

# **Belgian PSA Level 2 - Qualification of the TE MELCOR models**

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A qualification report of the Tractebel Engineering (TE) MELCOR models of the Doel and Tihange units has been established. Therefore, different assessments have been realized by TE with the 1.8.5 and/or 1.8.6 versions of the MELCOR code. It has been chosen to present the conducted benchmarks on the TMI-2 accident, the PHEBUS FPT-1 and QUENCH-06 tests.

Moreover, in the framework of TE R&D activities, a follow-up of the ASTEC code is performed. A code-to-code comparison has therefore been made by TE with ASTEC and MELCOR for a SBLOCA on a PWR FRA 1000MWe.

For all these exercises, the same modeling approach has been used following usual TE modeling process and practices. The main objective is to show that such modeling choices give accurate results, comparable with the given data or other code results.

This presentation focuses on the TE modeling practices (mainly on primary and secondary circuits nodalization and core model), the results of the different exercises and their impact on the qualification of the TE MELCOR models.