



**NUCLEAR SAFETY RESEARCH INSTITUTE**

# **Announcement of the 12th EMUG Meeting in Budapest, Hungary Organized by NUBIKI**

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**Gabor L. Horvath**

[horvathlg@nubiki.hu](mailto:horvathlg@nubiki.hu)

**EMUG 2019**

Brugg, 3-5 April 2019



# Invitation

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- Meeting will be in 5-7 May 2020 in Budapest
- Final details will be soon announced
- Voting on special WS on MELCOR packages and MACCS  
WS will be arranged
- Organization: Gabor L. Horvath (horvathlg@nubiki.hu)



# Background

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- Hungary operates 4 units of VVER-440 reactors
- Introduction of 2 units of VVER-1200 have been decided



# History of severe accident analyses in NUBIKI



- SAM calculations for
  - strategy (hydrogen recombiners, in-vessel melt retention, reactor vessel external cooling, long term containment cooling),
  - design (number and position of hydrogen recombiners, environmental conditions of equipments and measurements),
  - control of designed operation and compliance (calculation of experiments),
  - SAMG validation.
- Power upgrade: severe accident analyses for VVER-440/213
- Fukushima: Calculations for stress test
- Source term determination for HAEA emergency centre
- Calculations for PSA level 2
- EU projects: ERMSAR, SARNET, SARNET 2, CESAM
- ALLEGRO (4th generation HTGR) : support calculations
- Paks II: VVER-1200 independent control calculations

# Use of MELCOR

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- ALLEGRO (4th generation HTGR)
- VVER-1200
  - Model (input) development
  - Severe accident calculations
  - Comparison with Russian results
- VVER-440/213
  - Sequences for Emergency Center
  - Control calculations
- Code to code comparison (VVER-440/213)