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# National Association of Regulatory Utility Commissioners

Incorporated

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August 12, 1993

Charles Haughney  
Branch Chief  
OWFN  
11555 Rockville Pike  
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Dear Mr. Haughney:

On behalf of the National Association of Regulatory Utility Commissioners, I would like to thank you for your excellent presentation at our recent nuclear waste workshop. Your unique perspectives contributed to what we believe was a very useful and timely discussion of the difficult issues that need to be addressed for a successful resolution of this country's nuclear waste problem.

Once again we thank you for your insightful comments.

Sincerely,

Cas Robinson  
Director

Janice Owens  
Assistant Director

180054

NARUC NUCLEAR WASTE PROGRAM

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\*Member of the Executive Committee of the Association

## MEMORANDUM

Date: November 27, 1993

From: Cas Robinson

To: Participants in Dialogue on the Interim Storage of Spent Nuclear Fuel

Subject: Work Papers for the Third Dialogue Session

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While the date and location for the third dialogue session has not yet been selected, it is important to begin preparation for this important meeting. Enclosed you will find ten [10] documents that have been submitted for the information and use of the dialogue participants. A listing of the documents is shown below:

1. Comparison of advantages and disadvantages associated with the five interim storage options presently being discussed;
2. A statement of Agreed Principles for interim storage of spent nuclear fuel;
3. A proposed consensus statement on compensation in the event on site storage becomes necessary;
4. A proposed consensus position on the interim storage of spent nuclear fuel;
5. A letter from Citizens Advisory Council on Energy [CACE], dated November 16, 1993 and signed by Marguerite Daniel;
6. A letter from Dr. Judith Johnsrud, dated November 16, 1993;
7. A letter from Dr. Judith Johnsrud, dated November 17, 1993;
8. A letter from Carol Cain, dated November 9, 1993;
9. Remarks by Jesse L. Riley of the Nuclear Subcommittee of the Sierra Club National Energy Committee;
10. A letter from Finis Shealy, dated November 4, 1993.

I hope to receive the responses on preferred dates very quickly. As soon as a date is determined, I will let you know so that you can mark your calendar.

## OPTION 1 - At Reactor Storage Without Compensation

### Advantages:

1. Near term expenditures of waste fund moneys for off-site storage are eliminated. This reduces competition for near term funding of other Waste Program activities which are important to eventual disposal of spent fuel. This advantage however is considerably reduced or eliminated if the current efforts to establish a revolving fund or other more accessible funding mechanism prove to be successful.
2. Political/public reaction problems associated with siting one or more interim storage facilities are avoided.
3. The few utilities with life-of-plant storage capability would view this option as a way to avoid unnecessary waste system expenditures that would not have benefited them directly.
4. Legislative action related to the interim storage issue (i.e. MRS/repository linkage modification) would not be needed since the program shifts to a repository only system.
5. While the transportation system will need to continue development with the rest of the waste disposal system, the need to address some institutional transportation issues is significantly deferred. This allows for more focus on overall system development and repository issues.

### Disadvantages:

1. Continued reliance on reactor sites for all interim storage requirements appears as a lack of progress with the waste program. This may elevate local public/political opposition to reactor on-site storage.
2. Increases costs of on-site storage to utilities/rate payers prior to and following reactor shutdown. Societal costs are increased also due to inability of some utilities to complete reactor site decommissioning on an optimum schedule.
3. Utilities and rate payers continue to pay concurrently for both on site storage expansion requirements and support of the Waste Program beyond 1998.
4. DOE's contractual commitments are not met and the services expected by the utilities are delayed until the repository is operational. This would amount to a delay of 15 or more years in relief to utilities.
5. Difficulties in performing needed on-site expansion per # 1 above may cause premature decommissioning of certain reactor sites.
6. Maintaining storage at 67 separate sites around the U.S. is operationally and economically inefficient when compared to one or two centralized sites which could serve the expansion needs of the U.S.



## OPTION 2 - At-Reactor Storage with Methods of Compensation

### Advantages:

1. If the compensation is adequate, this option would eliminate or significantly reduce the concern for concurrent payment by utilities and rate payers for both on-site storage expansion requirements and support of the Waste Program beyond 1998.
2. Would completely or partially off-set costs of on-site storage to utilities/rate payers prior to and following reactor shutdown.
2. Represents an effective means of implementing the UCS program and encouraging UCS usage.
3. Political/public reaction problems associated with siting an interim storage facility are avoided, although this would elevate the potential for local opposition to on site storage. (See disadvantage # 1 below)
4. Legislative action related to the interim storage issue (i.e. linkage modification) would not be needed since the program shifts to a repository only system. Legislation may be needed however to allow for direct utility compensation to be paid from waste fund. Political issues associated with this approach would likely be much less controversial allowing for smoother and quicker legislative action.
5. While the transportation system will need to continue development with the rest of the waste disposal system, the need to address some of the difficult institutional transportation issues is deferred.

### Disadvantages:

1. Continued reliance on reactor sites for all interim storage requirements would appear as a lack of progress with the waste program which may elevate local public/political opposition to reactor on-site storage.
2. This option forces some utilities to install spent fuel storage facilities that may have otherwise been avoided with off-site interim storage availability. System-wide costs are increased due to inability of some utilities to complete reactor site decommissioning on an optimum schedule.
3. Compensation may cause a reduction in industry pressure on DOE and in DOE's incentive and to perform with the disposal aspects of the waste program and meet the current 2010 schedule. This would result in further waste program inefficiencies primarily due to the continued diversion of the waste fund moneys and the direct impact of the repository delays.
4. Equity issues are created and must be resolved due to variations in utility needs and due to the existence of utilities without any interim storage needs.
5. Depending on form of compensation, legislation will likely be required to obtain access to the waste fund.

### OPTION 3 - Interim Storage Using Existing Federal Sites

#### Advantages:

1. Initiates movement of fuel off reactor sites. Reduces need for installing and/or expanding on site storage capacity, cutting costs to utilities/rate payers. Sufficient receipt capacity and appropriate distribution of allocations would allow decommissioning of shut down plants to proceed.
2. The availability of existing environmental site information may be sufficiently flexible to reduce licensing lead times and thereby improve the probability for meeting the 1998 DOE contract commitments.
3. Some of the needed infrastructure for implementation may already exist with certain of these sites (i.e. structures, equipment, security, emergency plans, knowledgeable personnel, etc.).
4. This option creates additional certainty for spent fuel related planning by utilities and regulators once a firm schedule, capacity, and allocation scheme are in place.
5. Option represents real progress in management of spent fuel by the DOE and would enable their contractual commitments for fuel acceptance to be met. Industry wide economic and political implications of reducing the current uncertainty related to the spent fuel management issue would be positive.
6. Represents the least impactful mechanism for mandated siting.
7. Public safety and system economics are enhanced as a result of storing spent fuel at one or two locations rather than continuing to add spent fuel storage at reactor sites.

#### Disadvantages:

1. State and local opposition is likely to be strong though not as potentially impactful as that which would occur with individual siting efforts.
2. Use of defense waste sites may further drag the civilian waste program into the poor reputation of the defense waste program. This could create further political delays to the overall civilian program. Other questions relating to co-location include liability, preexisting contamination, environmental quality, and inconsistent licensing guidelines.
3. Legislation would be needed to allow for federal rather than voluntary siting of an interim storage facility.
4. Congress may be resistant to another siting program per the difficulties experienced with the Yucca Mtn. siting effort.
5. Represents need for additional leg of transportation relative to continued on-site storage.
6. Environmental opposition will likely oppose fuel movement off-site.

## OPTION 4 - Voluntary Interim Storage Site

### Advantages:

1. Significant local support for storage facility may exist which would possibly simplify the siting process.
2. Legislative framework and process already exists and is being implemented. Interruption of process prior to investigating all possible and reasonable sites would further hurt the credibility of DOE and the waste program in general.
3. Allows for maximum flexibility and optimization of private, utility, and DOE involvement in facility development, licensing and operation.
4. Initiates movement of fuel off reactor sites. Reduces need for installing and/or expanding on site storage capacity, cutting costs to utilities/rate payers. Sufficient receipt capacity and appropriate distribution/availability of allocations would allow decommissioning of shut down plants to proceed on optimized schedule.
5. Represents real progress in management of spent fuel by the DOE and would enable their contractual commitments for fuel acceptance to be met. Industry wide economic and political implications of reducing the uncertainty of the spent fuel management issue would be positive.
6. Creates additional certainty for spent fuel-related planning by utilities and regulators once a firm schedule, capacity, and allocation scheme are in place.
7. Represents significantly increased incentive for DOE to aggressively, quickly, and efficiently proceed with site characterization and development of the Yucca Mountain repository facility.

