



## Union of Concerned Scientists

Citizens and Scientists for Environmental Solutions

May 21, 2013

Dr. Allison M. Macfarlane, Chairman  
Ms. Kristine L. Svinicki, Commissioner  
Dr. George Apostolakis, Commissioner  
Mr. William D. Magwood, Commissioner  
Mr. William C. Ostendorff, Commissioner  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001

### **SUBJECT: NRC's Enabling Unsafe and Illegal Operations**

Dear Chairman and Commissioners:

Last year, the owner of the Palisades reactor in Michigan reported reactor vessel pressure boundary leakage to the NRC (ML12285A320). In that report, the owner stated that increased reactor coolant system leakage had been noticed after the plant restarted on July 14, 2012, and operators began shutting down the reactor on August 11, 2012 due to the leakage issue. The owner reported that the leak rate trended from 0.2 to 0.35 gallons per minute over this period.

Technical Specification 3.4.13 for Palisades (ML052720263) permits "No pressure boundary LEAKAGE"<sup>1</sup> while Action B requires that the reactor be shut down within 6 hours of pressure boundary leakage. Thus, Palisades operated longer than 6 hours with a condition expressly not permitted by its operating license.

The NRC dispatched a special inspection team to Palisades following this event. The NRC reported that "no findings of significance were identified" (ML12291A806).

Operating with pressure boundary leakage longer than 6 hours is clearly illegal. The technical specifications are a formal part of the operating license issued by the NRC for each reactor. Revising the technical specifications can only be done via a license amendment request submitted to the NRC and approved by the agency. The Palisades' technical specifications for pressure boundary leakage are consistent with the standard technical specifications issued by the NRC (NUREG-1432 Vol. 1, ML12102A165).

Operating with pressure boundary leakage longer than 6 hours is clearly unsafe. As the subject technical specification (NUREG-1432 Vol. 2, ML12102A169) states:

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<sup>1</sup> LEAKAGE is capitalized per technical specification convention where terms defined in Section 1 of the technical specifications are capitalized throughout the document.

*No pressure boundary LEAKAGE is allowed, being indicative of material degradation. LEAKAGE of this type is unacceptable as the leak itself could cause further deterioration, resulting in higher degradation of the RCPB [reactor coolant pressure boundary]. Violation of this LCO [limiting condition for operation] could result in continued degradation of the RCPB.*

Pressure boundary leakage is expressly not allowed and such leakage is unacceptable. Why did the owner allow Palisades to operate for nearly a month with such leakage? Why did the NRC's special inspection team accept it?

This situation is partially explained by having only two monitoring systems for three technical specification limits on reactor coolant system leakage. In addition to the technical specification limit on pressure boundary leakage, there are technical specification limits on identified leakage from the reactor coolant system (10 gallons per minute at Palisades) and on unidentified leakage from the reactor coolant system (1 gallon per minute at Palisades).

Leakage from certain components is routed to collection tanks with a monitoring system that reports the total amount of this identified leakage. The applicable technical specification limits identified leakage to 10 gallons per minute.

Other leakage collects in the containment sump as unidentified leakage. Its monitoring system cannot distinguish water that leaked through the pressure boundary from water that leaked through more benign pathways, such as valve packing and flange gaskets. During reactor operation, no monitoring system is available to determine whether unidentified leakage is partially, or even entirely, the result of pressure boundary leakage. It is common for plant owners to simply assume that the pressure boundary is intact and that all unidentified leakage comes from other sources. In other words, owners commonly opt for the non-conservative option and invoke the less restrictive technical specification limit.

If I was pulled over by a law enforcement officer while driving down the highway, I could not expect to evade a speeding ticket by pointing out that I lacked knowledge about the posted speed limit or that my vehicle lacked a speedometer. My driver's license carries with it a responsibility to comply with all traffic regulations.

