The following is provided as public comment on the NRC draft EIS re: Davis-Besse’s proposed 20 year license extension

Link to original Jan. 10, 2012 cracking contention filed with the NRC ASLB:

http://www.beyondnuclear.org/storage/FINAL%20Contention%205%20Cracking%20Jan
uary%202012.pdf

It is noteworthy to point out that, after an initial period of support for our contention, NRC Staff opposed it after the publication of FENOC’s Aging Management Plan in early April, 2012

At point #20, on p.21-22, we stated:

“Those patches are, of course, weak spots themselves, both the welded area on the inner steel containment, a mere 1.5 inches thick, as well as the “patched” area on the concrete shield building/secondary reactor containment structure, a mere 2.5 feet thick. As explained below, on January 4, 2012, David Lochbaum of UCS questioned whether the multiple holes cut in containment, and thus the multiple “patches” applied afterwards, overlapped, and how so. The “welds” on the inner steel container, and “repours” of concrete on the outer shield/secondary containment building, are themselves weak spots – perhaps repeatedly so in spots that have been involved in more than one cut-through and repair. This is a safety-significant issue that will grow all the more so with age-related degradation, and the prospect for yet one more cut-through and “repair” (patch) for the 2014 steam generator replacement project. In fact, FENOC has answered Lochbaum’s question about the overlap of the breaches. In its January 5, 2012 Camp Perry power point presentation cited previously, on Slide #18 (page 9 of the hardcopy handout), FENOC documents that indeed all of the first three breaches – 1970, 2002, and 2011 – have already overlapped, specifically in the top left-hand quadrant.”

As revealed via our FOIA request (dated Jan. 26, 2012), by documents NRC provided us in summer 2012, contractors Bechtel and Sargent and Lundy themselves at first suspected that the hydro-demolition process itself, used to breach the Shield Building, was responsible for the cracking. Although the cracking proved to be far more widespread than the access opening area impacted by the hydro-demolition activity, Bechtel and Sargent and Lundy’s concern is a strong indication that hydro-demolition can in fact be a concern in terms of damage.

In fact, in Feb. 2014, it was revealed that the hydro-demolition just carried out as part of the steam generator transplant operation had damaged the rebar in the Shield Building access opening area. On April 15, 2014, NRC Staff included this concern about rebar damage issue in Requests for Additional Information (RAIs) regarding the 2017-2037 Aging Management Plan (AMP).

Davis-Besse has breached its Shield Building four times: the Initial Construction Opening in the 1970s; the 2002 reactor lid replacement access opening; the 2011 reactor
lid replacement access opening; and the 2014 steam generator replacement access opening. This is more than any other nuclear power plant. Each breach of the Shield Building risks more damage to the structure. Davis-Besse cannot guarantee not needing to breach the Shield Building yet again before 2037.

At point #22, on p.23-24, we stated:

“This approach appears more attuned to an arbitrary outage schedule, with a speedy return to economically-profitable “production” rather than taking a conservative, analytical approach to determination of root causes, extent, and safety-significance of cracking in the shield building. Such an approach imperils Intervenors, the people they represent, and countless residents downwind and downstream of the aged and aging Davis-Besse atomic reactor in the Great Lakes Basin.”

NRC’s OIG reported at the end of 2002, after the Hole in the Head fiasco revealed earlier that year, that NRC – in addition to FENOC – had prioritized the company’s bottom line above public safety. NRC has repeated that behavior since 2011 – allowing the company to rush reactor restart in Dec. 2011, before knowing the root cause, extent of condition, and corrective actions needed, regarding Shield Building cracking. In fact, given revelations of the worsening of previously known cracking, and the initiation of previously unknown cracking, in August/September 2013, NRC has postponed FENOC’s due date for a “revised revised” root cause report and corrective action (aging management) plan until mid-2014 – more than two years after the original Feb. 28, 2012 deadline. As David Lochbaum of UCS indicated in May of 2012, FENOC’s failure to provide complete, accurate information by Feb. 28, 2012 constituted a 10CFR50.9 violation, but NRC has never taken enforcement action.

At point #23, on p.24, we stated:

“Of additional concern is that the pour of new concrete to re-seal the shield building foreclosed significant investigatory options for examination and further analysis of the cause, extent, and significance of the cracks, such as direct visual examination, direct measurement, direct sampling, etc. In effect, evidence of the cracking has been buried under inches or feet of concrete, due to FENOC’s rush to re-start, and NRC’s letting them get away with it.”