### Disadvantages:

1. Local support for interim storage facility would not necessarily extend to the state legislature and governor.
2. Environmental opposition will likely oppose fuel movement off-site.
3. Legislative action on negotiated agreement and/or to gain access to the nuclear waste fund would be needed.
4. Option requires immediate development and procurement of transportation system to accommodate earlier need for shipments. Recent development efforts have somewhat slowed due to funding constraints. Total system life cycle "cask miles" likely increases with interim facility.

## OPTION 5 - Integrated Storage and Disposal Capacity in Nevada

### Advantages:

1. Initiates movement of fuel off reactor sites. Reduces need for installing and/or expanding on site storage capacity, cutting costs to utilities/rate payers. Sufficient receipt capacity and appropriate distribution/availability of allocations would allow decommissioning of shut down plants to proceed on an optimized schedule.
2. Represents real progress in management of spent fuel by the DOE and would enable their contractual commitments for fuel acceptance to be met. Industry-wide economic and political implications of reducing the uncertainty of the spent fuel management issue would be positive.
3. Creates additional certainty for spent fuel related planning by utilities and regulators once a firm schedule, capacity, and allocation scheme are in place.
4. Simplifies and minimizes development and implementation of transportation segment of waste program provided Yucca Mountain proves suitable for repository.
5. Economics of siting MRS and repository in one location probably makes this the lowest cost option. Allows use of repository waste handling facilities and equipment, rather than building an additional facility at a remote MRS site.
6. Operation by 1998 would make spent fuel available for repository testing and evaluation requirements. Would be available to serve as repository lag storage once operations begin.
7. Represents maximum increased incentive for DOE to aggressively, quickly, and efficiently proceed with site characterization and development of the Yucca Mountain repository facility.

### Disadvantages:

1. Indications are strong that State of Nevada, and Nevada environmental groups would strongly oppose this option.
2. Suitability of the Yucca Mountain site has yet to be determined. This option would appear as an effort to force a positive suitability decision for the site. This perception would likely be source of additional opposition.
3. Eventual failure to demonstrate suitability of the Yucca Mtn. site would eliminate many of the advantages sited above.
4. Implementing this option could undermine recent progress in Nevada on acceptability of the repository facility and would further exacerbate the inequity issue that many current opponents continue to argue.

## STATEMENT OF AGREED PRINCIPLES FOR INTERIM STORAGE OF SPENT NUCLEAR FUEL

Following a series of discussion sessions, the NARUC dialogue reached consensus on a number of principles for resolving issues related to interim storage of spent nuclear fuel pending the operation of a final nuclear waste repository.

First and foremost, continued progress toward central long-term disposal is essential to the viability of any efforts to establish interim storage.

Conceptual agreement was reached in the following specific areas regarding interim storage:

1. Priority must be on assuring safety of the overall operations including handling and transportation.
2. Continued on-site storage of spent nuclear fuel (SNF) does not meet DOE's 1998 obligation to utilities and their ratepayers and does not require action by DOE. DOE should focus its attention on beginning to move SNF off-site in 1998 according to the terms of its contracts.
3. The voluntary process for finding an interim storage site has not produced a politically acceptable candidate to accept SNF and may not be successful. To help ensure a site is available:
  - A. The voluntary process should now be given a time certain in which to produce a result.
  - B. In light of the potential schedule advantages to be derived from utilization of sites with existing infrastructure and environmental data, one or more federal sites appear to be promising as possible locations for interim storage of spent fuel from utilities. Preliminary work to identify suitable sites should start now.
  - C. A process and criteria need to be established to fairly select the potential federal sites to receive SNF. Consideration should be given to adopting a process which emphasizes safety, technical, and cost considerations and minimizes political issues in the selection process. One such alternative would involve the appointment of a scientific commission which would make its recommendations to Congress for their acceptance or rejection under some form of expedited procedures.

- D. If the voluntary process has not produced a candidate site by the end of 1994, emphasis should be placed on a mandated federal site.
4. Alternative methods of compensation should only be considered if the federal government fails to remove SNF according to the queue as contemplated in the DOE/utility contracts.



## NARUC DIALOGUE CONSENSUS ON COMPENSATION

As discussed above, DOE should pursue aggressively development of one or more central storage facilities by 1998. The development of an interim storage facility is possible by 1998 if the federal process is streamlined. However, if the schedule for start-up of the facility slips beyond 1998 a compensation mechanism should be established. Such a compensation mechanism should be very short term and not regarded as an acceptable satisfaction of DOE's obligation to accept spent fuel by 1998.

Any funds paid to utilities should be withheld from their required payments to the NWF to avoid DOE administration costs. Beginning January 1, 1998 utilities should be compensated based on one or more of the following criteria:

- 1) Fixed percent of 1 mill/kwhr payments after January 31, 1998 universally applied to all utilities paying into the Nuclear Waste Fund.
- 2) Fixed dollar amount per MTU of spent fuel not being picked up
- 3) Fixed dollar amount per MTU of spent fuel requiring storage
- 4) Actual storage costs
- 5) Provision of Multi-Purpose Containers only
- 6) Provision of Multi-Purpose Containers with storage overpeaks or funds for balance of storage installation

DOE, in conjunction with utilities and rate commissions evaluate the costs of these options and effect on the Nuclear Waste Fund, and determine a recommended option or options.

11/24/93

## NARUC DIALOGUE

Consensus Position Statement

The objective of the NARUC Dialogue is to provide recommendations to the Department of Energy, the industry, the regulatory community and the public on the issue of how to best achieve the Congressional mandate of acceptance of spent nuclear fuel from existing commercial nuclear energy plants beginning in 1998.

Although contracts exist between each utility and the Department of Energy to begin to accept fuel in 1998, there are serious questions as to whether that goal will be met. Failure to achieve the 1998 acceptance objective will result in higher costs to ratepayers and a less efficient spent fuel storage system which is required until a high level waste repository becomes operational early in the next century. The objective of the regulators, the industry and the public is to assure that spent fuel is managed safely and cost effectively.

With that objective in mind, the Dialogue group reached the following consensus regarding the 1998 commitment:

OBJECTIVE

1. Spent fuel should be stored off-site rather than on existing nuclear plant sites. It was judged that temporarily storing spent fuel at one or more interim storage locations would be preferable. The basis for this judgement reflects the consensus that off-site facilities could be technically better and hence safer, more economical and more generally publicly acceptable.
2. Acceptance should begin in 1998 in accordance with the contracts that exist between DOE and the utilities.
3. Failure to begin accepting fuel at the published acceptance

rate for each utility should be compensated by the Department of Energy with funds coming from the Waste Fund. The amount of the compensation should be based on the cost to store the contracted amount of spent fuel on site until DOE ships it off-site. (DOE is to perform analyses of the financial impact of delays in the program on the Waste Fund.)

4. In order to reduce the backlog of spent fuel presently stored, DOE should set as an objective achieving an increase acceptance rate that would reduce on-site storage after plant shut down to less than 7 years. (Basis for the 7 years is a minimum required storage time of 5 years for heat decay and it should take no more than two years after that to ship all fuel off site).

#### IMPLEMENTATION

Given that the objective is to start off-site storage by 1998, the Dialogue group concluded the following:

1. The voluntary siting process, which was making progress, was stopped by the political process in Congress when it prohibited the Department of Energy from funding further volunteer siting efforts.
2. It is highly unlikely that the volunteer siting process will meet the 1998 objective. In any event, reliance should not be placed solely on the volunteer process.
3. The voluntary siting process should, however, continue but it cannot be counted on to meet the 1998 objective even under the best circumstances. Given the 1998 objective, if the voluntary siting process does not have a site approved by Congress by December 31, 1994, the process should be terminated by Congress.

