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Subject: Nye County Nevada Waste Confidence Comments
Attachments: Nye County Nevada Waste Confidence Comments.pdf

Attached are comments from the Nye County, Nevada, Nuclear Waste Repository Project Office regarding the NRC draft report, "Background and Preliminary Assumptions for an Environmental Impact Statement – Long-Term Waste Confidence Update." The comments are divided into two parts, 1) Overarching Comments and 2) Supporting Information and Detailed Comments. The overarching comments are included in this e-mail below, as well as in the attachment.

1. The concept of extended storage for hundreds of years ignores current Federal policy and law as defined in the Nuclear Waste Policy Act (NWPA). The NWPA prohibits construction of an interim storage facility before the first geological repository is built. Further, the site selection for any interim storage facility must await resolution of the current court action regarding NRC licensing of Yucca Mountain. None of the proposed scenarios in the NRC draft report include SNF disposal in a repository until after long-term storage for hundreds of years. On one hand this document cites every reason to believe continued governmental controls for hundreds of years (a key assumption of the analysis) and on the other, it assumes Federal law will continue to be willfully violated. This is hardly a **confidence building** exercise. The fact that the Commission sees a need for this exercise implies we will not have a repository in the foreseeable future if left up to the Commission and that the Commission is willing to substitute its own policy in place of one developed by Congress.

2. The Commission's decision to develop an EIS evaluating the environmental impacts of extended storage and transportation of SNF has little connection to "Waste Confidence" as has been previously defined. This document cites the history of the waste confidence process stemming from a 1979 decision by the U.S. Court of Appeals for the District of Columbia Circuit (in Minnesota v. NRC). It notes that the court ". . . directed the NRC to determine whether a disposal solution for spent fuel would be available . . ." This document in no way does that, but instead assumes disposal will not be available for hundreds of years. There have been three waste confidence decisions to date – the first two had to be modified because the confidence the Commission had regarding SNF disposal was not fulfilled. Each waste confidence decision had several findings. Finding 2 **regarding the disposal of SNF** has been updated with each change and now has been modified to remove the time frame a repository will be available and simply state it will be available "when necessary." The action contemplated by this document indicates that the Commission and NRC staff believe "when necessary" may be hundreds of years into the future. If so, the concept of waste confidence coupled with temporary storage (hundreds of years does not sound temporary) is in jeopardy.

3. Even if this exercise made sense, it is not clear why an EIS was not required for the first three waste confidence decisions, but is now required for a longer term decision. The concept of considering the potential environmental impacts for hundreds of years of long-term storage is not possible without many speculative assumptions about future society. It appears that the proposed action for the upcoming EIS is

to modify the waste confidence decision that was just recently issued. In the public meetings on this document, it was stated by NRC staff that one reason this was taking place was so the NRC would not have to revisit the waste confidence decision every 10 years or so.

Currently there is a waste confidence decision that makes NEPA analysis for individual licensees not necessary until at least the middle of this century, but a NEPA analysis for long term storage using assumptions about institutional controls for hundreds of years into the future is necessary according to this document. This makes no sense. Nye County urges the Commission to abandon the proposed EIS.

4. Relooking at waste confidence at least every decade makes sense – at least until this country can show that a national repository program can be implemented. Also, once an assumption is made that ongoing regulation and management of SNF occurs as it exists today – there can be no other EIS conclusion other than such management is safe with no significant environmental impacts. The assumption contains the answer without the need for an EIS. The only thing in question is the technical detail regarding degradation of the fuel or its containers and what management actions are required to ensure safety. Such a technical program (noted by NRC staff to be planned in concurrence with the proposed EIS), will be useful in light of our government's inability to implement a repository program. Spending staff and public resources preparing an EIS that is driven by one unsubstantiated assumption (continued institutional controls for hundreds of years) is not useful and implies that it is reasonable to assume that a repository will not exist for hundreds of years.

5. The NRC issued Safety Evaluation Report and Technical Evaluation Reports on Yucca Mountain prove that confidence exists that, from a technical and scientific perspective, a safe repository could be developed in this country. However, there is no confidence that electoral politics in this country will allow a repository or interim storage facility to ever be built and operated. The only prompt path forward to solve the spent nuclear fuel (SNF) and high-level radioactive waste problem is to complete the Yucca Mountain licensing process and follow existing Federal law. Anything else amounts to political hand waving and posturing that only delays a real solution.

