

NRR-PMDAEM Resource

From: Evans, Michele
Sent: Tuesday, July 31, 2012 4:05 PM
To: Salgado, Nancy; Thompson, Jon; Boska, John
Cc: Coffin, Stephanie; Lund, Louise; Banic, Merrilee
Subject: FW: Comments to NRC Partial Director's Decision on North Anna Restart and Operation
Attachments: anna_2206_07312012_pdd_reply_final.pdf

Jon,

For your disposition. Not clear to me if this is coming in hard copy also.

Michele

From: Paul Gunter [<mailto:paul@beyondnuclear.org>]
Sent: Tuesday, July 31, 2012 4:01 PM
To: Evans, Michele
Cc: Amidon / Eleanor M.; Ball / Richard; Blundell / G. Paul; Boyd/ Hilary; calta/ paxus; Edmund Frost; Gray / Erica; Gunter/ Paul; Jack / Alex; John Cruickshank; Kamps/ Kevin; King/Lovell II; Kretzmer / Erika; Levy/David; Price / Scott; Thomas Saporito; Bacque / Peter
Subject: Comments to NRC Partial Director's Decision on North Anna Restart and Operation

Good afternoon,

Attached please find the supplemental comments of Beyond Nuclear as regard the NRC proposed Partial Director's Decision of July 10, 2012 for the petition for emergency enforcement action (October 20, 2011) on the post-earthquake restart and operation of the North Anna nuclear generating station in Mineral, VA.

Thank you,
Paul

--
Paul Gunter, Director
Reactor Oversight Project
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July 31, 2012

Michele Evans, Director
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United States Nuclear Regulatory Commission
Washington, DC 20555-0001
By Email: Michele.Evans@nrc.gov

**COMMENT ON PROPOSED PARTIAL DIRECTOR'S DECISION RE:
THE OCTOBER 20, 2011 EMERGENCY ENFORCEMENT ACTIONS FOR THE
POST-EARTHQUAKE RESTART AND OPERATION OF THE NORTH ANNA
NUCLEAR POWER STATION, MINERAL, VA**

Ms Evans;

I am responding on behalf of Beyond Nuclear with regard to the United States Nuclear Regulatory Commission (NRC) correspondence of July 10, 2012 advising of us of an opportunity to comment on the agency's staff proposed partial Director's Decision on the joint petition of October 20, 2011 for emergency enforcement action per 10 CFR 2.206 for the post-August 23, 2011 earthquake restart and operation of the North Anna nuclear generating station in Mineral, Virginia.

Attached please find the additional comments of Beyond Nuclear.

Thank you,

----/signed/----

Paul Gunter, Reactor Oversight

----/signed/----

Kevin Kamps, Radioactive Waste Specialist

July 31, 2012

THE SUPPLEMENTAL COMMENTS OF BEYOND NUCLEAR
TO PROPOSED DIRECTOR'S DECISION FOR THE
OCTOBER 20, 2011 JOINT EMERGENCY ENFORCEMENT ACTION
PER 10 CFR 2.206 REGARDING THE
POST-AUGUST 23, 2011 EARTHQUAKE RESTART AND OPERATION OF
THE NORTH ANNA NUCLEAR GENERATING STATION, MINERAL, VA

Beyond Nuclear is providing its comments to the United States Nuclear Regulatory Commission (NRC) with regard to the July 10, 2012 proposed partial Director's Decision to a joint petition filed by Beyond Nuclear and co-petitioners on October 20, 2011 requesting regulatory enforcement action before the post-August 23, 2011 earthquake restart of the North Anna nuclear generating station in Mineral, Virginia.¹ The proposed Director's Decision was simultaneously provided to the licensee Virginia Electric Power Company for comment as well.²

The NRC identified that the petitioners raised a total of 16 concerns in the original petition, a supplemental petition and two subsequent public meetings with the NRC Petition Review Board.

Beyond Nuclear submits supplemental comments to the following action items identified by NRC pertaining to the onsite storage of High Level Radioactive Waste on this seismically active nuclear reactor site:

Action Item 7; The licensee needs to address the possibility of both boil down and rapid drain down events at the North Anna 1 and 2 spent fuel pools.

