

## **Abstract**

### **Experiences from Application of MELCOR 1.8.6 for Plant Analyses**

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Presently, MELCOR calculations of the Argentinian Pressurized Heavy Water Reactor (PHWR) Atucha-2 are being performed at GRS using the code version 1.8.6. These activities are supporting Level 2 PSA of Atucha-2 which is also conducted at GRS. The range of modelling of the plant covers e.g. primary and secondary circuits, containment, annulus, auxiliary building and potential release paths of radionuclides into the environment. The intent of the MELCOR calculations is to gain insights in the behaviour of the plant in case of a severe accident and to assign the source terms for selected accident sequences.

In the presentation the experiences of GRS from the application of MELCOR for plant analyses will be shown. It covers both experiences related to the modelling of primary and secondary circuits and experiences concerning the ex-vessel behaviour. Furthermore, the modelling of fission product behaviour inside the reactor circuit, the containment and the buildings will be shown. On the one hand, best practices regarding the modelling of the PHWR plant - especially regarding the characteristics specific for this reactor type - will be presented. On the other hand, difficulties in the application of MELCOR models, especially regarding the fission product release and transport models will be addressed.