

From: Michael Cheok *NRR*
To: Diane Jackson, Gareth Parry, Glenn Kelly, Mark ... *NRR*
Date: Wed, Jun 2, 1999 10:20 AM
Subject: Re: RG 1.174

Dianne,

I agree with Gareth's comments.

In RG 1.174, the difference between CDF and LERF is in the containment response (thereby affecting the timing for early health effects). In the SFP case, given a Zirc fire (which we assume for all the initiators), the RG 1.174 differentiation no longer exists. As Gareth mentioned, whether a sequence is fast or slow is already taken into account in the calculation of frequency of fuel uncover (since this affects timing for recovery actions). However, **IF** plants have procedures or guidance that tell them when (i.e., at what point during the accident sequence) to start offsite response, **AND** if the criteria used in these procedures allow for effective evacuation for the "slow" sequences versus the "fast" sequences, then perhaps we can distinguish between a "LERF-type" criteria versus a "normal fuel uncover type" criteria. Such a criteria could be "start offsite evacuation if level drops to within 10' of the top of the fuel". In the "slow" scenarios this 10' could buy you 20 or so hours, whereas in the "fast" scenarios, this 10' might not buy you any time at all. Note: the "fast" scenarios would include, not only seismic and cask drop, but also large inventory losses, tornado missiles, and aircraft crashes.

Some thoughts on a risk criteria for SFPs: Since RG 1.174 uses $1E-5$ per year for CDF and $1E-6$ per year for LERF, it implicitly assumes that 90% of the core damage sequences are either arrested in-vessel or result in small and/or late releases. Therefore, it can be assumed that the guideline for small or late releases is $9E-6$ per year. This is the frequency that is expected to lead to essentially no early health effects. Assuming that we have a "deterministic criteria" of no relaxation of EP for the first 2 years (or 3 yrs or 5 yrs or whatever) after the unloading of the last core, then the risk criteria could be $9E-6$ per year (or $1E-5$ per year) for SFPs since we can expect no early health effects after this point.

Mike

CC: George Hubbard, Vonna Ordaz

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