

From: Ralph Caruso , *NRC*
To: internet:judith.cuta@pnl.gov, internet:tom.michen... *PNL*
Date: Mon, Jul 24, 2000 2:57 PM
Subject: Spent Fuel Pool Heatup calculations

Tom,

The purpose of this note is to document our discussion this afternoon concerning the SFP heatup calculations. As I explained, our goal is to determine what decay power level (in Kw/bundle) will cause the fuel to heat up from 100C to 800C in 10 hours. PNL should use the existing BWR fuel model with the following boundary conditions: (1) assume the water level is constant, 2 inches below the bottom of the fuel, (2) assume that all of the bundles in the model are the same power level, (3) assume the initial temperature of the fuel and the water is 100C.

The PNL calculations will iterate on the bundle power level to determine which particular bundle power level will cause the fuel to heatup to 800C (peak clad temperature) in 10 hours. NRC will use this bundle power level to determine the corresponding fuel burnup and time since discharge.

PNL should also provide NRC with the steam mass flow rate up through the bundle during this time period, so that NRC can estimate the rate at which the water level is dropping in the bottom of the bundle during the transient.

I understand that PNL will contact me within the next few days with your estimate of the time that it will take to perform these calculations.

Thanks in advance for your help. If you have any questions, give me a call - 301-415-1813.

Ralph Caruso

CC: Charles Tinkler, Christopher Boyd, Diane Jackson...

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