4. An alternative to the voluntary siting process needs to be aggressively pursued immediately if the 1998 objective is to be met.
5. It is recommended that one or more existing Federal facilities be used for interim storage of spent fuel.
6. As the voluntary siting process has demonstrated, the political process makes siting of controversial facilities exceedingly difficult.
7. If the siting process is to work, it must be made "apolitical." An example of such a process used successfully is the one used by Congress to close unnecessary defense facilities. Congress established a "Defense Base Closing Commission" in which an independent panel was convened to review all defense facilities in the country and make technically based recommendations as to which facilities should be closed. The process used by the Commission allowed for public participation and input. Congress then voted up or down, as a package, the recommendations of the Commission for implementation. A similar panel could be convened for siting of interim storage facilities on federal sites.
8. Interim spent fuel storage site selection criteria supported by the Dialogue group are:
  - A. Safety -- The technology used should be similar to that presently licensed for existing nuclear plant sites. Transportation access should be considered to minimize cask handling incorporating the multiple purpose container (MPC) concept.
  - B. Equity -- To improve public acceptance and address the issue of fairness, multiple sites could be selected based

on the existing infrastructure of the facilities required to support simple storage and transportation.

- C. Time Limit for Storage -- To alleviate the concerns of the permanence of this interim storage facility, a specific time limit should be established for the storage at the facility. A time limit of 40 years is recommended allowing sufficient time for characterization of Yucca Mountain or other sites should Yucca Mountain not prove acceptable.
  - D. Public Acceptance -- The conceptual design of the interim storage facility should be completed prior to initiation of the site selection process to show the public what they are being asked to accept. It is strongly recommended that the design be simple storage containers which are transportable with the spent fuel to assure the public of the temporary nature of the facility.
  - E. Cost Effectiveness -- To improve cost effectiveness of these facilities, the Nuclear Regulatory Commission should be asked to review their siting regulations (for safety value given the simplicity proposed for the storage system).
9. The recommendation of the "Interim Spent Fuel Storage Commission" should be completed within one year of initiation.
10. Even though interim spent fuel storage facilities may be available, each utility should have the option to store on-site should they find it more desirable to do so.

IT IS EXTREMELY IMPORTANT TO THE SITING PROCESS FOR INTERIM STORAGE FACILITIES THAT CONTINUED PROGRESS BE MADE IN THE CHARACTERIZATION EFFORTS AT YUCCA MOUNTAIN.



Citizens Advisory Council on Energy  
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November 16, 1993

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Dear Commissioner Robinson:

It was indeed good to see you again recently at the hearing in Atlanta. It was an interesting and informative meeting.

It is my opinion that on-site storage of high level nuclear waste is, in fact, an interim measure. I think it wiser for the DOE to proceed with all haste to select a permanent storage site. This will eliminate an unnecessary handling of the waste.

The anti-nuclear community does not want this matter settled. Their reason for being will be eliminated if a permanent site is selected. The loop will be closed and they will be out of business. Please, with all due respect to some of our more learned anti-nuclear friends, do not be misguided by their wishes. The longer they are allowed to speak, the higher the expenses rise as was evidenced by the building of nuclear plants.

It is my feeling the Department of Energy has ample time to do whatever is necessary to find a "final resting place" for high level nuclear waste. I hope to see the directive go forth to this end.

Again, it was good to see you in Atlanta and I will be in touch in January regarding an April program agenda. We sincerely hope you can be with us.

Sincerely,

Marguerite Daniel  
Executive Director

FAX (202) 347-4517



433 Orlando Avenue  
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November 16, 1993

Mr. Cas Robinson, Director  
Nuclear Waste Program Office  
National Association of Regulatory Utility Commissioners  
1071 National Press Club Building  
529 14th Street NW  
Washington, D.C. 20045

Dear Mr. Robinson:

Please accept, and incorporate in the next phase of the NARUC "spent" fuel dialogue, the following comments on the discussion and document which we addressed at the second meeting in Atlanta on November 3rd. I had planned to submit these earlier but again have been away from my desk until today. Since I have received nothing yet from Andy Kadak, I hope I'm assuming correctly that his draft document will include comments that you are receiving from participants and others.

Among my overall general observations:

1. Any report issuing from this dialogue should advise that the matter of DOE's acceptance of "spent" fuel in February 1998 must be considered in the context of a full review of all of the nation's radioactive waste management programs: "spent" fuel storage and disposal, other high-level waste isolation, "low-level," transuranic, and mixed hazardous/radioactive waste, deregulation, etc. The fragmentation of approach to the totality of management has, in my opinion, increased the difficulty of resolving any portion of the problem. I would urge that the Secretary of Energy recommend to the President establishment of a fully independent commission to review all waste programs.

2. The wording of the 1987 Nuclear Waste Policy Act Amendment concerning DOE's interim storage obligation, as quoted by Mr. Davenport in his September 10th memo, makes clear that "Contracts...shall provide that...*following commencement of operation of a repository*, the Secretary shall take title to..." spent fuel and that "...*beginning not later than January 1, 1998*, the Secretary will dispose of..." spent fuel. It is clear that there is not likely to be a repository by 1998. It is not clear how long "interim" means, nor is it clear how or how rapidly the Secretary is bound to act after January 1, 1998, in disposing of spent fuel. Given these major uncertainties, plus the problems encountered by DOE in exploration and characterization of the Congressionally designated Yucca Mountain repository site, it would be imprudent of utilities to expect relief at that time from the spent fuel storage and possession to which they obligated themselves by producing the spent fuel.

3. It may be that the courts will yet determine that the contracts drawn up pursuant to the 1987 Amendments are not enforceable. Utilities should be prepared for that eventuality.

4. Despite reluctance of nuclear utilities to admit DOE's inability to accomplish permanent geologic disposal of "spent" reactor fuel or to persuade any community to accept open-ended "interim" storage, utilities and the public

utility commissions that regulate them must now seriously consider the one option that may lead to a willingness of some locale to accept the burden of risk: a moratorium on the generation of additional quantities of spent fuel.

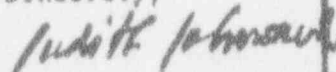
5. The utility insistence on being compensated for continued storage of the highly irradiated fuel that they have generated should not be allowed to raid the Nuclear Waste Fund that was collected in the first place to assure that there would be adequate money available for DOE to manage and dispose of spent fuel when, and if, it takes possession of the fuel. That fund should not be depleted in ways that do not further the long-term isolation of the fuel. The investor-owned electric utilities made business decisions to build and operate nuclear power reactors, assuring their regulators that their actions were prudent. That the costs associated with control of the wastes produced by those decisions now exceed their unrealistic optimistic earlier estimates should not excuse the companies' shareholders, not ratepayers, from financial responsibility, nor should this factor be used to permit depletion of the Nuclear Waste Fund.

6. In the document presented for discussion, the first sections on the General Advantages of Off-site and On-site Storage Options should have been matched by an equal listing of the General Disadvantages of each. Moreover, these advantages and disadvantages should be presented in terms of the perspectives of the several "stakeholders." An advantage to a utility may not be an advantage to its regulator, nor to the nearby residents of a reactor, nor to an affected population in the vicinity of an alternative location or on its transportation routes. The report that is to be the outcome of this NARUC dialogue should give primacy to the perspectives of the utility commissioners, the regulators, and of those whom they serve, the residents of their respective states who are affected by the presence and costs of the spent fuel.

7. No NRC regulations should be relaxed to accommodate the desire of the generators of spent fuel and other wastes to reduce their costs.

The remainder of my comments will address the options presented at both dialogue meetings, the November 3rd discussion, and Mr. Kadak's suggested "consensus" items. These will follow in a separate form as quickly as I can complete them. I will appreciate your incorporating them and the points here with the report or other document in preparation.

Sincerely,



Judith H. Johnsrud, Ph.D.

439 Orlando Avenue  
State College, PA 16803  
November 17, 1993

Mr. Cas Robinson, Director  
Nuclear Waste Program Office  
National Association of Regulatory Utility Commissioners  
1071 National Press Club Building  
529 14th Street NW  
Washington, D.C. 20045

Dear Mr. Robinson:

The following comments supplement my general comments dated November 16, 1993, on the NARUC "spent" fuel dialogue. Please include these with the earlier ones. I regret and apologize<sup>for</sup> repetitiveness; I want to be sure you receive them as timely as possible.

The matter at issue exemplifies what has been termed "The Law of Concentrated Benefit Over Diffuse Injury." This states in brief that a small group working for its own narrow interests can almost always impose an injustice upon a vastly larger group, provided that the larger group can be induced to believe that the injury is hypothetical, distant in the future (latent injury), or real but small relative to the real and large cost of preventing it. \* In this instance it is the unwanted imposition of long-lived highly radioactive wastes and their health risks upon people, places, and the future in order to divest the nuclear power industry of its obligation for the waste it has generated. The National Association of Regulatory Utility Commissioners, in my opinion, should base its recommendations on DOE interim spent fuel storage on those potential adverse impacts on the affected public, not the narrow financial interests of utility managers and stockholders.

