



Contribution ID: 3

Type: Oral

Scientific basis of thermal safety analysis of dry storage of spent nuclear fuel on Zaporizhska NPP

Tuesday, 25 June 2019 14:00 (20 minutes)

Now only one Dry Storage Facility of Spent Nuclear Fuel (DSFSNF) is operated in Ukraine –facility on Zaporizhska NPP. Many different thermal investigations were done for ventilated containers of DSFSNF. In this work the generalization of scientific approaches to the thermal safety assessment are carried out. The multi-stage approach to the definition of thermal state of containers' group, single container, spent fuel assemblies and fuel rods was developed. Detailed thermal profiles of spent fuel assemblies and each fuel rod inside storage container were calculated. With usage of multi-stage approach the thermal simulations of accident conditions and influence of outer factors onto thermal state of containers were carried out. On base of obtained results the classification of accidents with channels blockage was developed and the most dangerous blockages were found. Results of thermal investigations were generalized and factors, which are influence on thermal state of containers, are detected. Method of spent nuclear fuel thermal state prediction and changes to the system of thermal monitoring were proposed.

Do you wish to enter the YGE SFM19 Challenge?

Country or International Organization

Ukraine

Primary author: ALYOKHINA, Svitlana (V.N.Karazin Kharkiv National University)

Presenter: ALYOKHINA, Svitlana (V.N.Karazin Kharkiv National University)

Session Classification: Session 2.3

Track Classification: Track 2: Spent Fuel and High Level Waste storage and subsequent transportability