Blue Ridge Environmental Defense League

www.BREDL.org PO Box 88 Glendale Springs, North Carolina 28629 BREDL@skybest.com (336) 982-2691

January 2, 2013

Chairman Allison M. Macfarlane
US Nuclear Regulatory Commission
Washington, DC 20555-0001

RE: Docket No. NRC-2012-0246
Environmental Impact Statement Scoping for Waste Confidence Rule
10 CFR §51.23

Dear Chairman Macfarlane:

On behalf of the Blue Ridge Environmental Defense League, I submit the following comments on nuclear waste storage at power plant sites. This document will supplement my oral remarks made to the commission on November 14 and December 5, 2012.

In brief, our recommendation to the NRC is:

1. Before issuing its Final Environmental Impact Statement, we recommend that the Commission hold a series of regional public hearings so that those living near nuclear power plants and their stored high-level radioactive waste can attend and comment.
2. We oppose the NRCôs two-year deadline to complete the waste confidence rule. The agency is rushing the process and the public will suffer if the NRC persists in pleasing the industry at the expense of public safety.
3. Because the Commission neglected to publish a clear description of the proposed action, the NRC must prepare a second scoping notice, identifying the proposed action and alternatives, and seek further public comment.
4. We believe the NRC should completely eliminate the waste confidence rule. Because it is a general rule, it cannot apply to the 65 different commercially operated nuclear plant sites across the US. Each site is different and should be treated as such. There should be individual plant environmental impact statements.
5. We oppose nuclear waste dumps. A general waste confidence rule would be based on finding one or more waste dumps which would be located in economically stressed communities. Potential sites would be in the Southeast, such as Savannah River, or on Native American land, such as Yucca Mountain.
6. We support dry, safe storage at nuclear power plant sites. The industry made the waste and profited from it; they should manage it for as long as needs be. And storage on-site at nuclear power stations represents the least hazard to public health in the areas both near the reactors and along transport routes.

Background

ñWaste confidenceò is all about high-level nuclear waste which is produced by nuclear reactors, generated in the reactor core and highly radioactive. The US Nuclear Regulatory Commission adopted the original Waste Confidence Decision and Rule (10 CFR 51.23) in 1984.[1] The Decision and Rule were updated in 1990, reviewed in 1999, and updated in 2010. In the 2010 Decision and Rule (10 CFR 51.23), the Commission made five findings:

[1] The rule: ñTemporary storage of spent fuel after cessation of reactor operationð generic determination of no significant environmental impact, 10 CFR Section 51.23.ò

1. Safe disposal in mined geologic repository is technically feasible.
2. At least one mined geologic repository will be available when necessary.
3. High-level nuclear waste and irradiated fuel will be safely managed until a repository is available.
4. Irradiated fuel can be stored safely and without significant environmental impacts for at least 60 years beyond the licensed life.
5. Onsite or offsite storage for irradiated fuel will be made available if needed.[2]

(emphasis added)

However, this year the US Court of Appeals nullified the Nuclear Regulatory Commissionôs Waste Confidence Rule, clearing the way for a variety of challenges at scores of commercial nuclear power reactors in the United States.[3] The DC Circuit Courtôs ruling invalidated a broad federal regulation which supports all US nuclear power plant licenses. The old rule presumed that waste stored at reactors would go to a waste dump someday. Following the landmark legal decision, many groups petitioned the Nuclear Regulatory Commission to ensure that the environmental analysis ordered by the Court is properly incorporated into the licensing of nuclear power plants across the nation.

Comments

The NRC is rushing the process

The scoping process for the EIS is now underway. Sometime in 2013, the NRC will prepare a draft EIS. Then a draft Waste Confidence Decision and proposed Rule will be issued for public comment. NRC must resolve many technical issues including long-term waste integrity, vulnerability, deterioration and accidents. Also, the nuclear waste stored at Fukushima is still being evaluated. According to an NRC staff plan, a long-term waste confidence update was expected to take eight years.[2] Yet the NRC has set a deadline of September 2014 to finalize the new rule. The agencyôs two-year deadline is rushing the process and the public will suffer if the NRC persists in pleasing the industry at the expense of public safety. For example, one consequence of the foreshortened schedule is that it has eliminated any opportunity to participate by members of the public who live far from NRC Headquarters or have not the capability to access Internet webinars. This practice creates an artificial divide, favoring those in locations with high-speed Internet and the latest hardware and software. This is patently discriminatory and manifestly unfair. Within the context of the extant EIS process, the Commission should stop and reassess this procedure. At minimum, it should take a conservative approach and allow more time for technical analysis and public participation.