These comments will address (1) the spent fuel storage options presented at both dialogue meetings, (2) the November 3rd discussion, (3) Andrew Kadak's list of proposed "consensus" items, compensation, and (4) other issues.

On General Advantages of Off-site Storage Over On-site Storage Options:

1. The advantages presented appear to save money for utilities (i.e., reduced need to expand on-site storage capability) at the expense of the public in the forms of taxpayers ("DOE system costs") and endangered populations.
2. Off-site storage does not demonstrate "ability to close the nuclear fuel cycle." It simply moves the problem elsewhere. Nor will it improve "local/state public/political acceptance of existing reactors." To the contrary, additional sites may become contaminated and transportation risks are increased. Few who live with the risks of severe accidents at operating reactors will believe that removal of spent fuel from a site will in any way diminish those accident probabilities.

3. Although a utility's decommissioning costs may be decreased, the costs of interim storage elsewhere will be added to the tax burden of the whole

\* John W. Gofman, M.D., Ph.D., and Egan O'Connor, editor, Committee for Nuclear Responsibility, Inc., San Francisco, CA, November 1993.

citizenry. There is no explanation of how off-site storage "allows decommissioning to go forward" nor why utility regulators would consider it a benefit.

4. It is not clear how off-site storage can centralize high-level waste in "perhaps fewer" than one location.

5. There is no explanation of how off-site storage would alleviate NRC licensing issues, nor why that would be an advantage to the public overall.

6. Among disadvantages of off-site storage should be cited (a) increased transportation risks and costs; (b) increased waste handling; (c) uncertainties of destinations; (d) uncertain definition of "interim;" (e) contamination of additional sites, or greater contamination or risks at already contaminated sites; (f) costs transferred to public for construction, operation, and decommissioning of interim storage facilities; (g) may allow continued operation of unsafe reactors; (h) encourages generation of more radioactive waste without solving the problem of disposal; (h) may encourage utilities to commit to construction of additional new reactors.

On General Advantages of On-Site Storage Over Off-Site Storage Options:

1. Avoidance of negative public/political reactions is not a valid advantage; opposition would not be avoided, merely transferred. Utilities in our market economy chose the nuclear option without including full costs of waste management and disposal or the long-term risks. They should expect persistent and valid local objections to either on-site storage or off-site independent storage facilities. These objections may be expected to intensify, not lessen.

2. Utilities with life-of-plant storage that are asking the public to foot the bill for off-site MRS can't object that they (the utilities) do not benefit by having also to invest in an off-site facility. This situation is a consequence of earlier management decisions and the insolubility of waste disposal.

3. None of these options hastens a utility toward sustainable electricity generation dependent on demand side management, conservation, efficiency, and alternative sources, upon which their future must rely.

4. Among disadvantages of on-site storage should be cited (a) many plants are located at sites unsuitable for waste storage (e.g., floodplains, lakeshore and coastal sites subject to hurricanes and shore erosion); (b) NRC appears to define "interim" on-site storage as long as 140 years, with repeated permit extensions for dry cask storage on-site (as at Palisades), perhaps longer; (c) neither dry casks nor mobile multi-purpose casks have been tested for this duration; (d) on-site storage creates even more public opposition at both existing reactor sites and potential new reactor sites; (e) may postpone addressing effective long-term waste management systems; (f) encourages NRC to relax cost-related regulations (plant security, fire protection, etc.), thereby increasing overall risks; (g) further breaks public faith in this industry's promises.

On the Spent Fuel Storage Options presented for discussion 9/7 and 11/3:

1. The summaries of spent fuel options do not address the "unknowns" and "uncertainties" apart from utility-perceived advantages and disadvantages.



Page three (Supplemental Comments on NARUC Spent Fuel Dialogue)

2. Option 1: At-Reactor Storage Without Compensation: I agree that Nuclear Waste Fund money should be preserved for its intended use, not depleted in a pay-back to utilities for on-site storage, especially given the uncertainties surrounding Yucca Mountain and obtaining an alternative "interim" MRS. There is no evidence to support the assertion that utilities or states can, or will, operate a storage facility more efficiently than the federal government.

If utilities believe they are "paying twice" for DOE storage/disposal and for on-site storage, they could have avoided this problem by not signing a contract for spent fuel removal to a non-existent DOE MRS in the first place. Moreover, full costs of long-term spent fuel management should have been part of original cost estimates as a matter of prudent business decision-making and brought before the regulatory commission when a reactor was proposed. Their complaint that "contract holders do not receive the service paid for" should be ignored; utility managers should have known the meaning of "*caveat emptor*."

Premature decommissioning would be an advantage for all stakeholders. In addition to potential costs of equipment replacements and higher maintenance costs of operating aging reactors, there is no mention of problems of unsafe sites (eroding Great Lakes shorelines, seismic instabilities, climate changes contributing to weather more severe than plants were designed to withstand -- nor of the economic and societal costs of severe accidents.

Utilities should be required to retain liability as well as title and possession of the highly irradiated spent fuel that they caused to be generated.

Option 2: At-Reactor Storage With Methods of Compensation (including MPC's, etc.):

1. It is not clear that utility/DOE contracts for spent fuel removal are valid if they were undertaken despite the wording of the 1987 NWSA Amendments. The regulators should require utility investors, whose managers had failed to account prudently for spent fuel uncertainties and costs, to absorb those added costs, not the ratepayers who had no effective voice in the utility decision to generate electricity with nuclear power.

2. The premise that a utility would suffer "damages caused by [DOE's] inability to meet its contractual commitment" is invalid. Any added costs are a result of the utility's failure to provide for costs of long-term storage and disposal of waste in the first place.

3. The Nuclear Waste Fund should be reserved for its intended purpose.

Option 2a: At-Reactor Storage with that Portion of a Reactor Site Deeded over to DOE (suggested at September 7th meeting):

1. The suggestion that a utility could legitimately deed to DOE that part of its site where spent fuel is stored, then decommission the plant and walk away strikes me as extraordinarily cynical and designed to reduce further the integrity of and public trust in utilities. It should be addressed in any report of this dialogue and disavowed.

Option 3: Interim Storage Using Existing Federal Sites:

1. This approach, while convenient for utilities, simply transfers their spent fuel responsibility to other locations and to taxpayers. It further, and correctly, ties commercial nuclear power generation to nuclear weapons and adds to the burden of risk at DOE/DOD/other Federal sites. It raises issues of plutonium recovery, recycle, and diversion, which are addressed in the new RAND report on proliferation and security.

2. Removal to a Federal site also frees on-site storage for additional quantities of spent fuel, prolonging and worsening the situation for permanent isolation of high-level waste. DOE decontamination costs were said at a recent international conference on advanced reactors now to exceed \$1.1 trillion, a substantial portion of GNP, and an added 25% of the national debt. This option transfers utility liability and interim storage costs to taxpayers.

3. There would be strong, enduring public opposition to this proposal.

Option 4: Voluntary Interim Storage Site:

1. The NARUC dialogue participants wisely set aside this option. It should not be revived. As the Nuclear Waste Negotiator's searches have demonstrated, the only potential volunteers appear to be Native Americans, for whose land and people an MRS would be yet another abrogation of the good faith of the United States government toward native peoples, another designation of their treaty lands as a National Sacrifice Area.

2. The NARUC report should recommend that the office and function of Nuclear Waste Negotiator, seeking a voluntary community, be abolished.

Option 5: Integrated Spent Fuel Storage and Disposal Capacity in Nevada:

1. Profound Constitutional issues of Federal-State relationships complicate this option, as has already been demonstrated by the responses of the State of Nevada to the 1987 NWSA Amendments imposing the high-level waste geologic repository at Yucca Mountain upon the State, absent any technical assessment of its suitability.

2. The argument that it is acceptable to impose the additional burdens of risks and despoliation upon this State or at the Nevada Test Site because it has already been contaminated beyond remediation is specious.

3. None of the advantages proposed is justifiable in terms of societal equity or technical feasibility of NTS.

Document with Additional Discussion Offered by Individual Participants:

1. With regard to the options (A.1.), the single most important objective is not that "DOE demonstrate by 1998 its ability to accept and remove spent fuel from a site." It is for all parties to assure the safe isolation of highly irradiated "spent" reactor fuel and all other aspects of nuclear safety. State utility regulators should subordinate all other considerations to this imperative.



