



Nuclear Energy Information Service

Illinois' Nuclear Power Watchdog since 1981

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19 December, 2013

In the Matter of)	
)	
Proposed Rule: Waste Confidence)	
Continued Storage of Spent Nuclear Fuel)	Docket No. 2012-0246
10 C.F.R. Part 51)	
)	
Draft Waste Confidence Generic)	
Environmental Impact Statement)	

**Supplemental Comments on NRC's Waste Confidence Rule and DGEIS
Submitted by
David A. Kraft, Director**

NEIS is an environmental, safe-energy advocacy organization based in Chicago Illinois. We represent nearly 900 supporters in Illinois, 34 states and four countries. We thank the Commission for the opportunity to present our views pertaining to Docket No. 2012-0246. The comments below are in addition to oral and written comments made and provided at NRC's Public Meeting in Oak Brook, IL, on Tuesday Nov. 12, 2013; and in addition to the comments provided Dec. 20th, 2013, by attorney Diane Curran et al, to which NEIS is a co-signer.

To summarize our previous contentions:

1. NEIS submits that the DGEIS as written is inadequate to both the task of satisfying the directives of the U.S. Court of Appeals in *New York v. NRC*, 681 F.3d 481 (D.C. Cir. 2012); and also inadequate to protecting the health and safety of the public and the environment; and for these reasons was ask NRC to withdraw the DGEIS.
2. NEIS believes that the moratorium on licensing of new and relicensing of currently operating reactors should remain in place until such time as a permanent, deep-geological high-level radioactive disposal facility is designed, licensed, built and in operation. We ask NRC to maintain this moratorium until this condition is reached; and ask that the moratorium be extended to include the siting and licensing of any temporary, away-from-reactor high-level radioactive waste "storage" facilities, such as those referred to as "centralized interim storage" facilities. It is irresponsible to continue the production of such wastes without a demonstrated and operational means of disposal.
3. NEIS asks that you withdraw all statements to the effect that, because of NRC oversight programs, NRC asserts and guarantees that spent fuel can be stored at reactor sites indefinitely. Such a guarantee implies that NRC will be providing constant oversight into that indefinite period of time. In October of 2013, NRC could not even guarantee that its workers would be able to come to work

the next day. The hubris of such an assertion that NRC oversight and institutional controls will be available ad infinitum, therefore, borders on colossal, if not outright psychotic.

4. NEIS finds that NRC's "finding of no significant impact" regarding: 1.) spent fuel pool fires; 2.) spent fuel pool leaks; 3.) vulnerability of spent fuel pools and dry cask sites to natural disasters and terrorist assaults; and 4.) NRC's belief in the adequacy of generic findings at reactors -- to be unfounded, inadequate to the protection of the public health and safety, and in contradiction to NRC's own definition of what constitutes a "nuclear safety culture":

"Nuclear Safety Culture is the core values and behaviors resulting from a collective commitment by leaders and individuals to **emphasize safety over competing goals** to ensure protection of people and the environment." [NRC side show, Palisades reactor presentation, 9/12/12]

We will now examine these contentions in more detail.

1. *The DGEIS as written is inadequate to both the task of satisfying the directives of the U.S. Court of Appeals in New York v. NRC, 681 F.3d 481 (D.C. Cir. 2012); and also inadequate to protecting the health and safety of the public and the environment*

NEIS concurs with the detailed statements provided by Attorney Diane Curran et al in comments provided on 20 December, 2013, titled, *Comments by Environmental Organizations on Draft Waste Confidence Generic Environmental Impact Statement and Proposed Waste Confidence Rule And Petition to Revise and Integrate All Safety and Environmental Regulations Related to Spent Fuel Storage and Disposal*; and those views presented in supporting Declarations Exhibits A through D to that document.

In addition we wish to register the following additional points:

- As some of the material below will demonstrate, NRC has totally ignored the Court mandate to actually envision future problems – even those NRC feels are not likely – and do real calculations to reach predictions and conclusions about consequences. Instead NRC has merely proclaimed the world flat, and has proceeded to give assurances based on its ill-informed opinion. This is not what the Court required of NRC.
- NRC has relied on inadequate, outdated, superceded and at times simply wrong information as the basis for its many opinions. Using the GIGO rule, the DGEIS is totally inadequate to the task of protecting the public health and safety, since NRC has made "predictions" about a world that simply does not exist.