In fact, in Feb. 2014 we learned that, by leaving in place metal forms in late 2011, FENOC had concealed a 25 foot long, 6 to 12 inch wide, air space or gap of yet to be revealed depth through the 30 inch thick Shield Building wall. The metal forms prevented visual examination of the gap. Thus, not only did the rushed resealing of the access opening involve an incomplete concrete pour – it also prevented visual examination and discovery of the very gap resulting from the rush-job conducted during the rush to restart the reactor in Dec. 2011. Thus, Davis-Besse operated at full power for over two years –
from early December 2011 to Feb. 1, 2014 – with a significant void space in its Shield Building wall, of yet-to-adequately-be-determined impact on containment safety margins.

Such risky behavior by FENOC and NRC, working in collusion and complicity, cannot be endured for an additional 20 years.

At point #25, on p.26, we stated:

“If the shield building loses its ability to perform its safety- and security-related functions, Davis-Besse should be immediately shut down, of course. But this very risk, the potential loss of shield building safety and security function over time, is exactly the kind of analysis that should be included in FENOC SAMA analyses regarding the Davis-Besse license extension. Such analyses have not been done. Similarly, the potential for Davis-Besse’s cracked shield building to cause its early retirement, before its current license expiration in 2017, or before its extended 2037 license expiration proposed by FENOC, should be addressed by FENOC’s reliability analyses, and its energy alternatives analyses. For, if Davis-Besse’s days are numbered, due to its cracked shield building, then Intervenors’ wind, solar, and compressed air energy storage contentions increase in merit. FENOC, and the Region of Interest as a whole, should be preparing now to replace Davis-Besse and the NRC should reflect such a reality through its own independent analysis in the Draft Environmental Impact Statement on the license extension proposal.”

FENOC’s SAMA analyses assume a safe, sound Shield Building capable of performing its designed containment function. However, the severe cracking known since October 2011, combined with wall gaps in resealed access openings in 2002 and 2011, seriously undermine any such optimistic assumptions. As Intervenors’ SAMA contentions have challenged since the beginning of this license extension application proceeding, FENOC’s SAMA analyses need fundamental re-evaluation.

NRC’s draft EIS does not adequately address these needed SAMA re-evaluations, if it addresses them at all.

Mark Cooper, an energy economist at Vermont Law School, warned on April 10, 2014 that nuclear utilities must plan for replacement power – as from efficiency upgrades and development of renewable sources of electricity – in advance of the inevitability that atomic reactors will one day close, lest our electric grids lurch from crisis to crisis. In fact, in July 2013, Cooper identified Davis-Besse as one of a dozen reactors most at risk of near-term shut down, due to a variety of factors, including economic factors (cost, old age, stand alone status, and only a 25-year future even if it gets an extension), operational factors (lack of reliability, long-term outages), as well as multiple safety factors. (see Exhibit ES-1: Retirement Risk Factors of the Nuclear Fleet, page iv, posted online at http://216.30.191.148/071713%20VLS%20Cooper%20at%20risk%20reactor%20report%20FINAL1.pdf).
At point #40, on p. 38-39, we stated:

“A problem with this examination protocol is that this visual inspection program is limited to external surfaces. The present cracking controversy involves internal cracking, not visible to the naked eye on the surface. That is another reason that Interveners are concerned that the early December pouring of the concrete to patch the shield building hole may have covered up evidence of cracking that could only be obtained through direct visual inspection, but is now under inches or feet of concrete.”

The rushed access opening reseal, in the lead up to the rushed reactor restart, in late 2011, not only concealed primary evidence of severe Shield Building wall cracking, it also introduced a substantial gap in the resealed access opening, concealed from visual examination by metal plates that had been left in place. FENOC’s ability to detect serious problems with the Shield Building without direct visual examination seems quite limited. The substantial Shield Building wall gap introduced in 2011, for example, remained undiscovered until Feb. 2014, when visual examination revealed it during the steam generator replacement cut of yet another access opening through the Shield Building. During the Dec. 2011 to Feb. 2014 time frame, not a single acoustic test that could have revealed the wall gap was performed.

