all by itself, and if you stack the redundancy up, that should compensate for the uncertainties.

One of the issues we are focusing on today is to get the Department of Energy to develop a waste form that all by itself is pretty well indestructible.

This is an area that is ripe for additional technological development, and there is a lot of promising things that have been developed at universities, and even in DOE labs, but some more work needs to be done.

Mr. CLAUSEN. Could you submit to the committee an assessment as to the state of the art, those areas of technology that you feel need to be addressed, what progress we are making, and how long you feel it will take to have that type of technology in place so that we can address it positively without any kinds of concerns?

Mr. MARTIN. Yes, sir.

Mr. CLAUSEN. An in-depth recitation of where we are at this point, so we can fulfill what I think is our responsibility, Mr. Chairman, so we could have on the record the best available information, and even an elaboration of the magnitude of the problem, and how it could be handled in the next 50 to 100 years.

The CHAIRMAN. That information will be available to us.

[Response to Mr. Clausen's questions furnished by the Department may be found in the appendix. See table of contents for page number.]

Mr. MARRIOTT. Do I hear the gentleman saying that what we would need in this country would be two repositories, 1 square mile each, in some isolated place to take care of all of our depository waste problems?

Mr. MARTIN. Yes; that is about the right number of repositories, but I would say about 3 square miles each.

Mr. MARRIOTT. Would that include what we have stored in places, or is that just from here on out?

Mr. MARTIN. That would include the military waste that is now being stored.

None of it has been disposed of permanently. It is all being stored in one form or another, and I will get some more exact figures for this in-depth analysis that you asked for.

It is my impression that we might be able to get one, but more than likely we would need two, maybe three at the outside.

Mr. CLAUSEN. One final question. I was reading where a German scientist was suggesting that one of the potential answers to the waste disposal problem would be with sufficient thrust capability, to transfer it into space. I would be interested in having something for the record on the feasibility of that suggestion.

[In response to Mr. Clausen's request, the Department subsequently furnished the following information:]

While the NRC has not specifically investigated the feasibility of space disposal, the concept is not totally out of the question. The NRC program is oriented to geologic disposal at this time, in response to DOE's program. However, we do intend to consider alternative disposal concepts at a future date and, in doing so, we would expect to explore the merits of space disposal from a regulatory viewpoint.

The CHAIRMAN. Are there any other questions on my left?

Mr. Huckaby?

Mr. HUCKABY. Thank you, Mr. Chairman.

In reading your statement, on page 7, your point 5, the meaning and intent of what you are saying there is that if you want to go into a State, and the State did not want you, that you are suggesting Congress should have the authority to override that State?

Mr. DIRCKS. There has been a suggestion along that line.

All I was saying was that if you have a confrontation where the State says no, and somebody else says it is OK, it would be good to have some authority to resolve the differences, at least mediate them and listen to both sides of the argument.

It could be the Congress, a congressional committee, or it could be some other body to listen to the arguments, pro and con.

Mr. HUCKABY. Is the Secretary of Energy in concurrence with the position you have outlined here?

Mr. DIRCKS. I do not know. This report was developed and approved by the Commission. We did not ask for the approval of the Secretary.

Mr. HUCKABY. I will send you a copy of the letter that Senator Long and I received from the Secretary last year stating specifically that they had no intention of establishing any type of permanent or temporary repository in any State without the State's concurrence, which is not at all what you are saying.

I wish you would get together and decide which way you are going.

I will submit this for the record.

[Letter from Mr. Huckaby to James R. Schlesinger, letter from John M. Deutch to Mr. Huckaby, and document entitled "Principles of Understanding" follow.]

JERRY HUCKABY
5TH DISTRICT, LOUISIANA

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SUBCOMMITTEES:
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FOREST
OILSEEDS AND RICE

INTERIOR AND INSULAR AFFAIRS
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MOBILE OFFICE

Congress of the United States
House of Representatives
Washington, D.C. 20515

February 22, 1978

Honorable James R. Schlesinger
Secretary, Department of Energy
The White House
1600 Pennsylvania Avenue, N.W.
Washington, D.C. 20500

Dear Mr. Secretary:

It has come to my attention through the media that you recently conferred with the Congressional members of the New Mexico Delegation concerning the federal government's nuclear waste management program. Specifically, you spoke about the Department of Energy's consideration of salt beds located near Carlsbad, New Mexico as a potential nuclear waste disposal site.

According to a press statement made by Senator Pete Domenici, you had publicly announced that the State of New Mexico has the authority to determine whether high-level radioactive wastes can be stored within its boundaries.

I was intrigued by these remarks. As you know, the Department of Energy is currently conducting identical studies and experiments to determine the geological and hydrological suitability of two salt domes located in North Louisiana for nuclear waste burial. These projects have become a very sensitive issue in Louisiana. We are vehemently opposed to any activities, even in the experimental stage, which might advance the possibility of Louisiana salt domes being selected as storage sites.

The Louisiana State Legislature enacted a law to prohibit the disposal of radioactive materials in Louisiana. I would be very interested in knowing whether your statement regarding reversal preemption is applicable to the State of Louisiana as it is to New Mexico. I would like to point out that to date, New Mexico has not even passed a law to this effect.

A response from you to clarify Louisiana's situation would be appreciated.

With kindest personal regards,

Sincerely yours,

Jerry Huckaby

JH/ce

Department of Energy
Washington, D.C. 20545

MAR 1 6 1978

Lg 9 Huckaby.

The Honorable Jerry Huckaby
United States House of Representatives
Washington, D.C. 20515

Dear Mr. Huckaby:

Thank you for your letter of February 22, 1978, to Secretary Schlesinger regarding the location of a nuclear waste management facility in New Mexico. It is Secretary Schlesinger's view that the State of New Mexico should have a right of concurrence on the construction of any facility proposed for the long-term permanent disposal of nuclear wastes in that state.

We have also reached an agreement with Governor Edwards on nuclear storage, and I am enclosing a document outlining the principles of understanding between DOE and the State of Louisiana. I call your attention to paragraph 8 of this document.

I hope this response is satisfactory, and if I can be of any further assistance, please let me know.

With kindest personal regards,

Sincerely,

"SIGNED BY JOHN M. DEUTCH"

John M. Deutch, Director
Office of Energy Research

Enclosure:
Principles of Understanding

Principles of Understanding

In accordance with discussions between representatives of the Department of Energy ("DOE") and the State of Louisiana, the parties hereby agree that to the extent permitted by law, they will use their best efforts to adhere to the following policies and practices with respect to development of the Strategic Petroleum Reserve in the State of Louisiana:

1. Napoleonville Salt Dome--DOE use of this salt dome and others in Louisiana for strategic petroleum storage will be acceptable to the State, so long as no employees of industries utilizing the domes are displaced in their jobs by the Department of Energy in its storage operations.

2. Atchafalaya Pipeline--The State will support the proposed pipeline extending from St. James Terminal to Weeks Island, provided that activities in laying the line through the Atchafalaya Basin will not be undertaken until after July 1, 1978, and that applicable environmental and governmental regulations are adhered to.

3. Backup Operations--DOE will give all due consideration to barging operations as an available backup method to pipeline transportation of strategic reserves in emergencies. In particular, barging facilities at the Port

of New Iberia, and the accompanying dredging and deepening of the channel there will be studied. DOE will make available immediately $300,000 to the U.S. Corps of Engineers to be spent in 1978 for the preparation of an environmental impact statement for the New Iberia project.

4. Compensation--DOE will pay the State $1,289,082 for the State's interest in the West Hackberry Salt Dome, located on 35 acres of State-owned land under Black Lake in Cameron Parish.

5. Docking Facilities: St. James Terminal--The State will support the permitting, construction and maintenance of the St. James Terminal as a docking facility.

6. Well Pad Construction: Bayou Choctaw and Hackberry--The State will support the permitting of well pad facilities at these two salt domes.

7. Sabine River/Hackberry Pipeline--The State will support the granting of permits and rights of way for the proposed pipeline extending from the Sabine River Crossing to the Hackberry Salt Dome.

8. Nuclear Storage--All Federal Government studies relating to nculear waste disposal in the Vacherie Salt Dome in Webster Parish and the Rayburn's Salt Dome in Bienville Parish will be subject to this stipulation: The Department of Energy will not construct any nuclear waste

repository for long-term disposal in Louisiana if the State objects. Studies of possible areas in Louisiana as well as in other states would continue with some test drilling which will always be preceded by complete discussions with state officials.

9. Sub-Office--The Department of Energy will open a sub-office in New Orleans, accommodating some 200 federal and contractor employees.

10. Reversionary Rights--With respect to any donations by the State of property to the Federal Government, DOE agrees that when the use to which the property was donated ceases, the State will have the right of first refusal with respect to acquisition of the property.

John O'Leary
Deputy Secretary
Department of Energy

Date 2-22-78

Edwin Edwards
Governor
State of Louisiana

Date 2-22-78

Mr. DIRCKS. Well, I point out this is the Commission's view, and we did not check it out with the Secretary of Energy.

Mr. HUCKABY. No further questions.

The CHAIRMAN. Anything further?

Mr. WEAVER. Mr. Chairman, I would like to take the balance of my time.

Mr. Chairman, the staff has drawn up questions, they are excellent questions, and I ask unanimous consent they be submitted to the NRC.

The CHAIRMAN. Without objection.

[The questions referred to, with responses from NRC, may be found in the appendix. See table of contents for page number.]

Mr. WEAVER. I want to ask Mr. Martin a question.

Mr. Martin, these one or two or three repositories you are talking about, I would like to ask you, suppose you could live forever, we will not say that, but suppose you were on the face of the Earth at any given time, how many years before you walk into one of those?

Mr. MARTIN. The hazard of this material basically breaks into two time frames.

Mr. WEAVER. I want to know how many years before you walk into one.

Mr. MARTIN. In the order of 500 or 600 years.

Mr. WEAVER. You would walk into one in 600 years?

Mr. MARTIN. Yes.

Mr. WEAVER. I have heard it up to 225,000.

Mr. MARTIN. No; after about 600 years or so, the fission products that cause the high radiation levels will have died off, and you can physically walk into one.

Now, there is still a lot of long life material as plutonium, and other things, not unlike the radium in mill tailings, you would not want it blowing around or getting into the water, or people using it to build things with, and you would not want to have it around to breathe it in the air, but you could physically walk into it.

Mr. WEAVER. Mr. Martin, one final question. You say you are in charge of the Office of Waste Management of the NRC?

Mr. MARTIN. Right.

Mr. WEAVER. Would you build a home, your own home, without a waste disposal system?

Mr. MARTIN. No; I would not.

Mr. WEAVER. Thank you.

Yet the nuclear house has done that, has it not?

Mr. MARTIN. Yes.

Mr. WEAVER. Thank you.

The CHAIRMAN. Thank you very much, gentlemen.

Mr. DIRCKS. Thank you.

The CHAIRMAN. We have scheduled on the witness list, first of all delayed, Mr. Seiberling.

Mr. Seiberling, we would be happy to hear from you, either at the witness table or from up here.

I would hope that Mr. Dircks would stay, because he may want to respond to some of the points you would make.

[Prepared statement of Hon. John F. Seiberling may be found in the appendix.]

STATEMENT OF HON. JOHN F. SEIBERLING, A U.S. REPRESENTATIVE FROM THE STATE OF OHIO

Mr. SEIBERLING. Thank you, Mr. Chairman.

I have a prepared statement, which I would ask the staff to pass out, and I ask unanimous consent that it be placed in the record in its entirety. I will attempt to just hit on some of the main points that I want to emphasize to move this along.

I would also like to ask unanimous consent to put in the record the section-by-section analysis of the bill that I have introduced, H.R. 2762, which is in the Congressional Record, prior to my testimony, in order that anyone reading it may have a quick way of analyzing my testimony.

The CHAIRMAN. Without objection, we will proceed in that fashion.

[The bill H.R. 2762 and section-by-section analysis of H.R. 2762 may be found in the appendix. See table of contents for page number.]

Mr. SEIBERLING. Mr. Chairman, I commend you for holding this series of oversight hearings on issues related to nuclear power.

Since you are hearing testimony today on nuclear waste management and issues of equity and public participation, I am taking this opportunity to testify on legislation I have introduced to establish a procedure for States to participate in decisions on radioactive waste disposal.

This bill, H.R. 2762, is cosponsored by 37 of our colleagues, including several members of this committee. Senator George McGovern has introduced identical legislation with broad bipartisan support.

At this time I would invite your attention to the form of the legislation itself, which I would quickly like to outline.

First, it would require the Chairman of the NRC to notify the Governor, presiding officers of State legislatures, and the tribal council of any affected Indian tribe, of any intent to explore a site which is being considered as a radioactive waste storage disposal site within the State or Indian tribe area.

Second, it would authorize the Governor to request the creation of a Federal-State Radioactive Materials Management Commission to examine all of the issues related to the proposal, and would set forth guidelines to the composition of the commission.

Third, it would require the Commission to examine all issues related to achieving substantial concurrence with a State on all aspects of a proposed site, including socioeconomical, technical, environmental, and health safety issues. H.R. 2762 would further provide that if the Commission cannot achieve substantial concurrence, the Governor, in consultation with other Commission members, will file a report stating the areas of disagreement, and identifying alternatives acceptable to the State. Finally, the legislation would authorize the State legislature to concur or disagree with the Commission's decision, and would prohibit the Department of Energy from proceeding with the development of a radioactive waste facility within the State until the objections of the State are satisfied.

Mr. Chairman, one way to enlist the cooperation of the States may be simply to offer the Governors of the States, and perhaps the presiding

officers of the legislatures, to name the site the "Governor So-and-So" or the "Speaker So-and-So" memorial waste storage facility—perhaps an attractive offer to some since such a facility would probably be a longer lasting memorial than anything else we could create.

Whether the rest of the voters would go for that remains to be seen. But in the absence of such practical solutions we need this bill to affirm State's right to participate in and influence decisions which affect the long-term safety and health of their citizens.

I became even more actively interested in this subject when the DOE some years ago announced that they were considering locating such a radioactive waste disposal facility in salt mines 3,000 feet below the city of Barberton, Ohio, which is not in my district, but right next door to the city of Akron, and part of a 600,000 population urban area.

You can imagine the kind of reaction that that met with, and suffice to say, the DOE has indicated that they are not considering that location any longer.

This bill essentially affirms States' right to participate in and influence decisions which affect the long-term safety and health of their citizens.

H.R. 2762 would amend the Atomic Energy Act of 1954 to require the Nuclear Regulatory Commission to notify a State of any proposals to explore sites within such a State for the purposes of evaluating or developing a facility for storage or disposal of radioactive materials for interim storage, or longer.

Once the State has been notified of a proposed action relating to radioactive waste disposal, the Governor of the State may request the creation of a Federal and State Radioactive Materials Management Commission to study all the issues associated with waste disposal at the specific site or sites identified by DOE.

At the conclusion of the study, the Governor (in consultation with the other Commission members) and the State legislature, would be able to issue concurrence and nonconcurrence with the proposed action, along with recommendations, alternatives or conditions for further action by DOE.

The bill would establish for the first time a formal cooperative relationship between the States and the Nuclear Regulatory Commission and the Department of Energy to evaluate and develop sites for the disposal of radioactive waste.

Since the inception of the commercial atomic industry in the 1950's, the Federal Government has had sole authority for regulating the industry in all matters, including waste disposal.

The basis for the sole Federal authority stems from the first use of atomic science in weapons systems, consequently establishing the importance of atomic technology to national security.

Since the Federal Government had at that time expertise over the private sector in the technology and use of nuclear materials, the Federal preemption in issues of atomic power made sense; but continued Federal preemption in decisions concerning radioactive waste disposal is an unrealistic and outdated application of the policy.

The problems of nuclear waste disposal are enormous.

Currently, we have about 74 million gallons of radioactive waste in this country, and all in temporary storage at plant-sited "pools."

The fission products which comprise this waste include so-called transuranic elements—radioactive atoms heavier than uranium which remain radioactive for extremely long periods of time—plutonium-239, for example, has a half-life of almost 25,000 years.

In human terms, the continued radioactive hazard is infinite.

The immediate need for interim storage of this radioactive material is evident from the increasing frequency of leaks from existing storage sites.

The most prominent example of this is the storage facility for DOE radioactive wastes at Hanford, Wash., where over 423,500 gallons of high-level wastes have leaked from 16 tanks.

This experience points to the serious health, safety, and environmental problems associated with radioactive waste—problems which fall under the concern and authority of the States.

The past failures of storage technology may not be repeated in DOE's next attempt at developing nuclear waste storage technology.

But there is no guarantee that the next attempt, probably at interim storage for a period of 30 to 100 years, will be any more successful.

Just this week the press reported that a report by the National Academy of Sciences, commissioned by the NRC, on radioactive waste was suppressed because it criticized a technology for interim storage which is currently favored by DOE.

The technology, which would solidify high-level wastes into a glass-like substance, has been the Department's leading proposal for high-level waste disposal.

The supression of this report, which evidently called DOE's commitment to glass storage "premature," indicates that careful scrutiny by the States of proposals to store wastes at sites identified as geologically ideal for this type of storage is not only logical but desirable.

The incident points to the need for open discussion of potential hazards and the actual risks of nuclear waste disposal before faulty decisions are made and irreversible, tragic results are suffered.

The States have the right and responsibility to voice their concerns about the problems associated with potential sites and with proposed technologies for radioactive waste disposal, yet presently the States cannot exercise that responsibility.

Currently, DOE gives some consideration to States which object to possible siting of radioactive waste facilities within their boundaries—DOE has, for example, as I pointed out, temporarily discontinued field research in Ohio because of the Governor's strenuous opposition to radioactive waste siting in the State.

In the final analysis, however, there is absolutely no assurance that the views and objections of the States will be considered when it comes down to the crunch.

It is apparent that the tremendous task of securing existing radioactive waste demands a strong state role for the States in which a disposal facility may be sited, but the present policy—which operated in the case of Ohio—is nothing more than an internal DOE policy, subject to change with no notice or review.

I note on page three of his statement Mr. Dircks said NRC fully expects that DOE will involve State and local governments to take part in its site selection program.

An expectation and an involvement without any definition of what that involvement is going to be, or any guarantee that it is going to be a meaningful involvement is not, I am sure, sufficient to satisfy the population that will be affected.

In addition, the General Accounting Office, in response to a question by Congressman John Dingell, Chairman of the House Interstate and Foreign Commerce Subcommittee on Energy and Power, advised that any departmental policy which allows a State to reject a possible waste disposal site could constitute a "veto"—and that DOE has no authority under existing law to acknowledge a State veto.

Even if a State had a reasonable objection, nothing in present law prevents DOE from proceeding, except the Department's fear of earning a terrible public image by foisting radioactive waste on an unwilling State.

I do not mean to indicate that they would act irresponsibly, but there is no inhibition other than public opinion in the political process.

This singular authority is unrealistic in view of the immediate need to develop a workable program to deal with the national problem of radioactive waste.

The dimensions of the nuclear waste disposal problem demand a strong State role, and the States are strongly demanding to be heard.

Fifteen States have already passed laws which would prohibit outright or set conditions on nuclear waste storage within their jurisdictions, and 10 other States are considering initiatives to put similar authority on the books.

Under current Federal law, these State laws have no meaning in final decisions on radioactive waste disposal.

Yet, in many cases, States are not asking for a veto authority: They are asking for their rightful role in siting decisions.

H.R. 2762 would establish a process for continuous consultation and participation between State and Federal agencies on all issues related to nuclear waste management.

The actual extent of State participation in these decisions will be up to the individual States.

My bill provides room for a legislative role, where the State law creates a legislative concurrence process, and generally provides maximum flexibility for States which have already enacted laws relating to nuclear disposal to use their own process.

The consultation and concurrence process provided by H.R. 2762 may be time consuming, but decisions on disposing radioactive waste which remain toxic for thousands of years should not be made in a hurried manner.

And I would stress that the concurrence process is not necessarily a veto process.

A veto process would allow a State to arbitrarily shut out Federal activity at any point.

The process proposed by my legislation develops a forum for Federal and State officials to discuss the issues, and establishes a Federal/State communications process to negotiate on matters which can be subject to mediation.

For example, a State may logically fear that accepting radioactive waste will adversely affect economic growth; the State may not have the resources to provide sufficient security for the site; or the State

may anticipate transportation problems and require Federal assistance to widen its roads or develop a route around a highly populated community.

I envision the process in H.R. 2762 as helping the Federal Government to identify resolvable problems such as these which can be met with increased Federal authority.

Such requirements do not constitute blackmail by the States.

We should not fool ourselves into believing that States which accept nuclear waste will not need some economic incentives to make it easier to accept the tremendous responsibility of storing radioactive waste.

This burden must be recognized as part of the cost of nuclear power.

I wish to say that Mr. Dircks made some good points about having some authority to resolve differences, and I also note he too suggested there be a planning council established composed of Federal and State officials.

My planning council would be created in the form of an individual task force for each proposed, rather than the single permanent executive council to study all sites. However, I feel that the proposed mediation process would end up with some form of a means for resolving differences that can only be done in the end through the Congress.

If we want to have an expediting process, if there is an ultimately unresolvable dispute, it can come to the Congress, go to the appropriate committee, and then it can be reported out within a specified period of time, and Congress can act on it, and then the President can sign and enact it into the law. That is the proper way to do it, and I want to recall to my colleagues what happened several years ago when the NRC or the AEC at that time wanted to place radioactive waste in salt mines in the State of Kansas. If Mr. Skubitz, our colleague, had not rallied his fellow members to overrule that decision, a very serious mistake would have been made as it later turned out to be in the case.

I would like to mention one other point.

One view on nuclear waste management would require States which use nuclear power to be responsible for nuclear waste.

The gentleman from New Mexico raised this point, but in some small, populous States, such as Massachusetts, this probably would not be sound or rational policy.

Moreover, since States in the past have been excluded from meaningful roles in decisions on plant siting as well as regulating safety features of these plants because of the Federal preemption, it would be unfair and unwise to reverse this policy and automatically hold these same States accountable for radioactive waste disposal problems from plants already built or licensed to be built in the State.

Finally, I anticipate that there will be some who will question why this legislation creates an individual task force for each proposed action, rather than a single permanent executive council to study all sites.

The reason is this: States cannot delegate to a Federal agency their responsibility to protect the health and safety of their citizens.

This legislation provides a workable framework to give each State, according to its needs and priorities, the maximum opportunity to

participate fully and effectively in decisions on radioactive waste disposal.

Since one of the issues your subcommittee is studying today is public participation, I would point out that this legislation enhances public participation by giving the people directly affected the right, through their State legislators and their Governors, to make final recommendations on an issue which affects their lives and those of future generations.

I urge you to incorporate an effective role for the States in site-selection decisions, as provided by H.R. 2762, and to require that the full range of site-specific problems are made for interim and long-term storage of radioactive materials.

Since DOE views the development of an interim storage facility as an urgent matter, I cannot emphasize the urgency of enacting a process for State participation in these decisions.

Thank you, and if there are any questions, I would be glad to try to answer them.

The CHAIRMAN. I thank our colleague for taking the time, and making the effort to give us his views.

He has been very active in this area. I think you build a constructive case.

I am glad you are proceeding with it and give us the framework when we finally get to mark up on these aspects on the overall problem.

We have got to deal with the States, but we have got to do the kind of thinking you have done to arrange for concurrence in a sensible way and involve the States. I think you have given us some good ideas.

Does anyone have a burning desire to cross-examine Mr. Seiberling?

Mr. CLAUSEN. Seriously, John, I think you have provided us with not only a measure of leadership, but I am glad you have taken the initiative to start to bring together something which we can all focus upon.

I think it will be a very constructive exercise.

At some point it might be helpful if you could identify the States that you have included in your statement which have actually passed these laws.

Mr. SEIBERLING. That is a good point, and without objection, I will submit such a list for inclusion following my remarks.

Mr. CLAUSEN. I think it might be smart to start from that, from the ones that have passed restrictive laws.

[The following information was subsequently furnished for the hearing record.]

States that have passed restrictive laws: Alaska, California, Colorado, Delaware, Hawaii, Louisiana, Maine, Maryland, Michigan, Minnesota, Montana, North Dakota, Oregon, South Dakota, Texas, and Vermont.

The CHAIRMAN. Anyone else?

If not, thank you.

Mr. SEIBERLING. Thank you, Mr. Chairman.

The CHAIRMAN. Our next witness is from the Department of Energy, Mr. Worth Bateman, the Deputy Under Secretary.

The staff has distributed your statement, Mr. Bateman, and we will be glad to hear from you.

[Prepared statement of Hon. Worth Bateman may be found in the appendix.]

STATEMENT OF HON. WORTH BATEMAN, DEPUTY UNDER SECRETARY, U.S. DEPARTMENT OF ENERGY

Mr. BATEMAN. Let me just take a few minutes to summarize what is in the statement, if I may, and we can just enter the full statement in the record, with your permission.

The CHAIRMAN. Fine.

Mr. BATEMAN. It is a pleasure to be here this morning to talk about some of the problems associated with siting and operating nuclear waste repositories.

I think this hearing will help focus attention on a problem that we have been considering for over a year now in the interagency review group of nuclear waste management; namely, that the resolution of institutional issues may well be more difficult than in finding solutions to the technical problems.

I would like to submit for the record a listing of some of the studies which we have done, which address this issue, with your permission.

The CHAIRMAN. We would be glad to have them for our record.

[The Department subsequently submitted the following information.]

NUCLEAR WASTE REPOSITORY STUDIES AND OTHER INFORMATION RELATED TO THE SITING OF NUCLEAR WASTE REPOSITORIES

The following is a partial listing of recent studies of the social science aspects of waste management:

Impact/Siting Problems:

Cluett, Christopher; Mertaugh, Michael T.; Micklin, Michael. *A Demographic Model for Assessing the Socioeconomic Impacts of Large-Scale Industrial Development Projects.* October 1977.

Herbert, J. A. et al. PNL–2400. *Nontechnical Issues in Waste Management: Ethical, Institutional, and Political Concerns,* May 1978.

Brenner, Robert D. *The Social, Economic and Political Impacts of National Waste Terminal Storage Repositories,* January 1979.

Hunter, Ted. *Nuclear Waste Repository Land Use Control Considerations in Selected States,* September 1978.

Lindell, M. K. et al. *Radioactive Wastes: Public Attitudes Toward Disposal Facilities,* October 1978.

Maynard, W. S. et al. *Public Values Associated with Nuclear Waste Disposal,* June 1976.

Siting Incentives:

Cole, Roland J. et al. *Compensation for the Adverse Effects of Nuclear Waste Facilities,* July 1978.

Garvey, Gerald. *NWTS Policy and Public Choice,* January 1979.

Greene, Marjorie R. and Hunter, Ted. *The Management of Social and Economic Impacts Anticipated with a Nuclear Waste Repository: A Preliminary Discussion,* May 1978.

Decision Issues: Public, Local and State Participation:

Smith, Randall F. *State and Local Regulation Relevant to Nuclear Waste Isolation Facilities,* September 1978.

Bishop, A. Brace et al. *Public Consultation in Public Policy Information: A State-Of-The-Art Report,* 1977.

MANPOWER REQUIREMENTS FOR CONSTRUCTION AND OPERATION OF SINGLE COMMERCIAL NUCLEAR WASTE REPOSITORY BY DISPOSAL MEDIUM, FUEL CYCLE, AND IMPACT CONDITION

[Mean man-years per year]

	Construction		Operation	
	Expected impact[1]	Maximum impact[2]	Expected impact[3]	Maximum impact[4]
Salt:				
Once-through	1,400	1,800	870	1,200
Uranium recycle	1,200	1,600	1,000	1,300
Uranium and plutonium recycle	1,300	1,600	1,300	1,600
Granite:				
Once-through	2,200	2,900	1,100	2,100
Uranium recycle	1,700	2,200	1,300	1,800
Uranium and plutonium recycle	2,100	2,200	1,300	1,700
Shale:				
Once-through	1,900	2,300	880	1,200
Uranium recycle	1,600	1,900	1,100	3,300
Uranium and plutonium recycle	1,600	1,900	1,200	1,400
Basalt:				
Once-through	2,400	3,100	1,100	2,300
Uranium recycle	1,800	2,400	1,300	2,000
Uranium and plutonium recycle	1,800	2,400	1,500	2,100

[1] Mean man-years per year for 3 yr centered on year of peak manpower requirement.
[2] Mean man-years per year for year of peak manpower requirement.
[3] Mean man-years per year for operations from 1985 to end of project, excluding last 5 yr of operations manpower data from calculation.
[4] Mean man-years per year experienced from 1986 to 1990.

Source: Draft Environmental Impact Statement, Management of Commercially Generated Radioactive Waste, April 1979, DOE/EIS-0046-D, vol. 1 of 2, p. 3.1.127.

COMPARISONS OF COMMERCIAL NUCLEAR WASTE REPOSITORY CONSTRUCTION COSTS[1] BY GEOLOGIC MEDIA AND FUEL CYCLE

[In millions of 1978 dollars]

Fuel cycle	Salt	Granite	Shale	Basalt
Once-through	1,000	2,600	1,300	3,100
Uranium only recycle:				
Plutonium in HLW	1,100	2,000	1,200	2,300
Plutonium stored	1,200	2,000	1,300	2,300
Uranium and Plutonium recycle	1,200	2,000	1,300	2,300

[1] Includes mining, backfilling, and shaft sealing costs. Uncertainties in cost estimates are approximately ±20 percent.

Source: Draft Environmental Impact Statement, Management of Commercially Generated Radioactive Waste, April 1979 DOE/EIS-0046-D, vol. 1 of 2 p. 3.1.133.

COMPARISONS OF COMMERCIAL NUCLEAR WASTE REPOSITORY OPERATING COSTS[1] BY GEOLOGIC MEDIA AND FUEL CYCLE

[In millions of 1978 dollars]

Fuel cycle	Salt	Granite	Shale	Basalt
Once-through	590	2,360	810	2,390
Uranium only recycle:				
Plutonium in HLW	830	1,880	800	1,630
Plutonium stored	1,280	1,880	800	1,630
Uranium and Plutonium recycle	1,210	1,940	830	1,740

[1] Total operating expenditures over the life of the repository. Uncertainties in cost estimates are approximately ±25 percent.

