Overview of the exchanges after the December-2012 Workshop through the discussion forum established at the OECD-NEA

Simone Massara

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Exchanges on the discussion forum (1 / 2)

09/07/13: Exchange between G. Hache (IRSN) and T. Sawabe (CRIEPI)

- **Object:** Accident Tolerant Control Rod
- **Item:** Russian reference on dysprosium titanate available on the Journal on Nuclear Materials

- **Major outcome:** the choice of the absorber material at CRIEPI has also to allow a miscibility with molten UO$_2$ fuel, and must not affect the nominal operation conditions (high flux zone)
10/07/13: Exchange initiated by L. Ott (ORNL)

- **Object:** Reference accidental scenario for BWR
- **Item:** To consider 1F1 (STSBO) instead of 1F3 (LTSBO)
  - 1F3: Expensive computation cost (modelling of at least 50 hours of the transient needed)
  - 1F3 is more difficult to model even before getting into a degraded core situation:
    - Uncertainty on the use of RCIC by the operator
    - The significant RPV drop after RCIC failure and the initiation of HPCI is difficult to model for some codes
    - The resultant degradation of HPCI performance introduces an uncertainty on the quantity of water effectively pumped
  - 1F3: after HPCI failure, uncertainty in the amount of water delivered to the DW sprays
  - 1F3: problems in modelling the Wetwell (saturation and local overheating)
  - **1F1:** simpler, fewer uncertainties, bottom head failure within 15 hours (Sandia res.), closer to the order of magnitude of the targeted grace time
Exchanges on the discussion forum (2 / 2)

10/07/13: Exchange initiated by L. Ott (ORNL)

- **Object:** Reference accidental scenario for BWR
- **Item:** To consider 1F1 (STSBO) instead of 1F3 (LTSBO)

  - G. Hache (IRSN) agreed on this proposal
  - N. Waeckel (EDF): “at the workshop the 1F1 scenario had been first proposed to define a quantified target for an "ideal" ATF. But had been considered as not sufficiently documented (data and measurements) to run a complete calculation/analysis”
  - A. Sowder (EPRI): information on the EPRI’s technical event evaluation of the initial phase of the Fukushima Dai-ichi accident (Fukushima Technical Evaluation: Phase 1 -- MAAP5 Analysis)