

From: Tom Gurdziel [tgurdziel@twcny.rr.com] **March 27, 2012 (9:00 am)**
Sent: Monday, March 26, 2012 10:14 PM
To: Rulemaking Comments
Cc: 'Lyon, Jill'; 'Holden, Tammy'
Subject: Docket ID NRC-2011-0299
**OFFICE OF SECRETARY
RULEMAKINGS AND
ADJUDICATIONS STAFF**

B. Rulemaking Scope

Question 2 No Comments

Question 3 Response

How long does it take the specific-cycle-loaded nuclear fuel at each specific plant to start melting from the time core cooling, (not AC power), is lost? (This distinction is important for BWRs with properly (fully) equipped Emergency Condenser systems. These passive systems appear to me to be the appropriate design feature to handle a SBO without resulting in nuclear fuel damage.) For non-Emergency Condenser equipped BWRs, my time estimate, based on my readings of INPO Report 11-005 is 2 hours.

Let me briefly point out what this requires. The plant main generator trips off the line. There is no voltage on the emergency power boards. What do you have? one diesel driven fire pump, (plus 50.54hh equipment). What do you need? You need 100 psig or less in the reactor vessel inside 2 hours (after loss of HPCI and RCIC) plus a certain volume of water. Can you get it? I don't know. You probably have to immediately start venting the primary containment from torus, drywell or both because, with about 50 psid across the relief valves (used to reduce reactor pressure); primary containment pressure must be no higher than 50 psig. (It may need to be a lot lower.) The intention is to lineup firewater to inside the reactor vessel, preferably to core spray.

Can this be done in time? I don't have computer programs to run (or know how to use them) to check this but I don't think so, especially if current "hardened vents" at Mark I BWRs have a rupture disk in series in the vent path.

Please note that, in all this time discussing "coping", nobody (including Session TH34 at RIC2012) has provided a clear definition. Mine is this:

Coping (time) – the amount of time the reactor core can exist without cooling before starting to melt.

Note that "coping" does NOT solely involve the amount of time that station batteries satisfy minimum voltage requirements for operability.

Additionally let me make a comment about "receipt of offsite assistance". I do not think the nuclear fuel melting process is reversible. If core melting has begun, an appropriate strategy may be to just flood up the primary containment, whether you have off site assistance or not.

I am making no comments here either on PWR or elevated BWR spent fuel pool "coping", except to say that I recommend unloading elevated BWR spent fuel pools of all fuel out of the reactor vessel for 5 years.

Question 4 Response

Why bother setting up any additional external-event based regulations? The loss of all AC power at the emergency power boards should be all that is needed.

Question 5 Response

SBO should be expanded to cover all plants & plant facilities on any site.

Question 6 No comments at this time.

Question 7 Response

Template = SECY-067

Paragraphs 7a, 7b, and 7c appear to be asking us to predict the future. I think it is sufficient at this time to concentrate on addressing what we need to do when anything, (it doesn't seem to matter what), causes a SBO.

Question 8 Response

Actually, this may not be too hard a question to answer. Take the (U.S.) dollars saved at Fukushima Daiichi by NOT building a separate ventilation exhaust stack for Unit 3 at the time of construction. Compare it with the cost of the destruction and cleanup of Unit 4 from Unit 3 explosive gasses (as described in INPO Report 11-005, pages 33 & 34.) I think this will give a good idea of what the cost may be if we don't require improvements.

Thank you,

Tom Gurdziel