



**Studsvik**



# **Multi-physics Pellet Cladding Mechanical Interaction Validation (MPCIV) Benchmark**

**Kick-off Meeting**

**Lucca, 16-17 May 2018**

**In conjunction with BEPU-2018**

Local Organizer: NINE

Workshop Committee: A. Petruzzi (NINE)  
M. Cherubini (NINE)  
J. Karlsson (STUDSVIK)  
T. Valentine (ORNL)  
K. Ivanov (NCSU)  
U. S. Rohatgi (BNL)  
E. Ivanov (IRSN)  
J. Dyrda (OECD/NEA)

## Agenda

### May 16, 2018

#### Opening Session of LWR-UAM-12, MPCMIV, C5G7-TD-3, and Rostov-2 Meetings – Workshop Room A (Closter B).

**Chair: A. Petruzzi**

- 09:00 – 09:10 Welcome and opening remarks from NINE Nuclear and Industrial Engineering
- 09:10 – 09:20 Introductory remarks to OECD/NEA benchmark workshops
- 09:20 – 09:30 Overview and status of the OECD/NEA LWR-UAM benchmark activities after the 11<sup>th</sup> workshop – *K. Ivanov (NCSU)*
- 09:30 – 09:40 Overview and status of the OECD/NEA C5G7-TD benchmark activities after 2<sup>nd</sup> workshop – *J. Hou (NCSU)*

09:40 - 09:50 Introduction to the MPCMIV benchmark – *A. Petruzzi (NINE)*

09:50 - 10:00 Introduction to the Rostov-2 benchmark – *M. Avramova (NCSU)*

#### **10:00 - 10:30 Coffee Break**

10:30 - 11:00 MPCMIV Exercise: A Model for Demonstrating the Validation of Coupled Multi-Physics Phenomena – *T. Valentine (ORNL)*

11:00 - 11:30 Description of the R2 Reactor and of the In-pile Loop – *J. Karlsson (Studsvik)*

11:30 - 12:30 Description of the Selected Cold Ramp Tests – *J. Karlsson (Studsvik)*

12:30 - 13:00 Input Specifications: Geometrical and Material Specifications – *D. De Luca (NINE)*

#### **13:00 - 14:00 Lunch**

14:00 - 14:30 General Tests Specifications – *L. Lampunio (NINE)*

14:30 - 15:00 Detailed Tests Specifications: Thermal Hydraulics Area – *D. De Luca (NINE)*

15:00 - 15:30 Detailed Tests Specifications: Reactor Physics Area – *L. Lampunio (NINE)*

15:30 - 16:00 Detailed Tests Specifications: Fuel Performance Area – *M. Cherubini (NINE)*

#### **16:00 - 16:30 Coffee Break**

16:30 - 17:00 Multi-physics Hierarchical Validation: Status and Challenges – *K. Ivanov (NCSU)*

17:00 - 17:45 Benchmark Exercises and Validation Requirements – *D. De Luca (NINE)*

17:45 - 18:00 Output specifications – *L. Lampunio (NINE)*

### May 17, 2018

09:00 - 09:30 Other PCI Benchmarks and Differences and Motivations for MPCMIV – *M. Cherubini (NINE)*

09:30 - 11:00 Round Table Discussion – *All*

#### **11:00 - 11:30 Coffee Break**

11:30 - 12:30 Round Table Discussion and Expression of Participants' Interest – *All*

12:30 - 13:00 Presentation of V-MUST R2 Joint Project – *A. Petruzzi (NINE), J. Karlsson (Studsvik), T. Valentine (ORNL)*