The US Court of Appeals for the District of Columbia DC ruled that the NRCôs analysis was ñnot thorough enoughò to support the waste confidence rule at 10 CFR 51.23. On remand, the NRC has elected to pursue generic rule, a decision we believe is unwise. The NRC must account for the consequences of specific risks at varied sites. Therefore, all reactor sites must be included whether seaside, riverside, inland, etc. It is impractical for this to be done adequately to cover all sites and be completed within 24 months. When asked about this, NRC staff replied,

[2] ñWaste Confidence Decision: Background,ò Christine Pineda, NRC Office of Nuclear Material Safety and Safeguards, October 4, 2011, http://www.nrc.gov/waste/spent-fuel-storage/christine-pineda-10-04-2011.pdf
[3] *State of New York v. NRC*, USCA Case No. 11-1045, Decided June 8, 2012

ñWe can bound these analyses.ò[4] But bounding 104 reactors at 65 sites cannot be done with baling wire and masking tape. And to artificially limit the alternatives is in contravention of the law. In order to satisfy the National Environmental Policy Act (NEPA), the NRC must address the original agency action that caused the production of irradiated nuclear fuel and the resulting impacts: i.e., the licensing of nuclear reactors. In fact, within the context of this EIS, the most practicable alternative for preventing or mitigating high-level nuclear waste storage impacts is the cessation of further reactor licensing.

In any event, we recommend that the Commission heed the advice of those who estimate that the waste confidence rule should take three to four times as long as what the Commission has ordained.

No Dump Site for Nuclear Waste

Under the Nuclear Waste Policy Act of 1982, commercial nuclear power reactor waste disposal is limited to no more than 63,000 metric tons at the nationôs first nuclear dump site. Additional waste is prohibited at such a location, and a second waste site would be required to dispose of waste in excess of that figure. The NWPA prohibits:

> ñ...the emplacement in the first repository of a quantity of spent fuel containing in excess of 70,000 metric tons of heavy metal or a quantity of solidified high-level radioactive waste resulting from the reprocessing of such a quantity of spent fuel until such time as a second repository is in operationé ò[5]

The 70,000 metric tons would be 90% commercial nuclear reactor waste, the balance of 10%, or 7000 metric tons, would be waste from nuclear weapons production and nuclear energy research. Therefore, only 63,000 metric tons of commercial irradiated nuclear fuel could be disposed until a second national waste dump becomes available. [6]

According to the U.S. Department of Energyôs Office of Civilian Radioactive Waste Management, a total of 63,000 metric tons of commercial irradiated nuclear fuel was reached in 2010.[7] So the existing, operating commercial nuclear power reactors have effectively filled the nationôs first waste site and are now well into the second. Within the next twenty years, over 80,000 metric tons of irradiated nuclear fuel will have been generated at commercial nuclear reactors in the U.S. This was known well before the NRCôs last review of waste confidence in 1999.[8] In fact, the DOE predicted that there would be over 105,000 metric tons of commercial irradiated nuclear fuel by the year 2046.[9] Although the NRCôs standard license extension is for 20 years, the DOEôs assessment was based on license extensions of only 10 years. Further, DOEôs estimate included no new commercial nuclear reactors in the U.S. Therefore, the high-level nuclear waste generated by existing reactors is well on the way to filling twice over a mined geologic repository which the NRC has assumed will be ñavailable when necessary.ò

