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## Validation of the WWER Type Spent Fuel Transport Cask Shielding Model

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In 2009, Armenian NPP switched to the fuel assemblies with higher initial enrichment that allowed them to reach higher discharge burnups. However, higher burnup that implies bigger decay heat and neutron/gamma irradiation doses requires substantial increase of precooling time in spent fuel pools to meet ANPP NUHOMS type horizontal dry spent fuel storage design acceptance criteria. This may lead to possible issue of availability of enough free cells in spent fuel pools in case of emergency full core unloading. To tackle this issue ANPP decided to estimate additional dose burden during loading and transport on spent fuel in transport casks and storage of them in dry spent fuel storage in case of relatively shorter precooling time satisfying design acceptance criteria on decay heat. For this purpose spent fuel transport cask model was developed by MCNP 6 program. Neutron and gamma source intensities and spectra were calculated by ORIGEN program from SCALE 6 package. Developed model was validated based on irradiation dose measurement results of several spent fuel transport cask loadings.

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### Country or International Organization

Armenia

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