2. *The NRC moratorium on licensing of new and relicensing of currently operating reactors should remain in place until such time as a permanent, deep-geological high-level radioactive disposal facility is designed, licensed, built and in operation. We ask NRC to maintain this moratorium until this condition is reached; and ask that the moratorium be extended to include the siting and licensing of any temporary, away-from-reactor high-level radioactive waste "storage" facilities, such as those referred to as "centralized interim storage" (CIS) facilities.*

Nowhere is the dangerous “compartmentalization” of radioactive waste issues more evident than in political attempts to continue waste manufacture absent a disposal facility. This process has been handed a long-needed opportunity by the 2012 Court decision for the NRC and the industry to take responsibility for truly solving the high-level radioactive waste (HLRW) disposal issue. The First Rule of Holes applies: if you find yourself in the bottom of a hole, stop digging. If you find yourself buried under a “Mountain of Waste, 70 Years High,” stop making it, at least until you solve the disposal problem for what you’ve already created. NEIS therefore urges the NRC to maintain its present moratorium on new licenses and license extensions at U.S. nuclear reactors.

The same voluminous amounts of unresolved issues pertaining to HLRW storage, treatment, transportation will exist for any proposed CIS facilities. Until such time as NRC can provide a credible DGEIS on these matters, the nation should not create more contaminated waste sites with the same unresolved problems, just so the nuclear industry can continue to compound the waste problem with more waste from continued operation.

3. *NRC should withdraw all statements to the effect that, because of NRC oversight programs, NRC asserts and guarantees that spent fuel can be stored at reactor sites indefinitely.*

As mentioned previously, and below, the NRC cannot even guarantee its own day-to-day operation, let alone pledge “institutional control” for decades or indefinitely. This is not opinion. It is historically demonstrated FACT. Therefore, it cannot in all seriousness propose that HLRW will be afforded the ever-watchful eyes of NRC onsite inspectors indefinitely.

Worse, history has also amply demonstrated what travesties can occur at reactors even under those watchful NRC eyes (e.g., Davis Besse; Dresden 2&3 remaining on the “close watch list” for 15 consecutive evaluation cycles; SONGS). So, the conclusion that institutional control is somehow guaranteed by the mere presence of NRC onsite resident inspectors, or whatever institutions replace them in the future, is a tautology, not proof. “Presence” does not guarantee adequate “oversight.” While necessary, it by itself is insufficient.

Until NRC can again demonstrate that it is a regulatory agency (see list below), it has no business making absurd claims that HLRW can be stored safely indefinitely at nuclear stations.

4. *NRC’s “finding of no significant impact” regarding: 1.) spent fuel pool fires; 2.) spent fuel pool leaks; 3.) vulnerability of spent fuel pools and dry cask sites to natural disasters and terrorist assaults; and 4.) NRC’s belief in the adequacy of generic findings at reactors -- to be unfounded, inadequate to the protection of the public health and safety, and in contradiction to NRC’s own definition of what constitutes a “nuclear safety culture”.*

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Some examples should suffice to demonstrate how inadequately NRC has investigated these issues:

a.) *NRC has inadequately taken into account anticipated dramatic climate disruption and shifts weather patterns in reaching many of its conclusions.*

For example, regarding the effects of leaks from spent fuel pools on surface drinking water supplies, NRC *assumes* (E-17), "...a large body of surface water is usually available, which would dilute any groundwater contaminants that flow into them."

Illinois has 11 operating reactors, all sited on rivers. Climate models predict that by 2050 (certainly well within the timeframe envisioned by this DGEIS) Illinois is likely to have the climate of East Texas. In this case both the volumes and flow rates of these rivers – on which NRC depends in its assumption that dilution will occur – will be reduced significantly, and in cycles much different than today's climate provides.

Unless NRC has done the volume and flow rate calculations for Illinois rivers permanently or even intermittently subjected to an East Texas climate, it has failed to provide any hard science to back up its dilution claims. Without these actual calculations, its conclusions are unfounded.

Further, decisions about water intake and outflow of surface waters at nuclear plants is NOT under the jurisdiction of the NRC. It resides with the States under the NPDES permitting system. Illinois has historically experienced instances where the Illinois EPA has either curtailed reactor operations, or conversely, granted permit exemptions for thermal discharge into Illinois rivers during severe drought conditions (1988; 2005; 2006). These decisions will be made by the State, not the NRC; and as a result can impact river temperatures, chemical and biological activity, evaporation rates, recharge and other factors – many of which affect whether dilution as NRC envisions it would occur. We see no evidence in NRC's DGEIS that this has been taken into account.