2. The enterprises that have produced the spent fuel should continue to bear liability and full costs for the isolation of these wastes. Economic grounds, for which utility commissions have authority, justify the paramount nature of this consideration: the costs to the public in the event of radioactive contamination through mismanagement of these high-level wastes would be vastly higher. \* Because radiological safety and radiation protection standards are claimed by the Nuclear Regulatory Commission to lie within its licensing and regulatory realm, preemptive of state authority, a public utility commission can exercise its control over NRC licensees primarily via economics and prudence of utility decision-making -- and comparative costs of providing the regulated public service.

3. Rather than DOE's pursuing "all options including voluntary and federal siting, and storage at Yucca Mountain" (A.2.), DOE should exert leadership in curtailing generation of more spent fuel, in order that DOE may ascertain the total quantity and the composition, longevity, and toxicity of the spent fuel and associated wastes for which it is required to provide for interim and permanent storage.

4. Priority should be given not to "minimizing total cost" (A.3.), but rather to further development and demonstration of waste handling, storage, and permanent isolation technologies and capabilities.

5. Instead of rushing DOE toward the utilities' goal of rapid transfer of spent fuel from their jurisdiction to that of DOE in order to "avoid the need for developing more on-site storage" (A.4.), state regulators should see to it that utilities provide whatever storage facilities are needed to assure the safest possible isolation of highly irradiated spent fuel for whatever period of time may be required.

6. In its continuing quest for safer storage/transport/disposal casks, DOE should not permit itself to be pushed by utility demands for rapid action into short-circuiting appropriate testing of new cask designs (A.5.). NARUC should recommend that DOE pursue all options with caution and thoroughness to avoid the kinds of later mistakes that have characterized this agency's historical performance. This course will, in the long run, be less costly to consumers.

7. DOE should not divert nuclear waste funds to satisfy utilities' demands for compensation for on-site storage after February 1998 (A.6.).

8. Queuing, in addition to being consistent with the legislative framework (A.7.), must assure the safest achievable spent fuel storage, whether or not the oldest fuel is removed first from any site; other safety factors may have to be given precedence.

9. The "tailoring option" (A.8.), far from "begging the basic question of what DOE should do," provides an appropriate framework for decision-making that will maximize safety -- which is still the utilities' responsibility.

10. Nuclear industry and utility demands in 1987 for the 1993 date for DOE to take title to spent fuel were unrealistic relative to the ability of DOE to meet that deadline. Milestones that hinder careful, incremental progress toward

successful isolation of spent fuel and other radioactive wastes are counter-productive and result in wastefully expensive false starts and mistakes. (Cf. DOE's 1986 search for a second HLW repository.)

It is now becoming understood that waste "disposal" (as environmentalists have long warned) will be far more difficult, lengthy and costly to achieve than the nuclear industry had forecast. Because utility CEO's should have been smart enough (experienced enough with the problems of nuclear technology) in 1987 to have opposed imposition of an unrealistic milestone, it is appropriate that they now should retain title, responsibility, and possession of the spent fuel that they have continued to generate -- to generate even when they were fully aware that there was not sufficient progress being made toward permanent or interim spent fuel storage.

In our economic system, enterprises that exercise bad judgment go out of business. A regulated public utility should be held to rigorous standards of good decision-making, and of cutting the losses that result from wrong previous decisions.

11. As for implications of "Do Nothing" (A. second), some contend that it is less hazardous to move spent fuel to another location; others contend that it is more dangerous to keep it on-site, especially as NRC relaxes its regulatory philosophy and controls; others contend that in some instances spent fuel must be moved; others contend that none of the options available to the generators or to DOE will suffice to assure safe isolation. In my opinion, State utility regulators should allocate these costs to shareholders on the basis that expenditures which will increase safety of "spent" fuel isolation are justified. It is up to the PUC's to decide if ratepayers should share these cost burdens with stockholders.

12. As for the claim that there is "almost universal agreement that centralized storage at remote sites is far preferable" I must respectfully disagree with respect to the public-interest communities with whom I work. What is a "remote site" to some is the backyard of someone else. Perceptions and realities of distances and carrying capacity of lands vary greatly. Arid lands and subarctic lands possess extremely fragile ecological systems. A desert is not a "wasteland." There are equity considerations that are not mentioned here. Should not the burden of wastes remain with those who received the alleged benefits of the technology? We have not discovered the optimal compromise between the single technically and environmentally "best" site for radioactive waste and the most equitable site.

13. "Interim storage is another relative term (C.1.). Twenty years may well prove to be yet another unrealistic milestone, unachievable in the real world of delays, failures, restarts. A wiser approach may be to recognize the incremental nature of learning about how best to maintain control in isolation. Flexibility is essential for the federal agency charged with the impossible goal of permanent "disposal" of radioactive wastes. We cannot "dispose" of anything. At best, we can exercise long-term continuous vigilant management in isolation. Adoption of this language will help to better frame the nature of the task -- and the need for source reduction and elimination of generation of more waste that compounds the problem. The use of the term "permanent storage facility" in this section is appropriate and should be retained in the report.

14. In the introduction to the section labeled "B" there is no mention of safety as the primary goal. It is stated that another possible conclusion is that the "regulator" community has economics, local politics and continued plant operation as its priorities. This latter statement does not appear to square with the legal responsibilities of the state public service commissions; they have, to my knowledge, no required priority to keep a nuclear plant in operation if it is uneconomic, unsafe, or unwise to do so.

15. First among the proposed solutions (B.1.) should be "Reduce generation of additional spent fuel." Some would say, "Halt it, now."

16. At B.3., strike "DOE" ownership and control.

17. At "subsidiary outcomes" delete "Payment from the nuclear waste trust fund for interim storage." Utilities should not be rewarded for having imprudently continued to produce additional quantities of spent fuel when they knew that there was neither DOE interim storage or disposal available.

18. The thinking behind "Time is on the side of technology" is unfortunate and fosters continuing reliance on the naive assumption that there are achievable technical solutions for all problems created by technologies that have not been thought through to their conclusions. A Congressman's response in the late 1960's to Admiral Rickover's caution about continuing to generate radioactive wastes absent a solution to disposal is cautionary: he relied to Rickover, "That's our grandchildren's problem; let them worry about it." I believe that the single most important message that could be transmitted from NARUC to DOE would be that we give up our religious belief that technology can solve all the problems it creates. We need to learn that time won't resolve these risks, that the physico-biological hazard of the adverse impacts of ionizing radiation on biological organisms won't go away. Each recycle of nuclear waste materials from a waste facility to a utilization facility allows a 4- to 20-fold increase in permissible exposure.

As for DOE's spending money to establish an international center for waste management and disposal (C.2.), the supercollider lesson should stay with us. At a recent nuclear futures conference, an OMB representative put it to the reactor designers thus: "The US is broke; we can't afford you fellows anymore."

19. In the "favorable options" section (C.1.), the possibility of on-site storage, or off-site for that matter, should be defined in terms of maximizing safety, not in expedient terms of politics and risk assessment.

20. To urge creation of two or more federally-owned off-site storage facilities seems unrealistic, when DOE cannot get even one MRS. The reference to "geographically suitable" siting for a voluntary MRS (C.3.) should remind us that the spent fuel MRS centroid concept took DOE to the State of Tennessee, and that resulted in the 1987 Amendments linking MRS and Yucca Mountain progress, and the seven years of MRS wandering in the wilderness looking for a home where a community would accept it. Although the industry might now want to delink MRS from Yucca Mountain to force the removal of spent fuel from utility reactor sites, the political climate for acceptance has markedly changed. I wouldn't advise it.

Page eight (Supplemental Comments on NARUC Spent Fuel Dialogue)

Comment on Jim Davenport's memo:

1. To Mr. Davenport's "well-tailored proposal for interim storage" one might add (a) agreement of generators not to relax safety-related (i.e., any) regulated practices, even if NRC allows it; (b) restoration of full public participation with funding in all NRC licensing proceedings, including license amendments; (c) agreement by a storing utility not to seek license renewal or construct new reactors; (d) tie fully internalized nuclear costs to comparative costs for adoption of rigorous DSM and CEA (that's conservation, efficiency and alternative sources); (e) support utility commission approvals for transition from nuclear spent fuel-related costs to non-nuclear generating sources; (f) assurance that state utility regulators will require utilities to make prudent decisions based on safest management of highly irradiated spent fuel.