Thank you for the opportunity to comment. If you have any questions or wish to discuss the Nye County Comments, please do not hesitate to call me at 775-727-7727.

Thank you,

Lewis D. Lacy

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Comments on U.S. NRC Draft Report for Comment, Background and Preliminary Assumptions For an Environmental Impact Statement – Long-Term Waste Confidence Update, December 2011

Overarching Comments

1. The concept of extended storage for hundreds of years ignores current Federal policy and law as defined in the Nuclear Waste Policy Act (NWPA). The NWPA prohibits construction of an interim storage facility before the first geological repository is built. Further, the site selection for any interim storage facility must await resolution of the current court action regarding NRC licensing of Yucca Mountain. None of the proposed scenarios in the NRC draft report include SNF disposal in a repository until after long-term storage for hundreds of years. On one hand this document cites every reason to believe continued governmental controls for hundreds of years (a key assumption of the analysis) and on the other, it assumes Federal law will continue to be willfully violated. This is hardly a **confidence building** exercise. The fact that the Commission sees a need for this exercise implies we will not have a repository in the foreseeable future if left up to the Commission and that the Commission is willing to substitute its own policy in place of one developed by Congress.

2. The Commission's decision to develop an EIS evaluating the environmental impacts of extended storage and transportation of SNF has little connection to "Waste Confidence" as has been previously defined. This document cites the history of the waste confidence process stemming from a 1979 decision by the U.S. Court of Appeals for the District of Columbia Circuit (in Minnesota v. NRC). It notes that the court ". . . directed the NRC to determine whether a disposal solution for spent fuel would be available . . ." This document in no way does that, but instead assumes disposal will not be available for hundreds of years. There have been three waste confidence decisions to date – the first two had to be modified because the confidence the Commission had regarding SNF disposal was not fulfilled. Each waste confidence decision had several findings. Finding 2 **regarding the disposal of SNF** has been updated with each change and now has been modified to remove the time frame a repository will be available and simply state it will be available "when necessary." The action contemplated by this document indicates that the Commission and NRC staff believe "when necessary" may be hundreds of years into the future. If so, the concept of waste confidence coupled with temporary storage (hundreds of years does not sound temporary) is in jeopardy.

3. Even if this exercise made sense, it is not clear why an EIS was not required for the first three waste confidence decisions, but is now required for a longer term decision. The

concept of considering the potential environmental impacts for hundreds of years of long-term storage is not possible without many speculative assumptions about future society. It appears that the proposed action for the upcoming EIS is to modify the waste confidence decision that was just recently issued. In the public meetings on this document, it was stated by NRC staff that one reason this was taking place was so the NRC would not have to revisit the waste confidence decision every 10 years or so.

Currently there is a waste confidence decision that makes NEPA analysis for individual licensees not necessary until at least the middle of this century, but a NEPA analysis for long-term storage using assumptions about institutional controls for hundreds of years into the future is necessary according to this document. This makes no sense. Nye County urges the Commission to abandon the proposed EIS.

4. Relooking at waste confidence at least every decade makes sense – at least until this country can show that a national repository program can be implemented. Also, once an assumption is made that ongoing regulation and management of SNF occurs as it exists today – there can be no other EIS conclusion other than such management is safe with no significant environmental impacts. The assumption contains the answer without the need for an EIS. The only thing in question is the technical detail regarding degradation of the fuel or its containers and what management actions are required to ensure safety. Such a technical program (noted by NRC staff to be planned in concurrence with the proposed EIS), will be useful in light of our government's inability to implement a repository program. Spending staff and public resources preparing an EIS that is driven by one unsubstantiated assumption (continued institutional controls for hundreds of years) is not useful and implies that it is reasonable to assume that a repository will not exist for hundreds of years.

5. The NRC issued Safety Evaluation Report and Technical Evaluation Reports on Yucca Mountain prove that confidence exists that, from a technical and scientific perspective, a safe repository could be developed in this country. However, there is no confidence that electoral politics in this country will allow a repository or interim storage facility to ever be built and operated. The only prompt path forward to solve the spent nuclear fuel (SNF) and high-level radioactive waste problem is to complete the Yucca Mountain licensing process and follow existing Federal law. Anything else amounts to political hand waving and posturing that only delays a real solution.