Source: Draft Environmental Impact Statement, Management of Commercially Generated Radioactive Waste, April 1979, DOE/EIS-0046-D, vol. 1 of 2 p. 3.1.134.

Mr. BATEMAN. At present, the economic and social benefits of localities in which repositories may be sited are the same as those typically associated with any relatively large scale Government project. Basic-

ally, projects of this sort create benefits in the form of employment and income but result in demands for additional local services associated with the expanded work force and construction expenditures.

We believe local governments can be expected to gain by increased tax revenues on property, and local and State income taxes where they are in effect.

The actual physical and economic impacts that might be associated with any particular repository of course are unique to the site.

We have attempted in our generic environmental impact statement on commercial waste management to describe the range of the positive impacts and they are contained in my testimony. I will not go into detail, but the table at the back of the testimony provides an illustration of the range of possible impacts that one might expect.

Of course, these are speculative and should be interpreted in that light.

The location of a facility like a nuclear waste repository could also be expected to have adverse economic impacts, as well as positive ones. Those adverse impacts fall into a few categories.

First of all, an expanded work force would normally be accompanied by increased demands for local public services, like schools, roads, fire stations, and so forth.

To deal with these impacts, the current law does not allow State or local governments to tax federally owned land. We have existing legislation which permits DOE to make payments in lieu of taxes in those situations where the local community suffers a loss in taxes, as a result of projects.

Second, existing legislation allows the Department of Health, Education, and Welfare to provide specific assistance to local educational agencies in which a substantial burden has been created as a result of the project.

The Department currently has authority to make payments to State and local governments in lieu of property taxes when property is acquired by DOE.

In addition, the Department is authorized to make additional payments when so-called special burdens have been placed on the State or locality by DOE activities.

However, before arriving at an estimate of what those burdens are, and how they should be compensated, any benefits accruing to the State or local government as a result of those activities must be taken into account.

You have raised the question of what incentives beyond those which I have just described encourage States or localities to accept the location of nuclear waste repositories in their areas.

In our view, based on the review of existing legislation, we now have the only significant incentives that such communities could presently derive are the ones which I have just reviewed for you.

You have also asked if there are any systems of environmental tradeoffs which might balance the risks, and environmental costs of construction at a site of the nuclear waste repository. The tradeoffs that you suggest are similar to the ones in the Clean Air Act; namely, in those cases where unavoidable environmental effects are compensated by mitigating them or eliminating them in other areas.

To our knowledge, the application of such a system of tradeoffs has not been considered in the waste management program to date. This is an idea which we would like to look into further. Perhaps the proposed State planning council is a mechanism in which to generate ideas in this area. Assuming that it is successful, it would be explored further by the Department and the Congress.

Finally, let me say a word about Mr. Seiberling's bill. We have looked at this bill, and although there are many ways to proceed with it, to try to achieve the objectives described in that bill, the steps laid out there would seem to be reasonable, and consistent with our own view of the need to consult with States and local communities. The Department believes that it needs the concurrence of these communities to proceed with the location, siting, operation, of the nuclear waste repository.

The last section of the bill, section (g), however, would prohibit DOE from proceeding with any proposal regarding site selection or site development for radioactive waste management in the State, unless objections raised by the State in the course of the State evaluating that repository and its location were satisfied by DOE.

If that section is intended to provide a binding legal or statutory veto over Departmental activities in the repository area by the State, then we would take exception to that.

As you know, the Department's position has been as a matter of policy to extend the right of concurrence in any State in which we propose the location of a waste repository. However, we have not supported a legislative or statutory veto to be extended to the States at this time.

I think I will stop there, Mr. Chairman, and I would be happy to answer any questions you might have.

The CHAIRMAN. Thank you for a good summary.

What is the status of the WIPP project in New Mexico these days; where do we stand?

Mr. BATEMAN. I have not received a report as of this morning, but it seems to change daily.

I think that we are approaching a final decision on the future of that project.

The Department has in the past proposed missions for that project which are inconsistent with congressional wishes.

We are proceeding on the basis of congressional mandate; however, the Congress at the current time in the fiscal year 1980 budget has basically taken two different positions.

The Senate has said we would like to proceed with the project as originally defined by the Congress, that is high level R. & D. experiments as a mission, plus permanent disposal of TRU waste from the weapons program.

The House on the other hand has not authorized the project in fiscal year 1980. Those are the final choices that are offered to the administration. Of course the Congress directs us to carry out this project, unless the President decides to veto it, we will carry out the project itself as Congress directs. But our own position is that first we should have an additional element, that is the demonstration of the disposal of up to a thousand commercial spent fuel assemblies and, second, the project be licensed by the Nuclear Regulatory Commis-

sion. We continue to believe that both those actions are necessary and desirable, and there has been no change in that position. But we have not been able to persuade the Congress of the merit of these positions.

The CHAIRMAN. Has DOE ever requested funds, or authorization for WIPP as a civilian project?

Mr. BATEMAN. We have not requested that, no, sir.

We have tried to explore possibilities with the congressional committees having jurisdiction over commercial in terms of taking over waste jurisdiction of the project.

So far those discussions have not been fruitful.

The CHAIRMAN. Would the Department be willing to submit a request for funding on the civilian side of this?

Mr. BATEMAN. This is an issue which we have discussed in a recent memorandum to the President covering a variety of waste issues identified in the IRG report.

We have not to my knowledge received a Presidential decision on that.

The CHAIRMAN. Anyone else have questions?

Mr. VENTO. Mr. Chairman, in looking over your statement, Mr. Bateman, there are a number of concerns raised on page 9. You state you believe the States should have a voice in siting of nuclear waste repositories, and I believe the States ought to have a right to veto a site in some manner.

Maybe early on they ought to have the right to do that. It seems in these statements that States through various methods could really make it uneconomical. I mean, if you really give them a strong and meaningful voice, they could really make some of these decisions impossible by virtue of other action after a long period of time.

Mr. BATEMAN. That is exactly right.

Mr. VENTO. I fear, if we are going to end up with some long drawn out study process by which we permit the States in a period of 7 or 8 years to build a case, rather than giving them the veto up front, and say we do not want this thing, we do not want to go through the machinations in terms of avoiding it, I think that is a problem.

I think we are better off facing up to it in trying to deal with that, and giving the States that responsibility so we do not have to go through some protracted process, and that is the problem, we cannot get decisions made along these lines.

Mr. BATEMAN. Mr. Vento, I fully appreciate your view on this.

We believe that it is in the national interest in terms of our energy programs in having a viable supply of electric energy from nuclear sources to proceed with a waste management program that has the objective of permanently isolating these wastes from the biosphere.

If we did not believe that at the outset, a number of State laws, which in effect have said the future commercial development of nuclear power is going to be restricted unless a permanent waste disposal solution is found, further encourages us in that direction.

The question is how do you go about trying to achieve that objective.

Mr. VENTO. I think we have to have a veto on both sides, both by the DOE and NRC, and on the State side, because I think a lot of States might accept waste, and they have got 600 years of problems, we do not want that, but let me ask a question here, are there any security prob-

lems with regard to these wastes as well, and can you resolve all of the environmental ones?

Mr. BATEMAN. I do not think that is a problem from the point of view of facilities in safeguards.

Can I come back a minute to the earlier question? I think it is important to understand in trying to devise a process by which States and localities can be involved in repository siting decisions, that we all recognize there are at least three important phases in that process.

The first phase is one in which a number of potentially suitable sites get investigated, we improve our technical knowledge to the point we are in a position to select a site, and then we go ahead and select a site.

This is the phase we are in now. We are not up to site selection, we are trying to figure out what potential sites are available, and then make a choice from among them. The next step is with construction, and then the final phase is a period where a repository is placed in operation.

If that date of repository operation were very close at hand, then I think what you are proposing is in effect not very different from what we are proposing.

Our concern is that we will not get to the point where we have some options to be concurred in.

A lot has to take place between now and the time we get to that point.

The IRG says we may be 10 or 15 years away from getting to that point.

The trouble with getting a veto now in our view is that the likely effect of having a veto option available to the States today is that States will immediately exercise that veto. We will in effect halt current activities which eventually would lead to the point where you might have an option, or set of options from which to select a repository. So it seems to us that you have to devise a process which allows enough time to get you to the point where you know what you have, and what you do not have, and we do not think a veto now is consistent with that, a process which involves the State early on, at each of the major decision points until you get to the point where you can say we might want to locate a facility here, is one we have to have.

An early veto will never let us get to that point. A veto later on, that may be fine, but we do not have the information at this point, on what options are available, what their characteristics are, and whether those characteristics would be suitable and acceptable to the public to make a good decision.

Until we get to that point, it seems to me a veto, or nonconcurrence right legislated by the Congress would just not be appropriate.

Mr. VENTO. Is that not what Congressman Seiberling's goal provides?

It is not in concrete, but it does mandate all of their participation, but at the end, if the State does not want it, it does not have to accept it.

What you are saying is the same thing. I mean, you are saying by putting that up there as an end result, they know they can veto it right now, and it would be inappropriate to do so initially, but in the end,

if it was at the beginning of the process, there could be a significant savings of time and money.

You know, I think what you are going to have is the same type of reaction, one Member will have a site put in his State and generate a heck of a lot of enthusiasm for dealing with DOE, and I think it is just a problem.

I think it would be better off to start at the State level, they know where they are coming from, and you know what your problems are, and that might be helpful.

We have not solved the problems as of right now. It may be a lack of knowledge, it may be a lack of urgency with regard to resolving it, but nevertheless, it remains unresolved.

Mr. SEIBERLING. I have a further question, and then maybe we can let the witness go until Mr. Udall gets back.

Mr. Bateman, in your statement, you include a letter from Secretary Schlesinger of February 2, 1979, to Chairman John Dingell, which it is stated, and I will submit this letter for the record.

[The letter follows:]

Department of Energy
Washington, D.C. 20585

February 2, 1979

Dear Mr. Chairman:

This is in response to your letter of November 15, 1978, and the attached opinion of the General Accounting Office (GAO) concerning Department of Energy (DOE) authority to give States a right of nonconcurrence over the establishment of nuclear waste repositories. I am advised that the legal conclusions in the GAO opinion are consistent with those in the memorandum prepared in our Office of General Counsel on March 13, 1978, and referred to in the GAO opinion. In addition, we note that the GAO opinion indicates that we have not exceeded our authority in our discussions with the States.

We continue to believe that the successful exercise of our authority to select sites for nuclear waste disposal requires cooperation with the States and providing them with some assurances that we will proceed in a cooperative manner, rather than by force of Federal supremacy. In order to avoid Federal-State confrontations over the future siting of repositories, situations which we believe to be inimical to the public interest, we have been actively trying to construct a mechanism by which affected States can participate fully in the selection of suitable sites. We have found, however, that unless some provision is made for State concurrence, State governments will not feel assured that their participation in DOE site exploration and selection activities is meaningful. We have, therefore, put forward a policy that the Department would not make a final decision to proceed with construction of a waste repository within any State if the elected leadership of that State actively opposed such a decision. We believe this approach is consistent with the policy of this Administration to work cooperatively with political subdivisions at the State and local level, and it is our considered judgment that this is the wisest course of action on radioactive waste disposal. Both our General Counsel and the GAO have concluded that the manner in which we are proceeding is consistent with law.

The recent draft report to the President by the Interagency Review Group (IRG) on Nuclear Waste Management recommended the formation of an Executive Planning Council as a mechanism to define more precisely a consultation and concurrence process between the Department and the States. We are hopeful that the President will concur in the IRG's recommendation to establish the Executive Planning Council and that the Council will develop meaningful processes to avoid confrontation between any State and the Department over the issue of radioactive waste disposal.

Sincerely,

James R. Schlesinger

James R. Schlesinger
Secretary

The Honorable John D. Dingell
Chairman
Subcommittee on Energy and Power
Committee on Interstate and
Foreign Commerce
United States House of Representatives
Washington, D.C. 20515

Mr. SEIBERLING. Is that not a veto?

Mr. BATEMAN. I think that amounts to a veto, that is right.

Mr. SEIBERLING. Are you saying that is agreeable as a policy, or that you can change the policy, and therefore you have the final say?

Mr. BATEMAN. Yes, sir, if you ask the Department today, if we proceeded through the next 10 or 15 years of site characterization and site selection, got to the point where a facility was built, and that all of the health and safety standards of the NRC and whatever State laws applied, and the State said no, we do not want to put any nuclear waste in that facility, the current policy of the Department is we would not put waste in that facility, but that is a long way away, and the factors that could lead to State nonconcurrence, or concurrence for that matter, in that kind of a time frame, are extremely speculative.

We could be faced with an energy crisis much more severe than we have now.

We could be faced with costs of energy much higher than we have now.

Those factors could very much influence the way a State, or the way the Federal Government perceived what decision to make, once that facility was available.

The problem that we have is that to get to the point 15 years from now, where that option exists, where we can say yes or no, we want to use it. We have a lot of work to do. It takes a long time.

A veto legislated now, binding upon the Federal Government by the State, would prevent us from going through those stages. I think that would be a mistake.

I think the decision is too far into the future, in terms of the use of the facility, and to the extent a veto applies early on in that process, we will never get to the point where we know what options are available, and whether in fact we can use them safely and economically.

Mr. SEIBERLING. Then this is not really a State veto.

This is a policy that you say you are going to follow, until the crunch comes, and then you reserve the right not to follow. I do not really consider that satisfactory at this stage at least.

Suppose we added to H.R. 2762 a provision that said in the event of a final disagreement between the State and the DOE which is not resolved, and the State remains firm, the matter will be referred to the Congress, where it will be referred to the appropriate committee on an expedited process. In that instance anybody can discharge the committee after they have had it, say, for 60 days. Each House of Congress will have 60 days in which the matter then has to come to a vote. In this way the Congress becomes the final arbiter of the issue, and makes the final decision to go ahead with the facility, or to allow the State prohibition to stand. Then perhaps the congressional resolution should be subject to a veto by the President.

Now, why should not the Department of Energy be under the same pressure to reach agreement as the State?

They both have the possibility hanging over their heads, that if they do not reach agreement, Congress will overrule them.

Why is not that an appropriate procedure?

Mr. BATEMAN. If I understand what you say, sir, I think it is a perfectly appropriate procedure.

I think it is understood that whatever recommendation we ultimately decide to make with respect to facility location would obviously

have to be authorized and approved by the Congress, and I think our only concern is that we establish a process in dealing with the State, which allows the Federal Government to get to the point where it has a choice to make, but in no way are we suggesting that a mechanism be set up which circumvents or undercuts the ability of the Congress to work its will in this area.

We just want to get to the point where the Congress can.

Mr. SEIBERLING. I think they are right, and I think the procedure set forth in my bill, or similar procedure would guarantee that if it did finally come down to the point where Congress had to decide, then at least it would decide on the basis of a thoroughly established record, where the issues have been narrowed and Congress could understand the facts on which to act. Of course, Congress can always do that in the end anyway if they choose.

Mr. BATEMAN. That is right.

Mr. SEIBERLING. Nonetheless it seems to me it is much better to have it worked out to the point where if there is no agreement, Congress has a format in which to act. I think that is a much more satisfactory way and of course the only concern then of the executive branch would be that the Congress might listen to the political arguments of the State and choose not to override its fellow politicians. But, after all, that is why we have a Congress.

Mr. BATEMAN. Exactly. I would like to reemphasize, sir, that the summary of the bill which is in the Congressional Record of March 8, 1979, we think is a reasonable way of proceeding, up through section (f). That is, I think there are other ways to accomplish the same thing, but we fully agree that a process should be established which provides an adequate record for the Department, for the State, for the Congress, to make a decision, and that certainly is I think one such process.

The area of concern is making a commitment at this point which would legally bind the Department of Energy from proceeding with the repository if a State at the end of that process details that it does not concur with the Department's recommendation. Congress can always override.

Mr. SEIBERLING. Let me make sure I understand your view. If section (g) of the bill is modified so that in the event the State and the Department ultimately cannot agree, the matter is referred to Congress with some sort of a rule for expediting the decision; would that satisfy your concern?

Mr. BATEMAN. I think that that would go a long way to satisfying the concern, yes, sir.

Mr. SEIBERLING. Thank you. I have no further questions.

Mr. WEAVER. Thank you, Mr. Chairman.

Mr. Bateman, as of 11:33 a.m., June 28, 1979, has the United States resolved the waste disposal problem?

Mr. BATEMAN. Has it resolved it?

Mr. WEAVER. Yes, sir.

Mr. BATEMAN. I think what we have——

Mr. WEAVER. Just yes or no, sir, is all I want.

Mr. SEIBERLING. Or maybe.

Mr. BATEMAN. Maybe.

Thank you, sir.

Mr. WEAVER. You did not disagree with the person at the NRC.

How long has the United States been working on a solution to the waste disposal problem?

Mr. BATEMAN. In some form, I think as long as we have had a nuclear energy and weapons program.

Mr. WEAVER. How many years is that?

Mr. BATEMAN. Approximately 30 years.

Mr. WEAVER. We have been working on it for 30 years, and we have not any solution?

Mr. BATEMAN. In the sense that we have produced waste, we have stored waste, we have done research and development on how to handle those wastes on an interim basis, and on a permanent basis; yes, sir.

Mr. WEAVER. But we have not resolved conclusively according to your testimony the waste disposal problem, and as of this moment, and we have been working on it for 30 years?

Mr. BATEMAN. I think that is not fair to characterize the effort that generally.

I think that in the last 5 years the Department, or the agencies that preceded it have paid much more serious attention and have worked on this problem much more intensively than was done in the period up to that time.

Mr. WEAVER. What you are saying then is that we began building nuclear plants earlier without being serious about doing the nuclear waste disposal according to your testimony?

Mr. BATEMAN. I think that less attention certainly was paid to the waste side of the problem than the production of nuclear reactors and nuclear weapons.

Mr. WEAVER. Would you build a home, your own home, that you were going to live in, and it was around other people, without a waste disposal system?

Mr. BATEMAN. I am sorry.

Mr. WEAVER. Would you build a home without a waste disposal system?

Mr. BATEMAN. Not without some waste disposal system, but I think that is a bad analogy.

I think we have had many different kinds of waste handling systems for residences in the last 30 years or 500 years.

I think they developed, we think they can do a better job, you do a better job, but only if the benefits exceed the costs.

Mr. WEAVER. I see.

Do you know Steven Stalos, have you heard of him, a physicist who has held a position with Rockwell-Hanford operations?

Mr. BATEMAN. No, I do not know him.

Mr. WEAVER. Have you ever heard of him?

Mr. BATEMAN. No.

Mr. WEAVER. This is a statement on the Department of Energy Inspector General, Mr. Steven Stalos, a physicist, he resigned from a position with the DOE contractor, Rockwell-Hanford operation, said to the Inspector General, on page 5 of his statement, I was told by Mr. Barainca of DOE that there was a DOE policy that there will be no more leaks, due to the bad publicity the public announcement of leaks gave the nuclear industry.

I would at least assume, frankly I am not sure at all, so for the moment I would assume this is not an official DOE policy, but could

you tell us whether there are people within the organization, your organization, who act as though this is the policy; could Mr. Barainca have told Mr. Stalos this is the policy, that we have leaks about us of radioactive waste disposal?

Mr. BATEMAN. If the intent of the statement was to say we would say there are no leaks when there are leaks, I can be certain that is not DOE policy.

I think the policy of the Department is to not have leaks, but I do not think we are trying to mislead the public about whether leaks have occurred or not.

Mr. WEAVER. Would you please contact Mr. Barainca if he said that, and I ask unanimous consent that your written response be placed in the record.

Mr. BATEMAN. Yes, sir, I will try to get a response.

Mr. WEAVER. Thank you.

[The Department subsequently submitted the following information.]

Mr. Barainca stated that he suspected that the conversation Mr. Stalos reconstructed was actually a conversation he had with Stalos while driving together to the 200 East Area during the fall of 1978, following Stalos' unsuccessful primary bid for the U.S. Congress. During that conversation, Stalos discussed what he (Stalos) perceived to be DOE's policy of not publicizing unfavorable events, such as tank leaks. Barainca stated that during the conversation he believed he told Stalos either that it was DOE's goal that there would not be tank leaks, or that as a result of DOE policy it was our (DOE's) objective to prevent and minimize tank leaks. Barainca stated that what he meant was that DOE wanted to minimize the actual amount of radioactive waste which could leak from the tanks and not that DOE wanted to minimize the announcement of leaks to the public and that the policy referred to was the Environmental Statement for Hanford Waste Management Operations, ERDA 1538. Barainca stated that he told Stalos that DOE was doing everything practical to remove radioactive liquids from single-shell tanks and that the funding provided by DOE indicated that the management of DOE and Congress supported these objectives. He (Barainca) stated that he discussed the construction and operational activities of constructing new double-shell tanks and installing salt wells (in-tank pumping systems) to remove free liquid from the single-shell tanks, and that one of the construction projects for the isolation of waste tanks (B–145) included and acknowledged both those tanks of questionable integrity and leaking tanks as high risk tanks.

Mr. WEAVER. If we selected a site, one of these sites that may be selected, and we started putting our radioactivity in it for the next 600 years, and then we discovered after it was full, that we had made a mistake, there was a leak, or there was a problem whatsoever, what would be the cost of moving that, putting it some place else?

What are we getting ourselves into when we start determining costs?

Mr. BATEMAN. What are the costs?

Mr. WEAVER. Yes; I have to vote on this, and I want to understand it. Also I want you to understand that we resent very much having to vote in this Congress for the billions and billions of dollars to clean up the former wastes, and we are told: It is the Government's fault; it is your responsibility to clean up the West Valley; and clean up other places. I had to vote for a bill to clean up some milltailings when my constituents are saying cut the Federal budget, and I have to vote for this money, because what do we do?

I want to know what other pickles are we going to get into.

How much will it cost to have to rectify one of these sites once we have decided to use it, and find mistakes have been made?

Mr. BATEMAN. I think as you described it, the site, if the facility were full, as we now conceive of such a facility, I would say it is many millions of dollars, but I do not have an exact estimate at my finger tips.

Mr. WEAVER. Would it be tens of millions?

Mr. BATEMAN. I would say many millions of dollars.

Mr. WEAVER. Many millions of dollars.

There was another official from the Department of Energy here a month or so ago before this committee, and I am sorry I do not remember his name, he was an assistant secretary, I believe, who in response to my question, how much money do we need to spend further to do the research and development on waste disposal, he responded in the tens of billions of dollars, do you think that is an accurate statement?

Mr. BATEMAN. I do not know what he was including in that.

I think it is correct that the Department has done estimates of the cost of ultimately disposing of all of the nuclear wastes, which have been generated to date, and are likely to be generated until the end of the century, in the range in current dollars of around $25 billion to $30 billion, but I would like to point out that at the present rate at which those wastes have been produced as a result of making electricity from nuclear power, what was referred to earlier, the millions of gallons of wastes, are wastes that were produced in making nuclear weapons in the defense program.

Mr. WEAVER. I understand that.

Are any of these temporary deposits right now leaking at this time?

Mr. BATEMAN. No, sir, not to my knowledge.

Mr. WEAVER. Thank you very much, Mr. Chairman.

The CHAIRMAN. I am a little astounded at your estimate of $25 billion to $30 billion to clean up the wastes, and before I pursue that further, 90 military and 10 commercial, is that about the ratio of the wastes?

Mr. BATEMAN. It is much greater than that, if you are talking about just liquid high-level wastes.

The CHAIRMAN. Nearly all?

Mr. BATEMAN. Nearly all defense wastes, yes, sir.

The CHAIRMAN. I thought we were getting on track of a fairly simple procedure, that you would go to the salt mines in New Mexico, or the granite formations in Wisconsin, you would excavate a place, maybe as large as a mile square, as suggested earlier this morning. You would have to build a facility in West Valley at Hanford to put it in the cannisters and then move it to New Mexico, or wherever the site was.

How in the name of commonsense could that cost $25 billion?

Mr. BATEMAN. There is a lot of waste. We are talking about roughly 75 million gallons of liquid waste, and the facilities, to give you an example, the current estimated cost of solidifying the liquid waste at the Savannah River, S.C., one of the major defense installations is about $3 billion.

That is just the cost of solidifying, and I think based on a fairly extensive technical and engineering data at this point, so I think that is a fairly good number.

The CHAIRMAN. You need a new huge plant of some kind of solidify the waste?

Mr. BATEMAN. You need very extensive capital equipment, yes, to do that.

The CHAIRMAN. Somewhat similar to the reprocessing facility?

Mr. BATEMAN. The waste is really the result of reprocessing, so you have to get those wastes out of the tanks, decontaminate the tanks, solidify the waste and put it in a form that can be transported, transport them.

It is an expensive operation. I think it is very easy to imagine a future if the Congress proceeds with a major program of dealing with the defense waste problem, sooner or later we will all have to deal with it and to have multibillion dollar programs per year.

The CHAIRMAN. I had no idea that what was involved was that expensive.

Mr. WEAVER. Mr. Chairman, the staff advises me of one thing, I want to clarify this for the record.

Mr. Bateman, when you say 90–10, actually the chairman said it was actually greater military to commercial waste, that is by volume, correct?

Mr. BATEMAN. I was simply trying, it is by what you can calculate in many ways by volume, yes.

I am talking about gallons.

Mr. WEAVER. Now, let us respond to radioactive atoms, the amount of radioactivity.

Mr. BATEMAN. Let me answer your question, but I want to elaborate a little bit on it.

In terms of the curie content of the waste, or the commercial spent fuel, it is about 50–50. What I was trying to distinguish in my answer before was, or try to differentiate was liquid waste on the one hand and spent fuel on the other, and in terms of the liquid waste, you are talking about a much smaller fraction that was the result of commercial activity.

Mr. WEAVER. But when it comes to the actual radioactivity, it is 50–50?

Mr. BATEMAN. Approximately.

Mr. WEAVER. And one final question then for my own information, and that is, which is more—well, you have already answered that—obviously commercial waste is more radioactive than the military waste.

This is by unit?

Mr. BATEMAN. The commercial waste is more.

Mr. WEAVER. Radioactive?

Mr. BATEMAN. Radioactive, no, sir, I do not believe that is correct.

Sir, let me provide a somewhat elaborated answer to that question.

I think that the commercial waste has not been reprocessed, and this affects the answer that I gave you, and I would like to have an opportunity in the record to elaborate on that.

Mr. WEAVER. Fine.

[The following information was subsequently submitted by the Department.]

Three different comparisons were involved in the previous discussion of defense and commercial radioactive waste. The first pertained to volume of high level waste (HLW) on hand from past reprocessing operations. Since there are on the order of 75 million gallons of such waste at defense installations and about 600,000 gallons of commercial HLW stored at the West Valley site, the volume

ratio is over 100 to 1. The second comparison, which was not made directly but was implied, considers the radioactivity of these two volumes of HLW. Here the ratio is about 20 to 1 (defense vs. commercial) because the commercial HLW originated from fuel exposed to a higher Megawatt days per ton (MWD/T) level. For the third comparison, the definition of commercial "waste" was expanded to include spent fuel stored pending a decision on whether to reprocess or dispose. Although the volume of this material is not large, it does have a radioactivity content approximately equal (in curies) to that of the 75 million gallons of defense HLW. Hence, the 50–50 ratio cited.

The CHAIRMAN. Thank you, Mr. Bateman. I appreciate your help today.

Mr. BATEMAN. Thank you.

The CHAIRMAN. We will hear from Mr. Michael O'Hare, associate professor, Massachusetts Institute of Technology, Energy Impacts project.

Your statement has been distributed. We are pleased to have your help this morning.

You can proceed.

[Prepared statement of Michael O'Hare may be found in the appendix.]

STATEMENT OF MICHAEL O'HARE, ASSOCIATE PROFESSOR, DEPARTMENT OF URBAN STUDIES AND PLANNING, MASSACHUSETTS INSTITUTE OF TECHNOLOGY, CAMBRIDGE, MASS.

Mr. O'HARE. I do not want to subject you to my reading of this material aloud, so I will zip through it, and perhaps we can discuss it.

I also have some research materials I would like to have included in the record.

The CHAIRMAN. We will be glad to have them for our official file.

Mr. O'HARE. The first one I would like to make on the nuclear waste management problem is to put it in context that nuclear waste facilities are not unique as regard their siting problems.

We have a lot of kinds of facilities we have trouble siting, finding locations for nuclear powerplants, airports, prisons, and sanitary landfills, these have a history of widespread agreement that we ought to have them some place, but not in our backyard.

Some do get built, but many that are believed necessary do not.

In the process by which this siting has gone forward with, seemingly decreasing success for these locally nocuous facilities are facilities perceived to be locally nocuous.

A technical analysis of possible sites is made and a best site is chosen, generally on technical grounds.

The developer, whether Government agency or private industry, whoever is responsible for operating the facility satisfies a variety of regulatory agencies, and his plans meet a set of requirements, and having obtained the necessary permission from the appropriate authorities, the facility is built and operates, and this process does not seem to work, and I think these hearings are a recognition that a process of that type will not work, at least with the rapidity desired to get these materials under permanent storage, and, naturally, there have been some standard responses to the problem of siting failures, and I

will characterize four types of response that have become part of the congressional wisdom.

The first one is to have citizen participation, to have local involvement, and so on, that has appeared in much of the testimony this morning, that falls in this category.

The feeling, first of all, that some facilities that did not get built, did not get built because of real important concerns, which were not being made known to the developers, and the developers learned only to their chagrin how important they were when they were ready to go ahead, and another source of this approach is the recognition that the people do not trust the process by which these decisions are made, they will not like the outcome even if it is a very good outcome, it will not be seen that way.

The second strategy is entirely different, which is to use a bigger stick.

An example of that in the current context is the proposition the Congress will not grant States veto power over facility construction, where the veto power would be withheld from the local communities.

