

9 Twin Orchard Drive
Oswego, NY 13126
June 8, 2021

Chairman Christopher T. Hanson
Commissioner Jeff Baran
Commissioner Annie Caputo
Commissioner David A. Wright
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Hello:

Today I am, once again, bringing to the attention of the commission, my thoughts on reducing total plant/local area damage when experiencing very severe commercial nuclear plant accidents during which a continuous supply of cooling water to the reactor core cannot be provided.

(I understand that, today, we now have FLEX diesel generators. However, I also understand that it is possible for all (?) 5 to be unable to start and keep running.)

When heat from the core is not being removed, the temperature rises. Eventually, the fuel cladding begins to melt. Also, if water is supplied, the very hot cladding metal reacts with the oxygen atoms in the water molecules, which produces hydrogen. This is a standard explanation. However, I believe that there should be another consideration. Apparently, due to thermal decomposition, water molecules alone can be the source of hydrogen and of oxygen just due to sufficient heat. And, at higher temperatures you get more hydrogen.

So, I am asking that the thoughts above be checked for accuracy or mistakes. Next I am asking that calculations be made to find out how long a core cannot be cooled before an unacceptable amount of hydrogen is produced (when water flow would be reestablished). Finally, it would appear necessary to insert procedural guidance to "add no water" after that plant specific time of no core cooling.

The idea is this: if the core is already gone, why blow up the plant as well?

Thank you,

Tom Gurdziel

(I previously wrote to the entire commission on this topic on Feb. 28, 2013.)

Chairman Resource

From: Tom Gurdziel <tgurdziel@twcny.rr.com>
Sent: Tuesday, June 08, 2021 9:37 PM
To: Chairman Resource
Cc: Screnci, Diane; Esberg, John R:(GenCo-Nuc); Fellows, David E:(Exelon Nuclear)
Subject: [External_Sender] Attached Letter of June 8, 2021
Attachments: Damage Reduction.docx

Good morning,

I hope to mail out this letter by the weekend.

Thank you,

Tom Gurdziel



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