Comment on Compensation Alternatives:

1. Most of the points here have been cited above. The major point: the NWF should not be used to compensate utilities for storage of spent fuel that they have imprudently continued to produce in the absence of proven and available means of long-term storage and disposal. Those are costs of doing business and should be required by public utility commissions to be internalized, and should be charged to stockholders of the investor-owned utilities. DOE is going to need every penny it can get to clean up its contaminated facilities, not to mention increased effort to manage utility-generated high-level radioactive wastes. The industry should not hope for reliance on plutonium or uranium recycle or mixed oxide fuels to solve their spent fuel problems.

Comment on Andrew Kadak's Proposed "Consensus Items": According to my notes, Mr. Kadak offered the following for consideration:

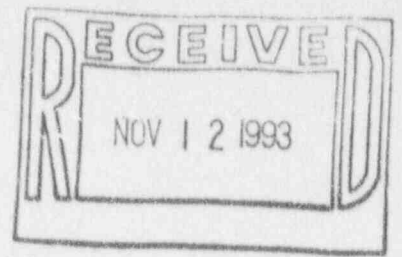
1. Move spent fuel off-site by 1998 according to contracts with DOE;
2. Voluntary siting is functionally dead and irrelevant to 1998, so it should be dropped for political reasons;
3. Look at existing federal facilities;
4. Other issues to be considered include
  - a. Equity
  - b. Progress at Yucca
  - c. Interim sites
  - d. Demonstrable and safe storage methods (using what utilities use now)
  - e. Time limit for interim storage (20-25 years) but no pressure on Yucca
  - f. Keep the process a-political, preferably using a military base closings commission technique to select a small group of interim MRS sites
  - g. Keep MRS simple, with no fuel handling or other activities to arouse public opposition

For the numerous reasons detailed above and more, I cannot join in any consensus on this set of proposals and would want to submit a separate report.

Sincerely,

*Judith H. Johnson*  
Judith H. Johnson





9 November 1993  
3476 Washington Way  
Atlanta, GA 30340

Cas Robinson, Director  
Nuclear Waste Program  
NARUC  
1071 National Press Building  
529 14th St., NW  
Washington, DC 20045

Dear Mr. Robinson,

I am Carol Cain, and I spoke briefly at the NARUC meeting held in Atlanta, Georgia, on 3 November 1993. In my remarks I made three points. 1) The need to stop creating more spent fuel. 2) Interim storage should be kept on site for now. 3) A national panel needs to be created to study the problem of nuclear waste.

My first point is the most critical. All generation of nuclear waste needs to be stopped, NOW. I do not feel the authorities understand the gravity of situation we are in concerning nuclear waste. Termination of nuclear waste production could show citizens that you are sincere in wanting to do something about the waste. I am a member of the Interim Working Group for the SRS Dose Reconstruction Project. I understand SRS is defense, but what I want to point out is that all nuclear waste sooner or later will probably work its way into the natural environment. Studies have shown that radiation does cause birth defects, disease, and death. Why are we still creating more?

My second point is made simply to show the people creating the waste, how much waste they are creating. It will also show them that it can't simply be thrown away and disappear. It will be in the environment for years. Why are we still creating more?

My third point is made because if enough minds are put together, maybe they'll realize they've painted themselves in a corner and start to ask "Why are we creating still more waste?"

Thank you for your time,

*Carol Cain*  
Carol Cain

REMARKS ADDRESSED TO NARUC CONCERNING  
MANAGEMENT OF SPENT NUCLEAR FUEL  
PRIOR TO THE AVAILABILITY OF THE  
LONG TERM REPOSITORY

Jesse L. Riley  
Nuclear Subcommittee  
Sierra Club National Energy Committee

There are some facts and judgments which I believe are essential if spent reactor fuel, absent a federal MRS or long term repository, is to be managed with a minimum level of adverse consequences both contemporaneously and in the future.

1. The performance to date of the DOE regarding the development of a long term federal repository gives no assurance that it will be ready when needed.
2. Central facilities will be preferable to on-site.

For states or regions there will be a minimization of mismanagement as well as economy of scale.

It will be more cost effective to have a single, highly qualified staff rather than a number of dispersed facilities with equally qualified or less qualified staffs.

It will be more cost effective to have a central facility embodying best available technology than a number of facilities representing a range of technologies which were developed with less resources.

Because geological requirements for safe storage are stringent there is a greater probability of finding one in a state or a region than of finding one at or near each nuclear generating station.

3. Storage at reactor sites is flawed for geological reasons.

Reactors, because there are cooling requirements, are located on bodies of water, usually rivers.

It is not known how long it will be before a given on-site cache of spent fuel will be moved to the federal long term repository. Flooding during this interval could generate substantial hazards.



Some rivers course over seismic faults, the Mississippi being a familiar example. There is uncertainty in the time of terminating on-site storage, it may stretch out indefinitely; there are uncertainties in seismic event forecasting; there is a relatively high frequency of seismic events in some regions; it will be appropriately responsible to avoid locales with a history of prior seismic activity.

4. In the interest of economy as well safety it would be best to seek a uniform waste package and facility design, making such adaptations as would be required for specific sites. It may be argued that the best design for dry climates would be different than the best design for wet ones. Given the length of time some high level wastes will remain hazardous, and the fact of historical climate changes, it would be best to have a design capable for a range of climates.

To insure the maximum of competent input, a design competition could be held with NARUC, appropriately advised in geological, climatic, and engineering matters, to make the choice.

5. A given for spent fuel rods is the production of substantial heat. The rate of heat production decays over time. Depending on degree of burnup, surface to fuel-weight ratio, etc., significant heat evolution should cease after about 600-800 years.
6. It is the writer's opinion that the best present package practice is the placing at the point of generation of multiple spent fuel assemblies, say 24, in a thick cast iron cask and welding it shut. This cask would serve for transport, for interim storage, and for repository containment. VEPCO has experience with such casks. The relatively short life of reinforced concrete makes it unsuitable for structures which must meet critical performance requirements over an indefinite period of time.
7. A 1992 series of meetings by EPA committees resulted in proposed standards for a long term repository. The premise was that the greatest hazard would be the release of carbon-14 dioxide which would enter the food cycle world wide. Over 10,000 years the expected consequence was of the order of 10,000 deaths. The committee recommended the enhancement of engineered barriers. The projected releases were premised on metal canisters of a specified thickness. It is obvious that increasing the thickness of the canisters would extend the time to penetration and

that protective barriers would further extend the period of containment.

It was assumed in the considerations that no transport by water of other toxic and radiotoxic materials would take place. The appropriateness of this assumption is related to both site and technology choice.

The final report of the EPA's High-Level Waste/Carbon-14 Subcommittee of the Radiation Advisory Committee, REVIEW OF GASEOUS RELEASE OF CARBON-14, was issued April 29, 1993. It may be of use to NARUC. It should be obtainable from the Office of the Administrator of the EPA Science Advisory Board.

Q.L.R. 11-5-93

REMARKS ADDRESSED TO NARUC CONCERNING  
MANAGEMENT OF SPENT NUCLEAR FUEL  
PRIOR TO THE AVAILABILITY OF THE  
LONG TERM REPOSITORY

Jesse L. Riley  
Nuclear Subcommittee  
Sierra Club National Energy Committee

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It is not known how long it will be before a given on-site cache of spent fuel will be moved to the federal long term repository. Flooding during this interval could generate substantial hazards.

Some rivers course over seismic faults, the Mississippi being a familiar example. There is uncertainty in the time of terminating on-site storage, it may stretch out indefinitely; there are uncertainties in seismic event forecasting; there is a relatively high frequency of seismic events in some regions; it will be appropriately responsible to avoid locales with a history of prior seismic activity.

4. In the interest of economy as well safety it would be best to seek a uniform waste package and facility design, making such adaptations as would be required for specific sites. It may be argued that the best design for dry climates would be different than the best design for wet ones. Given the length of time some high level wastes will remain hazardous, and the fact of historical climate changes, it would be best to have a design capable for a range of climates.

To insure the maximum of competent input, a design competition could be held with NARUC, appropriately advised in geological, climatic, and engineering matters, to make the choice.