Many State governments have taken local power for the legislation, over local decision on various kinds of facilities.

The third strategy is to try to make these projects go forward by providing more information.

Many of the participants claim they did not know what was involved, and if they had been informed sooner or better, things would have gone along more smoothly, and it is hard to argue that a better informed decision process will give way to better decisions.

Much of the State and community participation model that is proposed for the waste management scheme is an information difusion strategy, and of course we have also the provisions of NEPA.

I will talk a little more about information at the end of my remarks, and I want to point out that the conventional strategy is to require somebody to provide information at the beginning of the dispute, unduly it is thought to have provided what everyone else will want to know as they go through the dispute, the theory of the impact statement is to inform the decision process ad initio.

The final strategy is very much a special case of this, but in the recent context, it is especially important, that is technical reassurance strategy, that if a nuclear waste issue is there, we will find a very good way by technical research to store nuclear waste, and we will go to the communities that might otherwise be reluctant to accept it, and we will show them what a very good safe way we found to store it, and then the opposition that would otherwise develop will not arise because the citizens will be assured that the risk is no longer there, that the risks have been reduced sufficiently.

My first recommendation I would like to make is that you abandon any expectation that any of these strategies or all of them together, will be adequate to site nuclear waste facilities.

It may be they will be adequate, but if the Congress is concerned to really know that it can build one in a short period of time, I think trust in these approaches is ill placed.

As a corollary to that, I have observed that perhaps States that have a veto power and perhaps local governments that have a veto power on these waste facilities, that it is not within the power of the

Congress to withhold, and practically speaking, there is a very great difference between having legal authority to build something in a certain place and being able to actually proceed to build it, because there are many strategies that the affected groups can employ, when they believe they are being asked to bear a larger share of the costs of a social benefit from a project than they ought to.

Let me now talk about some special characteristics of siting these nocuous facilities.

When I say nocuous, I mean locally perceived to be nocuous, and for practical purposes, unless you can be persuasive, that means the same thing.

The first essential fact is that a nuclear waste facility of any kind is scary. It is more scary to some people than others, but it remains a place where dangerous materials are kept and to which they are brought in one or another kind of transport.

In addition to the consequences it shares with a minor powerplant or strip mine or geothermal plant, is that it is scary, it is certainly more scary to some people than others, but I think it would be very optimistic to think the technical reassurance of any kind, in the wake of Love Canal, Three Mile Island, the DC–10, Rocky Flats, and for that matter the inertness of such substances as PCB's and fluoridated hydrocarbons, so it is unlikely it will solve the problem by making the people believe it is an innocuous neighbor.

The second and important quality, and the reasons why the compensation to local and State neighbors that I will recommend is so important is the strategic observation about the nature of the problem, that is the beneficiaries of projects like this tend to be many in number, and the benefits they receive tend to be few.

Take myself as a typical example. I do not believe in much discussion of using Massachusetts as a nuclear waste repository, it may turn out we have a geology that would make it viable, but it is not really consequential to me, it will take another 5 years, or another 5 years after that to find a good place to site hazardous wastes, and the consequences are there, but they are very small, and particularly they are not enough to motivate me to invest a great deal of activity, protesting political activities, and so forth.

I would like a site to be found, I would like it to be secure, but it is not the most important thing in my life, or in the life of most people that receive this particular benefit.

Sufferers tend to be fewer in number, those who feel they are suffering tend to be fewer in number, and they tend to be large capital costs, extremely large costs in the event of some accident or failure, and especially large costs in the terms of the anxiety that they will be suffering.

In a contest between a large group and another, the large group has very little at stake, but then a small group in each of whose members have a great deal at stake, but the small group has a tremendous advantage in being able to organize itself for advantage and in being able to motivate each individual member in doing something.

The third important quality of a siting debate is the distinction between a program and its particular manifestations. There is a distinction in a program of say storage for nuclear waste and the particular manifestation of storing nuclear waste some place, and there is a difference that I think has motivated the present hearings.

Even if we all agree that we need nuclear waste facilities of some sort, it is quite possible we will go for many, many years not having them, because every location is full of people that say yes, we need them, but not here, and quite likely they are likely to have the power to make a decision to hold back the establishing of that facility.

The present characterization of nuclear waste is people who feel the risk should be very widely distributed, and in many cases this comes from the citizens of a State or a whole congressional district, in just looking at the record, and the last characteristic is important, as currently perceived, approaching the community with a suggestion that we build nuclear waste storage facilities with the cooperation of the members of that community, and the community may be a whole State full of people, with yes or no positions, yes, we have a facility, either we will build it as we described it here, or we will not build at all, and there is really no middle ground in the current formulation of this problem, and it is not surprising that faced with a choice between two alternatives, in which one is distinctly worse than the other, the opponents will pull their heels in and maybe even adopt a position privately and say, we are simply not convinced to accept these costs by the fact that there are benefits that you are distributing it to everyone.

I think in the way I have characterized the problem, and if you accept my characterization of its properties, the conventional solutions I have described above cannot be counted on to work.

Let me add a footnote, certainly they cannot be counted on to work, if you are talking about a facility which is perceived locally to be attractive, if the economic gains, if the Federal facility impact assistance to schools and so on, adds up in the minds of the community to be more attractive than the risk or anxieties, and I think there will be no problem in siting, but the tenor of the debate so far indicates that probably is not the case, that those benefits do not add up to the local costs.

Amplifying citizen participation in a problem of this kind, simply means amplifying the political power of groups, is the only rational position, and remember the all or nothing position you have given the community, so it would be more effective and more visible for groups whose only interest is to oppose, to remain in opposition.

As far as the use of power is concerned, I suppose the Federal Government can do practically anything it wants to, if there is sufficient population to work on it.

You can impose all sorts of costs on all sorts of people, but this does not appeal to me like acting on the problem, and I think all of resources the Congress can bring to bear on trying to put a facility in place is very likely not to be sufficient.

Government power is not infinite. Also, it tends to cause bad feelings, if you adopt that strategy, and claim that is the strategy.

It is much easier to solve the problem in other ways if you can.

As far as information is concerned, I spoke about the probable value of technical reassurance.

Furthermore, if information of the particular technical risks, and there is legitimate respectable doubt about any of the strategies that have been conceived or can be proposed, there may in fact be a sharpening of the perceptions of the community, which says I guess this is sort of an indifferent thing, and it is good for the country, having a heavy

investment, and say a lot of people say, this is really a very attractive facility to us, even given its value to the rest of the country, I think the key to breaking that impasse lies in the recognition that this is not a new type of problem, and we do not have to solve it in a novel way.

When we need to build nuclear waste repositories, we need bulldozers, steel, we need labor, engineers, and it seems as far as we can tell we need to use up the amenity of some community.

In all of those list of resources, the only one that can be suggested without payment is the amenity.

We are certainly not trying to find ways to build nuclear waste repositories on the theory we will do it when we can find somebody to give us the dynamite necessary to blast the home ground.

There is a market for risk, and there is a market for anxiety.

There are markets of this kind and choice of occupation and choice of residents. I might live in the city. I undergo significant added risk of lung disease, heart disease, traffic accidents, crime, and certain kinds of anxiety that I would not suffer in the country.

On the whole, the benefits of living in the city outweigh these.

My first recommendation on the siting issue is the siting process of whether the Congress ought to include explicit promise of compensation for the community on which this facility impacts, I think in this case it is important we also recognize such fuzzy ill defined impacts on anxiety and recognize that the appropriate strategy for siting is not to force people who do not want a facility to live next to it or accept it, but to make the facility together with everything it comes with so attractive, to build the facility itself into a package that includes more benefits that costs, and the way to make the package include benefits is to add the many different kinds of compensation that can be conceived.

Mr. CLAUSEN. Many kinds of what?

Mr. O'HARE. Many different kinds of compensation that can be conceived, and I will give you a couple of examples in a minute.

There are two important consequences for the siting process.

One of them is that when you go into the negotiations with States with communities saying we will compensate you for these costs, now, let us discuss the price, rather than saying we will stick you with this, it means the choice is now longer than two outcomes very far apart, and when two outcomes switch to the extent of compensation, it really closes together.

That is the whole point of the compensation, to make those happenings close together, that is, no facility on the one hand, or a facility with the right amount of compensation.

The right amount of compensation means that the people are indifferent, so there is much less chance for opposition.

The other important consequence is recognition that the compensation will not be exactly right, it replaces this all or nothing choice that you face the community with, with a whole spectrum of choices between those poles.

This provides grounds in between build and no build in the negotiation, and it means that the parties to this dispute, the community and the developer, really have something to talk about, rather than each putting his heels into the ground, and trying to pull the other off the ground.

You can both wind up on the line in the same place, if there is some place to stand there.

The CHAIRMAN. We are about to run out of time. Let me suggest you wind up.

Mr. O'HARE. I do not have much more to say about the compensation side, except that it is important to recognize the variety including cash payments, to governments, to individuals, and on the one hand, insurance against property value loss, insurance against health consequences may be important to consider.

The other remarks I had to do with the use of information in this dispute. I think it is probably more useful if I leave that in my prepared remarks and take any questions you want to ask about the compensation role.

The CHAIRMAN. You brought us a different perspective, and it is interesting and helpful to me in particular.

I have been, for a number of months in these hearings, using the analogy of the project of the Navy in which they had to lay cables over an extensive area of Wisconsin to communicate to the submarines which are thousands of miles away. The Navy Department, instead of going in and telling the citizens here is what we are doing, here is what the impacts will be and spreading excellent information about, trying in a rather devious kind of way to sneak in and getting it built before anybody realized what it was.

So much furor was involved in Wisconsin, that they announced they were dropping it, and the next thing they did was resurface in the upper peninsula of Michigan under a different name.

Do you not agree that one of the psychological factors that is important, is for the Government to come in honestly and openly from the very beginning and give people accurate information and not give the feeling of someone trying to get something over on them?

Mr. O'HARE. Yes; I do agree.

I think that is very important. A community expects that it will be fairly and honestly dealt with, this is very important, in the evidence we have been able to accumulate on our case studies.

The position of trust between the parties that is established by the initial approach has a lot to do with the outcome.

The CHAIRMAN. The central theme in your testimony is that we ought to be offering goodies to the communities. You know that we are talking about 3,000 to 4,000 jobs during construction, and maybe about 2,000 jobs during operation and investing capital in the community involving $2 or $3 billion.

You point out that this kind of economic benefit no longer persuades neighbors to accept certain facilities. If that is the case, then why would more money to the neighbors themselves make the thing acceptable?

Mr. O'HARE. The difference I guess is that many of the jobs provided are not jobs for the locals. Many of the locals already have jobs they are quite happy with, and they can only hold one at a time, so there is little benefit to that.

The capital investment is in a facility that does not serve any need they feel, or they would have made it already.

Whereas the compensation program provides resources they can use for their own purpose, rather than having already been committed, and——

The CHAIRMAN. So you draw a distinction between an indirect kind of community benefit and those hard to identify or quantify for the local individual versus the program, which says to the citizen, you get $x thousands of dollars if this plant is put here.

Mr. O'HARE. Yes; I certainly do and I think it is a mistake that one of these facilities will be regarded as a community resource.

It provides no direct benefit to the community at all, except to those members of the community who would be gaining direct work.

The CHAIRMAN. Any other questions?

Mr. SEIBERLING. I have a couple of questions, Mr. Chairman.

I was intrigued by the auction idea, but I just wonder whether it will work in practice where no State wants the facility.

Obviously at that point it does not matter how much you pay. Maybe every community has its price, I do not know, but I suspect that that is not the case.

Mr. O'HARE. The only answer I can offer to that is there are some facilities that some communities do not want them at all, but since they exist, there are some communities that do want them.

A prison on the local level, there are places where local citizens say they would not consider living near a local prison, and you can find some that live happily with prisons, having accepted the responsibilities and costs that go with them.

Mr. SEIBERLING. It may very well be that site choice by means of compensation and competition, which is the way I would like to see it done, if it could be worked out, would be the best procedure because parties may be able to reach an agreement. But if agreement cannot be worked out, such a process obviously will not work.

In that case where there may be only one technical site, the payment would be tremendous.

I think it is important to have an arbitrary mechanism for these disputes, where Congress can be that mechanism. This puts it in a much more palatable view.

Maybe Congress is not the right mechanism. But in other cases where we really have to make a deal, and people cannot be brought to the table, we have arbitration mechanisms. An arbitration mechanism is our insurance, where the job is to find the right compensation.

There are other ways to resolve disputes over sites for nuclear waste disposal, but I was addressing myself to the auction idea. I wonder, since we are dealing with a public body, a community, how can the auction approach be used, if the community finds another one wants a higher price. They are likely to say that is the same as they are getting, so if we are dealing with undesirable facilities, it seems to me that they are all going to end up wanting the same high price.

Mr. O'HARE. I want to draw the distinction between the fact you institute a compensation mechanism, and the use of an auction means to find out how much to pay.

I think I have been much more convincing than we would expect to be about the importance of compensation, and an auction is the right way to go.

Mr. SEIBERLING. I am only trying to explore the auction idea.

I do not have any questions about the other points.

Mr. O'HARE. My prediction is if in fact you announce one site will be chosen from among many candidate communities, reasonable bids for compensation packages would be entered, and I have to accompany that with the observation that the amount paid has nothing to do with the cost of this facility.

This is fairly common misunderstanding. The cost is there, being visited on the community, if they are not compensated.

It makes the cost visible, which may in fact be the public virtue of the scheme.

This is a transfer payment, not a resource utilization.

Mr. SEIBERLING. Thank you.

The CHAIRMAN. Any questions?

Mr. CLAUSEN. I want to make an observation, that, John, I appreciate your challenging line of questioning.

I also conclude from the line of questioning that you are presupposing that this nuclear waste situation is in fact and will always be an undesirable thing per se. I think most of the members of this committee will come away with a better understanding, where we are, and what the ultimate impact will be. Whatever those facts are, we are not about to let anything go forward unless there is a reasonable assurance there will be a measure of protection for the general public, for their good.

I have lived in my State of California next to an operating nuclear powerplant. No one has panicked in the area. It was operating for a while, then they came up with information that indicated there ought to be a redesign of the core reactor, because of geological conditions, but no one has really panicked in the area to my knowledge. I think we have to concentrate on getting the facts, and make certain that whatever we advance, we will have ample assurance of safeguards, and that includes the nuclear waste management objective for all to see, and if it cannot be done, then those facts will cause us to take another course of action. I think the gentleman is presenting a very intriguing concept here and is a very constructive approach.

Mr. SEIBERLING. I would just like to say I would analyze the nuclear waste storage problem with respect to imposing a tax.

You will never have an auction between the citizens as to whether they are willing to pay the most taxes.

Nobody wants to pay taxes at all. We do it as a matter of necessity, and the same is true, it seems to me, of the nuclear waste disposal facility.

Nobody wants it, so we will have to have a system for deciding where to put it, recognizing that it is not the most popular thing to do, and that is all I am saying.

I wondered if the auction process will work in this type of circumstance.

Mr. CLAUSEN. It goes back to the first part of the discussion, there could be certain benefits from the facility for society and along with it, there will have to be some responsibilities.

The CHAIRMAN. We might get the right combination of incentives that you are searching for, if you said we have found the following

five sites are suitable, and we in the Federal Government will make a decision to go with one of the five sites.

The community that will come in to bid, we will work out a fair arrangement with you, or you can all decide to refuse to bid, in which case one of you will get selected without any of these goodies and benefits, and then you have some incentive to bid.

Mr. Bereuter?

Mr. BEREUTER. Thank you, Mr. Chairman. I would like to welcome Mr. O'Hare.

I am acquainted to some extent with the compensation and the implications of the facilities, and I think it is relatively easy to look at the benefits and have some agreement because of location. On many types of facilities we will have some agreement because of costs. On many types we will have some agreement on other factors, but it seems to me that one of the problems in applying it to nuclear waste disposal facilities is that there is, on the part of the public, in the area of cost, at least a substantial amount of disagreement about what those costs are, and confusion or a lack of acceptance of facts concerning what those costs are going to be.

If you agree that this is one of the difficulties in defining costs to measure against those benefits, and therefore in terms of compensation, how is the theory applicable?

I gather you think the theory is applicable or you would not be here. And how do we overcome this lack of agreement on costs, or uncertainty on costs?

Mr. O'HARE. I think there is a case analogous to the market in art, where there is a wide disagreement about the value of individual artworks, but people can get together and buy what they are willing to give up in order to obtain different objectives which reveals a market value.

Here we have the wide agreement about the value or disvalue about living near one of these facilities.

I think the people who can give me the best information about the living next to one of these facilities are the people that might have to do it, and I would like to see if it is possible to do it, an auction mechanism of the type described, because that is a mechanism whereby the citizens are induced to reveal the real cost of the action, either too high or too low.

Following that is a law that applies in which you do the best at deciding these costs with a mechanism that is decided to be fair.

Government is a device that society has invented to solve problems of this kind.

I think the real serious risk is that if Government understands role and things involved, and it has appointed certain things for some people to accept the large costs for the benefit of many, when it is possible to spread the costs more evenly, that Government might then be able to do that, so I would be happy with an administrative determination of costs, if it is the best we can do, and I would say the reassurance the compensation be paid, it is by far the most important of this, and getting the right amount is secondary.

Mr. BEREUTER. Do you know if there is any national experience on compensation being directed to areas or individuals where these costs are in question?

The British have done some substantial amount of work in locating various facilities. Some locations are considered to be undesirable.

The French may be doing something in nuclear waste disposal. I am not certain.

Do you happen to know of any examples?

Mr. O'HARE. One interesting example that comes to mind is the German strip mining operation in Germany, where whole towns have been moved and replaced intact out of the way of the strip mining operation.

The cost has been compensated without referring to the money compensation costs, simply by relocating the people or something as nearly as possible.

I do not think that applies in this case, but there are many, many facilities that get there happily with no particular flap, which and of themselves would be considered very unattractive, and I am thinking almost of a kind of industrial facility, and what makes those acceptable is simply the tax payments they provide.

The nuclear power plant is something that few people would like to live next to, taking the plant by itself, but when you recognize the facts of taxes paid by them, and that is money compensation for all of the strange kinds of costs that people claim they suffer, seems to be adequate, and the method seems to work, and that is my justification that we are already doing it.

Mr. BEREUTER. Thank you for your testimony.

The CHAIRMAN. Thank you very much, Mr. O'Hare.

Mr. O'HARE. Thank you.

The CHAIRMAN. Now, we will hear from the National Governors' Association, Mr. Helminski.

[Prepared statement of Edward L. Helminski may be found in the appendix.]

STATEMENT OF EDWARD L. HELMINSKI, DIRECTOR, ENERGY AND NATURAL RESOURCES PROGRAMS, NATIONAL GOVERNORS' ASSOCIATION

Mr. HELMINSKI. Thank you very much.

Mr. Chairman, members of the subcommittee, my name is Edward L. Helminski.

I am staff director of the National Governors' Association Natural Resources and Environmental Management Committee, and director of the association's energy and natural resources program.

I am here today to present a statement on behalf of Gov. John Evans of Idaho, chairman of the NGA Nuclear Power Subcommittee and Gov. Richard Lamm, chairman of the NGA Natural Resources and Environmental Management Committee.

Governor Evans has asked me to convey his regrets at not being able to personally participate in today's hearing and that he stands ready to work with you, Mr. Chairman and your committee to develop a technically sound, responsive, and publicly acceptable nuclear waste management strategy.

Both he and Governor Lamm appreciate the opportunity to have the Governor's views on nuclear waste management expressed before this committee.

I know the time is late in the morning, almost the afternoon, so I will do my best to speed up my testimony and try to get through the main points very quickly.

As requested in your letter of invitation, I intend to outline the Governors' recommendations on the establishment of a responsive nuclear waste management decisionmaking process and am prepared to discuss the potential of establishing a compensatory system that would provide incentives to State and local governments and their constituents toward accepting a permanent nuclear waste repository.

With respect to the latter, at your staff's request, I have reviewed papers prepared by the Massachusetts Institute of Technology Department of Urban Studies and Planning and am prepared to respond to questions with regard to these proposals.

I have only commented briefly on these proposals in my testimony.

With your permission, Mr. Chairman, I would like to read the statement for the record.

The Nation's Governors—recognizing the critical problem posed by the accumulation of nuclear materials used for medical, defense, and commercial purposes—adopted a comprehensive nuclear waste management policy in August 1978.

Mr. Chairman, I ask your permission to submit the full NGA policy position for the committee record.

The CHAIRMAN. We will accept that position paper for the record.

[The document referred to entitled, "Nuclear Energy Policy Position," dated August 198, may be found in the appendix.]

Mr. HELMINSKI. The underlying principle embodied in that policy is that:

The waste management problem cannot be solved by a Federal process alone. It must be based on the principles of cooperative federalism, a strong partnership of Federal, State, and local governments and private industry is essential to a successful program.

The management of our nuclear waste is a problem we simply must resolve.

It is one that is not going to go away.

Even if we were to stop the construction of all new commercial nuclear powerplants, and shut down all the plants currently operating, we would still have to dispose of wastes already on hand, wastes which have been accumulated primarily from defense and research activities.

Whatever decisions are ultimately made regarding the future of nuclear power, we must seek a permanent method of managing our present radioactive wastes.

This is a matter that concerns governments at all levels and must therefore involve all levels of government in the decisionmaking process.

Public confidence in the governmental decisionmaking process is at its lowest ebb.

And though public acceptability cannot be the sole justification of a solution, scientifically sound solutions will not be accepted if they are developed in a clandestine manner out of public view.

Reinforced by the disclosure of events at Three Mile Island, the public is questioning the credibility and consistency of Government in using and regulating nuclear power.

The attitudes of State and local government officials toward Federal decisionmaking is reflective of these concerns.

Yet, the ultimate site for waste disposal, whether defense or commercial waste, will be within one of our boundaries.

Governors, together with local officials, have direct responsibility to protect the public's health and safety.

They must act on their constituencies' behalf by anticipating all eventualities and by participating in the decisionmaking process.

In order to do this, a process must be established at the national and State level that will allow State and local officials to participate, both collectively and on an individual basis, with the relevant Federal Government agencies in the development of all radioactive waste management programs and policies.

It is important that such processes have the visibility and the resources to interact effectively on a par with participating Federal agencies and to provide an open channel of communication to the highest levels of Government—the Congress and the President. This cannot be accomplished on ad hoc, individual, State-by-State basis.

There was an interaction with the IRG, a national workshop that we held in Denver, in which many congressional staff appeared, and over 100 attendees, State officials and Government officials.

NGA policy recommended the creation of a joint Federal-State commission as the most viable means of formalizing that process.

NGA policy, in turn, played a significant role in the final recommendations of the IRG to establish a State planning council and to adopt the principle of concurrence and consultation.

Although the State planning council, as recommended by the IRG, does not have the authority or responsibility of the commission recommended by the Governors, the IRG recommendations do not preclude the council's assuming greater responsibility.

The IRG also recommended establishing a consultation and concurrence process as described in the Governors' stated policy, but left open to further determination the means needed to resolve potential nonconcurrence that could halt progress toward final resolution of a nuclear waste disposal program.

In order to resolve the discrepancies between the IRG report and the Governors' policy and to define in a concise manner the means by which the objectives of the Governors' policy could be carried out, the National Governors' Association Nuclear Power Subcommittee and the Western Governors' Policy Office, in cooperation with the National Association of Counties, the National League of Cities, the U.S. Conference of Mayors, and the National Conference of State Legislatures, convened a national workshop of State and local officials in April of this year to focus on these questions.

Based on NGA policy, the recommendations of the IRG, and the discussion at that workshop, we have drafted a set of NGA recommendations on nuclear waste management.

These recommendations have been delivered to the White House by Governor Evans.

Mr. Chairman, I would like to submit a copy of those recommendations for the record.

They include:

1. The immediate establishment of a State planning council by Executive order of the President to be reinforced by an act of Congress as soon as possible.

2. The State planning council so established shall serve as adviser to Federal agencies, the President, and Congress on nuclear waste management policies and programs and have equal standing with Federal agencies in structuring a nuclear waste management program.

3. If the councils' actions are not incorporated into final plans developed by the relevant Federal agencies they should be transmitted directly to the President and the Congress for further consideration.

The CHAIRMAN. We will include that in the record.

[The document referred to above entitled, "Recommendations Toward Establishing A Publicly Responsive and Acceptable National Nuclear Waste Management Policy," may be found in the appendix.]

Mr. HELMINSKI. The council should consist of State and local government officials and representatives of Indian nations appointed by the President.

In order that the council may represent State and local interests in an effective manner, it is necessary that sufficient resources and opportunities be provided—including sufficient funds to acquire and develop its own expertise in technical and policy areas and access to all pertinent information, including proprietary information.

If established in the described manner the State planning council would meet the Governors' policy objectives.

As also emphasized by the NGA policy position, site-specific determinations can be made only with State concurrence.

It must be recognized that in the early development of site characterization, those States with sites that could possibly qualify as meeting the site profile should be consulted and given the opportunity to concur on the specifics of that characterization.

That process must begin with State or regional concurrence on overall designs and completed site-specific plans prior to the initiation of any action including the procurement of land and the initiation of preliminary construction at a proposed site.

Any procedure for concurrence obviously must allow for the possibility of nonconcurrence.

Neither the IRG report nor the Governors' policy position make a recommendation to resolve a nonconcurrence stalemate.

Though an override of State nonconcurrence by a Federal administrator would be unacceptable, the possibility of a congressional review of nonconcurrence by a State is an avenue that should be studied as a process that would allow for review, yet provide the States with the opportunity to continue to participate in a final resolution in the national interest.

The design of a practical and workable consultation and concurrence process that would meet the Governors' stated objectives should be the first order of business for the State planning council.

The National Governors' Association also adopted a policy which specifically addresses the development of a spent-fuel storage program and low-level radioactive waste disposal.

The policy statement on nuclear energy adopted last August recognizes that interim solutions for the management of spent fuel are necessary.

Our policy asks that spent fuel be considered as a valuable future resource and that programs for handling it should be designed to incorporate the concepts of interim storage and retrievability.

The Governors' policy also recommends the establishment of a user fee to pay for the costs of storing and managing nuclear wastes.

The Governors recommend that revenues from user fees be dedicated to the costs of regulation, operation, transportation, perpetual care, and maintenance of waste management facilities rather than to support research and development.

Both for commercial and military use, research and development funds should be authorized and appropriated from general tax revenues.

The Governors urge that expenses incurred by all levels of government be reimbursed by the funds from the collection of this one-time charge.

For further elaboration on the Governors' views on the establishment of a nuclear waste management decisionmaking process, I refer you and the committee members to the position paper which I have submitted for the record and again I ask that be made a part of this record.

I would like to add that the acceptability of the governmental decisionmaking process will depend upon the degree and quality of participation of interested public representatives at all levels of government.

Participatory processes must be established at all levels of government to assure public confidence and government accountability.

Although mechanisms to provide for public input at the Federal decisionmaking process must be provided, it is essential that State and local participatory processes be established to assure that representative elected officials participating in the siting process are doing so in an accountable and responsive manner.

I will now comment briefly on the proposals put forth in the papers by the Massachusetts Institute of Technology, Department of Urban Studies and Planning, recommending the establishment of a siting process based on a competitive auctioning system between potential sites.

The auctioning process is supposed to provide the potential host site the opportunity to obtain some measure of benefit of the liability of the proposed facility that would allow the State and local governments to compete for the site.

I might add that these views are my own and should not be construed as NGA policy.

I have serious misgivings about the proposal outlined by the MIT group.

Basically, I object to establishing a "process" that allows existing institutional structures the opportunity to play down the risks, while holding out potential carrots to enhance acceptability.

The process also allows the publicly elected officials to avoid facing the responsibility of acting in the national interest over and above their own parochial interest.

The MIT auction proposal, in the views of the author, is also based on the premise that the facilities that would be up for auction would be beneficial to a region and ought to be built somewhere, despite the localized cost they impose.

The regional benefits of a permanent nuclear management facility, if anything, are minimal.

The only benefits that would seem to accrue to the local area would be those that could be bargained or conned out of the granting agency in exchange for positive action.

But this would have no direct bearing on the establishment of the site itself (a new school, a Federal office building, and so forth).

The net effect would be that instead of focusing on the unknown risks involved and developing to the extent practicable strategies to minimize those risks, the siting process could focus on peripheral benefits.

Another major problem with the process is that it seems to leave open the question of long-term liability.

The unknown risks involved with the storage of nuclear wastes bags for the establishment of long-term liability on the part of the Federal Government.

This responsibility must not be clouded by setting up a process where State and local governments may have to go through lengthy litigations.

To obtain redress for adverse effects that were initially unforeseen and not taken into account in the host site's bid for the depository.

A third problem with the auction proposal is that it assumes that several sites would be available for the facility under question.

Because of the technological and geological requirements of a nuclear waste depository this may not be the case.

The auctioning process could possibly lead to the siting of a depository in a location that technologically would not be the best suited.

Though I have some serious misgivings about the auction approach, I do believe that through a constructive and accountable decision-making process, economic benefits and cooperation can and should be integrated into nuclear waste management strategy.

The consultation and concurrence process supported by the National Governors' Association and recommended by the IRG report would allow for such negotiations.

In such a process the focus, however, would be on the meeting of hearing safety and criteria that would deal with the real and unknown risks involved rather than with peripheral benefits.

I thank you, Mr. Chairman, and committee members on behalf of Governor Ray for allowing the National Governors' Association the opportunity to express these views.

If you have an questions or further discussion, I am at your disposal.

If I may, let me add a few remarks not contained in my statement, Mr. Chairman, with your permission.

One is the Governors' policy that has come down to a veto on substantive grounds.

It asks for cooperative participation with the Federal Government, but it does not ask for a veto out of hand, so that each State can protect its own interest with regard to neighboring States and calls for each State to participate constructively in the process through the stages, that resources be provided for the States so they can define their environmental safety needs.