Supporting Information and Detailed Comments

1. Executive Summary, first paragraph, first sentence – It is stated that the Commission "has directed agency staff to consider a long-term extension to the Commission's Waste Confidence decision and rule . . ." The paragraph goes on to say that ". . . the Commission directed the staff to develop an environmental impact statement (EIS)." It is explained that the recently enacted Waste Confidence rule and its basis, the Waste Confidence decision, express the Commission's confidence that spent nuclear fuel can be safely managed until it undergoes final disposition.

This document, therefore, recognizes the need for extending the recent waste confidence decision for a period of up to 200 years after the current decision on confidence (at least 60 years after the end of each reactor's operating life). This recognition indicates that the Commission must really not have confidence that there will be a disposition path for spent nuclear fuel (SNF) within 60 years after reactor operating life. Otherwise, there would be no need to consider either the technical or environmental consequences of extending the waste confidence decision further.

Why is there a need to consider long-term storage of SNF beyond the middle of this century if the Commission has confidence that there is already a disposition path? The Commission noted in its denial of a petition for rulemaking in 1977 that it " ....would not continue to license reactors if it did not have reasonable confidence that the wastes can and will in due course be disposed of safely." (68006 Federal Register / Vol. 64, No. 233 / Monday, December 6, 1999 / Rules and Regulations)

2. Executive Summary, paragraph 2 – This paragraph states that an EIS will be developed in accordance with NEPA and NRC's implementing requirements. It goes on to state that "a major assumption is that extended storage would be fully regulated under a regulatory program similar to the current program; there would be no loss of controls over stored waste." It also says the analysis will be based on present-day attributes. Present day attributes of SNF may not be indicative of the attributes and characteristics of high burn-up SNF. SNF and container integrity for high burn-up SNF may be significantly different that for present day SNF. Without a long term research program (at least decades) to characterize high burn-up SNF, the analysis hundreds of years into the future will not have the technical basis necessary to make such analysis useful.

   It is unclear why NRC needs to develop an EIS under NEPA unless there is a major Federal action contemplated that could have a significant effect on the environment. Later in the document it is stated that the proposed action is to extend the waste confidence decision, but that is an administrative action only if there is already confidence in a SNF disposition path. Such an administrative action would not require an EIS. Additionally, it is unclear why an EIS is needed to cover a period hundreds of years into the future when no EIS was required for the first three versions of the waste confidence decision and rule.

   Also, the assumption of an ongoing regulatory program and no loss of institutional control of the SNF for hundreds of years is extremely speculative. Later the document makes a case with a few unsubstantiated sentences that loss of administrative controls would be speculative and such an assumption is therefore not required for a NEPA analysis, but considering the time frame involved, any assumption regarding institutional controls would be speculative. Under the Nuclear Waste Policy Act (NWPA) and both the EPA and NRC implementing regulations, institutional controls are assumed to exist for no more than 100 years. Since it is recognized that current regulations and controls ensure the safety of SNF handling, storage and transport; the ongoing institutional control assumption assures that the results of any EIS will show no safety or environmental

issues. The NRC staff has essentially assumed the results before the EIS process has even begun.

This paragraph goes on to mention four scenarios that will be analyzed, but fails to include disposal in any of the scenarios until after the storage scenarios are complete. So the NRC staff considers loss of institutional controls as speculative, but the staff dismisses the requirements of Federal law in the NWPA. So dismissing Federal law must not be considered speculative by the staff. It's really not clear what the assumptions regarding disposal will be – the current waste confidence decision states that disposal will be available before the middle of this century, but the assumptions of this document and the forthcoming EIS indicate that disposal will not exist for hundreds of years. Which is it?

3. Page 1, Section 1, paragraph 1 – It is stated that the Commission directed the staff to address impacts of storing SNF "beyond a 120-year time frame (the maximum total storage time contemplated in the 2010 Waste Confidence decision and rule)." The need for such an analysis indicates that the Commission really has no confidence that there is a disposition path for SNF. Otherwise there would be no need to consider extended storage beyond the middle of this century. Furthermore, the intent of the original waste confidence rule was to demonstrate that there would be a repository available for disposal. The need for this document evaluating a period hundreds of years into the future indicates that confidence is much less certain.

