News from Beyond Nuclear
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Nuclear Regulatory Commission Staff Rubberstamp
Entergy Nuclear Palisades’ Operations Until 2031
Environmental Coalition Vows Continued Campaign to Shut Down
Dangerously Age-Degraded Atomic Reactor Pressure Vessel

Covert, MI and Rockville, MD—On November 23rd, the U.S. Nuclear Regulatory Commission (NRC) staff, headquartered in Rockville, MD near Washington, DC, published two related approvals, representing safety regulation rollbacks regarding age-related degradation risks at Entergy Nuclear’s 44-year old Palisades atomic reactor in Covert, MI, four miles south of South Haven on the Lake Michigan shore. Links to the NRC staff approvals, regarding “Appendix G” (ductile tearing risk) safety regulation rollbacks, and also the “PTS (Pressurized Thermal Shock) Amendment” (brittle fracture risk rollback), are posted at: http://www.beyondnuclear.org/safety/.

These NRC staff rubberstamped approvals represent a green light for Entergy to operate Palisades for 60 years, till 2031, despite the increasing risks at what has long been acknowledged as the worst neutron radiation embrittled and age-degraded reactor pressure vessel (RPV) in the U.S. The environmental coalition, which from 2005-2007 also unsuccessfully challenged Palisades’ 2011-2031 license extension, has vowed continued efforts to permanently shut down Palisades, in hopes of preventing a reactor core meltdown and catastrophic radioactivity release.

“Once again, the NRC Commissioners, and now staff, demonstrate that there is no way to thread the needle; the public remains excluded. This is likely the public's last opportunity ever to question the absurdly embrittled and dangerous pressure vessel at Palisades. We can only hope the NRC’s incurious facade and implacable public-be-damned attitude does not give rise to a spectacular radioactive catastrophe,” said Toledo attorney Terry Lodge, the environmental coalition’s legal counsel.

The coalition’s researcher, Michael Keegan of Don’t Waste MI, documented in 1993 that Palisades had already violated NRC’s RPV embrittlement safety standards by 1981, just ten years into its operations.

“NRC has custom-tailored weakened regulations to accommodate the severely age-degraded Palisades atomic reactor, and to allow Entergy to run it into the ground till
2031,” said Kevin Kamps of Beyond Nuclear, a national watchdog group based in Takoma Park, MD. “The collusion between Entergy, NRC, and U.S. Representative Fred Upton (R-MI’s 6th District) to keep Palisades operating, is frighteningly similar to the root cause of the Fukushima Daiichi nuclear catastrophe in Japan, as determined by the Japanese Parliament: collusion between the safety regulator, nuclear utility Tokyo Electric Power Company, and elected officials,” Kamps said.

“It is once again disheartening and frightening to know that the NRC continues to issue its rubber stamp approval on this aging and failing nuclear power plant on the shore of Lake Michigan,” said Bette Pierman, chairman of Michigan Safe Energy Future—Shoreline Chapter. “Greed rules over best practice and faulty infrastructure and an ever-problematic safety culture. They will continue to allow this plant to produce highly-toxic, radioactive waste while it is on the verge of a meltdown when they do not have a guaranteed safe waste storage facility in place and discuss transporting it by rail, and even by barges on Lake Michigan,” Pierman said.

“Why not test the safety of the Palisades reactor pressure vessel?” asked Mark Muhich, chairman of the Sierra Club’s Nuclear-Free Michigan Committee. “Palisades is one of the oldest commercial nuclear reactors in the world. It only makes common sense to take a precautionary approach ensuring safe operations at Palisades. Physical testing of the reactor pressure vessel at Palisades is long overdue, and should not wait until 2019, or even later. ‘Testing coupons’ are accessible for physically testing the embrittlement of Palisades’ RPV. Why not test them? Why has NRC overruled its own Safety Board, which ordered hearings into the integrity of Palisades’ RPV? Why has NRC ruled in favor of an appeal to delay testing by Entergy? Is it because NRC and Entergy do not want to know the results of that embrittlement test? Why is NRC authorizing huge potential risks to Michigan and the Great Lakes by eroding the conservative safety protocols that were built into the operations at Palisades in previous decades? NRC is ignoring science and safety in not testing the Palisades’ RPV. Is NRC's dismissal of its own Safety Board's findings, the environmental community, and local elected officials the final word on Palisades? NEVER!” Muhich said.

“The ‘Shutdown Before Meltdown Campaign’ continues despite these morally wrong decisions to deny this coalition, representing people of the Great Lakes region, to present evidence proving that the old Palisades reactor vessel, and the entire plant, are too degraded to safely operate. NRC, other federal government officials, and Entergy are knowingly entangled with the risks—a dangerous game of radioactive Russian roulette for all who live in the Lake Michigan basin and beyond,” said Iris Potter, Palisades Shutdown Campaign coordinator for Michigan Safe Energy Future’s Kalamazoo Chapter.