I would also like to add it is very important that there be coordination at the Federal level. It is pointed out here today, I believe earlier by more than one committee member that DOE and NRC are not coordinated. I would like to add the fact I am very concerned about that,

the focus of attention of the States has been dealing with DOE and the IRG on development of nuclear waste management policy, yet the NRC is developing rules and regulations with regard to the siting of the nuclear waste repository.

Those two processes cannot go on independently or on parallel tracks. They must be integrated. I would propose NRC not proceed on their licensing tract until a full nuclear waste management strategy has been developed, this includes what site criteria should be that defines the role of the State, Federal Government, and Congress in that such definition be included in congressional legislation.

That concludes my remarks.

The CHAIRMAN. Thank you very much. This is very helpful, and we look forward to working with you and with them, with the Governors.

Any questions?

Mr. CLAUSEN. I just have one. I noted that the nuclear repository position adopted by the National Governors' Association was submitted as an addendum to your testimony, it was adopted in August 1978.

Mr. HELMINSKI. Yes.

Mr. CLAUSEN. Has there been an update on that position since the Three Mile Island incident took place?

Mr. HELMINSKI. No, there has not.

Mr. CLAUSEN. Do you plan to do so?

Mr. HELMINSKI. We have not received any policy recommendations from the Governors for our summer meeting relative to that.

There was consideration of a policy position that was received, and the Governors through the nuclear subcommittee, the national resource environmental management committee, in working with the Governors, we are awaiting for that study so as not to preempt the Governors prerogatives in that study effort.

Mr. CLAUSEN. It clearly would be helpful to us if we had the updated policy position.

Mr. HELMINSKI. I would like to add as a comment to that, that I guess a little more than a year ago, the Governors through Governor Edwards, who was then the nuclear subcommittee chairman, they made the statement with regard to waste and nuclear power, which I think hits the point you would like to make, the statement Governor Edwards made, he said though I believe the technology, the implementation strategy should be encompassing as feasible, we should allow for the evaluation of progress toward a final solution in sufficient detail to determine further courses of action on the development of nuclear power, though I believe the technology is available, it would be irresponsible for me to definitely say a solution was at hand, merely because a timetable or definitive plan existed and was finally agreed upon.

Further accelerated nuclear development must be responsibly weighed against the positive progress toward a solution to the problem, so the Governors are on record in weighing the solution to a waste problem with regard to further development of nuclear power.

Mr. CLAUSEN. It would be helpful to us if there is an evolving new position paper, new policy position. It would be helpful to us if we could count on you to keep the committee informed and transfer that to the committee.

I frankly suggest that we ask you to update your policy.

Mr. HELMINSKI. Yes; I believe that at the winter meeting, that will probably come up as a result of the findings of the Three Mile Island Commission.

Governor Babcock has been involved in that.

The CHAIRMAN. Mr. Bereuter?

Mr. BEREUTER. Thank you, Mr. Chairman.

Mr. Helminski, I thought that the second paragraph on page 2 is perhaps the most important one that you provided in your paper, I would therefore ask you, are you stating that there is the possibility for a specific procedure to be estalished, whereby in the event of nonconcurrence, that nonconcurrence with the recommendation of the Federal Administrator or nonconcurrence by the State, would specifically be brought to the Congress for resolution for agreement or disagreement with the Federal Administrator? Are you saying that such a procedure might be an acceptable avenue in concluding in a decision?

Mr. HELMINSKI. Yes.

Mr. BEREUTER. Are you thinking about any specifics relating to a process for expeditiously bringing this to the attention of the Congress?

Mr. HELMINSKI. Yes; in the National Governors' Association, we have a policy position which we have used to establish our recommendations.

We have actually asked for a congressional commission essentially as was described by Governor Dixy Lee Ray, the rebirth of the Joint Atomic Energy Commission, only in the Joint Nuclear Waste Commission, and it would have congressional membership, and such an entity could be involved with respect to reviewing consultation concurrence.

Mr. BEREUTER. Are you suggesting that this entity, which is partly congressionally manned, would be the decisionmaking factor in this position of nonconcurrence, as opposed to the whole Congress?

Mr. HELMINSKI. The Congress would have to make a decision on how it would set up such a body, but our policy decision calls for it being set up by Congress rather than by the Executive.

Mr. BEREUTER. Is that described in the policy decision paper?

Mr. HELMINSKI. Yes; it is.

One qualification, we did call for membership of the State and local government as part of that commission, that was for stronger role, but we also recognize that may be unwieldly with respect to the congressional process.

Mr. BEREUTER. Thank you.

If I may continue further, would you like to indicate to us at this time, or for the record, any other alternatives that were discussed, but perhaps rejected, as not being as desirable from the Governors' Association's point of view, as in the case of the one you finally came up with?

Mr. HELMINSKI. The State veto was discussed, and the State veto out of hand was rejected by the majority of Governors, pro- and nonnuclear, as far as advocates, because a number of States, both nuclear power and not nuclear power, but given the fact that they were essentially told that that was the "energy of the future," we were going to pay virtually nothing for it.

I disagree with some of the perceptions the States should pay for the penalty of looking toward future energy source as they did in the 1980's, and we rejected the State veto out of hand, based on the fact of that, that States had to accept nuclear power, because there was no other way to generate electricity at that time, and also defense waste figured in the strategy, and as Governor Evans stated earlier, if you go for State veto, I would only go for it that every State would accept its share of defense waste.

Mr. BEREUTER. Specifically, in addition to what you said, which is a valuable contribution, and I appreciate it, were there any other alternatives considered for a congressional resolution of conflict, other than the one you already mentioned.

Mr. HELMINSKI. No. The people talked about using the committee process, they talked about a vote of approval on the plants, and we did put forward a great bill that outlined the procedure, where annual plans would be submitted, and Congress and the plans would have specified roles for State and local government.

The process would supposedly follow the adoption of a national energy plan to be submitted annually and updated.

Mr. BEREUTER. Thank you.

The CHAIRMAN. Mr. Seiberling?

Mr. SEIBERLING. Mr. Helminski, the Governors' Association testimony, and your testimony, seem to agree in principle with that of H.R. 2762 as to the desirability of having a process, and the fact that the State must consent to site specific decisions. I certainly think the idea of having congressional opportunity to override the State veto is a workable concept.

Have you any thoughts on H.R. 2762 specifically?

Mr. HELMINSKI. We were involved in the last Congress in working with Senator McGovern in a similar proposal.

On behalf of the Governors, we had objection to the Federal legislation to fighting between the Governor and his legislature, but the basic concept of the proposal we agree with.

At the moment, however, we would like that proposal considered in light of the various other proposals, that are on the Hill both in the Senate and in the House.

We would like a comprehensive nuclear waste management plan, and we would like something at the national level, in addition to the Federal-State commissioners outlined in your proposal and Senator McGovern's proposal.

What we recommend rather than a strategy of amending the NRC Authorization Act, which is going on in the Senate at this time, is to include and bring that proposal into more comprehensive proposals, and it would suggest to this committee that your proposal be integrated into a national comprehensive nuclear waste policy.

Mr. SEIBERLING. Thank you.

I thought you made some other excellent suggestions, such as the user tax, and user fees, to pay for the cost of storage.

I would like to make one other comment. I strongly believe that where the State and the executive branch do not agree, the matter must be referred for final decision to the Congress—either to the Congress as a whole under an expediting procedure, so the Congress cannot just sit on it, or the joint committees or committees with jurisdic-

tion over the nuclear industry and the Nuclear Regulatory Commission. I think these matters are of such importance that they ought to be decided on a political level by the offices which represent the whole country—the Congress and the President.

Mr. HELMINSKI. I agree with you.

The recommendation of the joint commission was more to focus attention in the Congress and the public with regard to Congress' role, with regard to nonconcurrence, the feeling right now among the Governors is that the concurrence, the review of nonconcurrence in the whole Congress, so that the States again are allowed to participate through their congressional delegation in that review, so we were not recommending that the joint commission be the body, but the whole Congress be the body, but the whole commission essentially be the focal point rather than have many focal points at your disposal.

Mr. SEIBERLING. You do not need to comment on this, but I am inherently suspicious of anything suggested by Dixy Lee Ray.

Mr. HELMINSKI. That is part of our commission policy.

Mr. BEREUTER. I appreciate the question you put, because I thought that I received the opposite answer a few minutes ago—that the commission, the intergovernmental commmission established would be making that recommendation.

Mr. SEIBERLING. That is what I thought too.

Mr. BEREUTER. The official policy of the association as I understand it is the answer you just gave to Mr. Seiberling?

Mr. HELMINSKI. That is correct. When you say the official policy, both Governor Evans and also the NGA position paper asked for the review and study of a congressional process implying a role for the whole Congress.

We have not adopted policy, but we recognize the fact that that is a good avenue to explore, to look at nonconcurrence.

Mr. SEIBERLING. Thank you.

Governor Ray's position as former Chairman of the NRC, gives her a built-in bias.

Mr. HELMINSKI. I should qualify the position actually was developed, Governor Ray had one vote on it, and the nuclear subcommittee adopted it, and it was adopted by the full association.

She made that after she had seen the position as drafted.

Mr. WEAVER. Thank you very much.

Mr. HELMINSKI. Thank you.

The CHAIRMAN. Our next witness is Mr. Peter Franchot, staff attorney, Union of Concerned Scientists.

Mr. Franchot, I appreciate your coming.

[Prepared statement of Peter Franchot, Union of Concerned Scientists may be found in the appendix.]

STATEMENT OF PETER FRANCHOT, STAFF ATTORNEY, UNION OF CONCERNED SCIENTISTS

Mr. FRANCHOT. Thank you, Mr. Chairman.

Mr. Chairman and members of the committee.

Thank you for the opportunity to testify on the important issue of public participation in the siting and licensing of nuclear waste facilities.

The Union of Concerned Scientists is a nonprofit group of scientists and technical professionals who are supported financially by 80,000 members of the American public.

USC is presently conducting a management program which will be published in the fall of 1979.

One conclusion from this study focuses on the large difference between "theory" and "practice" in the area of radioactive waste management.

In theory, some technical problems of waste management may be considered solvable.

In practice, however, there is considerable uncertainty about the implementation of a proper program to protect the health and safety of future generations.

It is our belief that full public participation in the siting of radioactive waste facilities has the potential for weeding out technically sound sites.

We believe that public participation can be insured by giving States the explicit power to approve or disapprove the siting of a Federal radioactive waste facility within their borders, after a review of the technical, social, and engineering issues involved.

For that reason we would urge this committee to support H.R. 2762 cosponsored by Representatives Kemp and Seiberling and 35 other Members of the House.

Such explicit authority will minimize the chances that a technically flawed site will be chosen because it will increase public scrutiny and examination of the technical issues.

In addition, if a technically sound site is selected and approved by the public or their elected representatives, there will be greater assurance of public acceptance.

It is important to discuss the background of the U.S. radioactive waste management program.

The issue of public participation and States rights should not be viewed in a vacuum.

There are serious risks associated with a poorly managed program.

There is a large and growing inventory of commercially generated radioactive waste.

There is a careless track record of radioactive waste management in this country characterized by incompetence and indifference to the public interest.

A brief review of the program can only lead to the conclusion that States should be more than equal partners with the Federal Government in deciding about the siting of a waste facility within its borders.

Our fear, unlike critics of our position, is not that the Federal Government will fail to choose a site for radioactive waste, but rather, under intense political and economic pressure, a flawed site will be chosen despite contrary technical evidence.

The "political" or institutional problem of radioactive waste management was recently noted by Mr. Gus Speth, a member of the Council on Environmental Quality when he said, "I am personally very concerned that those who see shoring up the nuclear option as a vital objective will see an affirmative answer on the question of the nuclear future as so important that they will shortchange serious issues and uncertainties related to safe waste management."

The potential consequences of improperly stored radioactive waste are, quite rightly, unsettling to members of the public from a possible host State.

The emissions from this waste are invisible, odorless, and tasteless, yet they are highly toxic and persistent.

They cannot be felt or heard.

Yet minute amounts are capable of inducing cancer in the living, birth defects in the unborn, and mutagenic effects in the descendants of those exposed.

Improperly guarded, radioactive wastes may be dangerous for thousands of years.

The current inventory of radioactive waste is enormous.

As a result of commercial power reactors, we have accumulated over 17,000 spent fuel assemblies that are stored primarily in water-cooled basins at reactor sites.

Commercial power reactors have also produced approximately 15 million cubic feet of low level radioactive wastes which are stored at six licensed facilities, three of which are closed.

Government reactors used for military activities have produced 80 million gallons of high-level radioactive waste stored in liquid and solid form at Hanford, Wash., Savannah River, S.C., and Idaho Falls, Idaho.

There are 600,000 gallons of liquid high-level wastes and sludge derived from commercial and military spent fuel stored at the abandoned West Valley, N.Y., site.

In addition there are over 140 million tons of uranium mill tailings that are stored in partially stabilized piles and hundreds of contaminated Government buildings and facilities that await decommissioning.

The problem is growing larger.

Although wastes from military activities are expected to increase slightly, wastes from commercial reactors are expected to dramatically increase in the near future.

The radioactive waste management program has a track record marred by many examples of incompetence and attempted political expediency.

Along with the hazards of fallout from weapons testing, unresolved reactor safety problems, and other problems under its jurisdiction, the Atomic Energy Commission, blinded by promotional zeal, also misled the American public about the problems of radioactive waste.

Today, the Department of Energy is afflicted with a similar conflict of priorities where it has a dual responsibility for promoting nuclear power and also resolving the radioactive waste problem—which is perceived as an impediment to the growth of nuclear power.

Some of the conspicuous failures in past history include:

A. The tanks at Hanford, Wash. Millions of gallons of high level radioactive liquid waste are stored in single walled carbon steel tanks at the Hanford, Wash., Reservation. Despite warnings from the U.S. Geological Survey and the General Accounting Office about the integrity of the tanks, the AEC neglected to follow recommendations to discontinue their use.

By 1973, 422,000 gallons of liquid waste had seeped into the sandy soil of Hanford.

One celebrated leak of 115,000 gallons went undetected for 51 days because no one bothered to compare readings that had been taken from one week to the next.

B. The Lyons, Kans., debacle. In 1972, the Atomic Energy Commission testified before Congress that they had spent 15 years and $100 million of taxpayers' dollars studying bedded salt disposal and and the solution to the problem could be found immediately at Lyons, Kans.

So confident was the AEC that Milton Shaw, Director of the AEC's Division of Reactor Development, stated before Congress that the site was "equal to or superior to the others [in the country]."

The site was found to be grossly unsuitable by the Kansas State Geological Survey.

Dr. William Hambleton of the Survey described the Lyons, Kans., site as "a bit like a piece of Swiss cheese" because of numerous gas and oil boreholes. The site was abandoned.

C. Reprocessing failures. In 1976, Getty Oil abandoned a reprocessing plant in West Valley, N.Y., and yielded ownership of 600,000 gallons of high-level radioactive waste to a reluctant State of New York.

Other problems and failures have occurred at reprocessing facilities at Morris, Ill., and Barnwell, S.C.

D. Low-level waste: Hanford, Maxey Flats, and Beatty, Nev. In 1973, the Atomic Energy Commission concluded that the concentration of plutonium at the bottom of one of its burial trenches at Hanford, Wash., might be enough to cause a spontaneous chain reaction. The contaminated soil was excavated and removed.

In December 1977, the Maxey Flats, Ky., commercial disposal site was closed when plutonium contamination was found in surface soil, 90-centimeter-deep soil cores, monitoring wells, and drainage streams.

The low-level commercial disposal site at Beatty, Nev., was known locally as "the store" because site employees illegally sold radioactive-contaminated tools, generators, plywood, and lab equipment to townspeople in need of inexpensive equipment.

E. The WIPP facility: The waste isolation pilot project is a bedded salt site near Carlsbad, N. Mex., originally slated for low-level and transuranium contaminated defense wastes. In 1977, it was suggested that high-level military wastes be put there, and in 1978, the Deutch report suggested putting 1,000 spent fuel assemblies in WIPP to demonstrate the scientific and technical feasibility of geologic disposal in bedded salt.

The WIPP facility has been roundly criticized for technical reasons and apparently will not be funded in the fiscal year 1980 budget.

It characterizes the current Federal program of radioactive waste disposal from the perspective of the States.

I return then, to the question of what role the State government should have in the siting of a Federal radioactive waste facility within its borders.

It is our strong contention that faced with the large amount of current and anticipated radioactive waste, and the checkered history of Federal management of the program, that Congress should establish a process which both mandates consultation with prospective waste dump States and also preserves the final right of the affected State to decide whether it will host such a facility.

This combined process protects both State and national interests.

There are several compelling arguments in favor of H.R. 2762.

First, the consultation process implies that any final State decision will follow, not precede, a full presentation of technical, engineering, and environmental information associated with the project.

The consultation process guarantees that States will have the benefit of factual data on which to base their decision.

Second, the authority to say "no" allows States to negotiate with the Federal Government from a position of strength.

Many States may have site-specific characteristics to which Federal officials are insensitive.

For them, a veto power may prove essential in negotiating the proper site standards and equity compensation measures.

For example, former Governor Mike O'Callaghan of Nevada endorsed the consideration of his State as a waste storage site but went on to say:

> The State must have authority to veto the use of storage and transportation facilities or other items that may account to a poor use of State resources or represent a real threat to the health, welfare and safety of State residents. Without this power I would never agree to voluntary location of a facility within this State. Should information come to light indicating that the radiation safeguards were going to be inadequate * * * Nevada must have recourse to an expeditious method of terminating planning involving land within the boundaries of the State.

Third, H.R. 2762 provides that there will be public acceptance of those sites that are eventually selected because it forces the Federal Government to make a persuasive case that a site will be safe and secure to those people who will be most directly affected.

Fourth, H.R. 2762 provides the type of public scrutiny and examination and debate which will prevent any politically motivated and technically flawed waste management proposal from going forward.

Fifth, many States have laws concerning the siting of a Federal radioactive waste facility within their borders.

Those States include Alaska, California, Colorado, Hawaii, Kentucky, Louisiana, Maine, Maryland, Michigan, Minnesota, Montana, New York, Oregon, South Dakota, and Vermont.

H.R. 2762 would affirm that the siting of a radioactive waste site is such an important public policy decision that the people of an affected State should be considered as full partners with the Federal Government through their elected State representatives.

In conclusion, H.R. 2762 is not a ban on radioactive waste disposal.

It establishes a consultation process between affected States and the Federal Government which will protect the interests of the individual States in the resolution of this important issue.

As President Carter said:

> The waste generated by nuclear power must be managed so as to protect current and future generations.

H.R. 2762 is a step in the direction of a safe and publicly accepted waste disposal program.

Thank you.

Mr. WEAVER [presiding]. Thank you very much, Mr. Franchot. It is a very clear position of this situation.

Mr. CLAUSEN. Just a couple of questions. First, we want to thank you for taking your time to come before the committee.

You mentioned 15 States I asked about before.

Mr. FRANCHOT. I will send a copy of the legislation.

Each of these States have varying types of legislation, but all of them go in the same general direction that we would like to have some final control over the decision, should our State be selected.

Mr. CLAUSEN. Would you agree with the previous witness for the Governors' Association, that no matter where we go in further nuclear policy, that there be a requirement to set up a conference?

Mr. FRANCHOT. I think without a doubt, there is responsibility for taking care of current military and commercial wastes.

Mr. CLAUSEN. Do you think it is technologically feasible to do so?

Mr. FRANCHOT. I think the feeling of our organization is that some of the technical problems are probably solvable, but we are very concerned about the situation when the technical preferred method of disposal is implemented in the real world, and if you look back at the track record, there is considerable uncertainty as to whether or not we can attain in this society under the type of pressures that apparently exist, a proper waste disposal program that will protect, not only us, but future generations, so what I am saying to you, I am not trying to be coy, I am saying, yes, some of the technical objections may be answered and may be solvable, but that is not to say that we are going to have safe radioactive waste disposal programs.

That is why we are so interested in this particular proposal offered by Congressman Seiberling, and why we support, for example, an independent radioactive waste authority, separate from the Department of Energy.

Mr. CLAUSEN. I read in either a newspaper or magazine publication, that the technology for the management of nuclear waste exists, that it was just a matter of implementing the technology.

What is your response to that?

Mr. FRANCHOT. I do not think it is currently available.

The question is whether it will ever be available, in an engineering sense, probably, yes, although there are some uncertainties there.

Whether or not we will be able to implement in a safe way is really the question you have to ask, because, for example, radioactive waste may in an engineering sense be able to be disposed in embedded salt deposits, the question is whether you can protect States from having what happened at the Lyons, Kans., site, from occurring in the future, from having siting errors, and through engineering and siting errors pick the wrong solution, and that I think is the real question you have to answer as far as linking the radioactive waste problem to a development of nuclear power.

I, for example, would be quite supportive of that concept that would in the future link the future generation of electricity to different sites, if the State has a technically viable site for disposing of the waste.

After a certain date, I think the State that benefits from nuclear power, from either buying or producing electricity, probably should be held responsible for disposal of that waste, provided there is a technically sound site within its borders.

Mr. CLAUSEN. There was reference, again from something I read, from a German scientist indicating that one of the more viable opportunities for disposal of waste would be to place it in space, as contrasted to dealing with it here on Earth.

Have you heard about that?

Mr. FRANCHOT. I think one of the concerns with the space disposal method is whether or not you can guarantee the reliability of the craft that gets it up into space.

I think it is probably very appealing to see the universe as a garbage pail, but the question is whether we are not subjecting ourselves to enormous risk, should some kind of space vehicle heavily loaded with radioactive waste fail to get out of the atmosphere, and I think as far as the technical aspects of the current state of the art on a radioactive waste program is concerned, I would much prefer to have our scientists and engineers submit written testimony to your questions as to pros and cons, for example, of space disposal.

Mr. CLAUSEN. Thank you.

Our objective is to pursue any avenue, and these are not to be taken lightly in any form. Certaintly my objective is to find out what the truth is, and as we all know, in the pursuit of the truth, you always have many different interpretations of what every person thinks to be the truth. Our role, and our responsibility, is to consider even the most remote suggestions.

Mr. FRANCHOT. I really think one way to get through this is to concentrate on the speed which you go about the program.

If you take your time, realizing that this is a project which affects not only us, but future generations, and has to be done right, then you are willing to say, OK, let us make sure it is done right, let us not get stampeded into a given site, and a given State, because of an argument that may not be applicable.

Mr. CLAUSEN. We may have some other questions that we will submit to you.

Mr. FRANCHOT. Thank you.

Mr. WEAVER. Mr. Franchot, you heard the statement, I believe with Mr. Bateman, that so concerned Chairman Udall, that the cost of developing the waste disposal system might be $25 to $30 billion.

Do you agree that is too high, too low, about right, do you have any guesses there?

Mr. FRANCHOT. I assume that would be fairly conservative in their figures, and I would like to look at their figures and respond to you in writing.

Mr. WEAVER. $25 to $30 billion would be conservative?

Mr. FRANCHOT. What I am saying is that the Department of Energy generally has a reputation for being conservative in those computations that affect, for example, nuclear policy, and that clearly is a figure that I think that agency would try to be as conservative as much as possible.

I do not know what the figure is, and I would like to get back in writing as to what the ball park figure is if it is possible to calculate.

Mr. WEAVER. Thank you.

[EDITOR'S NOTE.—The information referred to had not been submitted at time of printing and will be placed in the committee files when received.]

Mr. WEAVER. The gentleman from Nebraska.

Mr. BEREUTER. Thank you, Mr. Chairman.

Mr. Franchot, two very different questions. First, if I understood you correctly, you said in an engineering sense, it is possible to have

a safe solution to the disposal of nuclear waste. Is that generally accurate?

Mr. FRANCHOT. Our tentative conclusion I would really like to have our experts comment on in writing, essentially is that acceptable for some forms of high level waste disposal, and it is possible to say that some of the engineering impediments do stand in the way now will be resolved.

We cannot say conclusively that the program in an engineering sense is no problem.

Mr. BEREUTER. I would like to take us, for example, to Lyons, Kans. It seems to me that we had a technical capability, the engineering capability, to know that the proposal was basically flawed, and that those capabilities were simply not there.

Would that be an accurate statement, as far as your understanding?

Mr. FRANCHOT. Yes.

Mr. BEREUTER. If that is a fact, then are you really saying that we have the engineering sense but the problem is a matter of resolving the political process, or providing a credible and honest application of known technology to the problem?

Mr. FRANCHOT. What I am saying is that in the real world, it is very difficult, particularly with a unique problem like the disposal of radioactive waste to have some checks and balances, and when we look at the history of the radioactive waste management program in this country, right up to the current day, under the direction of the Department of Energy, as represented with WHIP, we feel apprehensive about implementing the safe radioactive waste management program in this country, and one check on that is to allow States, to have as much scrutiny to debate technical discussions as possible, and the only reason we like Congressman Seiberling's proposal is that it does generate considerable scrutiny and debate.

It would be nice to have a neutral scientific organization within the Government that would do a responsible job of disposing of radioactive waste.

You can create a new authority. It is very difficult to legislate that it be impartial, and that it not respond to political pressures.

You can create a new authority. It is very difficult to legislate that it be impartial, and that it not respond to poltical pressures.

For example, the State of California, or the State of Connecticut recently, or the State of Maine, that says we are not going to allow any more nuclear reactors to be built until there is a safe method of disposing the waste, that puts particular pressure on a Federal agency to come up with a solution, and the question is, there will be a solution, but let us make sure it is right.

Mr. BEREUTER. Shifting gears to a very different area, the French of course are experimenting with liquefied waste.

I am sure the people you represent must be familiar with that.

In relative terms, and recognizing the very costs of the process you have cited: Is anybody among your membership watching?

Mr. FRANCHOT. Yes; this is being done on an examination basis of not only the French program, but other Western European programs.

I would be happy to supply a list of those.

Mr. BEREUTER. I would appreciate that. As a matter of fact, Mr. Chairman, I would like to have that submission made a part of the record.

Mr. WEAVER. Without objection.

[EDITOR'S NOTE.—The information requested follows.]

FOREIGN PROGRAMS IN RADIOACTIVE WASTE MANAGEMENT

To allow comparison with the waste management program of the United States, short descriptions of foreign waste management programs are presented below. Although some countries are farther advanced in particular waste management areas, such as vitrification, no country has progressed beyond the United States in the field of permanent waste disposal.

UNITED KINGDOM

The United Kingdom has a reprocessing facility which is capable of handling about 1,000 metric tons per year. The reprocessing wastes are stored in liquid form in double walled steel tanks. Eventually, this waste is supposed to be converted into borosilicate glass and buried in geologic formations. Current research points to two options: Clay formations or crystalline rocks.

FRANCE

France has constructed or is in the process of constructing reprocessing facilities with an annual capacity of 3,200 metric tons. Liquid reprocessing wastes have been stored in engineered storage facilities until now. The French have developed a program for converting the liquid wastes to borosilicate glass. They are also assessing the suitability of salt as a medium for geologic disposal.

CANADA

The Canadian waste management program generally tracks that of the United States. Presently, no fuel reprocessing facilities for commercial fuel exist in Canada, and spent fuel is stored as in the United States. Studies into the feasibility of geologic disposal have been conducted, concluding that igneous rock may be a suitable medium. As of yet, no actual disposal has taken place.

JAPAN

At the present time, Japan has ten operating nuclear reactors and ten others under construction or in the planning stage. Current reprocessing capacity is 210 metric tons per year, although a 1,900 metric tons/year plant is planned for operation in the 1990's. Reprocessing wastes are stored as acid liquid in stainless steel tanks. Because Japan has no terminal disposal capability due to its small land area the Japanese are very interested in activities in other countries related to geologic disposal. They are also interested in seabed disposal and the island disposal concept, that is, finding an uninhabited island and dumping the waste there.

FEDERAL REPUBLIC OF GERMANY

The FRG has no reprocessing capacity for commercial fuel, but does have a commitment from France to reprocess all uncommitted German fuel through 1981. Germany plans to construct a fuel cycle center at Gorleben in Lower Saxony. At this site, fuel will be reprocessed and recycled, and waste will be buried in salt below the site. Some political problems may arise from this, however, because the Gorleben salt dome extends under the Elbe River into East Germany.[1] Currently, the German are disposing of low and intermediate-level wastes in an abandoned salt mine at Asse. This is a commercial program.

BELGIUM

Although Belgium has an active waste management program which is investigating, among other things, geologic disposal, it seems unlikely that any waste will be buried within the borders of the country as a result of its limited land area.

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[1] In the spring of 1979, the German federal government, under pressure from the public and the state of Lower Saxony (location of the Gorleben site), decided to postpone construction of the facility.

SWEDEN

The Swedish government has a reactor licensing policy similar to that of California. In order to comply with the "Nuclear Stipulation Law", as it is called, the Swedish power industry established the Nuclear Fuel Safety Project—also called the KBS Project—to develop and evaluate a method for the management of glassified liquid waste from reprocessing through storage in deep crystalline rock. Under the KBS plan, spent fuel will be reprocessed in France, the liquid wastes vitrified and placed in stainless steel canisters, returned to Sweden and allowed to cool for 30 years, with emplacement of the encapsulated wastes in a crystalline rock repository at a 500 meter depth no earlier than 2020. The storage holes and tunnels will be backfilled with a quartz sand-bentonite mixture which possesses good ion exchange characteristics, and which, upon contact with water expands to become almost totally impermeable. A review of the KBS Report by the California Commission concluded that many of the technical gaps troubling the U.S. geologic disposal program would also be encountered in the Swedish program. An assessment of the report written for the Swedish Energy Commission by Dr. J. Winchester of the Florida State University Department of Oceanography presented similar conclusions. Sweden is also cooperating with the United States in tests being conducted in an abandoned iron mine to determine the response of granite to heating.

U.S.S.R.

The Soviet Union has a very small reprocessing capacity at present, but is building a commercial reprocessing facility with an 1,800 MT/yr. capacity, to be operational in the early 1980's. Experiments with the vitrification of wastes into glass are being conducted, and studies of geologic isolation have been done. At present, surface storage for high-level wastes is being emphasized.

