QUESTIONS ASKED ON NRC DAVIS-BESSE STEAM GENERATOR REPLACEMENT WEBINAR

By Kevin Kamps, Beyond Nuclear, Thursday, Feb. 20, 2014, 6 to 7 PM Eastern

Q: How can NRC allow FirstEnergy to perform a “like-for-like” steam generator replacement at Davis-Besse, when the new steam generators are significantly different than the old steam generators. Arnie Gundersen, Chief Engineer, Fairewinds Associates, Inc., expert witness for the environmental coalition challenging the Davis - Besse steam generator replacements before the NRC’s Atomic Safety and Licensing Board (ASLB), has identified and documented the following nine significant changes from the old steam generators to the replacement steam generators: 1.) The tube inspection lane was removed; 2.) An additional tube support plate was added; 3.) 150 additional tubes were added; 4.) The tube alloy was changed; 5.) The tube to tube sheet junction was modified extensively; 6.) The overall design of the steam generator support structure was changed from a cylindrical skirt to a pedestal cone; 7.) The thickness of the pressure retaining walls of the ROTSG [Replacement Once Through Steam Generator] is two inches thinner than the pressure retaining wall in the Original Once Through Steam Generator; 8.) The 180 degree elbow design will be extensively modified; 9.) The alloy of the hot leg nozzles was also changed. As Gundersen has asserted, any one of these significant changes should have triggered a license amendment proceeding, as requested by the coalition of environmental interveners.

Q: Given that San Onofre 2 & 3, CA, were permanently shutdown after a dangerously botched steam generator replacement, causing a multi-billion dollar boondoggle, how can NRC now allow FENOC to install replacement steam generators at Davis-Besse that are significantly different than the old ones they are replacing? Why hasn’t NRC conducted a careful review of the changes’ safety significance? How can NRC allow FENOC to conduct an un-reviewed experiment with new steam generators, risking catastrophic releases of hazardous radioactivity to the environment (cascading failure of steam generators tubes, Loss of Coolant Accident, reactor core meltdown, containment breach) , and/or a financial meltdown?

Q: Given that Crystal River, FL, was permanently shutdown after fatally
cracking its concrete containment dome, causing another multi-billion dollar boondoggle, how can NRC now allow FENOC to re-start, and even extend the license for, a reactor with documented severe cracking in its own concrete containment Shield Building, and now documented 6 to 12-inch-wide air spaces or gaps, which extend 40% of the way through the 30-inch-wide Shield Building wall?

Q: How can NRC ignore Shield Building cracking in the light of the environmental coalition’s intervention against the 20-year license extension, especially since FENOC itself admitted last September that the severe Shield Building cracking is growing worse over time.

Q: Davis-Besse has breached its Shield Building four times: 1) in the 1970s for the Initial Construction Opening; 2) in 2002-2004 for the 1st vessel head replacement; 3) in 2011 for the 2nd vessel head replacement; and 4) now for the current steam generator replacement project. Hasn’t this 4th breach risked even worse cracking of the already severely cracked Shield Building? How can NRC Staff approve extending Davis-Besse’s 20-year license extension, given the risks of Shield Building cracking to fail the test of containment, as during a steam generator cascading tube failure, reactor core meltdown, causing a catastrophic release of hazardous radioactivity?

Q: Davis-Besse has operated its atomic reactor for the past two years with steam generators degraded enough to require replacement, as well as a 40% (12-inch-wide) gap or air space in its 30-inch-wide Shield Building wall. What if the degraded steam generators had suffered a cascading failure of steam generator tubes, Loss of Coolant Accident (LOCA), reactor core meltdown? Would the Shield Building have contained the catastrophic amounts of hazard radioactivity, without leaking them into the environment to blow downwind and flow downstream. What engineering analysis has FENOC or NRC undertaken upon which to base any assertion that the past two years of operations have been compliant with safety regulations, given the 40% gap in the Shield Building wall? Is sheer luck (that the containment was not tested over the course of the past two years of full-power operations) an acceptable form of atomic safety regulation?

Q: How can NRC guarantee that very sloppy work done in late 2011 by FENOC in re-sealing the Shield Building breach, and the very sloppy regulatory oversight exercised by NRC, will not be repeated in 2014 during the current re-sealing of the Shield Building wall as part of the steam
generator replacement project?