5. A given for spent fuel rods is the production of substantial heat. The rate of heat production decays over time. Depending on degree of burnup, surface to fuel-weight ratio, etc., significant heat evolution should cease after about 600-800 years.
6. It is the writer's opinion that the best present package practice is the placing at the point of generation of multiple spent fuel assemblies, say 24, in a thick cast iron cask and welding it shut. This cask would serve for transport, for interim storage, and for repository containment. VEPCO has experience with such casks. The relatively short life of reinforced concrete makes it unsuitable for structures which must meet critical performance requirements over an indefinite period of time.
7. A 1992 series of meetings by EPA committees resulted in proposed standards for a long term repository. The premise was that the greatest hazard would be the release of carbon-14 dioxide which would enter the food cycle world wide. Over 10,000 years the expected consequence was of the order of 10,000 deaths. The committee recommended the enhancement of engineered barriers. The projected releases were premised on metal canisters of a specified thickness. It is obvious that increasing the thickness of the canisters would extend the time to penetration and

that protective barriers would further extend the period of containment.

It was assumed in the considerations that no transport by water of other toxic and radiotoxic materials would take place. The appropriateness of this assumption is related to both site and technology choice.

The final report of the EPA's High-Level Waste/Carbon-14 Subcommittee of the Radiation Advisory Committee, REVIEW OF GASEOUS RELEASE OF CARBON-14, was issued April 29, 1993. It may be of use to NARUC. It should be obtainable from the Office of the Administrator of the EPA Science Advisory Board.

SLR 11-5-95



2282 Wendover Dr  
Tucker, GA 30084  
11/4/93

Cas Robinson, Director  
Nuclear Waste Program  
NARUC  
1071 National Press Bldg  
529 14th St, N.W.  
Washington, D.C. 20045

Dear Cas: Re 11/3/93 Waverly/Atlanta meeting

Limited Fossil Fuel reserves together with the "Greenhouse effect" environmental hazard demands prompt resolution of spent fuel interim and permanent storage to clear the way for future nuclear power development. The undue dragging out of this process equates to squandering of resources. As a nation, we can't afford this.

I favor on-site storage where possible. It doesn't matter who pays as the cost will eventually come out of the pockets of ratepayers/taxpayers anyway, and appropriate storage arrangements will benefit all citizens.

The weak link in this whole process has been absence of strong leadership. DOE should assume this role by communicating over public TV and other mass media what DOE concludes to be the best storage solution, and effectively solicit citizen support to make it happen. An informed citizenry will support a sound solution.

With the planned mass dismantling of nuclear weapons, has the time come to consider consolidating both commercial and military waste? There may be both a site and cost advantage.

Also, is it possible that the U.S.A. might recoup some world leadership role which we surrendered some decade and a half ago? This is a continuing national embarrassment.

Was good to see you again

Sincerely,  
Finis Shealy  
(FINIS SHEALY)

# James H. Davenport

ATTORNEY AT LAW

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WASHINGTON STATE BAR #7879  
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OLYMPIA, WASHINGTON 98501

January 12, 1994

Mr. Charles J. Haughney  
Branch Chief  
Nuclear Regulatory Commission  
OWFN  
11555 Rockville Pike  
Rockville, Maryland 20852

Re: Ad Hoc NARUC Dialogue Group Regarding Interim  
Storage of Spent Nuclear Fuel

Dear Charley:

Since the October 1993 meeting of the ad hoc group of NARUC commissioners, nuclear utility executives and some others, convened by the NARUC's Nuclear Waste Program Office, I have had the opportunity to review the various materials distributed by the NARUC Program Office and to discuss the various matters under discussion with my client, Nevada's Nuclear Waste Project Office. Also, since the last meeting a number of serious revelations have occurred regarding the federal government's conduct in matters nuclear over the last forty years. All of this puts my continued participation on behalf of the State of Nevada in a somewhat different light. In the interest of frankness with the ad hoc group, which has most courteously listened to, if not heeded, my point of view in the last several meetings, this letter is intended to apprise the group of Nevada's current posture. It is offered in a continued attitude of contribution to the dialogue, although perhaps under somewhat different terms.

There is one major aspect of the dialogue group's tentative recommendations which Nevada cannot abide. The concept of using federal sites for off-site storage presumes a federal ability to mandate sites within states and does not acknowledge the right of state governments, as expressed through their legislatures or governors, to permit or regulate nuclear facilities, notwithstanding their location on federal property. This is a right which Nevada continues to assert with regard to the high level nuclear waste repository being investigated by the Department of Energy at Yucca Mountain, Nevada. It would be totally without principle for Nevada to advocate that other states be compelled to accept interim storage facilities when Nevada asserts the right not to be so compelled. Unless this state right is acknowledged and

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included within the proposed recommendations, Nevada cannot concur. We would expect that many NARUC commissioners, who are state officers, would share Nevada's concern.

Nevada's position is essentially that Nevada's citizens are entitled to informed consent to the potential exposures to them and their environment which might occur because of the location of a high level nuclear waste repository or interim storage facility. The recent revelations of the Department of Energy illustrate repeated breaches of individual rights to informed consent prior to intended irradiation. The right of a political community (state or local government) to consent on behalf of its citizens is just as vital to American democracy as is the right of individuals to consent to their potential harm.

Nevada's citizens have recently expressed their continued adamant opposition to the placement of a high level nuclear waste repository or interim storage facility in the state. In a recent (December 1993) statewide poll, 69.4 % of respondents stated they would vote "no" if they were permitted to vote for or against a repository. 88.3 % believe that Nevada residents should have the final say on whether or not a repository is built within the state. The opinion of Nevada residents was affected by the American Nuclear Energy Council's advertising campaign about the nuclear waste program. Of the 62.2 % of the respondents who had heard or seen any advertisements, 29.3 % of them claimed actually to have become less supportive of the repository program. 66.6 % of the respondents do not believe that the Yucca Mountain selection process has been basically fair.

At both of the meetings of the ad-hoc group, individuals have expressed the need for public acceptance of any group recommendation or any ultimate nuclear waste system. This understanding is essential and the group should be commended for acknowledging it.

The Defense Base Closure and Realignment Commission model which the ad hoc group discussed at the October meeting does have aspects which would improve the fairness of facility site selection, for either interim or more permanent facilities. In particular, the comparative consideration of prospective sites on their merits in a process immune from political favoritism is essential to garner public confidence in facility siting. (This was the concept that Nevada thought it had agreed to in the 1982 Nuclear Waste Policy Act.) Unfortunately, that model does not recognize the rights of states to withhold consent but permits them to be commandeered into the federal government's program to assist nuclear utilities by assumption of their waste liability.

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In light of the recent revelations of government-condoned experimental irradiation of humans, it seems that any recommendation of the use of existing federal sites for interim storage which the ad hoc group might make would, for some time, be received belligerently by citizens living anywhere near existing federal sites. The ad hoc group may want to reevaluate this concept in this light, at least with respect to timing.

So far, the object and process of the ad hoc dialogue group has been dynamic, defining itself as the process moves forward. At this time, my client has asked me to continue to participate in the group, but I feel it only responsible to do so if the group understands the limits of my participation and the inability of Nevada to concur in the group's recommendations. If the ultimate recommendation of the dialogue group will propose actions which do not adequately recognize state rights, Nevada will be compelled to dissent. This issue is obviously central to the approach being discussed at this time and the breadth of Nevada's dissent can only be defined when a final recommendation is made. Nevada's original decision to participate was based in part on the understanding that Nevada could file dissenting or minority recommendations to NARUC if Nevada could not ultimately concur in the group's recommendation.

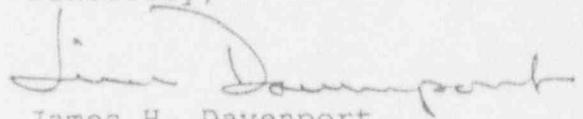
Based on my short thirteen years of involvement with the nuclear waste issue (I know many of you have more), and its political repercussions, my advice to the group would be:

1. Slow down, at least until the Clinton Administration's policy and strategy regarding past nuclear practices are defined.
2. Recognize that no strategy will put the Department of Energy in the position of actually removing spent fuel from reactor sites by February 1998.
3. Commit resources to on-site storage of spent fuel, develop management capability to conduct long term spent fuel custodianship, and explore compensation scenarios with the Department of Energy.
4. Explore individual corporate or intercorporate agreements with individual interim storage recipients based on consensual terms (i.e., the tailoring option previously briefed).
5. Reexamine and reissue underlying issues of the Nuclear Waste Policy Act so as to implement the following:
  - a. Discard the concept of "permanent disposal" of spent nuclear fuel or other nuclear materials.
  - b. Create flexible mechanisms for long-term, continuous, vigilant management of materials in isolation.