4. Page 1, Section1, paragraph 3 – It is stated that the NRC has not yet formally announced its intent to develop this proposed EIS under NEPA. Presumably this is because this document is being developed outside the bounds of certain NRC NEPA process procedures. Does this mean that the Commission may change its direction regarding the development of an EIS stated earlier? The remainder of this document is written as if a formal decision to prepare an EIS has already been made by the Commission.

   Nye County encourages the NRC to halt the idea of an extended storage EIS at this time. It will be assumption based and any assumptions regarding societal institutional controls for hundreds of years (whether they will exist or not) will be so speculative as to make the analysis meaningless. If institutional controls are assumed to exist, we already know that SNF can be handled, stored and transported safely and without significant environmental impacts. If such controls do not exist for hundreds of years, significant environmental and safety issues will exist. This has been documented in the Yucca Mountain FEIS in its no-action analysis. Additionally, it is unclear why an EIS is needed to cover a period hundreds of years into the future when no EIS was required for the first three versions of the waste confidence decision and rule.

5. Page 2, Section 2, Paragraph 1 – The scope of the Blue Ribbon Commission's mandate is said to include "long-term storage and reprocessing." Actually the scope stated in the BRC charter is to consider "all alternatives." The BRC final report takes no position on Yucca Mountain but notes that a repository needs to be developed in this country "promptly." Is the Commission and staff position that promptly may mean hundreds of

years into the future? Other than the Commission direction to perform this study, there is no admission by the Federal government that failing to comply with the NWPA will likely mean there will be no repository for SNF for hundreds of years, if ever. Is that why the Commission sees the need to analyze environmental impacts for extended storage for hundreds of years?

6. Page 2, Section 3, Paragraph 1 – This paragraph cites 10 CFR 51.23(a). 10 CFR 51.23 is titled, "Temporary storage of spent fuel after cessation of reactor operation—generic determination of no significant environmental impact." Section 51.23(a) states:

> The Commission has made a generic determination that, if necessary, spent fuel generated in any reactor can be stored safely and without significant environmental impacts for at least 60 years beyond the licensed life for operation (which may include the term of a revised or renewed license) of that reactor in a combination of storage in its spent fuel storage basin and at either onsite or offsite independent spent fuel storage installations. Further, the Commission believes there is reasonable assurance that sufficient mined geologic repository capacity will be available to dispose of the commercial high-level radioactive waste and spent fuel generated in any reactor when necessary.

The statements of consideration use confusing words to indicate that "when necessary" doesn't mean forever, but the action being contemplated in this document indicates that "when necessary" might mean hundreds of years into the future. Because 10 CFR 51.23 deals with "temporary storage," it is presumed that the Commission and NRC staff have determined that temporary can mean hundreds of years into the future – even though NRC has never issued a license for any facility for more than 40 years plus a 20 year license extension.

7. Pages 2 and 3, Section 3, Paragraph 2 – This section cites the history of the waste confidence process from a 1979 decision by the U.S. Court of Appeals for the District of Columbia Circuit (in *Minnesota v. NRC*) through the current 2010 waste confidence decision. It notes that the court ". . . directed the NRC to determine whether a disposal solution for spent fuel would be available . . ." This document in no way does that, but instead assumes disposal will not be available for hundreds of years. There have been 3 waste confidence decisions to date – the first two had to be modified because the confidence the Commission had regarding SNF disposal was not fulfilled. Finding 2 regarding the disposal of SNF has now been modified to remove the time frame a repository will be available and simply state it will be available "when necessary." The action contemplated by this document indicates that the Commission and NRC staff believe "when necessary" may be hundreds of years into the future. If so, the concept of waste confidence coupled with temporary storage is in jeopardy.

8. Page 3, Section 3, Last paragraph – This section states that waste confidence finding 1 that concludes that safe disposal of SNF in a geologic repository is feasible has been confirmed. It should be noted that all technical review and findings to date by both DOE and NRC staff show that a Yucca Mountain repository is technically feasibility and safe.

9. Page 4, Section 4, Paragraph 2 – This first sentence of this paragraph states, "Because it is solely a regulatory agency, the NRC does not propose or promote specific uses or plans for managing nuclear waste." Recent action by the NRC to first delay and then halt the licensing of Yucca Mountain indicates otherwise. NRC deliberately chose not to follow Federal law in the NWPA. The action proposed in this document is a further attempt by NRC to create new Federal policy by assuming, contrary to Federal law, that a repository for SNF will not be available for hundreds of years.