¹ Proposed Partial Director's Decision 10 CFR 2.206, US NRC to Beyond Nuclear, 07-10-2012
http://www.beyondnuclear.org/storage/north-anna/anna_2206_07122012_partial_dd_ML12165A208-1.pdf

² Proposed Partial Director's Decision 10 CFR 2.206, US NRC to David Heathcock, VEPCO, 07-10-2012,
http://www.beyondnuclear.org/storage/north-anna/anna_2206_07102012_nrc_heacock_partial_dd.pdf

Action Item 8; The Long-term storage of spent fuel in the spent fuel pool at North Anna 1 and 2 and at the North Anna ISFSI (Independent Spent Fuel Storage Installation) poses challenges to the public health and safety.

Action Item 9; “Hardened On-Site Storage” strategies for spent fuel should be used at North Anna 1 and 2.

Action Item 12; Concerns exist about damage to the structural integrity of the spent fuel pool structure at North Anna 1 and 2, as represent on pages 41 and 42 of the NRC staff’s technical evaluation for the restart of North Anna 1 and 2, November 11, 2011.

The NRC states with regard to all of the above items,

“In reviewing this concern, the NRC staff noted that out of the 12 concerns accepted for review, the NRC is currently reviewing six concerns as part of the lessons-learned from the Fukushima event. At the time of this partial DD (Director’s Decision) the NRC staff is still in the process of reaching a decision on this concern and resolution of this issue is forthcoming. The NRC staff will provide periodic status updates to the petitioners concerning progress on its resolution.”³

Beyond Nuclear takes this opportunity to identify two ongoing federal actions that pertain to the onsite storage of high level nuclear waste at the seismically active North Anna nuclear power station.

- 1) The NRC Japan Lessons Learned Directorate Compliance with NRC Order 2012-049 Modifying Licenses with Regard to Requirements for Mitigating Strategies broadly addresses strategies for developing,

³ Proposed Partial Director’s Decision Under 10 CFR 2.206, Eric Leeds, Director, NRR, US NRC, July 10, 2012, p.20

implementing and maintaining reactor core cooling, containment and spent fuel pool cooling in a three phase approach basically; 1) using installed equipment, 2) bringing in portable equipment and; 3) indefinite sustainment using off site resources.

Specific to the spent fuel pool issue, EA-12-049 at 4.0 lays out the “Spent Fuel Pool Cooling Strategies.”⁴

Beyond Nuclear notes that the focus of this action is to increase the reliability to utilize existing fire protection equipment rather than enhancing and maintaining emergency back-up power (AC and DC) as a Class E-1 system for maintaining reliable spent fuel pool cooling during sustained station blackout conditions.

Beyond Nuclear maintains that allowing the spent fuel pool to boil off cooling water inventory and falling back to providing reliable make up water capability still introduces potential unintended consequences from the condensation of water in the boil off process. These unintended consequences can include the precipitation leading to the failure of electrical circuits, sump clogging and other adverse impacts.

Beyond Nuclear further notes that none of these actions involve Dominion Nuclear reconfiguring the current high-density storage irradiated fuel inventories of Units 1 and 2 to open frame, low density storage by accelerating the transfer of irradiated fuel > 5 years to independent dry storage casks in Hardened On-Site Storage (HOSS) configurations⁵, also described as “Robust Storage of Spent Nuclear Fuel”⁶ which Beyond Nuclear continues to strive for.

Thus, EA-2012-049 fails to address the more fundamental problem and substantial risk from overcrowded high-density storage of high level radioactive

⁴ <http://pbadupws.nrc.gov/docs/ML1214/ML12146A014.pdf> p. 6

⁵ “Principles for Safeguarding Nuclear Waste at Reactors,” Institute for Energy and Environmental Research, <http://216.250.243.12/ieer/pdfs/HOSS%20PRINCIPLES%203%2023%202010x.pdf>

⁶ “Robust Storage of Nuclear Fuel,” Institute for Resource and Security Studies, January 2003, <http://www.irss-usa.org/pages/documents/CANReport.pdf>

waste in the spent fuel pools.

