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General Comment

Section 3.2 of DG-1389, Release Fractions, provides MHA LOCA core average release fractions (Tables 1 and 2) described as hybridized accident source terms from SAND-2011-0128. The hybridized source terms were derived from MELCOR simulations based on a defined set of accident sequences for a few typical NSSS designs.

1. The range of applicability for these source terms needs to be more detailed to ensure appropriate future application. Are there changes in reactor power, power density, NSSS design, fuel design, ESFAS capabilities, etc. which would challenge the applicability of these tables? Is the applicability limited to existing fleet of reactors? What about certified designs (e.g., AP1000, EPR, ESBWR)?

2. The range of applicability includes chromium-coated cladding and chromia-doped fuel. I would imagine that differences in the accident progression would be introduced by increasing the chromium coating thickness from 8 microns to 100 microns. Similarly, fission product releases may be impacted, especially gap release phase, by increasing dopant concentrations well beyond solubility. Are ranges of applicability for these fuel design features appropriate?

3. Based on SAND-2011-0128, it does not appear that the hybridized source terms represent the composite worst-case releases (i.e., highest predicted release for each radionuclide from worst accident sequence in worst NSSS design). How then can it be determined that Table 1 is conservative for every BWR and Table 2 for every PWR?

4. Based on SAND-2011-0128, differences between low- and high-burnup results do not appear significant. It appears that the main driver for differences between NUREG-1465 and SAND-2011-0128 is likely code-to-code differences in the MELCOR simulations. If this is true, then why is DG-1389 (future RG 1.183 Rev.01) being advertised as a high burnup source term? In light of the differences, maintaining RG 1.183 Rev.00 is confusing and needs to be justified. Will future applications, including the existing fleet, at a burnup limit of 62 GWd/MTU be able to choose between Rev.00 and Rev.01 source

terms? If so, why?