One of the more intriguing stories concerning radioactive waste management has to do with a purported radioactive waste explosion which occurred in the Soviet Union. The primary source of information concerning this incident has been Zhores Medvedev, a Soviet emigré biologist currently residing in London. In an article in New Scientist (Medvedev, 1976), he wrote that a waste storage site in Kyshtym in the southern Ural Mountains exploded in 1957, killing hundreds, injuring thousands, and radioactively contaminating some 2,000 square kilometers (770 square miles) to very high levels. Although Medvedev assumed that the accident was known to Western scientists, this was not the case, and his report created a great deal of interest and no little controversy. Nonetheless, the possibility of such an accident was dismissed by most nuclear scientists in the United States and Great Britain. Medvedev, in an attempt to prove the truth of his report, began to research the incident and published two articles which confirmed that some sort of nuclear accident had indeed taken place. In late 1977, the CIA released documents which indicated that a nuclear accident—possibly associated with a reactor—has occurred in Kyshtym.

By 1978, Medvedev managed to arouse sufficient interest, hostility, and criticism to cause the formation of a study group on the Kyshtym accident at the Oak Ridge National Laboratory. The group published a preliminary report which stated that Medvedev erred about the source of the radio active material and the size of the contaminated area. The study group concluded that the accident resulted from a chemical explosion in a nuclear fuel reprocessing plant and contaminated 65 square kilometers rather than the 2,000 reported by Medvedev. However, at least one member of the study group has acknowledged that Medvedev may have been correct about the source of the explosion. In any case, the amount of radioactivity released was enormous: up to one million curies of strontium-90 may have entered a lake near the site of the accident, resulting in a level of contamination about 1,000 times greater than that which would be caused by fallout from the explosion of a nuclear bomb. (See section 7 of bibliography for a listing of references about this accident.)

INDIA

India, with three small power reactors, and five more under construction, has a 60 metric ton/year reprocessing plant, and is planning a construct a 100 metric ton/year plant. India also possesses a plant capable of reprocessing fuel from an experimental reactor. Plutonium extracted from this fuel was used to construct the atomic device detonated in 1974. India is investigating igneous rock formations and selected sedimentary deposits as repository sites.

OTHER COUNTRIES

Many other countries have nuclear programs, with reactors in operation, under construction, or on order. They do not have any reprocessing or disposal capacity, however. President Carter announced in 1977 that the United States would be willing to accept limited amounts of spent fuel from selected countries if such a move would prevent construction of national reprocessing facilities with the attendant danger of nuclear proliferation. The Deutch Report estimates that by the year 2000, the United States may have up to 22,000 metric tons of foreign spent fuel in storage.

Mr. FRANCHOT. One other point I have heard today that we would object to is the idea that once the State objects to a radioactive waste facility, that automatically a congressional override process would be triggered.

I think that would be unfortunate, and I do not think you ought to be giving with one hand authority to States to make technical objections and with the other hand, provide what I think would be a very easy override provision.

I get a sense that the Congress would be less sensitive to some of the idiosyncrasies and site specific problems of a rural area like Nevada or Nebraska, than there would be perhaps to the national goal of developing nuclear power.

Mr. WEAVER. The gentleman from Ohio, Mr. Seiberling's name has been mentioned a number of times. He certainly deserves to question the witness.

Mr. SEIBERLING. Thank you.

Mr. Franchot, let me first of all congratulate the Union of Concerned Scientists, under the leadership of David Shown, for the many years of work in this whole field of nuclear problems. I particularly appreciate their support of H.R. 2762, and I would just like to ask you one question. You have probably heard the conversations earlier today about the possibility of having Congress act as a final arbiter in the event a State and the executive branch do not agree. I wonder how you feel about that.

Mr. FRANCHOT. I would propose certain language changes in your bill.

I would make the commission that the Governors request, and I would let only the State legislature by law and other powers under the Constitution make that final decision at the end of the consultation process.

I think that would clear up any conflict between your legislature and your Governor.

The reason that I really feel the congressional override that can be triggered by one State veto to a site is a type of sham, and I would oppose it.

If six or seven States in a row that had technically suitable sites were to decide at the end of the consultation process that they did not want a site in that State, then I can see some mechanism for a congressional override.

I think it is really implicit once you reach that type of situation.

Mr. SEIBERLING. What you are saying is if the process resulted in an inability to get any State to agree on a site, and obviously we have to dump the material, at that point there is an impasse which could not be resolved except by an act of Congress.

Mr. FRANCHOT. Right, and the only difference would be unlike what we are doing now, we would have the benefit of a thorough examination of a number of different sites.

Mr. SEIBERLING. I think that is a worthwhile point.

I am not sure whether I would require it to reach that stage or not, but I think that perhaps that would be desirable.

Congress could always, in the process of making a decision, learn whether there are other possible sites and take that into account in deciding whether or not to override the State's objections, and, of course, Congress can mandate it anyway by an act of Congress on its own initiative.

Mr. FRANCHOT. I think you have a good bill, and you ought to leave the congressional override out, because it is implicit, and I think certain States if they are given enough incentives and assurances that a site is safe will accept one.

I do not think we are quite in a situation where I would put an editorial in the New York Times, but I read one recently that said one consultant to the NRC has said nuclear waste be renamed to make it more acceptable to communities.

That is that it be changed to nuclear bonus material.

Mr. SEIBERLING. That is about as practical as my suggestion that we name the waste disposal site as a memorial to various elected State officials.

Mr. FRANCHOT. I think the only answer is to require the Federal Government to go in and make a persuasive case to people who have the right to say no, that technically this site will be something that is secure, not only for them, but for their children.

Mr. SEIBERLING. I have some confidence that the Congress in that sense, where a State was very strongly opposed, would not likely override that State's feelings in the matter.

On the other hand, I would hate to see the thing have to reach the point where we are absolutely desperate before Congress would formally be required to bite the bullet.

Members of Congress like other human beings do not like to make tough decisions, if there is some way of avoiding it. It seems to me the virtue of having the matter go before the Congress is to balance the scales between the Department of Energy and the State a little bit, since they both have the uncertainty as to what Congress will do, and, therefore, would be compelled to try to reach agreement. At the same time Congress would make a decision, if the matter is not resolved. However, I think your point is a good one about having the process exhaustive before making it compulsory on the Congress to come up with a decision. Congress can always step in at some point if it so desires, but knowing human nature, I would say Congress is not likely to want to wade in.

Thank you. I have no further questions.

Mr. WEAVER. I want to thank you very much, Mr. Franchot, for the leadership provided by the Union of Concerned Scientists.

We count on you, as I know the Congress has, to give us a balanced point of view to our own efforts.

Mr. FRANCHOT. Thank you for your patience.

Mr. WEAVER. The subcommittee stands adjourned.

[Whereupon, the subcommittee was adjourned at 1:10 p.m.]

APPENDIX

Additional Material Submitted for the Hearing Record

TESTIMONY OF

WILLIAM J. DIRCKS, DIRECTOR
OFFICE OF NUCLEAR MATERIAL SAFETY AND SAFEGUARDS
U.S. NUCLEAR REGULATORY COMMISSION

BEFORE THE

COMMITTEE ON INTERIOR AND INSULAR AFFAIRS
U.S. HOUSE OF REPRESENTATIVES

JUNE 28, 1979

I appreciate the opportunity to discuss the U.S. Nuclear Regulatory Commission's programs for public and state involvement in waste management decisionmaking. Appearing with me today is Mr. Jack Martin, Director of the Division of Waste Management.

When I speak of public participation, I mean participation by all non-Federal agency groups and individuals. I will limit my discussion to high-level waste (HLW) as requested. I do not at this time, intend to review the responsi-

bilities of NRC for waste management. Rather, I intend to address public participation in NRC decisionmaking, state participation in NRC decisionmaking, and the Commission's views on state veto.

The Commission recently submitted to the Congress a report on "Means for Improving State Participation in the Siting, Licensing, and Development of Federal Nuclear Waste Facilities," NUREG-0539, dated March 1979. This report covers the area of state participation in depth and provides specific findings and recommendations for improving this participation. Some of the points I am addressing here are included in this report.

Public Participation in NRC Decisionmaking

There are two key points at which public participation is most important and affects NRC decisionmaking. The first is during development of regulations and the second is during the licensing process.

Development of Regulations

The public has been involved in our efforts to develop regulations. In November of 1978, the Nuclear Regulatory Commission published for comment a proposed General Statement of Policy (GSP) outlining procedures for licensing geologic disposal of high-level radioactive wastes (HLW). At the same time, a draft rule consisting of specific requirements which would implement the procedures of the General Statement of Policy was circulated to the state governments for their review. Comments were received on the General Statement of Policy from thirty groups and individuals. Fourteen states commented on the draft rule.

As a result of these comments and the Interagency Review Group's Report to the President, the staff has modified the draft licensing procedure and is planning to forward it to the Commission for approval to publish for comment in the Federal Register as a proposed rule (10 CFR 60).

In addition, the staff is planning to submit to the Commission for approval to publish for comment in the Federal Register an Advanced Notice of Rulemaking which describes the status of technical criteria which will ultimately be included in 10 CFR 60 and identifies the staff's current thinking on important issues which have not yet been resolved. In addition to seeking early public comments on the proposed rule via the Advanced Notice of Rulemaking, we will publish results of technical work in support of the technical criteria to be included in the rule. Notice of this will be made in the Federal Register and comments will be requested.

Licensing Process

In light of comments received and further staff evaluation, the staff will propose to the Commission licensing procedures which are somewhat different from those outlined in the proposed General Statement of Policy sent out for comments. I wish to stress that no Commission decision has been reached on which procedures will be adopted. As we in the staff presently conceive it, the proposed rule will involve the NRC and the public during the actual license process in four stages as follows. The first stage begins when DOE has formulated plans for a prospective repository to the extent that it wishes to begin subsurface characterization of a specific site or sites. At this point, DOE will be required to submit a site characterization plan to NRC. The plan will address the process by which the media and site were selected and DOE's program for further development of alternative media and sites. At this time, NRC will notify affected

states of this proposed action. The plan will be reviewed by the NRC staff with opportunity for state and public comment on both the plan and a staff analysis of the report. It is also anticipated that the NRC will hold local public meetings in the immediate area of the sites to be characterized. These meetings are both to disseminate information and to obtain public input which will be factored into the final version of the staff analysis. NRC fully expects that DOE will involve state and local governments in its site selection programs. We will require that this involvement will be described in the site characterization plan.

The second stage begins with the submission by DOE of an application for construction authorization at a particular site. At this point, several sites will have been characterized from which one site will have been selected. Formal licensing proceedings will begin at this stage. A licensing board will be appointed and the license application and accompanying environmental report will undergo the first review. Public hearings will be held prior to deciding whether to permit construction.

The third stage commences with an application by DOE to receive wastes at the repository. Although not specifically required, public hearings may be held and the public would have an opportunity to participate.

The fourth stage is the closure of the repository. Once all the wastes have been emplaced, an application will be made by DOE to close the repository, and the final review of the repository will begin. The public will have an opportunity to participate in this stage.

It should be noted that our contacts with the states to date indicate that each state will probably have different ideas regarding the extent to which they desire to participate in the licensing process. Thus, the proposed rule is structured so that each state has the flexibility to participate in the process to the extent it desires or has the capability to do so. The staff intends to develop guidance to assist the states in planning for their participation.

State Participation in NRC Decisionmaking

In coordination with the Office of State Programs, for the past two years my office has had an active program to bring about greater state participation in waste management decisionmaking and to exchange ideas with state officials. We have participated in state legislative and administrative hearings and meetings on waste management and have sponsored a series of three regional workshops in September 1977 to solicit ideas from state officials on siting and licensing of high-level waste repositories. The workshops were attended by 170 state executives and legislators from 46 states. I would like to provide for the record the documents resulting from these workshops. A smaller meeting was held in Atlanta, Georgia in January 1979 to discuss with state representatives means for improving state participation in siting, licensing and development of waste disposal facilities.

In addition, based on the draft procedures, and in response to a report from the State of New Mexico we started discussions with the state to reach an agreement on how New Mexico would participate in a review of the Waste Isolation Pilot Plant in the event DOE submits an application to NRC and NRC has authority to regulate the facility. As some first steps in establishing that relationship, we have been exploring with the state agencies concrete ways in which the state can interact with NRC. Some of the ways states can participate which are being explored with New Mexico could also be applicable to state participation on licensing of a high-level waste repository.

For example:

- States could participate in regulatory development especially in reviewing the basis of our regulations.
- States could assist NRC in the review of specific portions of license applications.
- States could perform other technical assistance work, particularly in the area of environmental studies.
- States could perform environmental and radiation monitoring throughout the operational period and after closure.
- States could participate by assignment of state employees to NRC or NRC contractors or by using an NRC employee on assignment to the state during the licensing process.

In summary, states will be provided with the opportunity to participate in the licensing process. As recommended in NUREG-0539, Federal funding should be provided to assist the states. I should like to note that legislation would be required to authorize NRC to provide such funding.

Commission Views on State Veto

I have already noted that the Commission believes it appropriate to give statutory recognition to the legitimate concerns of states in which waste facilities maybe located.

The Commission made several recommendations in NUREG-0539 for legislation to improve the capabilities for improved state participation in the Federal waste management program should provide additional recognition of state concerns. The recommendations requiring legislation include: (1) establishment of a Federally financed planning council composed of Federal and state officlas, (2) Federal funding of an independent technical review capability under the direction of the planning council, and (3) establishment of a Federal grant program to allow host states to participate more fully in the Federal waste management program.

Up to this point, I have described ways that states might participate as active members in the process of siting and licensing nuclear waste facilities. When we come to the question of concurrence or veto, the issue becomes much more complex. In the Commission's NUREG-0539 report, a number of factors bearing on this question are identified:

1. The practical consequences of failure to achieve concurrence. Would this require a complete halt to the process at the time of the non-concurrence? Or would activities of siting, licensing and development be allowed to continue pending resolution of the state's concern?
2. The grounds on which a non-concurrence is made. The procedure might allow an interested state to exercise a veto without any reasons at all or the procedure might require a state to base its actions, using the record of the Commission's proceedings, on its determinations that specific environmental or safety concerns have been violated.

3. The form in which a state might invoke a veto. Should it be on the action of the Governor, the legislature or some other body within the state?
4. The point at which the veto might be invoked. We would prefer that the NRC licensing review be allowed to run its course in an orderly and untrammeled manner. This process is designed to provide for extensive state participation and we feel that it should not be interrupted as a result of a state veto. Thus, if a state veto were to be allowed we believe that such a veto should only occur after the NRC has assembled a fully developed factual record and a statement of the Commission's conclusions. Such a record would then be available and could be used in the resolution of the remaining differences.
5. The authority to resolve the differences. A veto provision should include a means to resolve differences between an affected state and Federal agencies concerned. This might take the form of action on the part of Congress or a Congressional Committee.
6. The extent to which a decision, other than that of the Commission would be subject to review.

In summary, we believe, that if provision for a state veto were to be made, that provision should be carefully drafted to clarify the circumstances under which the veto can be exercised. This should include requiring the state to exercise all reasonable means to resolve its difficulties.

In closing, the NRC's high-level waste program is an evolving one. We recognize that there are unresolved issues in how to best achieve public involvement and will continue to explore additional ways to increase the productive involvement of the public and the state in the licensing and regulatory process.

Udall Committee Hearing on State Participation in the Waste Licensing Process

Question: A description of the state of the art of waste management technology which identifies the specific technological shortcomings, provides an estimate of the amount of time necessary to resolve those problems, and defines the magnitude of the waste disposal problem.

Answer:

The High-Level Waste Problem

Radioactive waste is the byproduct of the generation of electricity by nuclear reactors or of the production of plutonium for weapons. Fuel assemblies must be removed periodically from nuclear reactors as fission products accumulate These spent fuel assemblies contain large concentrations of fission products which decay to innocuous levels in several hundred years, and of longer lived transuranic elements and their daughters which persist for hundreds of thousands of years.

Spent fuel can be processed chemically to recover most of the plutonium and unfissioned uranium for possible reuse. The residuum from this process is a highly radioactive byproduct usually referred to as "high-level waste." The United States currently does not plan to reprocess spent fuel; thus, the immediate problem of commercial radioactive waste is one of handling, storing, and ultimately disposing of spent fuel assemblies.

Radioactive wastes from military activities are somewhat different. These wastes are mainly the residue after plutonium has been extracted from materials that have been irradiated in a reactor designed specifically to produce plutonium. Although military wastes contain many of the same fission products and transuranic elements as commercial waste and occupy significant volumes, their total radioactivity is lower per unit volume than that resulting from power reactors. At present, there is about the same total radioactivity in the waste resulting from defense programs as that stored in spent-fuel assemblies from commercial reactors.

The volume of commercial radioactive waste that will accumulate during the next few decades will depend upon the growth of the nuclear power industry and on the form of the waste. It has been estimated that by the year 2000, approximately 95,000 tons of spent fuel will be on hand if none has been reprocessed. If these spent fuel elements were to be reprocessed, the resulting solid high-level waste would occupy approximately 3,000 cubic meters (m^3), and accompanying intermediate-level wastes contaminated by transuranic elements would occupy a volume one order of magnitude larger than the volume of high-level waste.

High-Level Waste Management Technology

High-level wastes are highly radioactive and biologically toxic and must be isolated from the biosphere. Isolation methods being investigated include disposal into space, transmutation of elements, rock melting, disposal in very deep drill holes, disposal in seabed sediments, and disposal in mined repositories in deep continental geologic formations.

The U.S. Department of Energy (DOE) is responsible for developing and implementing the technology for managing high-level radioactive waste and it is our understanding DOE tentatively views geologic repositories to offer the most viable near-term opportunity for the disposal of high-level waste. Therefore, NRC is focusing its near term efforts on preparing to review an application for a geologic repository.

The staff agrees with the findings of the Interagency Review Group (IRG) on Nuclear Waste Management that:*

"Present scientific and technological knowledge is adequate to identify potential repository sites for further investigation. No scientific or technical reason is known that would prevent identifying a site that is suitable for a repository provided that the systems view is utilized rigorously to evaluate the suitability of sites and designs, and in minimizing the influence of future human activities. A suitable site is one at which a repository would meet predetermined criteria and which would provide a high degree of assurance that radioactive waste can be successfully isolated from the biosphere for periods of thousands of years. For periods beyond a few thousand years, our capability to assess the performance of the repository diminishes and the degree of assurance is therefore reduced. The feasibility of safely disposing of high-level waste in mined repositories can only be assessed on the basis of specific investigations at and determinations of suitability of particular sites. Information

*Report to the President by the Interagency Review Group on Nuclear Waste Management, March 1979, page 42.

obtained at each successive step of site selection and repository development will permit re-evaluation of risks, uncertainties, and the ability of the site and repository to meet regulatory standards. Such re-evaluations would lead either to abondonment of the site or a decision to proceed to the next step. Reliance on conservative engineering practices and multiple independent barriers can reduce some risks and compensate for some uncertainties. However, even at the time of decommissioning some uncertainty about repository performance will still exist. Thus, in addition to technical evaluation, a societal judgment that considers the level of risk and the associated uncertainty will be necessary."

The specific areas of scientific and technical uncertainty which our studies and our overall observation of high-level waste management activities indicate must be clarified with respect to the permanent disposal of waste, are as follows:*

1. The ability to analyze repository performance is limited by the large uncertainties which exist in site characterization. Uncertainty in the description of site characteristics arise from many sources, primarily the inherent limitations associated with the instrumentation used to acquire data, and the interpretation of site data into model parameters. Additionally, the investigation of a site will most likely involve the use of intrusive or destructive testing methods (e.g., boreholes) which may introduce potential pathway for waste release.

2. The ability to analyze repository performance is also limited by the large uncertainties which are associated with the introduction of radiation and heat into a geologic system. These phonemena require significant additional study, particularly in the investigation of thermal effects on the mechanical properties of the rock (e.g., plasticity, stress and strain), and the thermal effects on the chemical interactions between the waste, groundwater and the rock (e.g., dissolution, retardation).

3. Uncertainty also exists in the reliability of engineered barriers to perform under repository conditions. Since the potential hazard from radioactive waste decreases significantly within the first five hundred years, engineered features such as waste form and specific repository design concepts can significantly contribute to confinement of the wastes during the most hazardous period.

*Additional information on the state of advanced waste management technologies is presented in the recently completed Department of Energy's Draft Environmental Impact Statement on the Management of Commercially Generated Waste, April 1979 (DOE/EIS-0046-D).

To date, the designs of deep geologic repositories have placed major (if not total) reliance for containment of radionuclides on the surrounding geology. Reliance on the waste form itself and its packaging to prevent radionuclide release over the long-term has not received intense emphasis. The waste form work that has been done has been devoted primarily to glass. Many feel that several geological settings should be characterized and "qualified" before a commitment is made.

The NRC waste management staff considers that an analogous argument applies to the waste form and packaging selection. The potential gains in assurance which could be made are, in our judgment, sufficiently large to warrant this approach. The long-term performance of the waste form, packaging, and its reactions with the host rock can be examined in the laboratory and can be extrapolated with some confidence through testing at aggravated conditiions. This approach has been used successfully in modern materials development work. A high degree of assurance of the performance of the waste form, packaging, host rock interface would also tend to offset the inevitable uncertainties in geologic performance.

As a result, the NRC waste management staff believes that a much more aggressive waste form and packaging development and demonstration effort should be undertaken in order to provide a multi-barrier repository system. The completely encapsulated nuclear waste would be protected by its chemical form and packaging until most of its fission products had decayed. At that point, the geologic repository's radioactive content would not be much different than the original ore body. This would leave the geology as a fully redundant backup barrier. The NRC staff is working with DOE on this multi-barrier approach and our preliminary regulation work reflect this view.

We are not able at this time to determine in an absolute sense the significance of these areas of uncertainty to the overall safety achievable in permanent nuclear waste disposal programs. The evaluation of the absolute importance of each factor is site dependent, and cannot be meaningfully performed until we have a specific site to assess. Our studies have revealed, however, areas in which further study is necessary to improve our confidence in predictions of repository performance. These are:

1. assessment and testing of methods for processing waste into chemical and physical forms which will provide optimum radiological safety for handling;

2. development of improved methods for measuring and understanding the mechanisms, rates, probabilistics governing the migration of radionuclides to the biosphere due to hydrological processes, or other natural phenomena or by the activities of man in the distant future;

3. development and test of probabilistic risk analysis models which will integrate and analyze the multidisciplinary data needed to provide predictive information for siting and licensing of high-level waste management facilities;

4. development of adequate understanding of the characteristics and effects of geochemical and hydrological processes which will be involved with waste and containers which are deposited in repositories;

5. assessments of the engineering designs and mining engineering practices that may likely be used in developing and operating repositories in geologic media;

6. confirmation of the short-term reliability and long-term durability of containers needed for handling and storing waste and spent fuel; and

7. development of data to confirm understanding of the radiological pathways and potential impacts on man that could occur if radioactive products from the wastes should be liberated into the biosphere in the future.

All of these items are key areas requiring resolution before a repository can become operational. Since research can turn up new problems as well as resolve old ones, each of the above items should be pursued as quickly as possible. The most urgent are those which relate to site selection and to information required to evaluate the likely performance of the site (items 2,3,and 4 above). This information is needed first so that an evaluation of the suitability of the site for a repository can be made to support a construction authorization. This is the point where a substantial commitment is made.

Time Necessary to Resolve These Technological Problems

The Interagency Review Group on Waste Management has expended considerable effort to review the technical problems associated with geologic disposal of radioactive wastes and has concluded that technical knowledge is sufficient to proceed with selecting sites for further investigations. These further investigations will lead either to abandonment of the sites or further development. The Department of Energy is responsible to resolve the uncertainties through their development program. While we cannot speak for the Department, we believe a vigorous, well managed, stepwise development program could reduce the uncertainties to levels which permit rational decisions over the next decade.

ENCLOSURE 2

Item 1: An evaluation of the state of the art of solidification of high-level waste. This should include an assessment of the French vitrification process to meet either existing or proposed NRC licensing criteria. The process should also be compared to the various methods of solidification being studied by the U.S. Department of Energy (DOE).

Answer: High-level wastes generated as a result of reprocessing may be processed into any one of the following waste forms: calcines, cements, ceramics, glasses, glass/ceramics, and metal matrix. In addition, the NRC has defined high-level waste to include unreprocessed spent fuel assemblies, and these fuel assemblies can be encapsulated in metal.

Calcines are unconsolidated, poorly crystalline or non-crystalline powders or granules produced by a one step process of evaporation and partial decomposition of high-level waste at high temperatures.

Cements, related to those used as building material, are also candidate waste disposal forms. However, cements considered for high-level waste disposal (high density Portland cement and high aluminum cement) are much different from the cements commonly known. Once hydrated, this kind of cement becomes a highly dense material comparable to many kinds of natural rock.

Ceramics are inorganic, nonmetallic, crystalline materials consolidated by a high temperature process.

Glasses are the inorganic product of fusion, based on a silicate or phosphate network, which has been cooled to a rigid condition without crystallization.

Glass/ceramics consist of residual base glass plus a crystalline phase produced by controlled devitrification (crystallization) during process annealing of the waste form.

Metal matrix waste forms are those in which an "inner" containment form, such as glass beads or calcine pellets, is imbedded in a metal matrix.

Unreprocessed spent fuel elements could be encapsulated in a lead matrix and put within a steel canister.

A very detailed analysis of each of these major waste forms including advantages and disadvantages in their use can be found in the following documents:

- Solidification of High-Level Wastes (NUREG/CR 0895)
- Immobilization of Defense High-Level Waste: An Assessment of Technological Strategies and Potential Regulatory Goals, Volumes I and II (SAND 79-0531)
- The Evaluation and Review of Alternative Waste Forms for Immobilization of High-Level Radioactive Wastes (no document number).

NRC has enclosed copies of these documents for your review.

In general, waste form processes are significantly better developed for borosilicate glass than for other alternatives. Virtually all development work in the U.S. with waste forms other than glass has been on a laboratory scale, mostly using simulated waste. Only in a relatively few cases have laboratory-scale experiments been carried out using actual radioactive waste. Presently, there are no large scale prototypes of these major processes with the exception of the Waste Calcining Facility at INEL. Even for glass production there are many formidable problems to be resolved before it can be considered an industrialized process in the United States.

Knowledge about the fundamental properties and behavior of potential waste forms is, without exception, in a formative stage. The methods and tests used to determine the characteristics and behavior of the waste form, packaging, and their interaction with the emplacement environment are poorly developed. Also, possible synergism between the waste form, packaging, and emplacement environment have not been studied in detail. Determination of the long-term behavior of the waste forms, packaging and emplacement environment will be necessary to compare alternative waste systems and to assess how well each meets performance requirements for licensing. Much of the projected behavior of defense waste glasses is inferred from studies performed on compositionally dissimilar glasses developed for commercial nuclear wastes.

The NRC staff is aware of the French AVM/AVH vitrification process in addition to other processes under development in other countries. The basic French process is semi-continuous with separate calcination and vitrification stages. The technology of the process is in general based upon technology developed by the DOE at the Hanford Reservation about ten years ago. Since then, the development of a refractory lined ceramic melter at Hanford has progressed to a point that the pot melting process used in the AVM/AVH system has been

discarded due to the high rate of failure of the melting pots and the associated electric resistance furnace elements. Presently, the French are assessing the use of a similar refractory lined ceramic melter. The use of this type of melter may resolve problems encountered with the pot melting process the French have experienced so far. While a detailed licensing assessment of the French process has not been performed by the staff, it is felt based upon our technical review of the process, that the AVM/AVH system does not necessarily possess characteristics which would make it the preferred waste solidification process over the proposed systems presently being developed by DOE.

Item 2a: Provide an estimate of the amount of waste which will be generated in the U.S. over the next 50 years. The estimate should include contributions from commercial power reactors, medical and industrial users of radioisotopes, and defense-related reactors. For each of the above, the estimate should include the number of curies and volume of waste generated.

Answer: The generation of radioactive low-level wastes is dependent on so many variables that extrapolations beyond about 20 years are probably invalid. Reactor design, startups, decommissionings, and operations as well as other nuclear industry and nuclear medicine growth and developments in addition to waste management practices (volume reduction, solidification agents, and other processing) all affect the rate of generation of low-level wastes. Based on work in progress we do have preliminary results for waste projections to the year 2000. These projections are based on 370 GWe of nuclear power plants in 2000, a volume reduction factor at 1.66 for reactor wastes, and a 14% annual growth rate in non-fuel cycle wastes.

Low-Level wastes are currently being generated at the rate of 4 million cubic feet a year and 1 million curies a year. By the year 2000, these rates should be increased by a factor of 10 to about 40 million cubic feet a year and 10 million curies a year. During the 22 year period from 1979 to 2000, about 270 million cubic feet of waste containing 96 million curies should be generated. Commercial power reactors in 1978 produced about 65% of the volume of commercial radioactive wastes. This market share will have slipped to about 45% by the year 2000. The balance of the waste is generated by medical and industrial users of radioisotopes.

These estimates include only commercial low-level wastes. High-level commercial wastes are addressed in Enclosure 1.

DOE is the agency that controls, manages and keeps track of defense related wastes. NRC knows of no DOE 50 year projection of defense waste; however, a multi-year projection was illustrated in the document entitled "Nuclear Waste Management Program Summary Document" (DOE/ET-0094). Page 1-5 of this document contains the following projection:

High-Level Waste (Solid)	10.4×10^6 ft^3 through 1985
High-Level Waste (Liquid)	2.7×10^6 ft^3 through 1985
TRU	15 to 125 $\times 10^6$ ft^3 through 2000
LLW	70 to 250 $\times 10^6$ ft^3 through 2000

The numerical range of the last two entries depends on the extent of decommissioning and decontamination activities.

