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**AGENCY FOR NUCLEAR PROJECTS  
NUCLEAR WASTE PROJECT OFFICE**

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February 24, 1993

Honorable Ivan Selin  
Chairman  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555

Re: Nevada Comments Regarding ACNW Recommendations

Dear Chairman Selin:

On December 1, 1992, Dade W. Moeller, Chairman of the Nuclear Regulatory Commission Advisory Committee on Nuclear Waste wrote to you regarding issues which the ACNW sees as significant issues pending in the HLW Repository Program. This was in response to your request that the ACNW identify "issues that have the potential for delaying or otherwise interfering with the timely development of a repository for high-level nuclear waste." This letter is written to provide you with Nevada's perspective on some of the issues identified in Dr. Moeller's December 1, letter.

Interaction with National Academy of Sciences Regarding EPA Standards:

The ACNW proposes that the NRC staff develop recommendations to the National Academy of Sciences about the Academy's role under Section 801 of the Energy Policy Act. Presumably, such recommendations might address the relationship between the NAS and the Environmental Protection Agency, or go further to address the substantive outcome of the NAS study, i.e. the adequacy of individually-based standards for the protection of the health and safety from radiological risks.

Section 801 of the Energy Policy Act does not create any advisory role for the Nuclear Regulatory Commission in the EPA's rulemaking activity nor NAS' advisory study. Indeed, Section 801(b) requires the NRC to re-promulgate its "technical requirements and criteria under Section 121(b) of the Nuclear Waste Policy Act of 1982 (42 U.S.C. 10141(b))", i.e. 10 CFR 60,

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2/25...To EDO for Appropriate Action...Cpy to: Chairman, Comrs, OGC, RF, ACNW  
Hoyle...93-0167 (SP to Ack)

within one year after EPA promulgates its new standards in order that 10 CFR 60 "be consistent with the Administrator's standards promulgated under Section (a)." While NRC staff might anticipate the outcome of the EPA's new standard in order to meet its own statutory time frame, it would be inappropriate for NRC staff to attempt to affect the outcome of EPA's rulemaking activity. The role of the NRC will be to act as adjudicator of the competence of DOE's case that it can construct and operate a repository while meeting EPA's performance standard. EPA's role is to objectively establish the level of performance acceptable to the environment and public health. Dr. Moeller's recommendation combines the functions of the two agencies and compromises the adjudicative role of the Nuclear Regulatory Commission.

NRC's "Consistency" Regulations:

ACNW also proposes that some definition of consistency or compatibility be established, perhaps by rulemaking, in advance of EPA's promulgation of new standards. 42 U.S.C. 10141(b) requires the NRC to issue technical requirements and criteria that will apply in licensing nuclear waste repositories. NRC has, of course, already published these as 10 CFR 60. Section 801(b)(1) of the Energy Policy Act requires that those technical requirements be made consistent with EPA's new standards required by 801(a). Although it is appropriate that NRC staff be prepared to respond to EPA's new standards by preparing its own understanding of "consistency", rulemaking on this subject is inadvisable. "Consistency" is a common english word. Everyone already knows what it means. Rulemaking would only limit the NRC's flexibility when it gets to the ultimate task of its consistency regulations.

Expert Judgment in Licensing Proceedings:

ACNW suggests that the NRC staff "proceed to rulemaking to delineate the processes and standards for application of expert judgment to ensure that this technique can make a useful contribution to the licensing process and that its application will be accepted in an adversarial setting." Although we are not absolutely clear what ACNW intends by this recommendation, Nevada is very cautious about the implications of such a recommendation.

