



Sustainable Fuel Cycle

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Sustainable Fuel Cycle Task Force Science Panel

February 17, 2012

Ms. Christine Pineda, Project Manager
Mailstop EBB-2B2
Office of Nuclear Material Safety and Safeguards
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Dear Ms. Pineda,

The Science Panel of the Sustainable Fuel Cycle Task Force appreciates the opportunity to provide comments on the “Draft Report for Comment -- Background and Preliminary Assumptions for an Environmental Impact Statement -- Long-Term Waste Confidence Update” (hereinafter “Draft Report”). We commend the NRC staff for its hard work on this effort and appreciate the fact that the Commission initially tasked it to develop a long-term update of its most recent Waste Confidence decision, addressing the impacts of storage beyond a 120-year timeframe.

As scientists who have worked for many decades to provide a scientifically sound approach for safely managing and disposing of our nation’s used nuclear fuel and high level radioactive wastes, we urge the staff to more fully use this process to articulate the importance of this generation developing a geologic repository capability in a timely fashion. We are concerned the draft report does not sufficiently address the significant technical and institutional uncertainties and consequences if this nation continues to defer indefinitely developing a functional disposal capacity for radioactive wastes. This country has been producing high level radioactive wastes from reactors for over fifty years without overcoming the social/political obstacles, such as those that have recently stopped progress on the Yucca Mountain geologic repository. To meet our needs for clean affordable energy, we need continued nuclear electric power. We must act responsibly now to provide a real disposal capacity and not just pass the environmental consequences of inaction on to future generations.

The Blue Ribbon Commission on America’s Nuclear Future (BRC) has just issued their report confirming that there is no known alternative to geologic disposal, that current law establishes Yucca Mountain as the site for the first U.S. repository, and that prompt efforts are needed to develop a geologic disposal facility. Although we understand this Administration does not wish to pursue the Yucca Mountain facility on political/policy grounds, this posture toward inaction does not relieve the NRC from evaluating the consequences of inaction and articulating the national need for action.

The NRC has a National Environmental Policy Act (NEPA) responsibility to consider the lasting environmental impacts of its regulatory actions that permit the continued operation and expansion of nuclear energy production. We support the need for this energy source, but we also strongly believe, as the BRC also states, that this generation must produce a disposal solution in parallel. It is immoral and unethical for this generation to reap the benefits of the nuclear electrical energy and just put the used nuclear fuel/ high level radioactive waste in indefinite engineered storage for over a hundred years, leaving the waste disposal problem to our great



Sustainable Fuel Cycle

TASK FORCE

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grandchildren. In our view, the Nuclear Regulatory Commission's Waste Confidence Rule decision did not sufficiently consider the long term environmental aspects of their decision. However, starting this NEPA Environmental Impact Statement (EIS) process is a good step toward rectifying the need to fully evaluate the societal impacts of the current national policy of inaction.

To appropriately evaluate the environmental impacts of the current situation, we recommend the draft report be strengthened by:

- Accelerating the schedule: which currently has a distant 2019 EIS milestone. This is much too slow to enable the importance of this matter to be understood by those potentially affected and those with decision-making responsibility.
- A more complete articulation of the societal uncertainties of the allocations of future resources to dispose of previous generations' wastes is needed. We believe there are substantial uncertainties in what future generations may do, or will be able to do, to deal appropriately with wastes that were left to them in a non-passive state. To our knowledge, traditional EIS efforts have not depended upon generations far into the future to take active corrective or continued maintenance actions to mitigate potential adverse environmental consequences from wastes that they did not make.

We realize that it will be a challenge for the NRC staff to address such societal uncertainties in an EIS, but we consider this assessment necessary based on the current Administration's posture toward inaction. What rationale is there that future generations will be better able (and willing) to deal with the technical, security, economic, and political aspects of the existing wastes than we are? As difficult as it may be, this task has to be addressed by the NRC staff in this EIS within a reasonable timeframe.

- The EIS process must realistically consider that nuclear utilities are currently loading large (over 15 MTU of used nuclear fuel) canisters with higher burn-up used nuclear fuel that will have to be received "as is" in whatever disposition (either consolidated interim storage or direct disposal) facility that may be developed. This is because a number of reactors have decommissioned and demolished their used fuel handling buildings. As more power reactors reach the end of their useful lives this number of large loaded canisters will substantially increase. The EIS needs to evaluate that there are meaningful environmental impacts in costs, radiation exposures, and risks to repackage the thousands of these canisters to enable emplacement in possible geologic settings that are not compatible with such large packages.

The physical size (well over 100 tons) and higher thermal characteristics of these large packages are unlikely to be able to be accommodated in geologic settings that cannot accommodate ramps, e.g. deep salt formations, or withstand higher near field environmental temperatures without adversely impacting geologic retardation, e.g. clays. Although, again, such long term evaluations will be difficult given currently available information, but such aspects clearly must be incorporated into the EIS plans.

- The EIS should fully consider the technical and safety issues associated with long-term dry storage: cladding deterioration, containment seal and boundary integrity, concrete deterioration, the ability to convincingly demonstrate compliance with transportation safety requirements after extended periods of on-site storage. A more complete



Sustainable Fuel Cycle

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development of these and other relevant technical issues is contained in the Nuclear Waste Technical Review Board report, *Evaluation of the Technical Basis for Extended Dry Storage and Transportation of Used Nuclear Fuel*, December 2010.

These are just examples of issues that must be addressed by the NRC staff in this challenging endeavor. We wish that the nation could be moving forward with the Yucca Mountain process as defined by the current law, and such an endeavor would not be necessary. However, this Administration has done what it has done, and thus this EIS needs to move forward to address these difficult issues to provide a NEPA basis in the absence of action to move forward toward a repository at Yucca Mountain. To delay addressing, or in effect to “whitewash”, these issues is not a responsible path forward. That is a path that could have serious adverse consequences on our needed nuclear energy production capabilities.

We look forward to assisting the NRC staff in any way we can.

Yours sincerely,

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