

February 28, 2005

Dr. Nils J. Diaz, Chairman
 Dr. Gregory B. Jaczko
 Dr. Peter B. Lyons
 Mr. Edward McGaffigan, Jr.
 Mr. Jeffrey S. Merrifield
 United States Nuclear Regulatory Commission
 Washington, DC 20555

By Email: SECY@nrc.gov and U.S. Postal Service

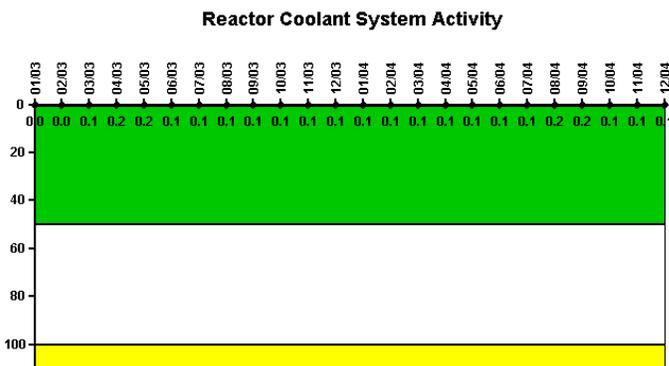
Dear Mr. Chairman and Commissioners:

On February 24, 2005, in the closing of the Commission Briefing on Nuclear Fuel Performance a question was raised on the regulatory interface with the power reactor operators and nuclear fuel vendors with regard to the Significance Determination Process (SDP). Nuclear Information and Resource Service (NIRS) stated that it would submit a formal question for a response from the Commission and staff given the late hour of the meeting. Attached please find related questions submitted in follow-up by both NIRS and the Union of Concerned Scientists.

As background, Jim Malone, Vice President, Nuclear Fuels, Exelon Generation Company, LLC stated to the Commission (slide 33 of the industry panel's presentation) that "We experienced an unacceptable number of fuel defects in Exelon Units" [emphasis in original]. Quad Cities 1 replaced defective 233 assemblies after becoming the industry leader in radiation exposures to its workforce.

Mr. Malone confessed to you that Exelon experienced an "unacceptable" number of fuel failures that caused them to replace 233 defective fuel assemblies at Quad Cities Unit 1. Curiously, the Reactor Coolant System Activity performance indicator (PI) submitted by

Exelon for Quad Cities Unit 1 at least looked acceptable:



Exelon did not provide the NRC with any comments accompanying this PI. One

might have expected unacceptable conditions warranting the replacement of 233 defective fuel assemblies might have been reflected in this PI or in the “comments” field for this PI.

Data presented to you during the February 24th briefing indicates that 20 to 25 percent of the reactors in the United States are operating with defective fuel. The Commission briefing reflects the response undertaken by the industry and the NRC staff to this problem. Yet the Reactor Coolant System Activity PI has never been greater than Green. Never.

In our view as public safety advocates the function of the fuel rod cladding clearly has not only an operational role but clear safety functions to include providing the first barrier for retention of fission products and providing structural integrity to ensure effective cooling of the reactor core geometry. As the principle barrier in a multi-barrier system, degradation of fuel cladding constitutes erosion in the agency’s defense-in-depth philosophy and practice.

The question comes up as to whether this same number of fuel cladding defects experienced at Quad Cities 1 was acceptable or unacceptable under the current NRC oversight process? If it was acceptable, please explain why?

With regard to the oversight of operational environment impact on the overall fuel performance cycle, at what point in the SDP is fuel cladding failure during reactor operation which adversely affects overall fuel performance such that the agency issues a RED as an “Unacceptable Performance Band”?

Mr. Malone, Exelon, on Slide 39 of his presentation to the Commission reports “Dose increases not significant.” The transcript of the briefing will indicate that Commissioner Merrifield questioned if Quad Cities was also the industry leader for worker radiation exposures during this same time frame and answered in the affirmative. Why should the public not view this as a significant disconnect in agency and industry’s portrayal of this issue as an economic issue versus a safety matter?

Is the Reactor Coolant System Activity PI an effective metric if it has failed to track conditions deemed “unacceptable” by the industry?

We greatly appreciate your attention to responding to this issue.

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