

NRR-PMDAPEm Resource

From: Deborah Grinnell <grinnelldebbie2@gmail.com>
Sent: Monday, February 15, 2016 2:40 PM
To: Lamb, John
Subject: [External_Sender] C-10 Comments on the NRC PRB call
Attachments: C-10 final statement for the PRB call.docx

Hello John,

You are attaching the C-10 Foundation comments for the NRC PRB call.

Thank you,

Debbie

Hearing Identifier: NRR_PMDA
Email Number: 2657

Mail Envelope Properties (FAE94493-E81C-4FC7-B8A3-EF3590EDB9CF)

Subject: [External_Sender] C-10 Comments on the NRC PRB call
Sent Date: 2/15/2016 2:39:50 PM
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From: Deborah Grinnell

Created By: grinnelldebbie2@gmail.com

Recipients:
"Lamb, John" <John.Lamb@nrc.gov>
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C-10's Additional Comments on C-10's 2.206 Petition

More than seven years after ASR was discovered in Seabrook Station's nuclear power plant's concrete structures, C-10 Research and Education Foundations (C-10) and the at-risk public recognized that no certified code testing has been done to confirm ASR, or key material properties to know the extent and rate of ASR concrete degradation in Seabrook's primary containment.

- C-10 is aware that water has been leaking through the containment structure at Seabrook since its initial construction. Significant water infiltration extends from 80 feet below to 6 feet above ground level. Due to ASR degradation Seabrook nuclear power plant is in violation of their current license. Aggressive water has been leaking through their containment since 1990. The Nuclear Regulatory Commission (NRC) Mortar Bar Test revealed that the ASR in Seabrook's affected and unaffected concrete was not "self limited". The reactor's ASR is active and progressive, it continues to erode unabated with no way to be repaired.**
- Seabrook's primary containment must remain an extremely robust concrete structure to prevent leaking through concrete. The public knows that if water is leaking through containment, radiation can leak out as well, which is deeply concerning. C-10 knows that if a small leak, a radiation containment failure, occurs it will release radiation over a longer time period, with a much smaller energy release. This would be below the threshold for "plume liftoff." The compromised containment structure that allows water leakage conversely allows deadly radiation emissions. Even a small radiation failure at ground level exposes the nearby public to severe health consequences as timely evacuation is impossible.**

- **NRC research reported that ASR negatively affects all mechanical properties of concrete in primary containment and all Seabrook structures. The NRC has stated that the diagnostic value of mechanical properties due to ASR lies in the capacity to require testing between the original unaffected concrete and affected concrete.**
- **In 2010, NextEra and the NRC reported ASR concrete degradation was confirmed in Seabrook’s control building. The data revealed a moderate to severe reduction of the mechanical properties through lab certified petrographic testing. The NRC has repeatedly stated that ASR is confirmed only through petrographic examination in accordance the ASTM code. IN NRC report (ML13151A328) *“The first core samples in April and May 2010. This area was selected because, qualitatively, it had the most significant groundwater intrusion, and the walls show the most extensive pattern cracking and secondary deposits. The initial examination of the core samples was positive – the core samples displayed the visual characteristics of high quality, competent concrete and proper concrete placement procedures. However, subsequent quantitative testing revealed a reduction in concrete strength and elasticity modulus (Young’s modulus)”*.**
- **As early as 2011, C-10 and the Union of Concerned Scientists (UCS) knew that without petrographic testing the impact of ASR on Seabrook’s primary containment and the spent fuel pool’s integrity and public’s safety was unknown.**

In 2012, the NRC clarified *“NextEra’s position that NO structure will be precluded from continued monitoring for the affects of ASR concrete degradation UNTIL: 1) a core bore petrographic examination has been completed on the Seabrook structure to CONFIRM the absence of ASR 2) and that ASR is no longer active.”* Unbelievably, later in 2012, NextEra’s position totally changed by stating that *“confinement provided by reinforcing steel and other restraints limits ASR expansion of the concrete within the structure, which reduces the extent of cracking and the associated reduction of*

concrete material properties". NextEra stated that petrographic core samples would not reduce the mechanical properties data results thus should not represent Seabrook's containments structural integrity.

NextEra's position was scientifically unfounded in research and by experts. Since 2012, UCS scientists, expert Paul Brown, and C-10 staff have repeatedly stated to the NRC that NextEra's assumption was scientifically unfounded. To-date, the NRC has not corrected NextEra's false assumption to the public or in any NRC reports or public meetings.

NextEra has further eroded confidence in their research by creating their own test specimens in Ferguson, Texas and then applying the study data to evaluate the current and future impact of ASR on Seabrook Station concrete structures. This study does not test any actual samples from Seabrook's primary containment nor can the unique confluence of Northeast weather, storm surge etc. be adequately replicated. The study is not valid. NextEra's intent to apply the study results to evaluate the current and future impact of ASR at Seabrook Station is unsound. This illogical method fails to provide any measure of confidence to the citizens impacted by the level of safety at Seabrook Station.

Seabrook station has been in violation of their current license for seven years because of ASR. It has been discovered in a number of Seabrook structures, but the primary containment building still has not been tested to confirm ASR or the extent of active and progressive concrete degradation. The NRC has not required that NextEra change their position based on their false assumption that "reinforcing steel and other restraints limits ASR." They have not required NextEra to reverse their current position to test only "replica" cores in their Ferguson, Texas study rather than also testing actual cores from Seabrook Station's primary containment structures. NRC stated, "*NextEra's off-site research test program must represent the actual in-situ conditions of Seabrook's primary containment.*" The NRC statement is frankly, absurd. NextEra's ASR current position is scientifically unfounded. Their "replica" research study has not been peer reviewed. Repeatedly, experts send

commentaries to the NRC and NextEra to state the scientific truth but NextEra continues to resist. The NRC does not correct NextEra's assumption and position. It is morally outrageous and scientifically unsupportable to not test Seabrook's actual concrete in primary containment with ASTM code testing given the safety risk. Frankly, NextEra has not fooled the public. We know Texas's concrete study cannot accurately represent Seabrook Station's ASR concrete degradation. No one will know the degree, extent and rate of Seabrook's ASR concrete degradation under their current license unless the actual in-site primary containment data in New Hampshire is tested though the petrographic examination in accordance the ASTM code, as represented in C-10's 2.206 petition.

C-10's 2.206 NRC petition is without question a necessary NRC enforcement request.

Comments presented for C-10 Foundation by the C-10 Foundation Board of Directors.