BACKGROUND

The NRC staff approvals came two weeks after the NRC Commissioners ruled against the environmental coalition, in favor of Entergy, on multiple contentions focused on the worsening RPV risks. These NRC actions came despite Palisades’ RPV being at increasing risk of pressurized thermal shock (PTS) fracture if emergency core cooling
system water ever contacts the hot walls and welds. Simultaneously, Palisades’ RPV is at risk of ductile tearing, even at the hotter temperatures of “normal operation” (above 500 degrees Fahrenheit), due to loss of fracture toughness (under Title 10, Code of Federal Regulations, Part 50, Appendix G safety regulations).

The NRC regulatory rollbacks came despite the coalition’s effort having garnered the support of the mayors of Grand Rapids and Kalamazoo. Grand Rapids (with a population of 200,000) and Kalamazoo (with 75,000 residents) are the two largest cities in southwest Michigan, both well within the 50-mile danger zone downwind of Palisades. On July 30, 2015, Grand Rapids Mayor K. George Heartwell wrote the NRC, urging that long overdue physical safety testing of Palisades’ RPV be conducted, and that the environmental groups’ intervention be allowed to proceed to a hearing. Echoing those calls, on November 6, 2015, Kalamazoo Mayor Bobby J. Hopewell went even further, urging that, “From the information presented… the requested regulatory relief should be denied to Entergy.”

Likewise, on August 4, 2015, the nearest residents to the Palisades atomic reactor, the Palisades Park Country Club, also demanded the long overdue physical safety testing, and called for the hearings to proceed.

And on August 7, 2015, so too did the Sierra Club, “the nation's largest and most influential grassroots environmental organization -- with more than two million members and supporters.” The Sierra Club’s attorney, Wally Taylor, filed a Friend of the Court brief in support of the environmental coalition’s efforts, on behalf of its Nuclear-Free Michigan Committee, chaired by Mark Muhich of Jackson, MI.

The intervening environmental coalition, comprised of Beyond Nuclear, Don’t Waste MI, MI Safe Energy Future, and Nuclear Energy Information Service of IL, won a hearing from an NRC Atomic Safety and Licensing Board Panel (ASLBP) on June 18, 2015. The hearing was to have addressed the loss of RPV fracture toughness, due to neutron radiation bombardment embrittlement of the metal walls and welds, as well as thermal and pressure stress, that have accumulated for over more than four decades. The ASLBP’s grant of a hearing on this increasing risk of ductile tearing of the RPV, during the hot temperatures of “normal operations,” was appealed by Entergy on July 13, 2015. On November 9, 2015, the NRC Commissioners ruled in favor of Entergy’s appeal, overriding its own ASLBP’s ruling, and blocking the hearing. On November 23rd, NRC staff approved the 10CFR50 Appendix G regulatory weakening.

Likewise, on November 9th, the NRC Commissioners ruled against an appeal by the environmental coalition, seeking admission of a hearing on the risks of colder temperature, brittle fracture risks due to RPV embrittlement during a pressurized thermal shock (PTS) emergency. The NRC staff followed suit on November 23rd, approving Entergy’s 10CFR50.61a regulatory rollback.

A severe overcooling of the RPV, as due to activation of the emergency core cooling system (ECCS), combined with sudden re-pressurization, could cause PTS – a one-two
punch that could fracture the RPV metal walls or welds at an internal flaw. The NRC rulings came despite the well-established fact that Palisades has the worst embrittled RPV in the U.S., most at risk of PTS. (The second worst embrittled RPV, as acknowledged by NRC, is just across Lake Michigan from Palisades, at Point Beach Unit 2 in WI. Other badly embrittled RPVs are found at Entergy’s Indian Point nuclear power plant in NY; Pacific Gas & Electric’s Diablo Canyon nuclear power plant in CA; and at FirstEnergy reactors, Davis-Besse in OH, and Beaver Valley in PA. See a March/April 2013 NRC document, at page 5 of 15 on the PDF counter, point #4).

Whether due to brittle fracture or ductile tearing, a RPV breach would lead to a Loss-of-Coolant Accident (LOCA) and core meltdown, risking containment failure, and a catastrophic release of hazardous radioactivity into the environment.

The Calculation of Reactor Accident Consequences (CRAC-2) study, commissioned by NRC and performed by Sandia National Lab in 1982, revealed the following potential casualties and property damage potential, in the event of a catastrophic radioactive release at Palisades:

Peak early fatalities [acute radiation poisoning deaths]: 1,000

Peak early injuries: 7,000

Peak cancer deaths [latent cancer fatalities]: 10,000

Property damage: $52.6 billion

But as Jeff Donn at AP reported in June 2011, populations have soared around U.S. nuclear power plants since 1982, so those casualty figures would be significantly higher now.

And when adjusted for inflation to 2014 dollar figures, property damage would now surmount $127 billion.

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