CHAIRMAN Resource

From: Tom Gurdziel <tgurdziel@twcny.rr.com>
Sent: Wednesday, April 18, 2018 8:22 AM
To: qainfo@nsr.go.jp
Cc: Lyon, Jill:(NMP); Holden, Tammy L:(GenCo-Nuc); CHAIRMAN Resource; Bridget Frymire; 'Ed Stronski'
Subject: [External_Sender] FW: NRC Briefing on Accident Tolerant Fuel, (first half only)
Attachments: Thermal Performance.jpg

Hello,

The present U.S. commercial nuclear industry, with their 34% efficient plants, is having trouble competing with the gas-fueled combined cycle electricity generating competitors with their 60%(+?) efficient plants. Wouldn't you think that improving plant efficiency should also be getting attention right now?

Thank you,

Tom Gurdziel
Member, ASME

From: Tom Gurdziel [mailto:tgurdziel@twcny.rr.com]
Sent: Tuesday, April 17, 2018 11:22 PM
To: Chairman Resources (chairman.resource@nrc.gov)
Cc: Bridget Frymire (bridget.frymire@dps.ny.gov); techols@psc.state.ga.us; 'Screnci, Diane'; Bavol, Rochelle (Rochelle.Bavol@nrc.gov); 'Ed Stronski'
Subject: NRC Briefing on Accident Tolerant Fuel, (first half only)

Good morning,

I didn't have time to listen to more than the first half of this meeting tonight. But I will take the time to make a few comments. Let me begin by saying that I thought listening to this part of the meeting was a rewarding use of my time. In particular, I thought those comments made by the Chairman starting about 1:15 (and the responses she received), were especially informative.

What will it cost to develop even just one type of "accident tolerant fuel". Here's a problem, so let's just stop here a moment. If you listened at about 33:30(-), you heard that accident tolerant fuel will NOT avoid melting, it just gives you a little more time until it starts melting. Maybe we should refer to it as ADF or accident-delaying-fuel. Next, I want to know what is the financial value of accident-delaying-fuel that delays fuel melting for, say, 1 ½ hours.

Let's take it to Japan.

OK, we are now at a nuclear plant site where the upper management will not accept any outsider's estimate of trouble, such as a 15.7 meter high tsunami. When a slightly lower tsunami does arrive, the plant is disabled. At Unit 1, the operators call the on-site Emergency Center and ask for assistance in providing water to their Emergency Condensers. That assistance is NOT provided. (The Site Emergency Director does not know that the Emergency Condensers need to periodically be refilled. But it really doesn't matter since he was out of the room when the call came in and he was not told about it upon his return.) Look at your IAEA report, "Technical Volume 1/5, Description and Context of the Accident", page 139 to see that "core degradation and major atmospheric releases occurred some 4-5 hours after Unit 1 tripped". Since this was with non-accident tolerant fuel, let's just add that 1 ½ hours for accident tolerant fuel. Now core degradation would occur at 5 ½ to 6 ½ hours.

Would that have made any difference at all?

Because, if it wouldn't, why are we spending money on different hardware, (fuel), when the need would appear to be increased site employee knowledge?

Thank you,

Tom Gurdziel

Not to mention that the entire industry, (not just here in the US), has not yet accepted the fact that the logic provided on some Tokyo Electric Power Company, Inc./Fukushima Dai ichi safety systems protects the individual safety system at the expense of the reactor core. This should not be considered acceptable. (A description of this problem is available in "SIDEBAR 5.3", pages 184 & 185 of the first National Academy report "Lessons Learned from the Fukushima Nuclear Accident for Improving Safety of U.S. Nuclear Plants". Unfortunately, the material is presented as if it is the proper way to do safety system logic.)

In other words, even if the Unit 1 Emergency Condensers had received more water, they still wouldn't have worked with the installed logic keeping them isolated (for their own protection).

CERTIFICATE OF COMPLETION

THIS IS TO CERTIFY THAT

TOM GURDZIEL

HAS COMPLETED THE

Introduction to PEPSE Modeling Seminar

Greg Alder, Instructor
Performance Systems Department
Halliburton NUS Corporation