10. Pages 4 and 5, Section 4, Paragraph 3 – This paragraph discusses waste confidence and cites the Commission's confidence in the safe management and ultimate disposal of SNF. It goes on to say that because of that confidence the NEPA analyses of new licenses or renewed licenses do not need to assess the environmental impacts of post-licensed life storage. However, the existence of the actions considered in this document indicates otherwise. The Commission sees the need for an analysis of long-term SNF storage for hundreds of years into the future. The staff assumption is that disposal options may not exist for that period because none of the considered scenarios include disposal during that period.

11. Page 5, Section 4, last paragraph – This paragraph attempts to explain why an EIS was not necessary for any of the waste confidence decisions to date, but is necessary for the proposed consideration of long-term storage. It appears that the proposed action for the upcoming EIS is to modify the waste confidence decision that was just recently issued. In the public meetings on this document, it was stated by NRC staff that one reason this was taking place was so the NRC would not have to revisit the waste confidence decision every 10 years or so. So, a decision that makes NEPA analysis for individual licensees is not necessary until at least the middle of this century, but a NEPA analysis for long-term storage using assumptions about institutional controls for hundreds of years into the future is necessary. This makes no sense.

    Perhaps relooking at waste confidence every decade is not a bad idea – at least until this country can show that a national repository program can be implemented. Also, once an assumption is made that ongoing regulation and management of SNF occurs as it exists today – there can be no other EIS conclusion other than such management is safe with no significant environmental impacts. The only thing in question is technical details regarding degradation of the fuel or its containers and what management actions are required to ensure safety. Such a technical program (noted by NRC staff to be planned in concurrence with the proposed EIS), will be useful in light of our government's inability to implement a repository program. Spending staff and public resources preparing an EIS that is driven by one unsubstantiated assumption (continued institutional controls for hundreds of years) is not useful and implies that it is reasonable to assume that a repository will not exist for hundreds of years.

12. Page 5, Section 5, Paragraph 1 – This paragraph purports to explain why and EIS is necessary. It states, ". . . in some cases, the NRC develops an EIS for significant changes to its regulations." It goes on to say the EIS is necessary to adequately consider public

concerns about the potential impacts of the extended storage of SNF. However, the current waste confidence decision covers storage for at least 60 years after reactor operations. What was the test the Commission used to determine that no EIS was required for extending waste confidence for 60 years beyond reactor operations, but not further? Is the NRC proposing to extend storage for longer periods because it assumes no repository will be available for hundreds of years?

13. Page 5, Section 5, Paragraph 2 – This paragraph begins by stating, "The NRC's proposed action under NEPA is a change to the Commission's current Waste Confidence decision and rule." Since it is a "proposed action," apparently the Commission has already determined that such a change is necessary. It is stated that any change will be informed by current circumstances including national policy and scientific knowledge. However, current national policy in the NWPA (and BRC recommendations) is to promptly develop a repository for SNF. Scientific knowledge in ten years when the EIS is scheduled to be completed will not include empirical evidence of the integrity of SNF that is hundreds of years old. Before embarking on an EIS to change something, the NRC should at least know what they are proposing to change it to. It appears that the proposal is to change waste confidence to extend to hundreds of years in the future. Is this correct? If so, why? We are decades away from the time frame of the current waste confidence decision. Perhaps waiting several decades to see if this country can implement a repository program would be wise before contemplating this EIS. An ongoing scientific research program studying the long-term integrity of SNF makes sense and should continue. As results are known, extending the waste confidence decision can be extended further into the future, if necessary. Hopefully, a repository will be available in less than hundreds of years into the future.

14. Page 6, Section 6 – This section discusses NEPA alternatives in this document that has been described as a non NEPA document. The alternatives are stated as four storage scenarios for up to 200 years beginning in the middle of this century and a no-action alternative stated as continuing to review the Waste Confidence decision and rule for updates every 5 to 10 years. We have no specific comments on the individual storage scenarios, but note that none of the scenarios assume a repository is available for the 200 year analysis period. It is not clear why the policy in Federal law is assumed not to have been implemented for hundreds of years since institutional controls are assumed to exist over the same period. It is also noted that empirical data on SNF integrity will not be available for hundreds of years old SNF even after the research program that is said to be planned over the EIS preparation period of the next decade.

