Wednesday, April 2, 2008

Modeling, simulation and isotopic validation studies for VVER fuel using SCALE
Subtitle:
Recent ISTC benchmark results, ORIGEN library generation for VVANTAGE VVER-1000 fuel, and automation tools
Frantisek Havluj, guest of the Nuclear Science and Technology Division
10:00 AM, Building 5700, room A-104
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Abstract:
Different aspects of isotopics prediction issues in VVER application area are investigated. Measurements of 8 spent fuel samples performed at Dimitrovgrad, Russia, under the ISTC project, are analyzed using the SAS2, TRITON and HELIOS codes. For these calculations, as well as in more general view, the importance of modeling nearest-neighbor assemblies on isotopic depletion is examined. Next, some aspects of ORIGEN library generation for VVANTAGE fuel, with different enrichment zoning and burnable absorber patterns etc. are discussed. Finally, numerous automation tools for preparing inputs for validation packages, output collection and analysis, and job running and load balancing developed for use with SCALE are presented.

Bio:
Frantisek Havluj
- Researcher at Nuclear Research Institute at Rez, Czech Republic (main areas of interest: isotopics prediction, criticality analysis for spent fuel systems and burnup credit implementation)
- PhD student at Department of Nuclear Reactors at Faculty of Nuclear Sciences and Physical Engineering, Czech Technical University (2006 - planned 2008)
- Master's degree at the same department (2006)