It should be noted that the NRC has recently completed a congressionally requested study entitled, "Regulation of Federal Radioactive Waste Activities" (NUREG 0527). The study is expected to be published in September 1979. One aspect of the study was to provide to the Congress a complete listing and inventory of all radioactive waste storage and disposal activities now being conducted or planned by Federal agencies. The study included a listing and inventory of all Federal radioactive waste by type of activity (disposal, storage, processing), by type of waste (low-level waste, transuranic waste, Oak Ridge intermediate level waste, high-level waste), and by site (e.g., Savannah River Plant, Hanford). Cumulative volumes and activities of the various types of Federal waste were compiled as of December 1978. The scope of the study did not include a projection of volumes and activities of the various types of Federal waste over the next few decades.

Item 2b: The staff would also like an estimate of the number of sites necessary to store this waste.

Answer: The number of sites needed to dispose of the low-level waste depends on how large the sites are. The current shallow land burial grounds have capacities in the range of 20 to 40 million cubic feet. For sites of this size, from 10 to 19 sites will be filled during the period from 1979 to 2000.

Item 3: Specification of the limiting criterion (volume of waste or activity) in determining waste storage capacity.

Answer: The limiting criterion for low-level waste storage capacity is volume. However, the limiting criterion for the storage of high-level waste is first the activity of the waste (e.g., heat), then volume.

Item 4: An evaluation of the state of the art of shallow land burial for low-level wastes.

Answer: The state of the art regarding shallow land burial has changed little over the past years, but efforts are underway to improve the disposal of low-level waste through the development of comprehensive regulations based on a sound technical basis. Specific regulations will be developed for low-level waste which will address not only shallow land burial, but will also address alternative disposal methods. Alternative methods are required to provide better isolation of certain types of wastes. Alternatives under consideration are deep land burial, use of mined cavities, and use of engineered structures. We are also developing criteria for the form of the waste accepted for disposal. Such criteria would impose upon waste generators the requirement to transform the waste into an acceptable form for shipment and burial. This will not only improve our predictions of performance of a site, but will increase safety during handling and transport to the site. Institutional arrangements for control and custody are being developed, along with technical specifications for site suitability. These rules will be available for public comment late next year.

TESTIMONY CONCERNING NUCLEAR WASTE MANAGEMENT AND THE ROLE OF THE STATES
BY CONGRESSMAN JOHN F. SEIBERLING

June 28, 1979

Mr. Chairman:

I commend you for holding these series of oversight hearings on issues related to nuclear power. Since you are hearing testimony today on nuclear waste management and issues of equity and public participation, I am taking this opportunity to testify on legislation I have introduced to establish a process for states to participate in decisions on radioactive waste disposal. This bill (HR 2762) is cosponsored by 37 of our colleagues, including several members of this Committee, and Senator George McGovern has introduced identical legislation with broad bi-partisan support.

This bill essentially affirms states' right to participate in and influence decisions which affect the long-term safety and health of their citizens. HR 2762 would amend the Atomic Energy Act of 1954 to require the Nuclear Regulatory Commission to notify a state of any proposals to explore sites within such a state for the purposes of evaluating or developing a facility for storage or disposal of radioactive materials for interim storage, or longer. Once the state has been notified of a proposed action relating to radioactive waste disposal, the Governor of the state may request the creation of a Federal and State Radioactive Materials Management Commission to study all the issues associated with waste disposal at the specific site or sites identified by DOE. At the conclusion of the study, the Governor (in consultation with the other Commission members) and the state legislature, would

be able to issue concurrence or non-concurrence with the proposed action, along with recommendations, alternatives or conditions for further action by DOE.

The bill would establish for the first time a formal cooperative relationship between the states and the Nuclear Regulatory Commission and the Department of Energy to evaluate and develop sites for the disposal of radioactive waste. Since the inception of the commercial atomic industry in the 1950's, the federal government has had sole authority for regulating the industry in all matters, including waste disposal. The basis for the sole federal authority stems from the first use of atomic science in weapons systems, consequently establishing the importance of atomic technology to national security. Since the federal government had at that time expertise over the private sector in the technology and use of nuclear materials, the federal pre-emption in issues of radioactive waste disposal is an unrealistic and out-dated application of the policy.

The problems of nuclear waste disposal are enormous. Currently, we have about 74 million gallons of radioactive waste in this country, all in temporary storage at plant-sited "pools". The fission products which comprise this waste include so-called transuranic elements: radioactive atoms heavier than uranium which remain radioactive for extremely long periods of time--Plutonium-239, for example, has a half-life of almost 25,000 years. In human terms, the continued radioactive hazard is infinite.

The immediate need for interim storage of this radioactive material is evident from the increasing frequency of leaks from existing storage sites. The most prominent example of this is the storage facility for DOD radioactive wastes at Hanford, Washington, where over 423,500 gallons of high-level wastes have leaked from 16 tanks. This experience points to the serious health, safety and environmental problems associated with radioactive waste--problems which fall under the concern and authority of the states.

The past failures of storage technology may not be repeated in DOE's next attempt at developing nuclear waste storage technology. But there is no guarantee that the next attempt, probably at interim storage for a period of 30 to 100 years, will be any more successful. Just this week the press reported that a report by the National Academy of Sciences, commissioned by the NRC, on radioactive waste was suppressed because it criticized a technology for interim storage which is currently favored by DOE. The technology, which would solidify high-level wastes into a glass-like substance, has been the Department's leading proposal for high-level waste disposal. The supression of this report, which evidently called DOE's commitment to glass storage "premature", indicates that careful scrutiny by the states of proposals to store wastes at sites identified as geologically ideal for this type of storage

is not only logical but desirable. The incident points to the need for open discussion of potential hazards and the actual risks of nuclear waste disposal before faulty decisions are made and irreversible, tragic results are suffered.

The states have the right and responsibility to voice their concerns about the problems associated with potential sites and with proposed technologies for radioactive waste disposal, yet presently the states cannot exercise that responsibility. Currently, DOE gives some consideration to states which object to possible siting of radioactive waste facilities within their boundaries--DOE has, for example, temporarily discontinued field research in Ohio because of the Governor's strenuous opposition to radioactive waste siting in the state. In the final analysis, however, there is absolutely no assurance that the views and objections of the states will be considered when it comes down to the crunch.

It is apparent that the tremendous task of securing existing radioactive waste demands a strong state role for those states in which a disposal facility may be sited, but the present policy--which operated in the case of Ohio--is nothing more than an internal DOE policy, subject to change with no notice or review. In addition, the General Accounting office, in response to a question by Congressman John Dingell, Chairman of the House Interstate and Foreign Commerce Subcommittee on Energy and Power, advised that any departmental policy which would allow a state to reject a possible waste disposal site could constitute a "veto"--and that DOE has no authority under existing law to acknowledge a state veto. Even if a state had a reasonable objection, nothing in present law prevents DOE from proceeding, except the Department's fear of earning a terrible public image by foisting radioactive waste on an unwilling state. This singular authority is unrealistic in view of the immediate need to develop a workable program to deal with the national problem of radioactive waste.

The dimensions of the nuclear waste disposal problem demand a strong state role, and the states are strongly demanding to be heard. 15 states have already passed laws which would prohibit outright or set conditions on nuclear waste storage within their jurisdictions, and 10 other states are considering initiatives to put similar authority on the books. Under current federal law, these state laws have no meaning in final decisions on radioactive waste disposal. Yet, in many cases, states are not asking for a veto authority: they are asking for their rightful role in siting decisions.

HR 2762 would establish a process for continuous consultation and participation between state and federal agencies on all issues related to nuclear waste management. The actual extent of state participation in these decisions will be up to the individual states. My bill provides room for a legislative role, where the state law creates a legislative concurrence process, and generally provides maximum flexibility for states which have already enacted laws relating to nuclear disposal to use their own process.

The consultation and concurrence process provided by HR 2762 may be time-consuming, but decisions on disposing radioactive waste which remain toxic for thousands of years should not be made in a hurried manner. And I would stress that the concurrence process is not necessarily a veto process. A veto process would allow a state to arbitrarily shut out federal activity at any point. The process proposed by my legislation develops a forum for federal and state officials to discuss the issues, and establishes a federal/state communications process to negotiate on matters which can be subject to mediation.

For example, a state may logically fear that accepting radioactive waste will adversely affect economic growth; the state may not have the resources to provide sufficient security for the site; or the state may anticipate transportation problems and require federal assistance to widen its roads or develop a route

around a highly-populated community. I envision the process in HR 2762 as helping the federal government to identify resolvable problems such as these which can be met with increased federal authority. Such requirements do not constitute blackmail by the states. We should not fool ourselves into believing that states which accept nuclear waste will not need some economic incentives to make it easier to accept the tremendous responsibility of stroing radioactive waste. This burden must be recognized as part of the cost of nuclear power.

This brings me to another point. One view on nuclear waste management would require states which use nuclear power to be responsible for nuclear waste. In some small, populous states, such as Massachusetts, this problably would not be sound or rational policy. Moreover, since states in the past have been excluded from meaningful roles in decisions on plant siting as well as regulating safety features of these plants because of the federal pre-emption, it would be unfair and unwise to reverse this policy and automatically hold these same states accountable for radioactive waste disposal problems from plants already built or licensed to be built in the state.

Finally, I anticipate that there will be some who will question why this legislation creates an individual task force for each proposed action, rather than a single permanent Executive Council to study all sites. The reason is this: states cannot delegate to a federal agency their responsibility to protect the health and safety of their citizens. This legislation provides a workable framework to give each state, according to its needs and priorities, the maximum opportunity to participate fully and effectively in decisions on radioactive waste disposal.

Since one of the issues your Subcommittee is studying today is public participation, I would point out that this legislation enhances public participation by giving the people directly affected the right, through their state legislators and their governors, to make final recommendations on an issue which affects their lives and those of future generations. I urge you to incorporate an effective role for the states in site-selection decisions, as provided by HR 2762, and to require that the full range of site-specific problems be thoroughly and openly examined to assure that the best possible decisions are made for interim and long-term storage of radioactive materials. Since DOE views the development of an interim storage facility as an urgent matter, I cannot emphasize the urgency of enacting a process for state participation in these decisions.

96TH CONGRESS
1ST SESSION

H. R. 2762

To provide for a formal process of State participation and concurrence regarding the management and storage of radioactive materials.

IN THE HOUSE OF REPRESENTATIVES

MARCH 8, 1979

Mr. SEIBERLING (for himself and Mr. KEMP) introduced the following bill; which was referred jointly to the Committees on Interior and Insular Affairs and Interstate and Foreign Commerce

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A BILL

To provide for a formal process of State participation and concurrence regarding the management and storage of radioactive materials.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That (a) chapter 19 of the Atomic Energy Act of 1954, is amended by inserting the following new section after section 241:

"SEC. 242. NOTICE TO STATES WITH REGARD TO DISPOSAL OF NUCLEAR WASTE.—

"a. Except as may otherwise be provided, the Chairman shall notify (and publish such notice in the Federal Register) the Governor, the presiding officers of the various chambers, where applicable, of a State legislature, and where applicable, the Tribal Council of any affected Indian tribe, of its intent to explore a site in such State, or within an Indian reservation, for the purpose of establishing, evaluating, or contracting for construction of facilities intended for the storage or disposal of radioactive materials.

"b. Except as may otherwise be provided, the Chairman shall, after making the notification required by subsection a., and upon the request of the Governor of an affected State or an affected Tribal Council, establish a Federal and State Radioactive Materials Management Commission (hereinafter in this section referred to as the 'Commission') for the purpose of achieving, in an expeditious manner, substantial concurrence between the State, the affected Indian tribe, and the Department of Energy for each proposal made by the Department of Energy regarding site selection, evaluation, contracting, or construction of facilities intended for the management and storage of radioactive materials including high-level defense waste, spent fuel reactor assemblies, transuranic materials and other mid- and high-level radioactive materials.

"c. The Commission shall consist of—

"(1) the appropriate officials from the Nuclear Regulatory Commission designated by the Chairman,

"(2) a representative from the Department of Energy designated by the Secretary,

"(3) a representative from the United States Geological Survey,

"(4) the Governor of each affected State, or his designated representative,

"(5) a representative of any affected Tribal Council,

"(6) not to exceed six State or local officials, or interested citizens from the affected State designated by the Governor, in consultation with the leadership of the State legislature,

"(7) such other individuals to be selected at the discretion of the Chairman or the Governor of the affected State.

"d. The Commission shall meet to examine all proposed actions to be taken under subsection a., with the objective of achieving substantial concurrence on each and any socioeconomic, institutional, technical, environmental, health, and safety issues associated with such action.

"e. In the event that the Commission representatives of the affected State determine that concurrence cannot be achieved with regard to any proposed action, the Governor,

in consultation with the other Commission members from the affected State, shall file a report stating his objections and identify acceptable alternatives.

"f. The State legislature of any affected State may by joint or concurrent resolution or by law, or in those States with a unicameral legislature by single resolution, or by other powers subject to each State's constitution concur or issue nonconcurrence with the decision of the Commission.

"g. No Federal agency or its representative shall proceed with any project for storage or disposal of radioactive materials unless the State has determined that its objections have been resolved.".

(From the Congressional Record, March 8, 1979)

SECTION-BY-SECTION ANALYSIS OF LEGISLATION [redacted] ACT OF 1954, INTRODUCED BY CONGRESSMAN JOHN F. SEIBERLING

The purpose of the bill is to provide for a formal process of state participation and substantial concurrence regarding the management and storage of radioactive materials.

Section (a) requires the Chairman of the Nuclear Regulatory Commission (NRC) to publish in the Federal Register, and to notify the Governor, the presiding officers of a State legislature, and the Tribal Council of any affected Indian tribe, of any intent to explore a site within such State or within such Indian reservation for the purposes of establishing a storage or disposal facility for radioactive materials.

Section (b) authorizes the Governer, or the Tribal Council, upon notification by the NRC, to request the creation of a Federal/State Radioactive Materials Management Commission for the purposes of examining all issues related to achieving concurrence between the affected State, the affected Indian Tribe, and the Department of Energy on any proposal by the Department regarding radioactive waste management. Such radioactive material will include high-level defense waste, spent fuel reactor assemblies, transuranic materials and other mid- and high-level radioactive materials.

Section (c) sets forth the guidelines for composition of the Commission. Members will include one official from each of the following federal agencies: the Nuclear Regulatory Commission, the Department of Energy, and the U.S. Geological Survey. The Commission shall also include the Governor of the affected state (or a representative designated by the governor), a representative of any affected Tribal Council, and other state and local officials to be designated by the Governor jointly with the leadership of the State legislature.

Section (d) requires the Commission to examine all issues related to achieving substantial concurrence, including socioeconomic, institutional, technical, environmental and health and safety issues.

Section (e) provides that if the Commission can not achieve substantial concurrence with the proposed action with the affected State, the Governor, in consultation with the other Commission members, shall file a report stating the Commission's objections and identifying any acceptable alternatives.

Section (f) provides that state legislature of any affected state, pursuant to the state's laws and constitution, may concur or disagree with the Commission's decision as reported by the Governor.

Section (g) prohibits the Department of Energy from proceeding with any proposal regarding site selection or site development for radioactive waste management in the affected State, unless the objections of the State issued pursuant to sections (e) and (f) are satisfied.●

STATEMENT OF
WORTH BATEMAN
DEPUTY UNDER SECRETARY
DEPARTMENT OF ENERGY
BEFORE THE SUBCOMMITTEE ON ENERGY AND THE ENVIRONMENT
HOUSE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS
JUNE 28, 1979

Nuclear Waste Repository Siting

Mr. Chairman and Members of the Subcommittee, I am pleased to appear before you today to take part in the discussions on public participation, compensation and equity in nuclear waste repository siting. These discussions are particularly timely now that our siting studies are progressing such that we can identify specific large areas of potential interest. These discussions also serve to focus attention on a judgement of the Interagency Review Group (IRG) on Nuclear Waste Management that "the resolution of institutional issues may well be more difficult than finding solutions to remaining technical problems." The resolution of these issues will occupy a considerable amount of the time of the Administration, the Department of Energy, and the Congress in the next several years. I believe the IRG recommendations concerning this resolution contain a framework within which these issues may be resolved in a timely fashion, and I will address these throughout my testimony.

But first, with your permission Mr. Chairman, I would like to submit for the hearing record a listing of some of the more pertinent studies that the Department has initiated. These studies examine some of the points that you raised and explore potential mechanisms for their resolution.

In this regard, there is some legal precedent to guide us. In those cases where such precedent is lacking, pragmatism will guide our actions. We continue to believe that the development of a nuclear waste repository requires us to proceed in a cooperative manner with the States rather than by the force of Federal supremacy. With this as background, Mr. Chairman, I would now like to address the questions that you raised.

At present,only limited economic or social benefits exist for localities in which repositories may be sited. These benefits would be the same as those typically associated with any relatively large, Federal project. They would result primarily from the channeling of outside financial resources into the community through repository workers' salaries and payments for supplies and services which can be locally supplied. Local and state governments would also be expected to gain by the increased tax revenues from the increased expenditures throughout the community. The degree to which this infusion can be considered "beneficial" is subjective and dependent to a large extent on the pre-repository situation of the involved community. For example, economic growth would not be favored by those who would seek preservation of the pre-repository status quo, and the impacts on a small community will be much more pronounced than on a large community.

The discussion of potential socioeconomic impacts in DOE's draft Environmental Impact Statement on Management of Commercially Generated Radioactive Waste (DOE/EIS-0046-D, dated April 1979), estimates

repository manpower requirements and repository construction and operating costs. Depending upon such parameters as the choice of repository host rock, nuclear fuel cycles and load capacities, the estimates for a single repository can vary considerably. Again, with your permission Mr. Chairman, I would like to enter for the record a few tables from the draft EIS which present these estimates for different assumptions. To illustrate the order of magnitude of a repository project in terms of jobs and financial impact, I would cite a range of from 1,200 to 3,100 people directly employed during the peak construction years and from 900 to 2,300 people employed during the operational phase. Estimates of construction costs in 1978 dollars range from $1,000 million to $3,100 million and operating costs over the repository lifetime range from $600 million to $2,400 million. The implications of these numbers in terms of (a) total project-related inmigrants (including primary and secondary workers' and associated house-hold dependents) and (b) their needs for locally provided social services (such as health, education, sanitation, fire and police personnel, recreation areas, government services, etc.) are also described for several different hypothetical settings and repository conditions.

The detailed fiscal and economic impacts depend upon the specific site. These impacts will be evaluated in an Environmental Impact Statement covering a number of alternative candidate sites prior to a decision being made to actually construct a repository at one of these sites.

There exist some Federal and other provisons for mitigating certain impacts related to construction and operation of repositories. Other impacts appear not to be covered. First, I should note a distinction betweeen environmental and socioeconomic impacts. Both are addressed in the current draft EIS. I will not discuss at this time the mitigation of environmental impacts since the entire repository concept is designed to protect the environment from potentially adverse impacts. The bases for assurances that the final design and selected site are in fact adequate in this regard will be extensively documented in safety assessments. Further, numerous forums for scrutinizing these bases will be provided, and independent expert evaluations will be made.

I will instead focus on the mitigation of potential socioeconomic impacts. These impacts appear to fall into two categories. First, there are those socioeconomic impacts which would be typical of any Federal project having the conventional work force and supply service requirements previously described. To deal with these impacts, and considering that current law does not allow state or local governments to tax federally owned land, existing legislation (1) allows DOE to make payments in lieu of taxes generally based on taxes which would have been payable for such property in the condition in which it was acquired and (2) provides for financial assistance to those local educational agencies upon which the government has placed financial burdens.

DOE has current authority to make payments to state and local governments in lieu of property taxes when the property is acquired by DOE pursuant to the Atomic Energy Act of 1954, as amended, and providing certain other criteria

are met. Section 168 of the Act permits DOE to make such payments in localities where DOE activities are carried on and DOE has acquired property previously subject to state and local taxation. Section 168 provides that DOE should be guided by the policy of not making payments in excess of the taxes which would have been payable for such property in the condition in which it was acquired, except where "special burdens" have been cast on the state or locality by DOE activities. In such cases, any benefit accruing to state or local governments by reason of such activities must be considered in determining the amount of the payment.

The legislative history of the Atomic Energy Act itself does not shed any light on the meaning of "special burdens" or "any benefit". There is, however, a legislative history reference to "special burdens" as that term is used in Section 91 of the Atomic Energy Community Act of 1955 which references Section 168 of the Atomic Energy Act. Senate Report 1140, dated July 25, 1955, states "The special burden which will be imposed on those communities is the burden of maintaining services which will attract the caliber of personnel which are needed to maintain the Atomic Energy plants."

Generally speaking, "in lieu" payments are not actually benefits to the local communities since they merely redress probable tax losses.

In the past, the Atomic Energy Commission was empowered to directly finance community services such as fire protection and water treatments at communities such as Los Alamos, New Mexico; and Oak Ridge, Tennessee, where the original

existence of the community was due primarily to the presence of the AEC program. This precedent could perhaps be applied in allowing for direct financing of community services by the waste isolation program.

It is also the policy of the Federal government pursuant to 20 USCA 236 et seq., to provide financial assistance for those local educational agencies upon which the government has placed financial burdens. Such Federal impact assistance would not be much of a benefit since it would only have the effect of easing a burden placed upon the community by the Federal project.

I have just described some of the current mechanisms and precedents for dealing with the conventional socioeconomic impacts. A second type of socioeconomic impact is far less predictable and/or quantifiable. These impacts result from a public perception of risks to health and safety associated with nuclear waste disposal and transportation. To the best of our knowledge, there is no Federal or other aid currently available to deal with impacts such as these nor is it clear that such aid would be required. If a later determination is made that such assistance is appropriate, it appears that it could be accomodated as part of the payment by the utilities

or other waste generators for disposal of their wastes. We are hopeful that institutions such as the IRG recommended State Planning Council, constituted with members having political mandates, can help us determine the appropriate policies or legislation for dealing with such impacts, if indeed any are needed.

The matter of incentives to encourage states and localities to accept location of Nuclear Waste Repositories in their area is in need of more examination. The only significant incentives presently derive from the potential benefits described earlier, i.e., jobs and prospects for increased business activity.

You have asked if any systems of environmental tradeoffs exist which might balance the risks and environmental costs of construction at a site of a nuclear waste repository. The term "environmental tradeoff" was used to suggest the type of tradeoffs now encouraged by the Clean Air Act, whereby new sources of unavoidable environmental disruption are compensated by mitigating or eliminating other, avoidable hazards or in other ways improving environment. The application of such a system of "tradeoffs" has not been considered in the Waste Management program to date, but we agree that this idea could have significant merit. The IRG proposed State Planning Council may be an ideal mechanism for coordinating a cooperative State/Federal study of potential tradeoffs such as those suggested as well as other innovative ideas for resolving difficult institutional problems associated with the siting of a waste management facility.

The kinds of technical or other assistance or compensation being offered by the Department to States or localities in areas being investigated, consist of contracts to States having expressed an interest in providing independent assessments of the Department's repository siting and development programs. Such contracts have proven mutually beneficial in several ways. For example, they help States to fund independent reviews and assessments of drafts of important documents and plans prepared for the Department by its contractors. These reviews have the effect of further assuring that the states are aware of and understand the latest plans, progress, and developments. The Department additionally benefits because these reviews often result in comments on the documents or other feedback from the State's political and technical experts which assist the Department in its evaluations and further planning efforts. Additionally, the DOE funds have facilitated the establishment of effective forums and continuing mechanisms for the exchange and airing of views among state and local officials, the general public, and the Department.

So far, such contracts have been or are expected shortly to be executed with agencies in the States of New Mexico, Louisiana, Mississippi, and Texas. Success to date with this approach leads us to believe that it can be a key implementing feature in the process of consultation and concurrence which I will further address later. For example, Mississippi

Executive Order 276 requires among other measures that the Governor's Select Committee on Nuclear Energy and Nuclear Waste Repository be informed and provide written agreement prior to the Department initiating any new activities within the State. A contract with the Mississippi Fuel and Energy Management Commission helps fund the logistics and expertise needed by the State to review and concur in planned activities. Both the State and the Department benefit.

This leads to your questions regarding the extent to which we believe the States should have a voice in siting of nuclear waste repositories and the best mechanism for this participation. The Department has long held and continues to believe that states and localities should, as a matter of principle, and must, as a matter of practicality, have a strong and meaningful voice in the siting of nuclear waste repositories within their boundaries. This view has been reaffirmed by the IRG. The mechanism proposed for this participation is "consultation and concurrence". The Department's position in this regard was described in a letter of February 2, 1979, from Secretary Schlesinger to Chairman John D. Dingell, Subcommittee on Energy and Power, Committee on Interstate and Foreign Commerce, U.S. House of Representatives. In that letter, the Secretary stated:

> "We continue to believe that the successful exercise of our authority to select sites for nuclear waste disposal requires cooperation with the States and providing them with some assurance that we will proceed in a cooperative manner, rather than by force of Federal supremacy. In order to avoid Federal-State confrontation over the future siting of repositories, situations which we believe to be inimical to the public interest, we have been actively trying to construct a mechanism by which affected States can participate fully in the selection of suitable sites. We have found, however, that unless some provision is made for State concurrence, State governments will not feel assured that their participation in DOE site exploration and selection activities

> is meaningful. We have, therefore, put forward a policy that the Department would not make a final decision to proceed with construction of a waste repository within any State if the elected leadership of that State actively opposed such a decision. We believe this approach is consistent with the policy of this Administration to work cooperatively with political subdivisions at the State and local level, and it is our considered judgement that this is the wisest course of action on radioactive waste disposal. Both our General Counsel and the GAO have concluded that the manner in which we are proceeding is consistent with law."

The recent report to the President by the Interagency Review Group (IRG) on Nuclear Waste Management recommended the formation of a State Planning Council as a mechanism to define more precisely a consultation and concurrence process between the Department and the States. We are hopeful that the Council, if established, would develop meaningful processes to avoid confrontation between any State and the Department over the issue of radioactive waste disposal.

Lastly, you asked what are the better mechanisms for improving incentives for States and localities to accept siting of deep geologic nuclear waste repositories in their areas. We believe the discussions held under the auspicies of the State Planning Council and the national committment to cooperative federalism through a process of consultation and concurrence are the primary mechanisms available today. Such mechanisms could, we believe, significantly facilitate the timely and efficient development of an adequate number of techically qualified candidate sites as a basis for site selection.

I hope this testimony has been fully responsive to the questions posed in your letter. I will be pleased to respond to any questions you may have.

Compensation and Information Management in Nuclear Waste Facility Siting

Testimony before the Committee on Interior and Insular Affairs
House of Representatives
U.S. Congress
June 28, 1979

Michael O'Hare, Department of Urban Studies and Planning
Massachusetts Institute of Technology
Cambridge, Massachusetts

Mr. Chairman, members of the Committee:

My name is Michael O'Hare. I am Associate Professor of Urban Studies and Planning at the Massachusetts Institute of Technology in Cambridge, Massachusetts. For the past three years I have been directing a research project sponsored by the U.S. Department of Energy concerned with the siting of energy facilities. I'm pleased to share with you on this occasion some of the principal results of that research as they apply to siting nuclear waste storage and processing facilities. Naturally, these remarks do not necessarily represent the position of the Department of Energy.

The first point I would make to you is that nuclear waste facilities are not unique. The problems we will have in siting them -- other than technical problems, which are certainly important -- are not unlike the difficulties posed in recent years by finding locations for a variety of facilities that provide benefits rather thinly across a large population but impose large costs on particular interest groups or on immediate neighbors: oil refineries, nuclear power plants, airports, prisons, sanitary landfills and even low income housing projects have had similar histories in almost every state at least since the 1960's.

The traditional process of locating these facilities has been characterized by three steps:

1. A technical analysis of possible sites is made and a "best site" is chosen.

2. The developer, whether government agency or private industry, satisfies a variety of regulatory agencies that his plans meet a series of specified legal requirements.

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3. With a complete set of permits in hand the developer constructs the facility and operates it under whatever supervisory powers apply.

In the last ten or fifteen years this process has seemed to fail more often than it has succeeded. Such failures have motivated a few basic strategies on the part of governments anxious to proceed with facilities widely agreed to be beneficial for the society as a whole despite the opposition they arouse from specific groups or interests:

1. Citizen participation. Many of the early failures involved projects that really ought not to have gone forward; the quintessential example in my part of the country was a highway planned for the middle of Cambridge, Massachusetts that would have wiped out stable neighborhoods and hundreds of homes with trivial long-term benefits. Planners and engineers inferred that the planning process, as then constituted, did not take into account enough different interests and concerns, and built in elaborate mechanisms of public participation and comment. The theory was that if the planning authority were properly informed of the whole spectrum of citizen's concerns, it could take them into account in designing and proposing "better" facilities which would then be publicly acceptable. Behind this justification was a basically sound recognition that the process by which major decisions were made needed to satisfy the affected parties; the best conceived project would be opposed if the process by which it was developed seemed to be insensitive or tyrannical.

2. Bigger sticks. A more recent development in facility siting practice has been the arrogation to state government of increased legal powers, typically power to override local land use decisions. The current debate over whether states should have a veto on nuclear waste facility construction concerns just this sort of strategy.

3. Information provision. A third theory of why worthwhile projects stalled held that the public would be cooperative if it could have the facts, and at the same time that the projects would be better conceived and more beneficial if enforced disclosure of the various impacts of such projects led the supervising agencies to take account of these impacts in the design and planning stage. Environmental impact statement legislation at the federal and state levels is one example of a strategy to improve public decision making by providing more information about particular projects to the public and to interest groups that might be affected.

My first recommendation to the committee is that you abandon any hope that these strategies, or all of them together, will be sufficient to provide nuclear waste storage or processing facilities. While they have produced occasional successes, their record has for the most part been poor and you would be ill-advised to rely on any or all of them especially in the case of nuclear waste. The policy that will make it possible to proceed with whatever technical solution to the nuclear waste problem is chosen is one of explicit compensation for the risks and costs that such a facility is expected to impose.

The compensation mechanism I recommend will be more easily understood if I briefly sketch the elements of the siting problem first.

