



Memorandum

To Euratom

From BTC/Sabina Kristensson SK
 Telephone +46 21 34 79 48
 E-mail kristesl@westinghouse.com

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ESSANUF – D8.8 Dialogue seminars and workshops [goal 6]

The purpose of this memorandum is to summarize the deliverable D8.8 “Dialogue seminars and workshops” in the European Supply of SAfe NUclear Fuel (ESSANUF) project. Each paragraph below gives the title of the activity and the date it was performed, followed by a brief description of the content.

1.1 VVER-440 Licensing workshop (Prague, June 15-16, 2016)

Information about the workshop is found in D2.7.

1.2 The Finnish Fuel Day (August 10, 2016)

LUT/Heikki Suikkanen gave a short presentation (20 min including questions) about ESSANUF in the Finnish Fuel Day, which was organized by VTT August 10, 2016. The Finnish Fuel Day is a half-day seminar with participants from the Finnish utilities, regulator and research organizations.

The content of the presentation were similar to that in the general project presentation shown in the licensing workshop in June. In addition, the presentation included the interactive presentation of the mechanical design of the fuel assembly (D8.7). The presentation is found in appendix 1.

1.3 Concept & issues review meeting (February 21-22, 2017)

See BTC 17-0272.



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Applicable agreement for transfer of information in this document:

Agreement No

Grant agreement number 671546 ESSANUF

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1.4 *Methods and methodology workshop (June 13-14, 2017)*

Methods and Methodology workshop minutes of meeting are found in BTC 17-0827.

The purpose of the workshop was to provide an early opportunity for regulatory bodies/potential customers to review the suggested methods and methodologies, to give suggestions for improvement, and identify and discuss any issues with regard to the licensing methodologies. In the workshop were attended by consortium members from WP 3/4/5/7, utilities and regulatory bodies as well as Transuranus (software) users.

The workshop covered general (integrated) methodologies for:

- Fault analysis, with focus on LOCA and RIA: review and discussion regarding methodologies adopted in the different countries, as well as about the simulations tools applied for verification of compliance with the safety criteria (e.g. ECR, PCT, DNB).
- Fuel rod design: review and discussion about codes and methodologies for thermo-mechanical analyses to verify fuel rod safety criteria for normal operation and AOO conditions.
- Thermal-hydraulic design: review of and discussion about proposed methodology for EU and Ukraine, covering acceptance criteria and the corresponding design assessments for both normal operation and AOO conditions.
- Nuclear criticality safety: criticality safety analyses of transport and storage of fresh and spent fuel and the related margins and criteria based on code validation, sensitivity analyses and regulatory requirements.

The general methodologies aimed at covering common aspects of licensing in all the participating countries i.e. Ukraine, Finland, Slovakia, Czech Republic and Hungary. For this purpose, country specific methodologies have been integrated into a single general methodology - in an attempt to contribute to the harmonization of safety analysis in the EU - which should include all generic design criteria to be verified.

The workshop was arranged in Finland at LUT (Lappeenranta University of Technology) during June 13-14, 2017.

1.5 *Transuranus workshop (June 15-16, 2017)*

A Transuranus workshop was arranged in Finland at LUT (Lappeenranta University of Technology) following the “Methods and methodology workshop”.

1.6 *Multiphysics Pellet Cladding Interaction Validation (MPCIV) Benchmark (Lucca, Italy, August 1-3, 2017)*

JRC/Paul Van Uffelen contributed (via presentation by video) to the workshop “Multiphysics Pellet Cladding Interaction Validation (MPCIV) Benchmark” organized in Lucca (Italy), August 1-3, 2017. The workshop was organized by the Expert Group on Multi-Physics Experimental



Data, Benchmarks and Validation (EGMPEBV) of the OECD-NEA. This Expert Group has the task to establish the processes for the certification of experimental data and development of benchmark models for validation of multi-physics modelling and simulation computational systems. In addition, the EGMPEBV attempts to establish appropriate processes and procedures for the use of data and benchmark models for validation of such tools. The main outcome is useful for the coupled code systems of ESSANUF, albeit out of the time-frame of the project itself.

1.7 The Finnish Fuel Day (August 23, 2017)

LUT/Heikki Suikkanen gave a presentation, including a general overview of the project and the highlight of specific work done at LUT on criticality safety in WP7, and on code coupling in WP3. The presentation is provided in appendix 2.