Along the same lines, the white wash applied to the exterior of the Shield Building in August 2012 has concealed visual evidence of surface cracking ever since. Intervenors called for comprehensive root cause, extent of condition, and corrective action examination, documentation, and analyses throughout late 2011 and all of 2012 (in fact, still call for it) – for all forms of cracking and other Shield Building problems, not just sub-surface laminar cracking. FENOC’s and NRC’s priority on production (company profit), rather than public safety, has glossed over serious Shield Building problems, of deep safety and environmental concern on the brink of approval of a 20-year license extension. In fact, we addressed this concern at the very end of point #45, on p.46-47, stating:

“Intervenors question with alarm the safety significance of the potential for worsening concrete shield building cracking over the next five years of licensed operations. Contemplating such worsening cracking for the next quarter century, considering the 20 year license extension proposed, raises the level of alarm considerably. Interveners contend that Davis-Besse should be shut down on Earth Day (April 22), 2017 – its last licensed date for operations under the original 40 year license – at the very latest.

In fact, by Sept. 2013, FENOC admitted worsening of previously identified cracking, as well as initiation of newly discovered cracking – that is, age-related cracking. This is clear evidence that Intervenors’ cracking should have been admitted for ASLB hearing in the first place – it still should be.

At point #48, on p.50, we stated:
“In request for additional information (RAI) B.1 4-1, issued on May 19, 2011, the staff asked the applicant to describe the programmatic activities that will be used to continually identify aging issues, evaluate them, and as necessary, enhance the aging management programs (AMPs) or develop new AMPs for license renewal. In its response dated June 24, 2011, the applicant stated that it currently has a procedurally controlled operating experience review process, as required by NUREG-0737, "Clarification of TMI Action Plan Requirements," Item I.C.5, "Procedures for Feedback of Operating Experience to Plant Staff." The applicant stated that this process provides for the systematic identification and transfer of lessons learned from site and industry experience into fleet and station processes to prevent events and enhance the safety and reliability of its operations.”

The irony of this, of course, is that the Three Mile Island precursor incident at Davis-Besse, 18 months before the TMI meltdown, had that OE [Operating Experience] been shared with TMI by Davis-Besse, or even NRC. But that did not happen, and the rest is history. This TMI precursor incident was described, in summary, in a backgrounder about Davis-Besse’s numerous close calls with disaster, previously put on the record in this proceeding, posted online at http://www.beyondnuclear.org/storage/Davis%20Besse%2020%20More%20Years%20of%20Radioactive%20Russian%20Roulette%20Nov%202010%20corrected%20Dec%202010.pdf (see pages 1-2).

Given NRC Staff’s April 15, 2014 RAIs, it is clear that NRC Staff is still not clear that FENOC has aging-related cracking of the Shield Building, and associated “adequate protection” concerns associated with Shield Building safety-related design functionality, comprehensively covered, under its 2017-2037 AMP.

At point #51, on p.55, we stated:

“NRC’s DB RAI 3.1.2.2.16-3, on page 6, also directly touches upon Intervenors’ present contention. This is due to the fact that degradation of the steam generators will require their premature replacement, requiring yet another breach of the Davis-Besse concrete shield building. FENOC already plans such an organ transplant in 2014. But if FENOC screws up this aging management program badly enough, it could very well have to replace steam generators yet again in the future, during the license extension, even after the 2014 steam generator replacement. Given the fact that Davis-Besse currently has its third lid, with no guarantees that a fourth lid will not be needed, necessitating yet another concrete shield building breach, it is not far fetched to raise the concern about yet more steam generator replacements post-2014. Each breach of the concrete shield building risks introducing more weakness into the structure, and undermining its vital safety function.

The late Jan., 2012 San Onofre (CA) steam generator tube rupture occurred a few weeks after this Jan. 10, 2012 contention was filed. The defective San Onofre replacement steam generators led to the permanent shutdown of San Onofre Units 2 and 3 in June 2013.
Although we also filed a steam generator replacement contention at Davis-Besse in May, 2013, which included concerns about Shield Building breaches, that contention was summarily dismissed by the ASLB. Thus, the steam generator replacement “experiment” at Davis-Besse is now well underway, and only time will tell how long they will last, and how soon the Shield Building must again be breached, if FENOC chooses to replace large nuclear components located within the Shield Building.