(1) The first essential fact is that a nuclear waste facility of any kind is scary. It is more scary to some people than others, but (whatever precautions are taken) it remains a place where dangerous materials are kept and to which they are brought in one or another kind of transport. Furthermore, it is unrealistic to expect the level of anxiety induced by a nuclear waste facility to be reducible by any reassurance the government can provide, especially in the wake of such recent demonstrations of seeming scientific overconfidence as Love Canal, Three Mile Island, the DC-10, Rocky Flats, and the "inertness" of such substances as PCB's and fluoridated hydrocarbons. Government and industry reassurance is selling at a discount and will for some time to come.

(2) The second important quality of a facility siting process is that the beneficiaries of the project tend to be many in number and to face modest per capita gains, while the sufferers tend to be few in number and to expect large per capita costs. The importance of this allocation of gains and losses cannot be overestimated from a strategic point of view; the concentrated interest group, playing for large stakes, will always have an advantage over the diffuse, large group no member of which has very much to gain or lose.

(3) The third important quality of a siting debate is the distinction between a program and its particular manifestations. Even if all parties can agree that "we need nuclear waste facilities," it is possible that none will be built, as a series of individual site proposals are successively defeated by specific opponents, each adding to the unanimous sentiment its own caveat, "but not in our town!"

Nuclear waste facilities, furthermore, threaten to impose cost at some distance from their immediate vicinity, whether by contamination of ground water, transportation accidents, or atmospheric contamination in a rural area. A nuclear waste facility also promises disruption of an accepted way of life by creation of a boom town during construction, possible loss of property values, ongoing transportation risks, and the threat of technical failure, while its benefits are limited to property tax payments if privately operated. The political debate surrounding nuclear waste facilities confirms that its neighbors -- and because of the possible diffuse environmental impact, the "neighbors" can include populations at a substantial distance from the site -- will see the facility as making them distinctly worse off than they are without it.

The all-or-nothing quality of this choice is important. As currently conceived, a nuclear waste facility offers a community only two outcomes of very different attractiveness. Faced with this pair of widely different alternatives, the neighbors (and we may be speaking of a whole state full of neighbors) can be expected to fight the project with whatever weapons they can get hold of. Add to this opposition the likely alliance of environmentalists uncertain about the long-term security of whatever technical solution is adopted, and skilled in the use of litigation as a tool with which to stop or delay the development, and we can see the outlines of a powerful political force. Unfortunately, no such concentrated and committed force can be invoked to support any particular site.

Against this background the inadequacy of the three conventional measures described above should be clear. In a problem of this type, for example, citizen participation simply means amplifying the political power of groups whose only rational position is uncompromising opposition. As to the use of power, it might seem that government could invoke enough power of one sort or another to impose a facility even on a protesting community, but there are many opposition tactics. In the case at hand, these include political pressure, long-drawn-out litigation, and extralegal actions (sit-ins, demonstrations, and the like). Combined with the apparent justice of the communities' position, these means, which have an excellent track record in similar cases, will ensure that all the powers available to federal and state legislators are not sufficient to force a nuclear

waste facility on an unwilling community. I cannot overemphasize the importance of this perception, and I urge the members of the Committee to consider, if they doubt my conclusion, the number of locally noxious projects that have been stopped or stalled despite the developer having every legal authority to proceed with his plans.

Finally, it should be clear that informing the parties to this debate in greater detail about the consequences of the project being proposed will simply confirm and sharpen their perception that it really is much worse for them than the status quo.

The key to breaking this impasse lies in the recognition that this negotiating problem is not novel, nor does it paralyze society in most of the cases in which it arises. After all, a nuclear waste facility requires all sorts of resources: steel, concrete, labor, engineering expertise. It also uses some of the amenity of the community in which it is to be located, and I suggest to the Committee that you should no more expect to use that amenity as an input to the production of a nuclear waste facility without paying for it, than you should expect to obtain steel or labor for free. Note in this context that it is not typically the owners of the land on which an unpopular facility will be built that provide the major opposition; even if the developer has taking power, the landowners see as the worst possible outcome selling their property and moving away: assuming a fair price is paid, this is something people do quite regularly in the normal course of things. The opposition to facilities of this kind comes from neighbors who expect to have their quality of life taken away from them without being paid for it. I recommend accordingly that nuclear waste processing and storage facility plans include explicit compensation for the individuals who can expect to be injured by it, including such intangible injuries as anxiety.

I suggested above that such compensation is merely an extension of the principle of paying for resources consumed that we apply in the case of labor, land and materials. It also has two important consequences for the strategic problem I outlined earlier.

(1) In the first place, the assurance that compensation will be paid for the injuries imposed by a nuclear waste facility means that the local community faces a worst case outcome that is probably equal in value to the status quo, rather than being much worse. The motivation for a local community to oppose a facility is vastly less if the future they can expect

with the facility has been made comparable to the status quo by the inclusion of fair compensation. This reassurance, also, makes it more difficult for geographically diffuse opposition groups to form effective coalitions with locals.

(2) The other important consequence for the strategic position of the parties is that the promise of negotiable compensation provides an infinity of outcomes in between the poles of "build" and "no-build." Rather than facing a community with a decision in which the only way to avoid injury is to oppose the facility uncompromisingly, a compensation-based siting program faces the community with a whole spectrum of possible outcomes and therefore with an issue on which to negotiate.

As to the type of compensation to be used, a variety of alternatives should be considered, but some general principles apply. First, compensation should be addressed to, and focused on, those individuals who live in the site community when the project is first announced. Insofar as possible, it should be withheld from newcomers, who arrive knowing that the facility is planned or exists, and who by the fact of their arrival demonstrate that the move has made them better off than they were before. (One typical reason for such a move is that housing is less expensive near an unattractive facility -- the newcomers are compensated for the facility by lower housing purchase price and do not need to be compensated again. Naturally, the seller who finds his property has lost value since the coming of the facility is, by the same, argument, deserving of compensation.)

Much of the socio-economic impact of facilities such as we are discussing is capitalized in property values, and a substantial capital loss on the principle asset of a family (its home) is one of the worst fears of a proposed site community. This suggests that one very attractive type of compensation, at least for near neighbors of the facility, would be an insurance mechanism to maintain property values for the first seller after the facility is constructed: its frontend costs and budget impact are low, and it automatically provides about the right amount of compensation. Note that if fears of property value decrease are unfounded, the price to the developer of this compensation mechanism will be zero!

One problem likely to arise in negotiating compensation with a single site community is the possibility of substantial overpayment. If only one site is under consideration, the amount of compensation will

probably have to be determined by a combination of negotiations and administrative determination of costs. For this reason I strongly recommend that the siting process be designed to simultaneously evaluate several different sites, at widely separated locations, for each facility that is expected to be built. What we should be aiming for is a sort of competitive market of communities attempting (i) to under-bid each other so as to obtain the facility and its intended compensation, while (ii) not bidding less than the real cost each community expects to bear. The outcome of such a process, in the absence of collusion by the candidate locations, will approximate the real social costs of the facility that is eventually built, and if the site ultimately chosen is that for which the cost of construction plus the cost of compensation is least, we can be sure of having chosen the economically most efficient site.

I would now like to add some remarks on the use of information in this process. Information is a very peculiar economic good. It has, among other special qualities, the properties that

1. Its value varies widely over different individuals, and even for the same individual depending on whether he has already received it.
2. Even worse, the quantity of information in a particular document or statement varies from individual to individual, since information is measured by the use of probabilities that are intrinsically subjective.
3. It is not possible to know whether information has been consumed: receiving a book is not the same as reading it, and reading it is not the same as believing what it says.

Our traditional approach to public information in issues like facility siting has been to order a public agency or developer to anticipate the information that affected parties might want and provide it, ab initio, in "objective" form. This approach is naive and unrealistic for a variety of reasons. The siting process should not only recognize that the parties to the debate will want to get their own information from sources they respectively trust, but should encourage them to do so, perhaps by a "planning grant" or "intevenor funding" mechanism. In any case, I urge the Committee to recognize that, entirely aside from the costs imposed on the site community by the nuclear waste facility itself, merely suggesting a community or

state as a site for such a facility imposes a cost of analysis on that government which is the cost of gathering enough information to know what position to take and how to negotiate the matter. An environmental impact study statement prepared by a federal agency does not satisfy this requirement of information. Both as a sign of goodwill and a matter of simple justice, the federal government should provide an explicit funding mechanism for impact projections and technical analysis by affected communities -- by which I mean not only communities that receive facilities in the end, but communities that are proposed as possible sites early in the process.

Another important consideration in information management is careful attention to the extremely limited effort that most participants can commit to obtaining it. Some information consumers, it is true, can invest whatever time and resources are necessary to comb the record and the literature; among these are the greatly affected powerful parties such as government agencies, developers, and opposition groups looking for errors and omissions that will support litigation. But neighbors and interested citizens do not participate in siting conflicts full time; even for those facing large per capita costs from a decision they oppose, the time they can rationally invest in information gathering is limited by two probabilities, both usually small: first, the probability that the information will change the user's mind (if it doesn't, it has no value), and second, that the user's efforts to change the outcome will have any effect on it.

A realistic information management program will package facts and projections carefully to provide what people want to know in accessible form. What people want to know is basically what the future will be like for them given each possible outcome. This means what their health will be, not how many microcuries the drinking water will contain; what will happen to their home's value, not what the multiplier for direct employment increase is. Projections of facility impacts should be presented in terms relevant to individuals' concerns, and -- equally important -- organized by class of impacted individual, not by type of impacts.

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TESTIMONY OF

EDWARD L. HELMINSKI
NATIONAL GOVERNORS' ASSOCIATION

ON BEHALF OF

GOVERNOR JOHN V. EVANS

BEFORE THE

SUBCOMMITTEE ON ENERGY AND THE ENVIRONMENT
COMMITTEE ON INTERIOR AND INSULAR AFFAIRS

U. S. HOUSE OF REPRESENTATIVES

JUNE 28, 1979

MR. CHAIRMAN, MEMBERS OF THE SUBCOMMITTEE, MY NAME IS EDWARD L. HELMINSKI. I AM STAFF DIRECTOR OF THE NATIONAL GOVERNORS' ASSOCIATION NATURAL RESOURCES AND ENVIRONMENTAL MANAGEMENT COMMITTEE, AND DIRECTOR OF THE ASSOCIATION'S ENERGY AND NATURAL RESOURCES PROGRAM. I AM HERE TODAY TO PRESENT A STATEMENT ON BEHALF OF GOVERNOR JOHN EVANS OF IDAHO, CHAIRMAN OF THE NGA NUCLEAR POWER SUBCOMMITTEE AND GOVERNOR RICHARD LAMM, CHAIRMAN OF THE NGA NATURAL RESOURCES AND ENVIRONMENTAL MANAGEMENT COMMITTEE. GOVERNOR EVANS HAS ASKED ME TO CONVEY HIS REGRETS AT NOT BEING ABLE TO PERSONALLY PARTICIPATE IN TODAY'S HEARING AND THAT HE STANDS READY TO WORK WITH YOU, MR. CHAIRMAN AND YOUR COMMITTEE TO DEVELOP A TECHNICALLY SOUND, RESPONSIVE, AND PUBLICLY ACCEPTABLE NUCLEAR WASTE MANAGEMENT STRATEGY. BOTH HE AND GOVERNOR LAMM APPRECIATE THE OPPORTUNITY TO HAVE THE GOVERNORS' VIEWS ON NUCLEAR WASTE MANAGEMENT EXPRESSED BEFORE THIS COMMITTEE.

AS REQUESTED IN YOUR LETTER OF INVITATION, I INTEND TO OUTLINE THE GOVERNORS' RECOMMENDATIONS ON THE ESTABLISHMENT OF A RESPONSIVE NUCLEAR WASTE MANAGEMENT DECISIONMAKING PROCESS AND AM PREPARED TO DISCUSS THE POTENTIAL OF ESTABLISHING A COMPENSATORY SYSTEM THAT WOULD PROVIDE INCENTIVES TO STATE AND LOCAL GOVERNMENTS AND THEIR CONSTITUENTS TOWARD ACCEPTING A PERMANENT NUCLEAR WASTE DEPOSITORY. WITH RESPECT TO THE LATTER, AT YOUR STAFF'S REQUEST, I HAVE REVIEWED PAPERS PREPARED BY THE MASSACUSETTS INSTITUTE OF TECHNOLOGY DEPARTMENT OF URBAN STUDIES AND PLANNING AND AM PREPARED TO RESPOND TO QUESTIONS WITH REGARD TO THESE PROPOSALS. I HAVE ONLY COMMENTED BRIEFLY ON THESE PROPOSALS IN MY TESTIMONY.

WITH YOUR PERMISSION, MR. CHAIRMAN, I WOULD LIKE TO READ THE STATEMENT FOR THE RECORD.

"THE NATION'S GOVERNORS - RECOGNIZING THE CRITICAL PROBLEM POSED BY THE ACCUMULATION OF NUCLEAR MATERIALS USED FOR MEDICAL, DEFENSE AND COMMERCIAL PURPOSES - ADOPTED A COMPREHENSIVE NUCLEAR WASTE MANAGEMENT POLICY IN AUGUST OF 1978.

MR. CHAIRMAN, I ASK YOUR PERMISSION TO SUBMIT THE FULL NGA POLICY POSITION FOR THE COMMITTEE RECORD.

THE UNDERLYING PRINCIPLE EMBODIED IN THAT POLICY IS THAT:

> THE WASTE MANAGEMENT PROBLEM CANNOT BE SOLVED BY A FEDERAL PROCESS ALONE. IT MUST BE BASED ON THE PRINCIPLES OF COOPERATIVE FEDERALISM, A STRONG PARTNERSHIP OF FEDERAL, STATE AND LOCAL GOVERNMENTS AND PRIVATE INDUSTRY IS ESSENTIAL TO A SUCCESSFUL PROGRAM.

THE MANAGEMENT OF OUR NUCLEAR WASTE IS A PROBLEM WE SIMPLY MUST RESOLVE. IT IS ONE THAT IS NOT GOING TO GO AWAY. EVEN IF WE WERE TO STOP THE CONSTRUCTION OF ALL NEW COMMERCIAL NUCLEAR POWER PLANTS, AND SHUT DOWN ALL THE PLANTS CURRENTLY OPERATING, WE WOULD STILL HAVE TO DISPOSE OF WASTES ALREADY ON HAND - WASTES WHICH HAVE BEEN ACCUMULATED PRIMARILY FROM DEFENSE AND RESEARCH ACTIVITIES. WHATEVER DECISIONS ARE ULTIMATELY MADE REGARDING THE FUTURE OF NUCLEAR POWER, WE MUST SEEK A PERMANENT METHOD OF MANAGING OUR PRESENT RADIOACTIVE WASTES.

THIS IS A MATTER THAT CONCERNS GOVERNMENTS AT ALL LEVELS AND MUST THEREFORE INVOLVE ALL LEVELS OF GOVERNMENT IN THE DECISIONMAKING PROCESS.

PUBLIC CONFIDENCE IN THE GOVERNMENTAL DECISIONMAKING PROCESS IS AT ITS LOWEST EBB. AND THOUGH PUBLIC ACCEPTABILITY CANNOT BE THE SOLE JUSTIFICATION OF A SOLUTION AND SCIENTIFICALLY SOUND SOLUTIONS WILL NOT BE ACCEPTED IF THEY ARE DEVELOPED IN A CLANDESTINE MANNER OUT OF PUBLIC VIEW.

REINFORCED BY THE DISCLOSURE OF EVENTS AT THREE MILE ISLAND, THE PUBLIC IS QUESTIONING THE CREDIBILITY AND CONSISTENCY OF GOVERNMENT IN USING AND REGULATING NUCLEAR POWER. THE ATTITUDES OF STATE AND LOCAL GOVERNMENT OFFICIALS TOWARD FEDERAL DECISIONMAKING IS REFLECTIVE OF THESE CONCERNS. YET, THE ULTIMATE SITE FOR WASTE DISPOSAL, WHETHER DEFENSE OR COMMERCIAL WASTE, WILL BE WITHIN ONE OF OUR BOUNDARIES. GOVERNORS, TOGETHER WITH LOCAL OFFICIALS, HAVE DIRECT RESPONSIBILITY TO PROTECT THE PUBLIC'S HEALTH AND SAFETY. THEY MUST ACT ON THEIR CONSTITUENCIES' BEHALF BY ANTICIPATING ALL EVENTUALITIES AND BY PARTICIPATING IN THE DECISIONMAKING PROCESS.

IN ORDER TO DO THIS, A PROCESS MUST BE ESTABLISHED AT THE NATIONAL AND STATE LEVEL THAT WILL ALLOW STATE AND LOCAL OFFICIALS TO PARTICIPATE, BOTH COLLECTIVELY AND ON AN INDIVIDUAL BASIS, WITH THE RELEVANT FEDERAL GOVERNMENT AGENCIES IN THE DEVELOPMENT OF ALL RADIOACTIVE WASTE MANAGEMENT PROGRAMS AND POLICIES.

IT IS IMPORTANT THAT SUCH PROCESSES HAVE THE VISIBILITY AND THE RESOURCES TO INTERACT EFFECTIVELY ON A PAR WITH PARTICIPATING FEDERAL AGENCIES AND TO PROVIDE AN OPEN CHANNEL OF COMMUNICATION TO THE HIGHEST LEVELS OF GOVERNMENT - THE CONGRESS AND THE PRESIDENT. THIS CANNOT BE ACCOMPLISHED ON AN AD HOC, INDIVIDUAL, STATE-BY-STATE BASIS.

NGA POLICY RECOMMENDED THE CREATION OF A JOINT FEDERAL-STATE COMMISSION AS THE MOST VIABLE MEANS OF FORMALIZING THAT PROCESS.

NGA POLICY, IN TURN, PLAYED A SIGNIFICANT ROLE IN THE FINAL RECOMMENDATIONS OF THE IRG TO ESTABLISH A STATE PLANNING COUNCIL AND TO ADOPT THE PRINCIPLE OF CONCURRENCE AND CONSULTATION. ALTHOUGH THE STATE PLANNING COUNCIL, AS RECOMMENDED BY THE IRG, DOES NOT HAVE THE AUTHORITY OR RESPONSIBILITY OF THE COMMISSION RECOMMENDED BY THE GOVERNORS, THE IRG RECOMMENDATIONS DO NOT PRECLUDE

THE COUNCIL'S ASSUMING GREATER RESPONSIBILITY.

THE IRG ALSO RECOMMENDED ESTABLISHING A CONSULTATION AND CONCURRENCE PROCESS AS DESCRIBED IN THE GOVERNORS' STATED POLICY, BUT LEFT OPEN TO FURTHER DETERMINATION THE MEANS NEEDED TO RESOLVE POTENTIAL NON-CONCURRENCE THAT COULD HALT PROGRESS TOWARD FINAL RESOLUTION OF A NUCLEAR WASTE DISPOSAL PROGRAM.

IN ORDER TO RESOLVE THE DISCREPANCIES BETWEEN THE IRG REPORT AND THE GOVERNORS' POLICY AND TO DEFINE IN A CONCISE MANNER THE MEANS BY WHICH THE OBJECTIVES OF THE GOVERNORS' POLICY COULD BE CARRIED OUT, THE NATIONAL GOVERNORS' ASSOCIATION NUCLEAR POWER SUBCOMMITTEE AND THE WESTERN GOVERNORS' POLICY OFFICE, IN COOPERATION WITH THE NATIONAL ASSOCIATION OF COUNTIES, THE NATIONAL LEAGUE OF CITIES, THE U.S. CONFERENCE OF MAYORS, AND THE NATIONAL CONFERENCE OF STATE LEGISLATURES, CONVENED A NATIONAL WORKSHOP OF STATE AND LOCAL OFFICIALS IN APRIL OF THIS YEAR TO FOCUS ON THESE QUESTIONS.

BASED ON NGA POLICY, THE RECOMMENDATIONS OF THE IRG, AND THE DISCUSSION AT THAT WORKSHOP, WE HAVE DRAFTED A SET OF NGA RECOMMENDATIONS ON NUCLEAR WASTE MANAGEMENT. THESE RECOMMENDATIONS HAVE BEEN DELIVERED TO THE WHITE HOUSE BY GOVERNOR EVANS. MR. CHAIRMAN, I WOULD LIKE TO SUBMIT A COPY OF THOSE RECOMMENDATIONS FOR THE RECORD. THEY INCLUDE:

- THE IMMEDIATE ESTABLISHMENT OF A STATE PLANNING COUNCIL BY EXECUTIVE ORDER OF THE PRESIDENT TO BE REINFORCED BY AN ACT OF CONGRESS AS SOON AS POSSIBLE.

- THE STATE PLANNING COUNCIL SO ESTABLISHED SHALL SERVE AS ADVISOR TO FEDERAL AGENCIES, THE PRESIDENT AND CONGRESS ON NUCLEAR WASTE MANAGEMENT POLICIES AND PROGRAMS AND HAVE EQUAL STANDING WITH FEDERAL AGENCIES IN STRUCTURING A NUCLEAR WASTE MANAGEMENT PROGRAM.
- IF ITS RECOMMENDATIONS ARE NOT INCORPORATED INTO FINAL PLANS DEVELOPED BY THE RELEVANT FEDERAL AGENCIES THEY SHOULD BE TRANSMITTED DIRECTLY TO THE PRESIDENT AND THE CONGRESS FOR FURTHER CONSIDERATION.

THE COUNCIL SHOULD CONSIST OF STATE AND LOCAL GOVERNMENT OFFICIALS AND REPRESENTATIVES OF INDIAN NATIONS APPOINTED BY THE PRESIDENT.

IN ORDER THAT THE COUNCIL MAY REPRESENT STATE AND LOCAL INTERESTS IN AN EFFECTIVE MANNER, IT IS NECESSARY THAT SUFFICIENT RESOURCES AND OPPORTUNITIES BE PROVIDED -- INCLUDING SUFFICIENT FUNDS TO ACQUIRE AND DEVELOP ITS OWN EXPERTISE IN TECHNICAL AND POLICY AREAS AND ACCESS TO ALL PERTINENT INFORMATION, INCLUDING PROPRIETORY INFORMATION.

IF ESTABLISHED IN THE DESCRIBED MANNER THE STATE PLANNING COUNCIL WOULD MEET THE GOVERNORS' POLICY OBJECTIVES.

AS EMPHASIZED BY THE NGA POLICY POSITION, SITE-SPECIFIC DETERMINATIONS CAN BE MADE ONLY WITH STATE CONCURRENCE. IT MUST BE RECOGNIZED THAT IN THE EARLY DEVELOPMENT OF SITE CHARACTERIZATION, THOSE STATES WITH SITES THAT COULD QUALIFY AS MEETING THE SITE PROFILE SHOULD BE CONSULTED AND GIVEN THE OPPORTUNITY TO CONCUR ON THE SPECIFICS OF THAT CHARACTERIZATION.

THAT PROCESS MUST BEGIN WITH STATE OR REGIONAL CONCURRENCE ON OVERALL DESIGNS AND COMPLETED SITE SPECIFIC PLANS PRIOR TO THE INITIATION OF ANY ACTION INCLUDING THE PROCUREMENT OF LAND AND THE INITIATION OF PRELIMINARY CONSTRUCTION AT A PROPOSED SITE.

ANY PROCEDURE FOR CONCURRENCE OBVIOUSLY MUST ALLOW FOR THE POSSIBILITY OF NON-CONCURRENCE. NEITHER THE IRG REPORT NOR THE GOVERNORS' POLICY POSITION MAKE A RECOMMENDATION TO RESOLVE A NON-CONCURRENCE STALEMATE. THOUGH AN OVERRIDE OF STATE NON-CONCURRENCE BY A FEDERAL ADMINISTRATOR WOULD BE UNACCEPTABLE, THE POSSIBILITY OF A CONGRESSIONAL REVIEW OF NON-CONCURRENCE BY A STATE IS AN AVENUE THAT SHOULD BE STUDIED AS A PROCESS THAT WOULD ALLOW FOR REVIEW, YET PROVIDE THE STATES WITH THE OPPORTUNITY TO CONTINUE TO PARTICIPATE IN A FINAL RESOLUTION IN THE NATIONAL INTEREST.

THE DESIGN OF A PRACTICAL AND WORKABLE CONSULTATION AND CONCURRENCE PROCESS THAT WOULD MEET THE GOVERNORS' STATED OBJECTIVES SHOULD BE THE FIRST ORDER OF BUSINESS FOR THE STATE PLANNING COUNCIL.

THE NATIONAL GOVERNORS' ASSOCIATION ALSO ADOPTED A POLICY WHICH SPECIFICIALLY ADDRESSES THE DEVELOPMENT OF A SPENT FUEL STORAGE PROGRAM AND LOW LEVEL RADIOACTIVE WASTE DISPOSAL.

THE POLICY STATEMENT ON NUCLEAR ENERGY ADOPTED LAST AUGUST RECOGNIZES THAT INTERIM SOLUTIONS FOR THE MANAGEMENT OF SPENT FUEL ARE NECESSARY. OUR POLICY ASKS THAT SPENT FUEL BE CONSIDERED AS A VALUABLE FUTURE RESOURCE AND THAT PROGRAMS FOR HANDLING IT SHOULD BE DESIGNED TO INCORPORATE THE CONCEPTS OF INTERIM STORAGE AND RETRIEVABILITY.

THE GOVERNORS' POLICY ALSO RECOMMENDS THE ESTABLISHMENT OF A USER FEE TO PAY FOR THE COSTS OF STORING AND MANAGING NUCLEAR WASTES. THE GOVERNORS

RECOMMEND THAT REVENUES FROM USER FEES BE DEDICATED TO THE COSTS OF REGULATION, OPERATION, TRANSPORTATION, PERPETUAL CARE AND MAINTENANCE OF WASTE MANAGEMENT FACILITIES RATHER THAN TO SUPPORT RESEARCH AND DEVELOPMENT. GIVEN THAT THE NATIONAL INTEREST IS AND HAS BEEN SERVED BY NUCLEAR DEVELOPMENT, BOTH FOR COMMERCIAL AND MILITARY USE, RESEARCH AND DEVELOPMENT FUNDS SHOULD BE AUTHORIZED AND APPROPRIATED FROM GENERAL TAX REVENUES. THE GOVERNORS URGE THAT EXPENSES INCURRED BY ALL LEVELS OF GOVERNMENT BE REIMBURSED BY THE FUNDS FROM THE COLLECTION OF THIS ONE-TIME CHARGE.

FOR FURTHER ELABORATION ON THE GOVERNORS' VIEWS ON THE ESTABLISHMENT OF A NUCLEAR WASTE MANAGEMENT DECISIONMAKING PROCESS, I REFER YOU AND THE COMMITTEEE MEMBERS TO THE POSITION PAPER WHICH I HAVE SUBMITTED FOR THE RECORD. I WOULD LIKE TO ADD THAT THE ACCEPTABILITY OF THE GOVERNMENTAL DECISIONMAKING PROCESS WILL DEPEND UPON THE DEGREE AND QUALITY OF PARTICIPATION OF INTERESTED PUBLIC REPRESENTATIVES AT ALL LEVELS OF GOVERNMENT. PARTICIPATORY PROCESSES MUST BE ESTABLISHED AT ALL LEVELS OF GOVERNMENT TO ASSURE PUBLIC CONFIDENCE AND GOVERNMENT ACCOUNTABILITY. ALTHOUGH MECHANISMS TO PROVIDE FOR PUBLIC INPUT AT THE FEDERAL DECISIONMAKING PROCESS MUST BE PROVIDED, IT IS ESSENTIAL THAT STATE AND LOCAL PARTICIPATORY PROCESSES BE ESTABLISHED TO ASSURE THAT REPRESENTATIVE ELECTED OFFICIALS PARTICIPATING IN THE SITING PROCESS ARE DOING SO IN AN ACCOUNTABLE AND RESPONSIVE MANNER.

I WILL NOW COMMENT BRIEFLY ON THE PROPOSALS PUT FORTH IN THE PAPERS BY THE MASSACHUSETTS INSTITUTE OF TECHNOLOGY DEPARTMENT OF URBAN STUDIES AND PLANNING RECOMMENDING THE ESTABLISHMENT OF A SITING PROCESS BASED ON A COMPETITIVE AUCTIONING SYSTEM BETWEEN POTENTIAL SITES. THE AUCTIONING PROCESS IS SUPPOSED TO PROVIDE THE POTENTIAL HOST SITE THE OPPORTUNITY

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TO OBTAIN SOME MEASURE OF BENEFIT OF THE LIABILITY OF THE PROPOSED FACILITY THAT WOULD ALLOW THE STATE AND LOCAL GOVERNMENTS TO COMPETE FOR THE SITE. I MIGHT ADD THAT THESE VIEWS ARE MY OWN AND SHOULD NOT BE CONSTRUED AS NGA POLICY.

I HAVE SERIOUS MISGIVING ABOUT THE PROPOSAL OUTLINED BY THE MIT GROUP. BASICALLY, I OBJECT TO ESTABLISHING A "PROCESS" THAT ALLOWS EXISTING INSTITUTIONAL STRUCTURES THE OPPORTUNITY TO PLAY DOWN THE RISKS, WHILE HOLDING OUT POTENTIAL CARROTS TO ENHANCE ACCEPTABILITY. THE PROCESS ALSO ALLOWS THE PUBLICLY ELECTED OFFICIALS TO AVOID FACING THE RESPONSIBILITY OF ACTING IN THE NATIONAL INTEREST OVER AND ABOVE THEIR OWN PAROCHIAL INTEREST. THE MIT AUCTION PROPOSAL, IN THE VIEWS OF THE AUTHOR, IS ALSO BASED ON THE PREMISE THAT THE FACILITIES THAT WOULD BE UP FOR AUCTION "WOULD BE BENEFICIAL TO A REGION AND OUGHT TO BE BUILT SOMEWHERE, DESPITE THE LOCALIZED COST THEY IMPOSE." THE REGIONAL BENEFITS OF A PERMANENT NUCLEAR MANAGEMENT FACILITY, IF ANYTHING, ARE MINIMAL.