First, Nevada would oppose the use in an NRC licensing proceeding of any opinion testimony that is presented to fill gaps in objective evidence. For example, if during site characterization DOE had developed information about the physical characteristics of the Yucca Mountain tuffs at a certain location within the mountain, evidence should not be permitted that, in the opinion of an expert, the same physical characteristics exist at a different location within the mountain. Such an opinion defies physical reality. The physical conditions of Yucca

Mountains are not homogenous and isotropic. They are heterogenous and anisotropic. Nevada will oppose any device, including expert opinion testimony, used to cast a scientifically inaccurate description of Yucca Mountain. Nevada will also oppose development within Yucca Mountain in any area which has not been independently examined.

Second, Nevada would oppose any definition in advance of the actual licensing proceeding of who may be qualified as an expert in such a licensing proceeding. Under standard rules of evidence, experts who qualify as such may give opinion testimony where other witnesses may not. Long-standing methods of establishing expertise exist and should be used in the licensing proceeding. DOE should be expected to establish that the persons upon whom it relies for opinion evidence are in fact worthy of the recognition. Nevada and other intervenors should bear the same burden. An advanced definition could also severely limit the ability of Nevada or other intervenors to prepare and present a case in licensing, as DOE's significantly greater resources could be used to purchase and tie down all of the professional "experts" who fit the definition.

#### Engineered Barriers:

ACNW raises again an issue which has been with us since 1984, i.e. whether performance enhancement of the engineered barrier system can be used to offset potential deficiencies in the geologic media. ACNW feels that the engineered barrier system should be taken into account.

Nevada has continuously taken the position, and announced it to NRC on repeated previous occasions, that engineered barriers should not be taken into account when DOE is determining whether a site is "suitable" under 112(a) Guidelines, but that engineered barriers may be taken into account when NRC does its performance assessment and considers whether to license a site. This is one of the distinctions between "suitable" and "licensable". This distinction guarantees that only sites which have their own integrity would be brought into licensing, but further insures that the best engineering capability will be added to sites with natural integrity.

ACNW recommends that NRC staff should "devise a means to ensure that major improvements in the EBS can and should be used to offset inadequate retention/confinement properties of the geologic environment of the waste". Although this is not a bad idea from the perspective of preparing NRC staff to evaluate whether the engineering DOE proposes in its licensing application is adequate to the task, implementation of the recommendation merely lets DOE place greater reliance on the capability of engineered barriers to cure deficiencies in the site's natural

integrity. The ACNW recommendation aggravates the possibility that a bad site could be licensed relying too heavily on engineering and not enough on natural site integrity.

Nevada currently has no assurance that DOE is willing to determine site suitability without reliance on engineered barriers, as required by the Section 112 of the Nuclear Waste Policy Act. Until such an assurance is provided by DOE, Nevada must oppose any ACNW or NRC consideration of engineered barriers before a site suitability determination is made.

#### Long-Stored Spent Fuel:

ACNW recommends that NRC staff "identify those properties of stored spent fuel that are of "importance" to the repository and those tests that are considered necessary for qualification of this waste as interim storage time lengthens". This is a good recommendation. Definition of those properties not only will assist NRC staff in evaluating a repository proposal, but will enhance the technology, management and length of on-site storage capabilities.

#### Performance Models:

ACNW recommends that NRC staff "define a methodology for obtaining agreement" "that a specific model adequately describes the future state of a system". ACNW recommends that this be done by rulemaking in advance of licensing. Nevada has consistently opposed this proposal and continues to do so now.

Nevada has taken the position for several years 1) that any model used should define a physical system as protective as a totally engineered and managed system (a "perfect model") and describe the shortcomings of the actual physical system under consideration by comparison to that "perfect model"; 2) that conservative analysis dictates that reliance should only be placed on a model which utilizes the most physical information about the site to be modeled, i.e. site characterization should be complete before performance models are selected, 3) validation of a model describing a system or process as large as a mountain should be of sufficiently long duration and scale to be meaningful, and 4) issues of validation and reliability should go to the weight of the evidence presented by the model, not the admissibility of the evidence, i.e. that models should be fully litigable in a licensing proceeding. Consequently, Nevada's position is also that rulemaking on models in advance of the licensing proceeding should not occur.