- 2) The Japan Lessons Learned Directorate Compliance with Order EA-2012-051 Spent Fuel Pool Cooling focuses on simply enhancing spent fuel pool monitoring instrumentation and similarly fails to address the much more significant and fundamental problem of over crowded high density storage of high level radioactive waste in the Unit 1 and 2 spent fuel pools.⁷

These Orders constitute the NRC and industry actions (including Dominion) and commitments and simply focus on make-up water capability and enhancing spent fuel pool instrumentation.

Beyond Nuclear finds these Orders fundamentally defective and, as such, do not constitute sufficient and adequate enforcement action as requested by Beyond Nuclear and joint petitioners in their October 20, 2011 as supplemented.

Irradiated fuel pools containing high-level radioactive waste in nuclear power reactors were designed for temporary storage only and to store only a small fraction of the inventories they currently hold. The failure to establish a scientifically accepted and licensed nuclear waste management strategy has resulted in North Anna 1 and 2 as at other U.S. plants containing several times as much spent fuel as the one at Fukushima's Unit 4, and stored in a densely packed configuration that would be harder to cool in the event of a rapid loss of pool water. The emergency enforcement action sought by the petitioner(s) is that the spent fuel pool hazard be decreased by accelerating the transfer of irradiated fuel > 5 years out of the reactor into Hardened On-Site Storage in qualified and robust dry casks, thereby reducing the density of the fuel remaining in the pools and segregating the hazardous material into smaller inventories. To the contrary, NRC has instead assigned accelerated transfer of spent fuel to dry

⁷ <http://pbadupws.nrc.gov/docs/ML1214/ML12144A323.pdf>

storage issues to Tier 3 - effectively placing it at the agency's lowest priority. Moreover, the staff has determined that the current regulatory approaches to these issues are acceptable (including maintaining high-density storage in spent fuel pools) only to "review" new information as it becomes available as a result of specific ongoing activities to confirm this conclusion and gain additional insights.

In fact, the Orders do not demonstrate what effectively can be done if the newly ordered irradiated fuel pool monitors show that the level is not adequate to support operation of the normal fuel pool cooling system, the level is not adequate to provide substantial radiation shielding for a person standing on the spent fuel pool operating deck, and the level where the fuel remains covered and actions to implement make-up water addition should no longer be deferred."

(Order, Appendix 2)

Beyond Nuclear maintains that jury-rigged systems do not provide reasonably adequate protection and can therefore fail to maintain and add water to an affected pool in sufficient quantity to prevent a pool fire under certain circumstances. Therefore, reducing the probability of a pool fire should be NRC's top priority by maintaining reliable cooling functions. Beyond Nuclear supports and maintains the argument that the most reasonable, effective and reliable measure to prevent a high-level radioactive waste storage pool fire would be to reconfigure and re-equip the pool with low-density, open-frame racks with the transfer to Hardened On Site Storage casks.

Therefore, Beyond Nuclear submits that NRC's assumptions about North Anna's operator's (as generically applicable to all US reactor operators') capability to mitigate an accident as presented in EA-2012-049 and EA-2012-051 are unrealistically optimistic and unreliable. The operator's ability to carry out mitigative measures can be severely degraded in an accident environment involving fuel damage. Therefore, Beyond Nuclear maintains the argument that the aforementioned Orders as referenced must be supplemented as part of a

Tier 1 strategy to include a requirement for open-frame, low-density pool storage and place assemblies > 5 years out of the reactor in dry casks.

Therefore, Beyond Nuclear does not find the NRC proposed Partial Director's Decision of July 10, 2012 to adequately or acceptably address its request for emergency enforcement action at the North Anna Nuclear Generating Station as pertains to high-level nuclear waste storage pools on a seismically active site.

Sincerely,

-----/signed/-----

Paul Gunter, Reactor Oversight

-----/signed/-----

Kevin Kamps, Nuclear Waste Specialist

July 31, 2012