

Abstract for European MELCOR User Group (EMUG) meeting March 2010

Title: Core modeling using data from the approval process for refueling  
Authors: Dr. W. Tietsch, Dr. W. Rapp, Dr. F. Sassen  
Presented by: Felix Sassen

A structured approach for the modeling of a PWR/BWR core for MELCOR version 1.8.6 will be described. It will be described which core physics and core structure data are necessary and which information and existing data can be used from existing licensing documentation. One very good source of these data includes licensing packages for reloads as well as calculations done by the vendor of the reloads for core management. Further more the possibility to use calculations performed for the determination of generic core inventories for emergency guidelines development or for specific burn up calculations is discussed.

Three concepts, which have been applied in recent Level 2 Probabilistic Risk Assessment projects, will be presented with respect to their different level of plant and cycle specific input data. The influence of the different degree of plant and cycle details on the robustness of derived conclusions will be discussed. The presentation will also discuss the assumptions concerning the radio active inventory of the spent fuel pool with regard to decay heat production, which is relevant for the subsequent containment pressurization in case of loosing the spent fuel pool cooling for German type PWR containments.