Q: FENOC's Jennifer Young has stated this week in the media that this most recent gap or air space in the Davis-Besse Shield Building wall was not detectable before the breach to replace the steam generators was revealed by visual examination. But why hadn’t FENOC performed, and why didn’t NRC require, other tests (such as X-rays, ultra-sonics, etc.) that could have easily revealed the gap or air space before now, after full-power operations with a 40% through-wall gap in the Shield Building?

Q: Both the Crystal River, FL, and San Onofre 2 & 3, CA, permanent closures represent multi-billion dollar boondoggles. How can NRC allow Davis-Besse to risk such a billion-dollar boondoggle, as well as a catastrophic radioactivity release.

Q: Why did NRC Staff oppose the environmental coalition’s intervention against Davis-Besse’s steam generator replacement, and argue against expert witness Arnie Gundersen of Fairewinds Associate’s testimony warning about risks associated with NRC not carefully reviewing the nine significant changes to the new steam generators identified and documented by expert witness Gundersen? Why is NRC not supporting and requiring full license amendment proceedings, as requested by the environmental coalition?

Q: Why did NRC allow FENOC to breach its Shield Building twice – first for the 2011 reactor head replacement, and again for the 2014 steam generator replacement – instead of just once for both replacement jobs, as FENOC originally planned? How can NRC allow such multiple breaches, given the likely damage it is doing to the Shield Building each time?

Q: Has any other reactor containment been breached four times, as it has at Davis-Besse?

Q: Why did NRC Staff oppose the environmental coalition's intervention challenging the Davis-Besse steam generator replacements?

Q: Why did NRC let FENOC do a rush-job on the Shield Building re-sealing in October 2011? How did so many NRC inspectors, with enhanced oversight, miss the bad pour of concrete that led to this 6 to 12 inch void or gap or air space in the Shield Building wall?!
Q: With U.S. Congressman Dennis Kucinch requesting strong NRC regulation at every step of the way after severe cracking was discovered in October 2011 in the Davis-Besse Shield Building wall, how could NRC allow a 12 inch wide gap in the Shield Building wall to occur?

Q: An admission has been made by Ms. Jennifer Young, spokesperson for FENOC, as reported by the Toledo Blade on February 15, 2014, that: "...Some of the shield building’s rebar needs to be replaced. It appears to have been damaged by the cut made through the wall, she said.” (The article can be accessed online at http://www.toledoblade.com/Energy/2014/02/15/Davis-Besse-had-air-gap-in-shield-building.html#FAPYhYP7IMKFZULO.99) What is the safety significance of this damaged rebar? As revealed in a 2012 inspection report, NRC caught FENOC using sub-standard rebar in violation of NRC regs in the late 2011 Shield Building wall breach repair job. Will NRC have to look over FENOC's should yet again for this 2014 Shield Building breach repair? Will NRC commit to doing so, given FENOC's clear incompetence?

Q: What is the basis for, and the modeling done to support, the statement contained in the NRC Event Notification Report, Event Number 49828, dated February 14, 2014, which states, in part, that: "...Analysis shows this condition is bounded by previous calculations that demonstrate the containment function is maintained such that the protection of the health and safety of the public was not in question. Further analysis is planned to reconfirm previous calculations.” This NRC Event Notification Report, Event Number 49828, dated February 14, 2014, is posted online at: http://www.nrc.gov/reading-rm/doc-collections/event-status/event/en.html#en49828

Q: Does NRC have any basis for, and the modeling done to support, FENOC spokesperson Jennifer Young’s claim, reported in a February 14, 2014 Toledo Blade article (posted online at http://www.toledoblade.com/local/2014/02/14/Gap-in-concrete-discovered-in-Davis-Besse-s-protective-shell.html), that there is “no reason to believe the flaw [the air pocket or gap in the Shield Building wall first reported that very day] compromised the integrity of the outer shield building while the plant was online the last two years.”

Q: Why did NRC not require that suitable alternative inspection methods (such as x-rays, ultrasonic tests, acoustic tests, etc.) were utilized to
compensate for FENOC’s departure from standard industry practice when it employed a technique, during the late 2011 re-sealing of the Shield Building wall breach, that prevented normal post-concrete-pour examination and inspection methods (such as visual examinations). Why were such methods not required by NRC, as they could have detected the gap much earlier than the visual discovery made during the current steam generator replacement Shield Building cut through?

Q: Why did NRC not require that industry standard wooden forms be used, and simply removed, after the Shield Building replacement wall’s concrete had cured in late 2011?