    Perhaps more importantly, the Commission history of being able to accurately predict when a repository will be available is not good, as evidenced by the need to update the decision further and further into the future. There is no possible study that could accurately predict the future of SNF and the availability of disposal options hundreds of years into the future. It is likely that either a repository will be developed in the next several decades or a repository will prove impossible for the United States. If a repository is developed, no further need to update the waste confidence decision will be necessary. If not, perhaps recognition of the need for perpetual storage will replace the current waste

confidence strategy. Either way, an EIS at this time is a waste of resources – especially with the starting assumption of continued regulatory and institutional controls for hundreds of years. The only possible outcome with that assumption is that long-term storage is safe and environmentally acceptable.

Lastly, by proposing an action for long-term storage for hundreds of years, the Commission is violating an underlying principal of the NWPA – that the generation that created the nuclear waste problem is the one to deal with the problem. Regardless of the safety and environmental consequences of long term storage, it is unconscionable for the Federal government to push the ongoing burden of nuclear waste many generations into the future. No one knows the economic scenario this country will be in hundreds of years hence. The problem needs to be solved with a repository now, with the money available in the nuclear waste fund created by the NWPA.

15. Pages 6 and 7, Section 7 – This section discusses one overriding assumption, "that the storage of spent nuclear fuel will continue to be a regulated activity in the future . . . oversight will continue to ensure operational safety, consistent with NRC experience with operating facilities and licensing activities . . ." It also discusses the quantifiable impacts of long-term storage.

    As noted in previous comments, the assumption of ongoing institutional controls for hundreds of years is speculative. Further, once that assumption is made, there is no need for an environmental impact statement. Both safety and environmental protection are essentially assumed by the overriding assumption of ongoing institutional controls.

    As far as quantifying the impacts of long-term storage, that has already been done by the Federal government in the DOE Yucca Mountain FEIS no-action alternative analysis. NRC review of the DOE FEIS indicated there was no issue with adopting that part of DOE's analysis. What might be useful, although not requiring an EIS, is an analysis of the difference in security forces required, radiation exposure, additional transportation, additional repackaging required, likelihood of impacts from severe natural phenomena, and additional cost (including Federal government legal liability for not implementing disposal) for each of the proposed scenarios described in this document. Then a comparison should be made for each factor not only to the other proposed scenarios, but also to a scenario assuming direct shipment and disposal at a repository.

    In this analysis, it should be recognized that container sizes for a repository other than Yucca Mountain would likely have to be much smaller – similar in size to the waste packages in repositories proposed in Sweden or Finland. The large packages for the Yucca Mountain repository are unique to the geologic setting of Yucca Mountain that allowed gradually sloped access ramps. More information regarding generic repository concepts that should be considered is available in a presentation made by Ernest Hardin at a January 9, 2012 Nuclear Waste Technical Review Board meeting (available on NWTRB web site).

Such a long-term storage study might provide useful information for Congress (policy makers) if they wish to consider alternatives to prompt development of a repository. Any EIS required to implement any future scenario should be done only after there is a Federal policy decision to propose such an action. Such an EIS before there was a proposed linkage between storage, transportation, packaging, and disposal concepts would not likely be useful once a disposal concept is selected. Therefore, the implementer defined in any revised policy should develop the technical basis for such an EIS as is done with almost all other NRC licensing actions.

16. Section 7, Page 8, Paragraph 2 – This paragraph discusses how radiation exposure will be analyzed. It should be noted that exposure from handling and transporting SNF has been studied and documented extensively. Because many factors are unknown at this time, it will be impossible to define a scenario that will actually be implemented. Therefore, an EIS is premature, but a technical study showing the differences in radiation exposure and the probability of accidents that could result in public exposure could be performed. For instance, transportation requirements will be different for each scenario. Additionally, within each scenario the vehicle miles of transportation required will depend on the package sizes assumed. A technical study that considers radiation exposure differences depending on transportation vehicle miles, various package sizes, probability of accidents with various assumptions, vulnerability to terrorist activity based on how many and how long packages are in transit, and other sensitivity factors might be useful to policy makers in the future. An EIS is premature at this time because defining a particular scenario that will not have to be reevaluated once a specific repository disposal concept is selected is not now possible.