The recent fast growth in computer technology and methodology, including quickly developing GIS systems, suggests that static and flow modeling capability will be much improved in

the future. The longer we wait to ascertain the models upon which to rely in licensing, the better technology and method will be available. Given the pace with which the repository program has proceeded, it is likely that we could be enjoying entirely new generations of modeling by the time a license application is filed. Again, it seems more advisable to leave the issue of models open until licensing actually occurs.

Guidance to DOE in Absence of EPA Standards:

ACNW recommends that NRC staff give "guidance to DOE on its requirements for the confinement of radioactive material" in the absence of EPA environmental release standards being re-promulgated. Although the recommendation anticipates that EPA standards may be in place in time to "influence the details of such guidance", Nevada recommends that NRC refrain from such "guidance" and await EPA's action. It is inappropriate for NRC staff to telegraph to DOE the Commission's willingness to approve DOE's license application, even before EPA standards are adopted or a license application is filed and docketed. The role of the NRC will be to judge DOE's case that it can construct and operate a repository while meeting EPA's performance standard. Dr. Moeller's recommendation would compromise the adjudicative role of the Nuclear Regulatory Commission.

Testing of Engineered Barrier Systems:

ACNW recommends that Commission staff develop staff technical positions to guide when test conditions on engineered barrier systems are "repository-relevant". Presumably, this means Yucca Mountain-relevant. Nevada's position is that the adequacy of engineered barrier systems at Yucca Mountain cannot be ascertained or evaluated until the most is known about the physical characteristics of the mountain, i.e. when site characterization is complete and the site has been otherwise determined to be suitable for development.

Waste Form:

ACNW suggests that the NRC should "adjudicate" whether the waste form (spent fuel, glass) should be incorporated into the overall repository performance assessment. Although it is not clear what ACNW means by "adjudication", we presume that it means adjudication of the disparate views held by NRC staff and DOE staff. Adjudication on issues which are relevant to licensing approval should not occur until a formal proceeding is docketed. All parties and intervenors should be involved in the adjudication. The concept that adjudications could occur in advance of licensing, presumably without any procedural amenities, is even more troublesome than using rulemaking to preempt certain licensing issues.

Site Monitoring After Emplacement of Waste:

ACNW recommends that NRC staff develop criteria for thermal and other measurements after waste is emplaced in a repository and standards and criteria governing potential retrieval of waste from a repository. Although these might be perceived as within the realm of EPA's environmental standards, ACNW is correct that these are subjects which no-one has yet considered. They should be considered, and NRC is probably better qualified to do so than EPA.

Closure of Issues Through Rulemaking:

One of the major concerns that we have had with the NRC staff's interaction with the Department of Energy is the continued proposal to close issues prior to licensing. DOE's approach seems to be to set the crows on the fence and knock them off one at a time. NRC staff, perhaps because of a desire to become actively involved when DOE's own program has languished, has played into DOE's approach by suggesting that various issues be closed through rulemaking, technical position papers or other devices. Nevada has continually opposed this.

I wrote to Chairman Zech about this very problem on January 18, 1989, reacting to SECY--88--285.

For several years, we and your staff have been discussing theoretically the "early resolution of licensing issues". In the context of the abstract question of resolving issues early, Nevada has always taken the position that, aside from obvious disqualifiers, no issue involving the ultimate demonstration of a repository's capability to isolate high-level nuclear waste should be resolved prior to the actual licensing proceeding in which all parties are able to fully "litigate" that issue.

Chairman Zech did not respond. However, in Mr. Robert Bernero's March 14, 1989, letter attempting to dismiss my concerns, Mr. Bernero stated:

The NRC staff emphasized, in SECY-88-285, that resolution of potential licensing issues will be achieved through rulemaking for certain regulatory uncertainties where the meaning of a regulatory requirement is subject to different interpretations. These rulemakings are not designed to address site-specific uncertainties involving the ultimate demonstration of the repository's capability to isolate high-level nuclear waste.