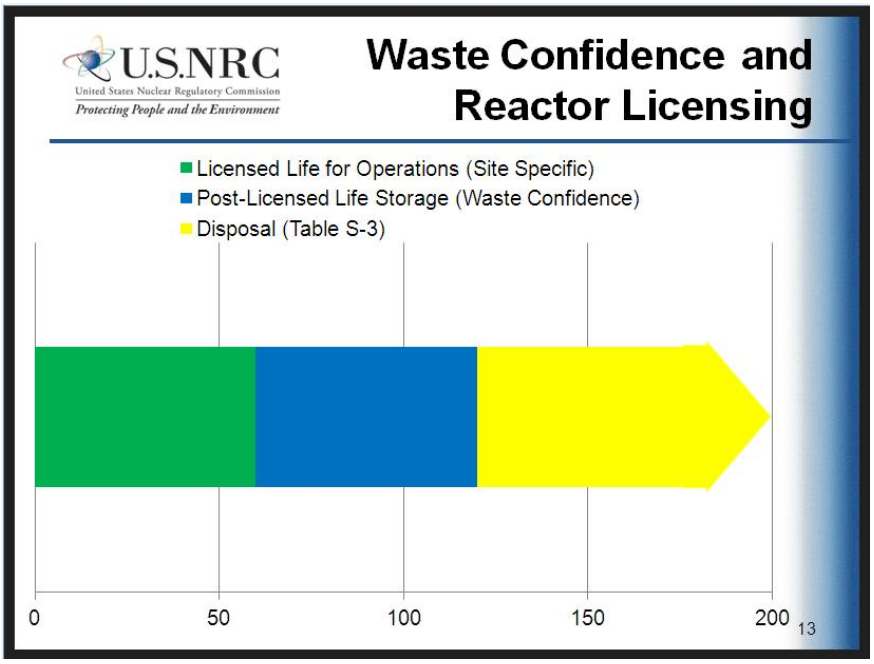
---

[4] December 5, 2012 NRC Waste Confidence Rule EIS Internet webinar: oral reply to question posed by L. Zeller.
[5] Nuclear Waste Policy Act of 1982, Section 114(d); 42 U.S.C. § 10134(d)
[6] Yucca Mountain EIS at A-1
[7] DOE OCRWM Director Ward Sproat III at the U.S. Nuclear Regulatory Commissionôs Regulatory Information Conference
[8] U.S. Nuclear Waste Technical Review Board ñDisposal and Storage of Spent Nuclear Fuel: Finding the Right Balance,ò (March 1996)
[9] ñFinal Environmental Impact Statement for a Repository for Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye County, Nevada,ò (Feb. 2002)

Further, the NRCôs lack of basis for a finding of confidence in the technical feasibility of a repository fatally undermines Table S-3 of the NRCôs Uranium Fuel Cycle Rule, which depends on the assumption that radioactive releases from a repository will be zero.

The Blue Ridge Environmental Defense League has raised these specific issues in several NRC licensing proceedings, including Bellefonte Units 3 and 4 Docket Nos. 52-014 and 52-015, North Anna Unit 3 Docket No. 52-017, William States Lee III Docket Nos. 52-018 and 52-019 and Vogtle Units 3 and 4 Docket Nos. 52-025 and 52-026, but until *State of New York v. NRC* the Commission has been recalcitrant.

In their internal scoping for irradiated nuclear fuel, the NRC staff identified three scenarios: first, evaluate storage until a repository is available mid-century (green), second, evaluate storage until a repository is available at the end of the century (blue) and third, continued storage if a repository is not available (yellow).



Scenario Three is ñunavailability of a national nuclear waste respository.ò During the 1980ôs I observed the fruitless search to locate a site for a waste repository 20 miles from my home. The history of the Nuclear Waste Policy Act of 1982 as amended in 1987 does not lend confidence in the ability to locate a repository. The US Department of Energyôs Office of Civilian Radioactive Waste Managementôs methodology and conclusions were inadequate to the task. Today, the Presidentôs Blue Ribbon Commission on which you served seeks a site using a warmed over DOE approach. Further, the fundamental environmental justice issues of a volunteer waste site have still not been addressed. Therefore, the scenario of a repository being unavailable is the most likely of the three and the yellow arrow in slide number 13 should extend for at least 10,000 years and have 65 points.

<u>Duct Tape: Because All Nuclear Waste Solutions are Temporary</u>

The general principles for at-reactor storage of high-level nuclear waste has been outlined in a letter from national, regional and local non-governmental organizations including Blue Ridge

Environmental Defense League.[10] I recommend these principles as a starting point for the current scoping process:

- **Require a low-density, open-frame layout for fuel pools:** Fuel pools were originally designed for temporary storage of a limited number of irradiated fuel assemblies in a low density, open frame configuration. As the amount of waste generated has increased beyond the designed capacity, the pools have been reorganized so that the concentration of fuel in the pools is nearly the same as that in operating reactor cores. If water is lost from a densely packed pool as the result of an attack or an accident, cooling by ambient air would likely be insufficient to prevent a fire, resulting in the release of large quantities of radioactivity to the environment. A low density, open-frame arrangement within fuel pools could allow enough air circulation to keep the fuel from catching fire. In order to achieve and maintain this arrangement within the pools, irradiated fuel must be transferred from the pools to dry storage within five years of being discharged from the reactor.
- **Establish hardened on-site storage (HOSS):** Irradiated fuel must be stored as safely as possible as close to the site of generation as possible. Waste moved from fuel pools must be safeguarded in hardened, on-site storage (HOSS) facilities. Transporting waste to interim away-from-reactor storage should not be done unless the reactor site is unsuitable for a HOSS facility and the move increases the safety and security of the waste. HOSS facilities must not be regarded as a permanent waste solution, and thus should not be constructed deep underground. The waste must be retrievable, and real-time radiation and heat monitoring at the HOSS facility must be implemented for early detection of radiation releases and overheating. The overall objective of HOSS should be that the amount of releases projected in even severe attacks should be low enough that the storage system would be unattractive as a terrorist target. Design criteria that would correspond to the overall objective must include: a) Resistance to severe attacks, such as a direct hit by high-explosive or deeply penetrating weapons and munitions or a direct hit by a large aircraft loaded with fuel or a small aircraft loaded with fuel and/or explosives, without major releases. b) Placement of individual canisters that makes detection difficult from outside the site boundary.
- **Protect fuel pools:** Irradiated fuel must be kept in pools for several years before it can be stored in a dry facility. The pools must be protected to withstand an attack by air, land, or water from a force at least equal in size and coordination to the 9/11 attacks. The security improvements must be approved by a panel of experts independent of the nuclear industry and the Nuclear Regulatory Commission.
- **Require periodic review of HOSS facilities and fuel pools:** An annual report consisting of the review of each HOSS facility and fuel pool should be prepared with meaningful participation from public stakeholders, regulators, and utility managers at each site. The report must be made publicly available and may include recommendations for actions to be taken.
- **Dedicate funding to local and state governments to independently monitor the sites:** Funding for monitoring the HOSS facilities at each site must be provided to affected local and state governments. The affected public must have the right to fully participate.
- **Prohibit reprocessing:** The reprocessing of irradiated fuel has not solved the nuclear waste problem in any country, and actually exacerbates it by creating numerous additional

[10] Principles for Safeguarding Nuclear Waste at Reactors, September 15, 2007, available at: http://www.beyondnuclear.org/storage/principles_for_safeguarding_irradiated_fuel_knownukestnvalley_9152008.pdf

waste streams that must be managed. In addition to being expensive and polluting, reprocessing also increases nuclear weapons proliferation threats.

Conclusion

The Waste Confidence Rule generic approach remains utterly inadequate to satisfy the requirements of both the Atomic Energy Act and NEPA for the licensing decisions necessary for nuclear power plants. First, the Commission is in danger of abrogating its responsibility to allow public to participate in a decision which affects them. Second, a generic decision to allow the creation of additional irradiated nuclear reactor fuel and other radioactive waste associated with the uranium fuel cycle should be accompanied by 65 well-supported and well-documented plant-specific safety findings. And it would need scores of credible, plant-specific environmental impact statements that fully assesses the health and environmental impacts of the uranium fuel cycle with a reasonable array of alternatives, including the alternative of not producing any additional radioactive waste. In sum, the generic waste confidence dog wonôt hunt.

Thank you for your attention to these issues. Please notify me and the co-signers listed below of any decisions made by the Commission in this matter.

Respectfully,

Louis A. Zeller
Executive Director, Blue Ridge Environmental Defense League

Co-signed by:

- John A. Cruickshank, 324 Parkway St. Charlottesville, Virginia 22902
- Elena Day, Steering Committee Chair, Peopleôs Alliance for Clean Energy, 151 Buckingham Circle, Charlottesville, Virginia 22903
- Beverly and Julius Kerr, Neighborhood Environment Watch, 4772 S. NC Hwy 54 Graham, North Carolina 27253
- Sandy Kurtz, Bellefonte Efficiency and Sustainability Team, 3701 Skylark Trail, Chattanooga, Tennessee 37416
- Gordon Woodcock, grw33@comcast.net

CC: Cindy Bladey, Chief
Rules Announcements and Directives Branch (RADB)
Office of Administration, Mail Stop TWB-05-B01M
US Nuclear Regulatory Commission
Washington, DC 20555-0001