17. Section 7, Pages 8 and 9, Paragraph 4 – This paragraph begins a discussion of BRC recommendations and how the BRC recommendations will help define scenarios to be evaluated. It is unclear why the scenarios in this document do not include disposal for hundreds of years when the BRC clearly recommended "Prompt Efforts to Develop a New Permanent Geologic Disposal Facility." Do the Commission and NRC staff now consider hundreds of years to be prompt? The discussion continues in the first full paragraph of page 9, by stating, ". . . the EIS will include geologic disposal as the endpoint for all scenarios evaluated." It's interesting that none of the scenarios include geologic disposal. Apparently, endpoint means after the scenarios are complete hundreds of years from now. To be useful at all, geologic disposal should be incorporated into each scenario at varying times. Only in this way will it become obvious what the impacts and costs are of varying degrees of repository delays. Only if the NRC staff can quantify impacts will this analysis have any value. We already know that more transportation, more handling, and more repackaging will result in more radiation exposure, higher risk for transportation accidents, and more cost.

18. Page 9, Section 8.1, Assumption 1 – The assumption is that 20% of electricity produced in this country will be from nuclear power. There is no basis for this assumption. Nuclear power as a percentage of supply has been decreasing in this country for some time. At a minimum, it should be assumed that nuclear generation in States that have a moratorium

on new nuclear generation until there is a disposal facility to receive SNF will not increase, but will be eliminated over the time of this study.

19. Page 10, Section 8.1, Assumption 1 – This assumption deals with transportation impacts. To be thorough, transportation of packages of various sizes should be included. Also, transportation to a repository at varying times throughout the period of study should be considered, not one huge transportation campaign at the end of hundreds of years of storage. Total vehicle miles for each scenario should be calculated and compared not only to the other scenarios, but to a direct shipment to a repository scenario. An evaluation, both quantitative and qualitative, of transportation impacts from each scenario of factors such as radiation exposure, terrorist risk, and increased handling operations should be made for each scenario including a direct shipment to a repository scenario. Without such comparisons, this study can be of no use to policy makers or anyone else.

20. Page 11, Section 8.1, Assumption 5 – This assumption is that SNF will be managed safely as it is today. This assumption dictates the conclusion that no significant safety or environmental issues will be identified. It is good that staff has identified the possible need for major repackaging efforts for the SNF over the hundreds of years of analysis. The extent and difficulty of required repackaging, however, is unknown. Even with technical studies planned concurrently with the preparation of this document, there will be no empirical evidence regarding SNF degradation over hundreds of years. Therefore, the extent and difficulty of repackaging will be based on unproven assumptions, at best. At a minimum, the analysis should assume repackaging facilities with the capability of handling degraded fuel exist at every long-term storage location.

    The statement that NRC staff are unaware of any significant impacts associated with maintaining the waste container that are dependent on the type of ultimate disposal does not take into consideration repackaging requirements that will vary depending on repository concepts. For instance, storage in a transportation, aging, and disposal (TAD) container as proposed for Yucca Mountain would have minimal impact and repackaging requirements before shipment to the repository. Other repository concepts will likely require smaller waste packages and therefore require extensive repackaging at storage locations or the repository site.

21. Pages 11 and 12, Section 8.1, Assumption 6 – This assumption says that regulatory controls and government intervention will be available hundreds of years into the future – basically the continuation of institutional controls as they exist today. The first two paragraphs on page 12 attempt to justify this assumption, but are only an emotional argument without basis. It is stated that NEPA only requires evaluation of impacts that are "reasonably foreseeable" and loss of institutional controls is not reasonably foreseeable. The time period involved in the proposed study makes the arguments in this assumption unsupportable. World history has shown that governments often come and go within hundreds of years. Many recent examples exist including the collapse of the Soviet Union; near financial collapse of several European governments; and annual budget deficits in the United States that continue to grow exponentially.