Mr. Bernero's essential message was that NRC staff would go ahead as it pleased notwithstanding Nevada's concerns.

On February 6, 1992, at a meeting in Rockville, Maryland, Mr. John Linehan of the NRC Division of High-Level Waste Management and representatives of the Department of Energy agreed with members of my staff that the term "closure of issues" which both NRC and DOE use in the context of discussing the continuing controversy over technical issues, is an administrative term of art which means that there are no more questions or comments for the present as to a particular issue. The term "closure" does not mean "approval" as "approval" comes from the Commission itself, or its designated hearing panel. The term "closure" does not mean that NRC staff may not raise questions regarding the same issue later in the pre-licensing period. It was further agreed that the term "closure" does not mean that any party to an eventual proceeding to consider a construction authorization, including NRC staff, is foreclosed from raising questions about the issue, submitting evidence relevant to the issue, or asserting a position inconsistent with administrative reticence regarding the issue. These agreements were memorialized in my March 23, 1992, letter to Mr. Linehan. On May 6, 1992, Mr. Linehan responded that he "was pleased to find that our staffs were in substantial agreement on the events that occurred at the February 6, meeting on pre-licensing consultation.

In an April 8, 1992, memorandum to you from William C. Parler, General Counsel, and James M. Taylor, Executive Director for Operations, those gentlemen stated:

3. It appears that the "resolution of issues" in guidance correspondence and open meetings with DOE may be a topic of concern to the State of Nevada. This concern has recently been specifically addressed at a February 6, 1992, NRC-DOE management meeting attended by the State of Nevada, by clarifying that "resolution" at this time is only at the staff level. All issues will be finally and completely resolved only in the licensing proceeding or by rulemaking after public notice and comment.

Similarly in his published remarks at the Las Vegas International High-Level Radioactive Waste Management Conference on April 13, 1992, Commissioner Rogers stated:

However, it should be emphasized that unless resolution of an issues goes to rulemaking, resolutions addressed in guidance documents or meetings represent "closure" of issues only at the staff level.

The "resolution" or "closure" of issues in guidance,

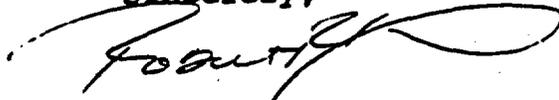
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correspondence and open meetings with DOE is a topic of specific concern to the State of Nevada. This concern was recently addressed at the February 6, 1992, NRC-DOE management meeting attended by the State of Nevada. The parties to this meeting have agreed that, at this time, issues are "resolved" or "closed" only at the staff level. Issues will be finally and completely resolved only in the licensing proceeding or by rulemaking after public notice and comment.

Needless to say, neither Mr. Parler's, Mr. Taylor's nor Commissioner Rogers' characterization of the agreements made at the February 6, 1992, meeting were entirely accurate, as the agreement was that no issue was ever closed, even with NRC staff. I brought these same issues to your attention in my June 16, 1992, letter to you.

Although the February 6, meeting dealt primarily with staff discussion on technical issues, my specific understanding of that meeting was that rulemaking would also not be used to close issues. Any direct NRC expression of an intention to proceed to rulemaking contravenes our understanding that all issues will remain open to the licensing proceeding. ACNW has now returned to the theme that issues should be resolved or "closed" through rulemaking or other early methodology. Nevada continues to oppose any rulemaking as a device to remove issues which should be litigated in a licensing proceeding. I apologize for seeming relentless on this very important issue to the State of Nevada, but it seems that NRC staff, and now ACNW, never quite get the message. Thank you for your continued concern that Nevada's opinions be heard.

Sincerely,



Robert R. Loux  
Executive Director

RRL/sjc

cc: Honorable Richard Bryan  
Honorable Harry Reid  
Honorable Barbara Vucanovich  
Honorable James Bilbray