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I have prepared comments regarding the materials distributed in December. They are enclosed. Thank you for your courtesy at the two previous meetings. Please feel free to contact me if I can be of greater assistance in explaining Nevada's position.

Sincerely,

A handwritten signature in cursive script that reads "Jim Davenport". The signature is written in dark ink and is positioned above the typed name.

James H. Davenport  
Special Deputy Attorney General  
State of Nevada

JHD/wp



Comments Regarding Work Papers for the Third Dialogue Session  
(Distributed December 27, 1993)

I. Comparison of Advantages and Disadvantages Associated with the Five Interim Storage Options Presently Being Discussed (contributor unidentified)

The tailoring option is not mentioned or evaluated as an option. Tailoring solutions to individual utilities would permit each utility to enjoy some advantages and avoid some disadvantages. A single approach creates some inequities for everyone.

Opt. 1, adv. 1: The "current efforts to establish a revolving fund or other more accessible funding mechanism" are not likely to produce any change in federal budgeting law. The Administration needs the money in the Nuclear Waste Fund to make the deficit look smaller.

Opt. 1, disadv. 1: The appearance of lack of progress with the waste program is really more an issue for nuclear utility personnel than it is for the public. It is really relevant only to a decision to site a new nuclear power plant. Would anyone in the ad hoc group be prepared to make a risk investment of that nature in any event?

Opt. 1, disadv. 2, 3: These are addressed by compensation (Option 2).

Opt. 1, disadv. 4: This is a likely statement of fact notwithstanding the option chosen.

Opt. 1, disadv. 6: Is this really correct? Do the existing management structures and the scale of operation permitted by continued on-site storage permit greater efficiency than centralized sites? Who possesses the requisite management capability to operate centralized sites? Please don't respond "DOE".

Opt. 2, adv. 1-5: Agree

Opt. 2, disadv. 1: See comment re: Opt. 1, disadv. 1

Opt. 2, disadv. 2: "System-wide costs" resulting from inability to complete "decommissioning on an optimum schedule" is a concept that need clarification and quantification. Decommissioning schedules are uncertain at present in any event because of NRC's ongoing decommissioning rule development. Until NRC defines what decommissioning standards will be, and the concepts of unlimited and limited future use are more completely developed, decommissioning schedules and costs probably cannot be accurately estimated.

Opt. 2, disadv. 4: These "equity issues" can be addressed by utilizing a tailoring option. Uniformity of treatment of every utility is only the result of adopting a single, centralized approach to the problem.

Opt. 2, disadv. 5: True

Opt. 3, adv. 5: This advantage is one of perspective from the nuclear industry and is balanced by disadvantage 2.

Opt. 3, adv. 6: "Impact" is not a verb; "impactive" is neither an adjective nor a word.

Opt. 3, adv. 7: See comment re: Opt. 1, disadv. 6.

Opt. 3, disadv. 1: I question this proposition. Opposition is often based on a sense of unfair or singular treatment. Centralized site communities may take much greater umbrage than multiple sites. Also, people tend to be more accepting of that with which they have some experience, rather than that which is new or unknown.

Opt. 3, disadv. 2-6: Agree

Opt. 4, adv. 1-7, disadv. 1-4: Agree. Additional comment: this alternative is currently not working, perhaps because of monolithic (single site) approach.

Opt. 5, disadv. 1: This is an understatement. In a recent (December 1993) statewide poll, 69.4 % of respondents stated they would vote "no" if they were permitted to vote for or against a repository. 88.8 % believe that Nevada residents should have the final say on whether or not a repository is built within the state. The opinion of Nevada residents was affected by the American Nuclear Energy Council's advertising campaign about the nuclear waste program. Of the 62.2 % of the respondents who had heard or seen any advertisements, 29.3 % of them claimed actually to have become less supportive of the repository program. 66.6 % of the respondents do not believe that the Yucca Mountain selection process has been basically fair.

Opt. 5, disadv. 4: Assumption of "recent progress in Nevada on acceptability of the repository facility" may be incorrect. See preceding comment.

Opt. 5, additional disadv.: Rail transportation infrastructure for delivery to Yucca Mountain does not exist. NRC licensing standards (seismicity) for above-ground nuclear facilities may preclude siting.

II. Statement of Agreed Principles for Interim Storage of Spent Nuclear Fuel (contributor unidentified)

3.D. A "mandated federal site" is inconsistent with Nevada's asserted right to consent.

4. This statement is negative. Methods of compensation should be viewed as opportunities out of the conundrum, not as additional impediments to the way out of it.

III. NARUC Dialogue Consensus on Compensation (contributor unidentified)

The phrase "acceptable satisfaction of DOE's obligation to accept spent fuel by 1998" sounds like contract expectation and contract damages logic. Is this the intention? Of the compensation alternatives listed, 3 and 4 are the types of damages one might expect in a contract enforcement action. Contract damage claimants must, of course, attempt to cover (minimize) their losses and damages are ordinarily reduced by the amount that claimants fail to cover. Although the other alternatives look better because they actually try to do something with the problem, solutions which favor individual response to individual storage problems are better. Alternative 1 is defective for being too universal.

The proposal that DOE and rate commissioners evaluate the costs of these options is an excellent proposal, as it would make the alternatives comparative in real, rather than theoretical terms.

IV. NARUC Dialogue (Andrew Kadak)

Objective 1: Whether spent fuel should be stored off-site rather than on existing nuclear plant sites should be a case by case determination, rather than a universal one. Individual nuclear plant sites may indeed be better than any off-site location.

Objective 3: Agree

Implementation 7: Agree, except that the Defense Base Closure and Realignment Commission model does not recognize the rights of states to withhold consent but permits them to be commandeered into the federal government's program to assist nuclear utilities by assumption of their waste liability.

Implementation 8: Agree.

Implementation 10: Agree.

V. Letter from CACE (Marguerite Daniel)

No comments.

VI. Letter from Judith Johnsrud (11/16/93)

General observation 1: Disagree, amalgamating the various nuclear waste problems only makes them more difficult to solve. The one area which would be beneficial would be a total national radioactive material accounting system by which any one political constituency could demonstrate (or satisfy itself) that its radioactive materials burden was essentially equivalent (in total radioactivity) with all others.

General observation 2, 3: Yes, predicting the outcome of litigation over DOE's failure to accept spent fuel in 1998 is very uncertain.

General observation 4: Agree, a moratorium on future production of spent fuel would be a significant good faith contribution by the nuclear utility industry which could break some political log jams.

General observation 5: Disagree, the cash pool existing in the Nuclear Waste Fund is the one significant, existing positive asset available for contribution to solution of the problem. Not all nuclear utilities are investor-owned. Use of the currently-funded cash pool, rather than new rate revenues, has a much more benign effect on inflation economics.

General observation 6: Agree, an advantage to a utility may not be an advantage to its regulator, nor to the nearby resident of a reactor, nor to an affected population in the vicinity of an alternative location or on its transportation routes. One man's garbage is another man's gold (except, of course, for nuclear garbage). This is why a more evenly representative ad hoc group would have been advisable.

General observation 7: Agree.

VII. Letter from Judith Johnsrud (11/17/93)

Paragraph 2: Agree that NARUC commissioners should base their recommendations on affects on the public, rather than the financial interests of utility managers and stockholders, except that the central NARUC issue is how to reduce the fiscal affect on the public from adverse financial events within the rate-regulated industry.

General Advantages of Off-Site Storage Over On-Site Storage Options, 6: Agree

Generally Advantages of On-Site Storage Over Off-Site Storage Options, 1, 2: Generally agree that costs of waste management and disposal, whether interim or permanent, are merely deferred costs. Whether deferral of those costs has increased them is uncertain. They are not, in any event, avoidable costs.

General Advantages of On-Site Storage Over Off-Site Storage Options, 4: Agree, but not every site has all, if any, of these problems. This is why a tailoring option should be considered.

VIII. Letter from Carol Cain (11/9/93)

No comments.

IX. Remarks from Jesse L. Riley, Sierra Club National Energy Committee.

2. Central facilities will be preferable to on-site: Again, this is a theoretical presumption, untested by actual comparison of actual sites or circumstances. This is precisely the position taken by the environmental community in 1980 promoting enactment of deep geologic repository aspects of the NWPA. It is more likely, and good common sense, that the problem of waste disposal must be broken into manageable parts, rather than centralized.

3. Storage at reactor sites is flawed for geological reasons: Again, a theoretical presumption without any actual reference to particular sites.

X. Letter from Finis Shealy (11/4/93)

No comment and fini.