Congress implemented the NWPA to ensure the people that caused the nuclear waste problem deal with it and not defer to future generations because the problem, if left unattended, could become insurmountable. Only a permanent near term solution was reasonable. At a minimum this study should include an analysis of the effects of loss of institutional controls and the adverse safety and environmental impacts that could occur. Current EPA and NRC risk based repository regulations are contrary to the argument presented that there will always be continuous improvement in our society's understanding and handling of radiation risk. Those recently enacted regulations require that initiating events with a probability of one in ten thousand over the period of evaluation be considered for radioactive waste repositories. That would equate to events with an annual probability of between one and three million per year for this study. Surely the probability of loss of institutional controls is much greater than that and the consequences would be much greater than from a repository. Because the effects of loss of institutional controls could be so severe, they should be considered in your analysis and compared to the effects of a promptly developed repository. Of course the effects of loss of institutional controls at a repository are already limited to negligible radiation dose to any member of the public because repository regulations do not allow the assumption of continued institutional controls.

22. Page 12, Section 8.1, Assumption 7– This assumption is that the study will assess impacts of storing and transporting reprocessing wastes. There is no indication that reprocessing in the United States will occur over the next few hundred years. The BRC made no such recommendation; economics of reprocessing are not and are not projected to be favorable compared to the manufacture of fresh nuclear fuel; and there is no current government program in support of reprocessing. The arguments made on this very page, concerning another topic, about only evaluating what is "reasonably foreseeable" seem to be ignored in this assumption.

23. Page 12, Section 8.1, Assumption 8 – This assumption says that the study will evaluate a range of accident scenarios involving storage and transportation. These analyses have already been done and will not change in the scenarios for this evaluation. One documented source is the Yucca Mountain FEIS. What will change is the probability of such scenarios over the period of evaluation. The analysis should include a careful comparison of the probability of accidents for each scenario including a scenario of direct shipment to a repository. Scenarios will substantially higher SNF handling and transportation requirements will certainly involve proportionally greater risk than others.

24. Page 13, Section 8.1, Assumption 9 – This assumption says impacts of terrorism will be considered. Again, such analyses have already been performed and will not change in the scenarios for this evaluation. One documented source is the Yucca Mountain FEIS. What will change is the probability of terrorism over the period of evaluation. The analysis should include a careful comparison of the probability of accidents for each scenario including a scenario of direct shipment to a repository. Scenarios will substantially higher SNF handling, storage, and transportation requirements will certainly involve proportionally greater risk than others. Also, the greater the number and size of storage locations, the greater the total vulnerability to terrorist acts.

25. Pages 14 and 15, Section 8.2, All Scenarios – None of the scenarios include prompt repository development and operation which is the policy of the United States. Each scenario should be developed considering various repository available timing. Otherwise, it appears that the NRC staff is saying that lack of repository development for hundreds of years is the only reasonably foreseeable alternative.

26. Page 15, Section 8.2, Scenario 4 – The reprocessing facility scenario should be deleted. There is no indication that reprocessing in the United States will occur over the next few hundred years. The BRC made no such recommendation; economics of reprocessing are not and are not projected to be favorable compared to the manufacture of fresh nuclear fuel; and there is no current government program in support of reprocessing. Previous arguments in this document about only evaluating what is "reasonably foreseeable" should be followed by deleting this scenario.

27. Page 16, Section 10 – Extended storage research described in this section is one of the few things in this document that is necessary and makes sense. Notwithstanding the current Commission position on waste confidence, such research is necessary to understand the potential degradation of SNF between a few decades and 100 years out of reactor. The program should extend well beyond 10 years and continue to cover aged SNF for as long as it takes to have empirical evidence of aging phenomena.

28. Page 18, Section 12 – This section discusses how the NRC staff will define "plausible assumptions" for the proposed EIS. An EIS is premature at this time for several reasons. First, the current waste confidence decision is adequate for the next few decades. Second, any societal assumptions made in an EIS covering hundreds of years will be speculative whether or not continued institutional controls are assumed. Lastly, the stated purpose of this EIS is to avoid having to reconsider the waste confidence decision every 5 to 10 years. Not only should the NRC not avoid relooking at its waste confidence decision, it should plan on periodic reevaluation until a permanent waste solution exists. Each reevaluation will require that the speculative societal assumptions will have to be either changed or reconfirmed. Having to modify the first two waste confidence decisions are a perfect example of this. Regardless of the results of any technical and environmental studies that are performed, there will only be real confidence that SNF will be handled safely in a way that protects the environment when a permanent solution exists.

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