THE ONLY BENEFITS THAT WOULD SEEM TO ACCRUE TO THE LOCAL AREA WOULD BE THOSE THAT COULD BE BARGAINED OR"CONNED"OUT OF THE GRANTING AGENCY IN EXCHANGE FOR POSITIVE ACTION. BUT THIS WOULD HAVE NO DIRECT BEARING ON THE ESTABLISHMENT OF THE SITE ITSELF (A NEW SCHOOL, A FEDERAL OFFICE BUILDING, ETC.). THE NET EFFECT WOULD BE THAT INSTEAD OF FOCUSING ON THE UNKNOWN RISKS INVOLVED AND DEVELOPING TO THE EXTENT PRACTICABLE STRATEGIES TO MINIMIZE THOSE RISKS, THE SITING PROCESS COULD FOCUS ON PERIPHERAL BENEFITS.

ANOTHER MAJOR PROBLEM WITH THE PROCESS IS THAT IT SEEMS TO LEAVE OPEN THE QUESTION OF LONG-TERM LIABILITY. THE UNKNOWN RISKS INVOLVED WITH THE STORAGE OF NUCLEAR WASTES BEGS FOR THE ESTABLISHMENT OF LONG-TERM

LIABILITY ON THE PART OF THE FEDERAL GOVERNMENT. THIS RESPONSIBILITY MUST NOT BE CLOUDED BY SETTING UP A PROCESS WHERE STATE AND LOCAL GOVERNMENTS MAY HAVE TO GO THROUGH LENGTHY LITIGATIONS TO OBTAIN REDRESS FOR ADVERSE EFFECTS THAT WERE INITIALLY UNFORESEEN AND NOT TAKEN INTO ACCOUNT IN THE HOST SITE'S BID FOR THE DEPOSITORY.

A THIRD PROBLEM WITH THE AUCTION PROPOSAL IS THAT IT ASSUMES THAT SEVERAL SITES WOULD BE AVAILABLE FOR THE FACILITY UNDER QUESTION. BECAUSE OF THE TECHNOLOGICAL AND GEOLOGICAL REQUIREMENTS OF A NUCLEAR WASTE DEPOSITORY THIS MAY NOT BE THE CASE. THE AUCTIONING PROCESS COULD POSSIBLY LEAD TO THE SITING OF A DEPOSITORY IN A LOCATION THAT TECHNOLOGICALLY WOULD NOT BE THE BEST SUITED.

THOUGH I HAVE SOME SERIOUS MISGIVINGS ABOUT THE AUCTION APPROACH, I DO BELIEVE THAT THROUGH A CONSTRUCTIVE AND ACCOUNTABLE DECISIONMAKING PROCESS, ECONOMIC BENEFITS AND COOPERATION CAN AND SHOULD BE INTEGRATED INTO NUCLEAR WASTE MANAGEMENT STRATEGY.

THE CONSULTATION AND CONCURRENCE PROCESS SUPPORTED BY THE NATIONAL GOVERNORS' ASSOCIATION AND RECOMMENDED BY THE IRG REPORT WOULD ALLOW FOR SUCH NEGOTIATIONS. IN SUCH A PROCESS THE FOCUS, HOWEVER, WOULD BE ON THE MEETING OF HEARING SAFETY AND CRITERIA THAT WOULD DEAL WITH THE REAL AND UNKNOWN RISKS INVOLVED RATHER THAN WITH PERIPHERAL BENEFITS.

I THANK YOU, MR. CHAIRMAN, AND COMMITTEE MEMBERS ON BEHALF OF GOVERNOR RAY FOR ALLOWING THE NATIONAL GOVERNORS' ASSOCIATION THE OPPORTUNITY TO EXPRESS THESE VIEWS. IF YOU HAVE ANY QUESTIONS OR FURTHER DISCUSSION, I AM AT YOUR DISPOSAL.

National Governors' Association

Julian M. Carroll
Governor of Kentucky
Chairman

Stephen B. Farber
Director

NUCLEAR ENERGY POLICY POSITION

ADOPTED BY

NATIONAL GOVERNORS' ASSOCIATION

AUGUST, 1978

HALL OF THE STATES • 444 North Capitol Street • Washington, D.C. 20001 • (202) 624-5300

NUCLEAR ENERGY POLICY

Preamble

Energy from all sources is the underlying base of economic and social activity in all states. The limited availability of energy adversely affects every aspect of our lives. Nuclear energy is, and must be, a critical and essential component of the nation's near-term and mid-term energy supply. In the continued development of this component, the Governors insist that health, safety, and environmental concerns be given paramount consideration. In addition, the Governors stress that priority be given to the following considerations:

1. Radioactive waste management,
2. Transportation of radioactive materials,
3. Advanced nuclear systems development,
4. Siting of nuclear energy facilities,
5. Nuclear light water reactor,
6. Breeder reactor, and
7. Abandoned uranium mine and mill tailing sites.

Radioactive Waste Management

Both federal and nonfederal sites for the disposal of radioactive waste are located within the boundaries of one or more states. In dealing with the issue of radioactive waste management, the Governors, along with local and federal officials, must protect the public health and safety and the environment.

The radioactive wastes that have accumulated from military activities, commercial reactors, medical research, and other sources are a national responsibility. All states generating any part of the problem need to participate in its resolution. The waste management problem cannot be solved by a federal process alone. It must be based on the principles of cooperative federalism. A strong partnership of federal, state, and local government and private industry is essential to a successful program. That partnership must be continued and strengthened. Continued dialogue on details of program plans is also essential to developing a sound program that will ensure public confidence.

The Governors urge Congress and the President to create a joint commission on radioactive waste management, consisting of seven members, a majority of which is drawn from the states. The commission should have the responsibility for developing a comprehensive radioactive waste disposal policy and implementation plan in conjunction with states, federal agencies, and local governments. Other responsibilities of the commission should include oversight of the development of generic environmental impact statements (GEIS) on the final disposal of commercial waste; investigation of the feasibility of establishing public-private waste management corporations, initially federally financed, on a site-specific

basis; and development of recommendations for away-from-reactor (AFR) spent-fuel storage. Such programs should move forward on an accelerated basis.

The Department of Energy should become more aware of and sensitive to the potential social, economic, and political impacts of waste management plans and programs on existing institutions. Greater attention should be given to the arrangements needed to offset or ameliorate those impacts. To that end, the Department of Energy needs to develop more effective methods to obtain timely, informed, and responsible public participation in formulating these policies and programs. Early in the process of preparing environmental impact statements for specific sites or facilities, the Department of Energy should involve state and local officials. State and local officials should help furnish the information needed for these activities. DOE must obtain state concurrence prior to final site determination. In addition, significant DOE management attention must be redirected to the analysis of environmental impact statements for radioactive waste management. Schedules must be accelerated, and additional technical personnel must be assigned to this task.

Although the ultimate disposal of high-level defense and commercially generated wastes must have the highest priority, the Governors recognize that interim solutions for the management of spent fuel will be necessary in order to continue using present nuclear capacity.

Because spent fuel should be considered a valuable future energy resource, programs for handling spent fuel should be designed to incorporate the concepts of "interim storage" and "retrieveability."

The Governors believe that long-term program plans for low-level radioactive waste that continue to permit private operation and "agreement-state" regulation of low-level waste burial grounds on a cooperative basis with federal authorities, wherever this is both preferred and practicable, should be finalized as expeditiously as possible.

Rather than delay action until a "perfect" program for the disposal of radioactive wastes can be developed, the relevant federal agencies should utilize to the fullest extent practicable already available and workable technologies and solutions to forge an implementation strategy, giving priority to the protection of the environment and the health and safety of the general public.

Adequate funding for the costs of developing and implementing waste disposal programs should be provided to the states through user fees and other sources.

Abandoned Uranium Mine and Mill Tailing Sites

Numerous abandoned uranium mines and inactive mill tailing piles pose potential health hazards to the general public. These abandoned mines and mill tailing piles are the results of mining for uranium fuel under federal contracts for purposes of energy production and national security. The Governors urge Congress to pass legislation making it the full responsibility of the federal government to clean up and restore the abandoned mine sites and inactive mill tailing piles resulting from the mining of uranium.

Transportation of Radioactive Materials

The transportation of radioactive materials, including nuclear waste, is of growing concern to the general public. Increased citizen awareness and

concern must be dealt with thoroughly and responsibly. The Governors recommend that a set of uniform regulations and procedures relative to the transportation of radioactive materials be developed by state and federal officials. Such regulations and procedures must address the interests of individual states in issues such as routing, insurance, licensing, packaging, loading, and unloading. They must define the responsibilities and coordination mechanisms in the event of theft, diversion, or accidents involving radioactive materials. Such regulations and procedures should also address the coordination of local, state, and federal roles in the day-to-day operation of radioactive materials transportation systems. Adequate funding for the enforcement of and impact from the implamentation of the above regulations and procedures should be provided. A federal agency should administer all aspects of federal involvement in the transportation of radioactive materials.

Advanced Nuclear Systems Development

Domestic sources of commercial-scale uranium ore are limited and are diminishing. With our present resource base so short-lived, we must pursue continued exploration of all nuclear and nonnuclear technologies. This includes breeder reactor technologies and nuclear fuel reprocessing. These technologies must receive adequate commitment for federal research, development, and demonstration.

Siting of Nuclear Energy Facilities

Congress is currently considering the Nuclear Siting and Licensing Act of 1978. Certain aspects of this act would require expediting the licensing of nuclear facilities through a number of improvements in the federal administrative process. The act, as proposed, also recognizes the importance of states in making need-for-power determinations and in being responsible, under federal guidelines, for making environmental impact analyses under the National Environmental Policy Act.

Avoidance of Delays in Construction of Nuclear Power Plants

Recent examples of regulatory delays in the construction and operation of nuclear power plants highlight the inability to bring new generation on line when needed. These delays have resulted in substantial increases in the cost of electricity to the consumer.

The Governors support licensing procedures that provide for full public participation and encourage a careful review of all health, safety, and environmental concerns. However, policies must be developed that provide for clear and definitive decisions. Any reconsiderations of these decisions must be limited to significant new issues that indicate the facility or site would not comply with the original requirements or to new information that indicates that the health and safety of the public would be endangered. Reconsideration must be handled in an open and expeditious manner.

The Governors request that any such pending issue be resolved with utmost dispatch in order to minimize uncertainty in the provision of power and ultimate financial loss to the electricity-consuming public.

The Governors reaffirm the principles stated in the previously adopted policy position on energy facility siting, emphasizing state flexibility and involvement in siting.

Adopted August 1978; replaces the existing D.-13, D.-14, D.-15, and D.-35.

RECOMMENDATIONS TOWARD ESTABLISHING A PUBLICLY RESPONSIVE AND ACCEPTABLE NATIONAL NUCLEAR WASTE MANAGEMENT POLICY

A Position Paper Based on National Governors' Association Policy and Further Developed at a National Meeting of State and Local Officials

The National Governors' Association
Nuclear Power Subcommittee
Governor John B. Evans, Chairman

May 8, 1979

Introduction

In August 1978, the National Governors' Association adopted a nuclear waste management policy, calling for the establishment of a comprehensive national nuclear waste management program within a framework of cooperative federalism. The policy states:

> Both federal and nonfederal sites for the disposal of radioactive waste are located within the boundaries of one or more states. In dealing with the issue of radioactive waste management, the Governors, along with local and federal officials, must protect the public health and safety and the environment.
>
> The radioactive wastes that have accumulated from military activities, commercial reactors, medical research, and other sources are a national responsibility. All states generating any part of the problem need to participate in its resolution. The waste management problem cannot be solved by a federal process alone. It must be based on the principles of cooperative federalism. A strong partnership of federal, state, and local government and private industry is essential to a successful program.

In order to affect the development of a national program based on these objectives, the governors' policy recommended that a joint federal-state commission be established and stated that the Department of Energy must "obtain state concurrence prior to final waste disposal site determination." The joint federal-state commission proposed by NGA, with governors as members, would have a substantial role in all facets of nuclear waste management. It would be responsible for developing a comprehensive radioactive waste disposal policy and implementation plan in conjunction with the states, federal agencies, and local governments.

The NGA policy played a significant role in the final recommendations of the Interagency Review Group to establish a State Planning Council and to adopt the principle of concurrence and consultation. Though the State Planning Council, as recommended by the IRG, does not have the authority or responsibility of the

NGA recommended joint federal-state commission, the IRG recommendations did not preclude the Council's assuming greater responsibility.

The IRG did recommend establishing the consultation and concurrence process as described in the governors' stated policy, but left open to further determination means to resolve potential non-concurrence that could stop progress toward final resolution of a nuclear waste disposal program.

In order to resolve the discrepancies between the IRG report and the governors' policy and to define in a concise manner the means by which the objectives of the governors' policy could be carried out, the National Governors' Association Nuclear Power Subcommittee and the Western Governors' Policy Office, in cooperation with the National Association of Counties, the National League of Cities, the U. S. Conference of Mayors, and the National Conference of State Legislatures, convened a national workshop of state and local officials attended, with representatives from 35 states and Congressional committee staff and from the Department of Energy.

The workshop was structured to develop recommendations to resolve the differences between the IRG recommendations and the National Governors' Association policy in order to develop practical means of achieving the basic objective -- the establishment of an effective and acceptable intergovernmental decision-making process to formulate a national nuclear waste management program.

Findings and Recommendations

The recommendations of NGA are based on the following premises:

- That final resolution of the waste management issue is a matter that all states must consider regardless of whether commercial nuclear power facilities are placed within their boundaries or not;

- That a solution to the waste problem must be developed through a process that is thorough, understood, believable and accepted by the public;
- That more effective involvement of state and local policymakers should be sought.

The IRG recommendations to establish a State Planning Council and a consultation and concurrence process are in line with these objectives, and therefore offer a good foundation to establish a workable process. The recommendations of NGA on the development of the State Planning Council and the process of consultation and concurrence are formulated to meet the governors' objectives.

General Principles of Consultation and Participation at the National Planning Level

An acceptable nuclear waste management program can only be developed and implemented through a process that recognizes that elected state and local government officials, in order to fulfill their responsibility to protect the general welfare and safety of the public, must be directly involved in the nuclear waste management decision-making process from policy development to implementation.

In order to ensure the participation of state and local government officials at the national planning level a mechanism must be established that can work effectively and responsively in concert with the federal government agencies. It is important that such a mechanism have the visibility and the resources to interact on a par with federal agencies with responsibility for the nuclear waste management effort.

Consultation at the national policy and planning level between state and local officials and the federal government must be a meaningful process that provides an open channel of communication to the highest levels of government -- the Congress and the President. In order to realize this objective, consultation at the national policy level cannot be carried out on an ad hoc, individual, or state-by-state basis. It must be accomplished through a visible mechanism that will focus public concern and provide the opportunity for the building of consensus among state and local officials whenever possible.

In order to assure state and local government officials that the consultation mechanism so established is indeed their vehicle for participation, their consultation role should be defined by the state and local government community and not restricted by federally dictated boundaries. The national workshop participants, who were predominantly state officials sent to represent their governors, concluded that a national consultative mechanism should be advisory in nature but with sufficient leverage to assure that advice given was incorporated into the development of national programs. One limitation to the consultation mechanism voiced at the workshop was that a body so constituted to perform this function could not speak for individual state needs or have authority to preempt in any way individual state action.

The State Planning Council

The State Planning Council recommended by the IRG can, if properly established and structured, meet these requirements and allow for substantive participation by state and local government officials in the development of a national nuclear waste management program.

However, in order to do that, the State Planning Council must first be established as the body independent of federal direction and with the necessary statutory backing that will assure its existence and participation, regardless of future Administration policy.

Since it is critical that implementation of nuclear waste management strategy begin immediately, executive action must be taken to establish the Council immediately with confirmation through Congressional statutes as soon as possible.

The proposed State Planning Council can satisfy the objectives of NGA policy if:

- the State Planning Council as recommended by the IRG is created immediately by Executive Order of the President;
- legislation to assure the continuity and role of the Council is transmitted to Congress as soon as possible;
- the role of the State Planning Council is defined as that of advisor to the President and Congress on nuclear waste management policies and programs, and to assist those federal agencies responsible for nuclear waste management;
- the Council is involved in the formulation of all nuclear waste management programs including, but not limited to, high level, low level, mill tailings, and decommissioning strategies for both civilian and defense waste;
- the Council will have equal standing with the federal agencies in structuring a nuclear waste management program. Its recommendations, though advisory, must be either incorporated into final plans developed by the relevant federal agencies or be transmitted directly to the President and Congress for further consideration.

- o the Council's activities focus on generic issues related to nuclear waste management and on the process of consultation and concurrence that must be established between the federal government and the potential host state or states.
- o the Council is given the responsibility to develop guidelines for the consultation and concurrence process to aid individual states in dealing with site specific issues. Such guidelines should be flexible enough to allow states to address their specific needs when interacting with the federal government.

In order to fulfill these functions, the Council must be structured in a manner that recognizes that state governments, through their governors, are an effective medium for public participation in the national decision-making process.

With this in mind, it is recommended that the Council:

- o be appointed by the President and consist of only elected state and local government officials and representatives of Indian nations;
- o have a majority of its membership be governors, with a governor designated as chairman of the Council;
- o exclude representatives from the federal agencies.

In order for the Council to represent state and local interests in an effective manner, it is necessary that sufficient resources be made available to support Council activities. The Council, therefore, should be provided through the enabling Executive Order and then by Congressional initiative with:

- o sufficient funds to acquire and develop its own expertise in technical and policy areas through the employment of full

time staff and the employment of outside consultants. These funds should be provided by an independent authorization and appropriation to allow the Council to function in an accountable, independent and objective basis;

- o necessary authority to obtain access to all pertinent information, including proprietory information with the understanding that all rules of confidentiality would apply.

The effectiveness of the State Planning Council will depend in great part on its ability to interact collectively and individually with all those federal agencies having responsibility for nuclear waste management. This cannot be achieved if the Council is subsumed under the aegis of a single federal agency. The Council must be viewed by the competing federal interests as a captive of none in order to carry out the functions intended by the state and local community. For these reasons, it is recommended that the Council be established as an entity of the White House, possibly attached to the Domestic Policy Council.

To complement the functions of the Council and enhance its ability to work collectively with the various involved federal agencies, it is also recommended that an interagency federal coordinating council or group be established chaired by a designated lead agency.

The State Planning Council, established in the described manner and structured accordingly, would meet the governors' policy objectives. These recommendations are designed to supplement those contained in the IRG Report that outline the functions of the Council to include

- o provision of state perspectives for the development of the national Nuclear Waste Management Plan, the site characterization program and other waste activity planning and other planning documents to insure that they adequately address the needs of the states and the localities;

- o preparation of an annual report on its activities to include its recommendations concerning the government's nuclear waste disposal programs;
- o advice on the regional distribution, characterization and placement of facilities for the management and disposal of nuclear wastes and review and make recommendations regarding the process for selecting, characterizing and determining the suitability of potential repository sites;
- o assistance to DOE and the states in recommending proposed sites for licensing by NRC to assure that the needs of the states and localities are met;
- o establishment under its auspices of such advisory committees as are deemed necessary to assist in its deliberations. Such committees should include representatives of all relevant interest groups.
- o defining additional state roles in the federal government's waste management program including state organizational and other institutional questions.

Participation in Implementation - Consultation and Concurrence

The implementation of an agreed-upon national plan must include consultation and concurrence mechanisms between individual states and the federal government.

As articulated in the governors' policy position, site specific determinations can be made only with the concurrence of the host state or states. It must be recognized that in the early development of site characterization, those states with sites that could qualify as meeting the site profile should

be consulted and given the opportunity to concur on the specifics of site characterization. As indicated in the NGA recommendation, the process of concurrence should be developed by the State Planning Council.

Site Specific Consultation and Concurrence

Proceeding with the determination of alternative sites, concurrence and consultation becomes a process between states with potential host state having the overriding responsibility. The process must begin with state or regional concurrence on overall designs and completed site specific plans prior to initiation of any action (procurement of land, preliminary construction) at a proposed site.

Concurrence must also allow for a state to perform overall evaluations of the risks and benefits associated with a specific waste site, as site development is in progress, in addition to evaluation of discrete portions of the program.

Non-Concurrence

The procedure for concurrence obviously allows the possibility of non-concurrence by a state. The IRG report and the governors' policy position make no recommendation to resolve a non-concurrence stalemate. The issue definitely bears further study. Though an override of state non-concurrence by a federal administrator would be unacceptable, the possibility of a congressional review of non-concurrence by a state is an avenue that allows for review and override yet provides the states with the opportunity to participate in the final resolution.

The design of a practical and workable consultation and concurrence process that would meet the governors' stated objectives should be the first order of business for the State Planning Council.

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Union of
CONCERNED SCIENTISTS

Testimony of

Peter Franchot

On Behalf of the Union of Concerned Scientists

before the

Subcommittee on Energy and the Environment

Committee on Interior and Insular Affairs

United States House of Representatives

Congressman Morris K. Udall, Chairman

June 28, 1979

Washington, D.C.

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Mr. Chairman and members of the Committee,

Thank you for the opportunity to testify on the important issue of public participation in the siting and licensing of nuclear waste facilities.

The Union of Concerned Scientists is a non-profit group of scientists and technical professionals who are supported financially by 80,000 members of the American public. UCS is presently conducting an independent assessment of the United States nuclear waste management program which will be published in the fall of 1979. One conclusion from this study focuses on the large difference between "theory" and "practice" in the area of radioactive waste management. In theory, some technical problems of waste management may be considered solvable. In practice, however, there is considerable uncertainty about the implementation of a proper program to protect the health and safety of future generations.

It is our belief that full public participation in the siting of radioactive waste facilities has the potential for weeding out technically flawed sites and for gaining public approval of technically sound sites. We believe that public participation can be ensured by giving states the explicit power to approve or disapprove the siting of a federal radioactive waste facility within their borders, after a review of the technical, social, and engineering issues involved. For that reason we would urge this committee to support H.R.2762 cosponsored by Representatives Kemp and Seiberling and 35 other members of the House.

Such explicit authority will minimize the chances that a technically flawed site will be chosen because it will increase public scrutiny and examination of the technical issues. In addition, if a technically sound site is selected and approved by the public or their elected representatives, there will be greater assurance of public acceptance.

It is important to discuss the background of the U.S. radioactive waste management program. The issue of public participation and states rights should not be viewed in a vacuum. There are serious risks associated with a poorly managed program. There is a large and growing inventory of commercially generated radioactive waste. There is a careless track record of radioactive waste management in this country characterized by incompetence and indifference to the public interest. A brief review of the program can only lead to the conclusion that states should be more than equal partners with the federal government in deciding about the siting of a waste facility within its borders. Our fear, unlike critics of our position, is not that the Federal government will fail to choose a site for radioactive waste, but rather, under intense political and economic pressure, a flawed site will be chosen despite contrary technical evidence. The "political" or institutional problem of radioactive waste management was recently noted by Mr. Gus Speth, a member of the Council on Environmental Quality when he said, "I am personally very concerned that those who see shoring up the nuclear option as a vital objective will see an affirmative answer on the question of the nuclear future as so important that they will

shortchange serious issues and uncertainties related to safe waste management."

The potential consequences of improperly stored radioactive waste are, quite rightly, unsettling to members of the public from a possible host state. The emissions from this waste are invisible, odorless, and tasteless, yet they are highly toxic and persistent. They cannot be felt or heard. Yet minute amounts are capable of inducing cancer in the living, birth defects in the unborn, and mutagenic effects in the descendants of those exposed. Improperly guarded, radioactive wastes may be dangerous for thousands of years.

The current inventory of radioactive waste is enormous. As a result of commercial power reactors we have accumulated over 17,000 spent fuel assembles that are stored primarily in water cooled basins at reactor sites. Commercial power reactors have also produced approximately 15 million cubic feet of low level radioactive wastes which are stored at six licensed facilities, three of which are closed.

Government reactors used for military activities have produced 80 million gallons of high level radioactive waste stored in liquid and solid form at Hanford, Washington, Savannah River, South Carolina, and Idaho Falls, Idaho. There are 600,000 gallons of liquid high level wastes and sludge derived from commercial and military spent fuel stored at the abandoned West Valley, New York site. In addition there are over 140 million tons of uranium mill tailings that are stored in partially

stabilized piles and hundreds of contaminated government buildings and facilities that await decommissioning.

The problem is growing larger. Although wastes from military activities are expected to increase slightly, wastes from commercial reactors are expected to dramatically increase in the near future.

The radioactive waste management program has a track record marred by many examples of incompetence and attempted political expediency. Along with the hazards of fallout from weapons testing, unresolved reactor safety problems, and other problems under its jurisdiction, the Atomic Energy Commission, blinded by promotional zeal, also misled the American public about the problems of radioactive waste. Today the Department of Energy is afflicted with a similar conflict of priorities where it has a dual responsibility for promoting nuclear power and also resolving the radioactive waste problem - which is perceived as an impediment to the growth of nuclear power. Some of the conspicuous failures in past history include:

A. The Tanks at Hanford, Washington

Millions of gallons of high level radioactive liquid waste are stored in single walled carbon steel tanks at the Hanford Washington Reservation. Despite warnings from the U.S. Geological Survey and the General Accounting Office about the integrity of the tanks, the AEC neglected to follow recommendations to discontinue their use. By 1973, 422,000 gallons of liquid waste had seeped into the sandy soil of Hanford. One celebrated leak of 115,000 gallons went undetected for 51 days because no one bothered to compare readings that had been taken from one week to the next.

B. The Lyons Kansas Debacle

In 1972, the Atomic Energy Commission testified before Congress that they had spent 15 years and $100 million of taxpayers' dollars studying bedded salt disposal and the solution to the problem could be found immediately at Lyons, Kansas. So confident was the AEC that Milton Shaw, director of the AEC's Division of Reactor Development stated before Congress that the site was "equal to or superior to the others (in the country)."

The site was found to be grossly unsuitable by the Kansas State Geological Survey. Dr. William Hambleton of the Survey described the Lyons, Kansas site as "a bit like a piece of Swiss cheese" because of numerous gas and oil boreholes. The site was abandoned.

C. Reprocessing Failures

In 1976 Getty Oil abandoned a reprocessing plant in West Valley, New York and yielded ownership of 600,000 gallons of high level radioactive waste to a reluctant state of New York.

Other problems and failures have occurred at reprocessing facilities at Morris, Illinois and Barnwell, South Carolina.

D. Low Level Waste: Hanford, Maxey Flats, and Beatty, Nevada

In 1973, the Atomic Energy Commission concluded that the concentration of plutonium at the bottom of one of its burial trenches at Hanford, Washington might be enough to cause a

spontaneous chain reaction. The contaminated soil was excavated and removed.

In December 1977 the Maxey Flats, Kentucky commercial disposal site was closed when plutonium contamination was found in surface soil, 90 centimeter deep soil cores, monitoring wells, and drainage streams.

The low level commercial disposal site at Beatty, Nevada was known locally as "the store" because site employees illegally sold radioactive contaminated tools , generators, plywood and lab equipment to townspeople in need of inexpensive equipment.

E. The WIPP Facility:

The Waste Isolation Pilot Project is a bedded salt site near Carlsbad, New Mexico originally slated for low level and transuranium contaminated defense wastes - in 1977 it was suggested that high level military wastes be put there and in 1978 the Deutch Report suggested putting 1,000 spent fuel assemblies in WIPP to demonstrate the scientific and technical feasability of geologic disposal in bedded salt. The WIPP facility has been roundly criticized for technical reasons and apparently will not be funded in the FY 1980 budget. It characterizes the current Federal program of radioactive waste disposal from the perspective of the states.

I return then, to the question of what role the state government should have in the siting of a Federal radioactive waste facility within its borders. It is our strong contention that faced with the large amount of current and anticipated radioactive

waste, and the checkered history of Federal management of the program, that Congress should establish a process which both mandates consultation with prospective waste dump states and also preserves the final right of the affected state to decide whether it will host such a facility. This combined process protects both state and national interests.

There are several compelling arguments in favor of H.R. 2762. First, the consultation process implies that any final state decision will follow, not precede, a full presentation of technical, engineering, and environmental information associated with the project. The consultation process guarantees that states will have the benefit of factual data on which to base their decision.

Second, the authority to say "no" allows states to negotiate with the Federal government from a position of strength. Many states may have site-specific characteristics to which Federal officials are insensitive. For them, a veto power may prove essential in negotiating the proper site standards and equity compensation measures. For example, former Governor Mike O'Callaghan of Nevada endorsed the consideration of his state as a waste storage site but went on to say:

> "The State must have authority to veto the use of storage and transportation facilities or other items that may amount to a poor use of state resources or represent a real threat to the health, welfare and safety of state residents. Without this power I would never agree to voluntary location of a facility within this State.
>
> Should information come to light indicating that the radiation safeguards were going to be inadequate...Nevada must have recourse to

> an expeditious method of terminating planning involving land within the boundaries of the State."

Third, H.R. 2762 provides that there will be public acceptance of those sites that are eventually selected because it forces the Federal Government to make a persuasive case that a site will be safe and secure to those people who will be most directly affected.

Fourth, H.R. 2762 provides the type of public scrutiny and examination and debate which will prevent any politically motivated and technically flawed waste management proposal from going foreward.

Fifth, many states have laws concerning the siting of a Federal radioactive waste facility within their borders. These states include Alaska, California, Colorado, Hawaii, Kentucky, Louisiana, Maine, Maryland, Michigan, Minnesota, Montana, New York, Oregon, South Dakota and Vermont. H.R. 2762 would affirm that the siting of a radioactive waste site is such an important public policy decision that the people of an affected state should be considered as full partners with the Federal government through their elected state representatives.

In conclusion, H.R. 2762 is not a ban on radioactive waste disposal. It establishes a consultation process between affected states and the Federal government which will protect the interests of the individual states in the resolution of this important issue. As President Carter said,

> "The waste generated by nuclear power must be managed so as to protect current and future generations."

H.R. 2762 is a step in the direction of a safe and publicly accepted waste disposal program.

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