REQUEST TO NRC: We request that NRC provide these calculations, the model used, the base assumptions, and all pertinent data regarding the projected future water conditions of the Illinois river network in a climate disrupted world, and the effects this will have on Illinois reactor functioning; as well as their effects on the assumptions NRC has made in this DGEIS. Since NRC allowed us 75 days to comment on the DGEIS, we request that the requested information be provided within 75 days of the submittal of these comments.

A second example of NRC failing to take into account both reality and a reasonable measure of anticipatory thinking is the near catastrophe at the Port Calhoun (nee "Fort" Calhoun) reactor in Nebraska

in 2012. It stands as a perfect example of NRC failure “to analyze the cumulative impacts that may result from past, present, and reasonably foreseeable future radiological leaks from non-SFP systems, structures, and components.”

Photographic evidence shows that while in 2012 the spent fuel casks at the reactor stood above then-catastrophic flood level, NRC has no means to assure that this would be the case in future catastrophic flooding; or that Cooper NPP or Oconee NPP dry casks would be above flood level after a catastrophic upstream dam failure. Should this occur the lower cooling vents of the casks could potentially become submerged or clogged with debris that staff would not be able to intervene to clear. Should the vents become plugged or submerged, convection air cooling would cease in the casks. This could result in the fuel overheating and possibly becoming damaged; or, possibly could result in a cask rupture if severe enough. In this case, intermingling of radionuclides from a NON-SFP source would occur. NRC has provided no analysis of this possibility; nor has it taken into account at all the effects of NON-SFP sources of contamination.

In a Nov. 14, 2013 webinar meeting scheduled by NRC itself to “inform” the public on the virtues of ISFSIs and dry casks, we asked the NRC “experts” several questions:

Q: If those vents [on the dry casks] are blocked, how long can the canister go before experiencing overheating and fuel damage?

NRC staff replied that, well, they did not know, but that site staff would surely be able to intervene before any consequential overheating occurred.

We submitted a follow up question:

Q: That does not answer the question about blockage. In an emergency on the order of Fukushima, there was no guarantee that personnel could have intervened effectively if those vents got blocked. If Port Calhoun went under any more water the same situation would have existed. So the question stands -- HOW long before the canister overheats, and fuel damage occurs? If you have not done that calculation, you're doing the same "assuming" that the Courts said is not acceptable in the waste confidence docket.

We received no response to this question, neither during the session or afterwards.

This demonstrates that 1.) NRC itself has not done sufficient homework to answer fundamental questions about cask and fuel integrity, and perhaps does not have the answers itself, yet claims that both will operate flawlessly for indefinite periods; and 2.) NRC displays no vitally necessary creative imagination into likely future emergency scenarios over the next, say, 10,000 years, in express violation of what the 2012 Court ruling mandated they should do. It has not done sufficient future analyses into these matters.

REQUEST TO NRC: We request that NRC provide written answers to the above two questions asked (not merely responses predicated on baseless opinions or assertions), demonstrating the model used, the calculated temperatures derived, and predictions about fuel and cask failure times over the entire line of currently licensed storage casks; within 75 days of the submittal of these comments.

b.) *The above discussion demonstrates that the local variability of circumstances among US reactors argues against a generic policy, and generic assumptions on the part of NRC regarding spent fuel management.*

At the Oak Brook, IL NRC Waste Confidence hearing on November 12th, 2013, Sierra Club group chair Evan Craig made a critical observation to NRC, which we are sure went totally ignored. He said (we paraphrase) that “generic environmental” is an oxymoron. There is NOTHING generic about the environmental, which is a dynamic, constantly changing and evolving set of near infinite interactions and possibilities. As such, he dismissed the NRC’s “generic environmental” impact statement as an exercise in both futility and unreality. It would describe nothing but severely limited self-fulfilling prophecies, not the real world. NRC would be wise to understand this fundamental flaw in issuing a DGEIS.

c.) *NRC lacks a demonstrated safety culture by its own definition. It therefore is in no position to be responsible for the institutional management of spent-fuel into the indefinite future.*

At a meeting between NRC and Entergy Corporation at the Palisades NPP in Sept., 2012, NRC attempted to define for Entergy what it meant by having a “nuclear safety culture”:

“Nuclear Safety Culture is the core values and behaviors resulting from a collective commitment by leaders and individuals to emphasize safety over competing goals to ensure protection of people and the environment.” [NRC side show, Palisades reactor presentation, 9/12/12]