Q: Did NRC and FENOC miss the “air pocket” or “gap” in the Shield Building wall, because FENOC had installed metal plates on the inside surface of the wall when pouring the replacement concrete in late 2011. Why did NRC allow FENOC to leave the metal plates in place, making visual examinations and inspections of the concrete and steel rebar impossible?

Q: Given the large number of NRC inspectors at Davis-Besse in late 2011, and the enhanced oversight by NRC, as demanded by Congressman Kucinich, what follow up was conducted to make sure the re-sealing of the Shield Building was done well? How was a bad concrete pour allowed to happen? Would the Shield Building has stood up to the test of a tornado missile, or internal reactor core meltdown, during the past 2 years of full power operations, if the test had come?! Would a hazardous radioactivity release have occurred, had a tornado struck or a meltdown occurred? Has NRC carried out engineering analyses to confirm this?

Q: How much concrete and steel rebar was determined to be necessary for the late 2011 repair job? Did the actual amounts used differ from the estimates?

Q: Which companies, besides FENOC, including contractors and sub-contractors, etc., were responsible for making the repairs to the Shield Building following the October 2011 reactor head replacement breach? Who screwed up?

Q: What was the method to pour concrete and install rebar used to re-seal the Shield Building breach in 2011? Is the same method to be used again in 2014? Shouldn't NRC get on top of that methodology, to make sure the gap
doesn't happen again?

Q: What was the composition of the concrete used in the pour, and the rebar installed, during the Shield Building breach repatch in 2011? Will the same concrete and rebar be used again in 2014? How can NRC allow this, given the 2011-2014 gap in the Shield Building wall?

Q: Will NRC make publicly available, immediately, any and all documents and communications having to do with the concrete pour and/or steel rebar emplacement to re-seal the breach (opened in order to replace the degraded reactor lid) in the concrete Shield Building at Davis-Besse in late November to early December 2011? Will this include all inspection reports, radiography test results, ultrasonic test results, acoustic tests, other test results, quality assurance (QA) inspections, tests, programs, protocols, methods, activities, logs, etc., and engineering calculations, used to ascertain or determine that the patch job on the Shield Building (concrete pour, steel rebar emplacement, etc.) performed in late 2011 by FENOC, its contractors, sub-contractors, etc., met all NRC construction, quality assurance (QA), health, safety and environmental protection requirements and regulations?

Q: Will NRC make publicly available, immediately, all communications and documentation having to do with NRC’s mid- to late-November, 2011 decision to authorize the pouring of concrete and/or emplacement of steel rebar to re-seal the breach opened in the Davis-Besse Shield Building, in order to allow restart of the Davis-Besse atomic reactor, after its reactor lid replacement, despite the mid-October 2011 revelation of severe cracking in the concrete Shield Building?

Q: Given the Japanese Parliament's independent investigation conclusion that industry-regulator collusion was the root cause of the Fukushima Daiichi nuclear catastrophe, how can NRC justify its own collusion with FENOC at Davis-Besse, vis a vis NRC's supposed mission to protect public health, safety, and the environment? Isn't NRC doing just what NRC OIG warned against in its 2002 Hole in the Head Fiasco follow up report: placing company profits ahead of public safety?

Q: What is the NRC's technical difference or distinction between a "void" and a "crack" in the Shield Building wall?
Q: Didn't the Shield Building wall gap, combined with the Shield Building wall's severe cracking, add up to a compromised containment system during the Dec. 2011 to recent 2014 full power reactor operations at Davis-Besse? What if a tornado missile had hit that soft spot? What if an internal reactor core meltdown, its pressures, attacked the Shield Building? Would it have contained the catastrophic amounts of hazardous radioactivity inside, or released it to the environment to blow downwind, flow downstream?

Q: Will NRC now admit that its rush to approve the re-sealing of the Shield Building wall, and to re-start Davis-Besse, was a mistake, now that the Shield Building wall gap has been revealed? Has Davis-Besse operated safety for the past two-plus years, given the questionable structural integrity of its radiological containment structures?

Wasn't the Davis-Besse Shield Building designed and constructed badly in the first place? For example, out of plumb vertical lean, which has exerted large pressures and forces on the underside of the lean for four decades now? Hasn't that damaged the structural integrity of the Shield Building? Combined with the 2011-2014 gap in the Shield Building wall, was the containment structure adequate to withstand tornado missiles, or the pressures of a reactor core meltdown?

Would near-term dealing with the radioactive steam generators mean sending them to NewGreen for "recycling" into consumer products?

B&W Canada has made defective replacement lids, as at Palisades. How has NRC assured the Davis-Besse SG replacements are not also defective?