Fuel Inspection Hot Cell at Ignalina B1 ISFSF – Lessons Learned

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FIHC in Ignalina B1 ISFSF

For storage of the spent nuclear fuel from Ignalina NPP (Lithuania) the Consortium GNS-NUKEM built the dry type Interim Spent Fuel Storage Facility (ISFSF) (B1 Project). The containers with the spent nuclear fuel will be safely stored in the ISFSF. The storage period is 50 years with the possibility, if necessary, to prolong the period. The total capacity of the Interim Spent Fuel Storage Facility is 202 places for the CONSTOR® RBMK1500/M2 casks; the currently planned number of casks with the spent nuclear fuel is 190.

For the unlikely case of any defect of one of the casks (expected frequency 0 to 1 during the storage period) a Fuel Inspection Hot Cell (FIHC) with a dry storage well is implemented into the B1 facility.

The FIHC allows complete removal of a cask content (182 fuel bundles) into a dry storage well inside the FIHC in a manner, that the presumed defective cask can be fully emptied. After removal of the defective cask, the fuel bundles are transferred inside the FIHC from the storage well into a new cask.

The presentation will explain lessons learned during planning, erection, construction and testing of the FIHC and will consider aspects, like

- Optimisation of location of wall penetrations, i.e. additional shielding vs. easy access for maintenance
- Optimisation of safe access
- Calculated dose rates vs. measured dose rates
- Necessity of close survey during erection / installation to avoid formation of gaps inside of the concrete walls
- Necessity of survey of shielding efficiency

taking into account the purpose and the designed frequency of use of the Hot Cell.