In further dialog and exposition on the topic, then-Region III Director Chuck Casto offered that it meant, “Going beyond what’s required.” NEIS pointed out to NRC and those present that, by this very definition, NRC itself possesses no “nuclear safety culture,” since it repeatedly allowed innumerable “competing goals” – utility profits, production and operation timelines, strict adherence to unreasonable comment periods, numerous license waivers and variances, unwillingness to adopt the precautionary principle, even after Fukushima, etc., as examples -- to govern its behavior and decision making, none of which were for the public good.

d.) *“Betrayal is a solid rational basis for distrust.” – journalist and author William Boardman*

Subsequent actions or lack of actions (and certainly many previously documented ones) on the part of NRC have borne out the accuracy of the above criticism.

As such, NRC is not an agency that can be trusted to “go beyond what’s required” even today, let alone into an indefinite future of radioactive waste storage at reactor sites. It has no demonstrated interest in behaving in this manner; and it cannot even guarantee it can field a workforce on a given day, should the U.S. Government decide to shut down again in the future. This is an Agency that has accrued the following track record (a few salient examples, not an all-inclusive record):

- By a 4 to 1 vote, the Commission voted against quicker implementation of Fukushima lessons learned, delaying them at U.S. Fukushima-designed reactors for up to 6 years. Those four Commissioners later forced out the Commission Chair Gregory Jaczko – the only one in favor of more rapid implementation of safety measures.
- According to authors John Byrne and Steven Hoffman, since the 1980s the NRC has generally favored the interests of nuclear industry and has been unduly responsive to industry concerns. The NRC has often failed to pursue tough regulation. At the same time, it has sought to hamper or deny public access to the regulatory process and created new barriers to public participation. (Source: *Governing the Atom: The Politics of Risk*, 1996)
- The number of safety violations at U.S. nuclear power plants varies dramatically from region to region, pointing to inconsistent enforcement in an industry now operating mostly beyond its original 40-year licenses, according to a congressional study awaiting release....the reasons aren't fully understood because the NRC has never fully studied them, the report says. Right now, its authors wrote, the "NRC cannot ensure that oversight efforts are objective and consistent." (Source: "Uneven enforcement suspected at nuclear plants," AP, Oct. 16, 2013)
- A disastrous fire in March 1975 [at the Brown's Ferry Reactor in Alabama] nearly caused two of its reactors to melt down. The NRC adopted fire protection regulations in 1980 seeking to prevent another serious nuclear plant fire. But the three reactors at Browns Ferry, along with nearly four dozen other reactors in the U.S., still do not comply with fire protection regulations more than three decades later....It's not the cumulative effects of regulation that the NRC should be evaluating. The NRC should be concerned about the cumulative effects of non-regulation. (Paper by David Lochbaum, UCS, "Cumulative Effects of Non-Regulation," August 23, 2012)
- "In a letter submitted Friday afternoon to internal investigators at the Nuclear Regulatory Commission, a whistleblower engineer within the agency accused regulators of deliberately covering up information relating to the vulnerability of U.S. nuclear power facilities that sit downstream from large dams and reservoirs. The letter also accuses the agency of failing to act to correct these vulnerabilities despite being aware of the risks for years." (Source: *Flood Threat To Nuclear Plants Covered Up By Regulators*, NRC Whistleblower Claims, Huffington Post, Sept. 14, 2012)
- "A separate former senior Democratic aide who has worked with Jaczko, Magwood and Flint said that Yucca is the impetus for the industry's opposition to the outgoing chairman. ...Magwood "and the industry hate Greg because they think he was put on the commission by Reid, who's anti-Yucca, and he's gonna be a Reid stooge. And you know what? They're f*cking right," the former aide said. "That's exactly why he was put on there. But that commission and that agency were complete and total captives of the nuclear industry. One and the same." (Source: "Nuclear Regulatory Commission Chairman Steps Down," Ryan Grim, Huffington Post, May 21, 2012)

While NRC may be legally charged with regulating the nuclear industry, and in completing the DGEIS and mandates emanating from the New York Court decision of 2012, the responsible thing for NRC to do would be to inform Congress of its incapacity to carry out such responsibilities absent a safety culture; recuse itself from future efforts on the DGEIA; and appoint, assign, or recruit an independent public research body to conduct such efforts.

We would be happy to provide references for such a public body.

We thank you for consideration of these views.