But if I operate a nuclear power plant for days, months, or years (as in the case of Davis-Besse) with pressure boundary leakage, I can expect to evade any and all sanctions by the NRC simply by saying I didn't know the pressure boundary was leaking and conveniently assumed—with absolutely no proof to back it up—that it was not leaking.

When unidentified leakage is initially detected and when an increased unidentified leakage is detected, a plant owner could conservatively assume that at least some might be pressure boundary leakage and promptly shut down their reactors to conduct the inspections necessary to make that determination. Or the owner could non-conservatively assume that none of this leakage is from the pressure boundary.

The NRC has the authority to impose a civil penalty of \$140,000 for each day that a violation exists. The NRC could have imposed a civil penalty for each day that Palisades operated with pressure boundary leakage. (Alternatively, the NRC could split the difference as it does when safety-related components fail surveillance tests by considering them to have failed for half of the time back to their last successful test and impose the civil penalty for half the number of days the reactor operated with unidentified leakage).

Law enforcement officers encourage compliance with traffic regulations by issuing tickets. If I sustain irresponsible driving practices, I run the very real risk of having to pay speeding tickets and ultimately losing my driver's license.

But if I scoff at the regulatory requirements and irresponsibly continue operating my nuclear power reactor with pressure boundary leakage for months until its next scheduled refueling outage, I face zero risk of losing the reactor's operating license or paying even a nickel in fines. The NRC literally gives owners a free pass to operate their nuclear reactors illegally and unsafely by not enforcing the regulatory requirement prohibiting pressure boundary leakage. The NRC doles out the free passes frequently, as evidenced by this abridged sampling of pressure boundary leakage reports from just the past decade:

- Davis-Besse – pressure boundary leakage during last month of operation before refueling outage (ML102800416). The NRC exercised enforcement discretion and issued no violation or finding (ML102930380).
- Indian Point Unit 2 – pressure boundary leakage during months of operation (ML101450119). The NRC exercised enforcement discretion and issued no violation or finding (ML103140355).
- Byron Unit 2 – pressure boundary leakage detected on June 24, 2009, with the reactor being shut down on June 26, 2009 (ML100430847). The NRC issued a non-cited violation that the owner disputed (ML093100141).
- South Texas Project Unit 2 – increasing leakage detected on January 28, 2005, with the reactor being shut down on February 9, 2005 (ML050980111). The NRC found that no regulatory requirements were violated (ML062220153).
- Waterford – three separate indicators of pressure boundary leakage during the prior operating cycle were identified during a refueling outage (ML033560242). The NRC issued a green finding—not for the pressure boundary leakage but for ineffective corrective actions to prevent recurring pressure boundary leakage (ML040330908).
- Millstone Unit 2 – two through-wall cracks allowing pressure boundary leakage during the prior operating cycle were identified during a refueling outage (ML033460378). The NRC exercised enforcement discretion and issued no violation or finding (ML041340687).
- Oconee Unit 1 – three through-wall cracks allowing pressure boundary leakage during the prior operating cycle were identified during a refueling outage (ML033090486). The NRC exercised enforcement discretion and issued no violation or finding (ML031260778).

We respectfully urge you to require the NRC staff to enforce safety requirements on pressure boundary leakage. The NRC's bases document for this specific regulatory requirement explicitly states that pressure boundary leakage is not allowed and is unacceptable—yet the NRC allows

and accepts it time and again. The NRC's failure to enforce regulatory requirements is enabling repeated and chronic unsafe and illegal operations by reactors across the country.

It is imperative that you take action to end this status quo. It makes a mockery of the NRC's licensing process. What's the point of intervening in the licensing of a new reactor or a license amendment process for an existing reactor if the NRC then refuses to take the requirements of that license seriously? There's little sense in debating the height of the safety bar if the NRC continues to act as if the bar does not exist.

We look forward to your action on this matter.

Sincerely,

A handwritten signature in black ink, reading "David A. Lochbaum". The signature is written in a cursive, flowing style.

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cc: Roy Zimmerman, Director, Office of Enforcement  
Hubert Bell, Inspector General