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Technical Basis for Regulatory Guidance on the Alternate PTS Rule

Comment On: NRC-2014-0137-0001

Draft Guidance Regarding the Alternate Pressurized Thermal Shock Rule

Document: NRC-2014-0137-DRAFT-0005

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General Comment

Dear NRC,

My first comment is that I think there is an error on your <regulations.gov> online posting. The last sentence of II. Discussion reads:

"The alternate PTS requirements are based on updated analysis methods, and are desirable because the requirements in 10 CFR 50.61a are based on overly conservative probabilistic fracture mechanics analyses."

I think you meant to say 10 CFR 50.61, not 10 CFR 50.61a. After all, 10 CFR 50.61a is the alternate PTS rule itself, after all.

However, I must add that the phrase "overly conservative" strikes me as an odd one for NRC to use, and an odd justification or rationale for the regulatory relief, or safety regulation weakening, that 10 CFR 50.61a represents for an atomic reactor like Entergy Nuclear's Palisades in Michigan, which -- by both Entergy and NRC admission -- will violate 10 CFR 50.61 screening criteria by August, 2017. After all, NRC's supposed mission, mandate, and job is supposed to be to protect public health, safety, and the environment.

(Actually, by NRC and/or Palisades' -- be it Consumers Power, Consumers Energy, Nuclear Management Company, or Entergy Nuclear -- own admissions, Palisades' RPV "End of Life" due to RPV embrittlement/PTS

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Add = E. Stevens (p. 54) - M. Kirk (M+K) - (5x63)

risk had, previously, been set at 1995, then 1997, 1999, 2001, 2004, 2007, 2014, April 2017, and August 2017, all under 10CFR50.61. Now, under 10CFR50.61a, NRC stands poised to permit Palisades to operate till 2031, despite its dangerously embrittled RPV. This "moving target" collusion to accommodate Palisades' continued operation is outrageous!).

But in this case, NRC seems to see its role as weakening regulations enough to accommodate a dangerously embrittled reactor pressure vessel, as at Palisades, so it can continue operating. NRC seems to see its role as allowing Palisades to come as close to an arbitrary "acceptably risky" line as possible. 50.61a allows for a 1 in a million risk, per reactor year, of a through-wall RPV fracture, due to pressurized thermal shock (PTS). NRC staff defends doing this, by stating that the NRC Commissioners have blessed this level of risk as "reasonable assurance of adequate protection." A growing number of people, such as those living in the shadow of Palisades, now understand that 50.61a means that NRC is fine with chipping away at "overly conservative" safety standards, at their expense. Chipping away at "overly conservative" safety standards, of course, means increasing risks.

The public downwind and downstream, up the food chain, and down the generations from Palisades, and other badly embrittled RPVs -- such as Point Beach Unit 2, WI, also on the Lake Michigan shore, like Palisades, and, also like Palisades, predicted to surpass 50.61 safety standards by 2017 -- does not agree with NRC that a 1 in a million per reactor year risk of PTS through-wall cracking is "acceptably risky." It is not reasonable, adequate, protective enough, nor acceptable.

After all, what was the risk of the Fukushima Daiichi nuclear catastrophe happening, before it actually happened? Let's assume the risk, prior to 3/11/11, was 1 in a million per reactor year, for a meltdown and catastrophic radioactivity release at a reactor unit at Fukushima Daiichi. Therefore, the risk of three meltdowns and consequent radioactivity releases would have been 1 in a million X 1 in a million X 1 in a million = 1 in 1,000,000,000,000,000/ reactor year. Truly, a very low probability risk. But it did happen, beginning on 3/11/11. And the consequences have been nightmarishly high, and will continue to be so for a very long time into the future (Cs-137 and Sr-90 in the living environment and food chain remain hazardous for 300-600 years; Pu-239 that escaped will remain hazardous for 240,000 to 480,000 years; I-129 will remain hazardous for 157 million to 314 million years; etc.)

A 1 in a million per reactor year risk is much more likely to occur, than was the Fukushima Daiichi triple meltdown, and ongoing, catastrophic radioactivity release.

Another such example: what was the professional judgment as to PRA (probabilistic risk assessment) for the Space Shuttle Challenger to explode on lift off, before it actually did? 1 in 100,000? Well, that was off. The Space Shuttle Challenger was only the 25th such launch. So a 1/100,000 risk instantly became a 1/25 risk in one tragic moment.

We object to the over-reliance on PRA in 10CFR50.61a. We call for actual physical data to be returned to prominence in this regulatory realm. For example, at Palisades, four metal capsules remain available in the Palisades RPV for testing. And yet, the 2007 test was simply cancelled. A full 16 years will have passed between Palisades' last test, and its next scheduled (2003 to 2019). An over-reliance, an exclusive reliance, on PRA, conjecture, extrapolation, and projection, when substantial physical data remains available, is unacceptable. Pulling and testing capsules would deliver a dose of reality to these proceedings.