



## Summer Workshop 2014

# FUEL MANAGEMENT

25–29 August

At the Auditorium of the  
Geological Survey of Finland  
Espoo  
FINLAND



Image source: TVO

### ETSON JSP Summer Workshop 2014

The 2014 Summer Workshop of the Junior Staff Programme of the European Technical Safety Organisation Network (ETSON) is organized by VTT Technical Research Centre of Finland. The workshop takes place on the 25<sup>th</sup> – 29<sup>th</sup> of August 2014 at Espoo, Finland.

The topic of the 2014 Summer Workshop is FUEL MANAGEMENT, covering the nuclear fuel cycle from mining and fabrication to usage and storage. The workshop is aimed at young professionals from ETSON member organizations.

The programme of the workshop consists of lectures prepared by the participants themselves, and a technical visit to the TVO and Posiva sites in Olkiluoto, Finland.

Information about the workshop is available at the workshop website,

[www.vtt.fi/sites/ejsp2014/index.jsp?lang=en](http://www.vtt.fi/sites/ejsp2014/index.jsp?lang=en)

### Venue and accommodation

The workshop takes place at the Auditorium of the Geological Survey of Finland, located at Betonimiehenkuja 4, Espoo.

The participants are encouraged to book a room at the Radisson Blu Espoo hotel. For information on how to reserve the room and how to reach to hotel from Helsinki airport, please visit the workshop website.

On Sunday, 24<sup>th</sup> of August, VTT is pleased to welcome all the participants to the workshop with an ice-breaker at 19:00.



Image source: GTK

Topic and coordination	25 (Monday) Front end of the fuel cycle <u>M. Prevost, IRSN</u>	26 (Tuesday) Transport + Fuel behaviour <u>B. Miglierini, CVR</u>	27 (Wednesday) Technical visit to Olkiluoto <u>T. Ikonen, VTT</u>	28 (Thursday) Back end of the fuel cycle Spent Fuel: Wet storage <u>A. Lazaar, GRS</u>	29 (Friday) Back end of the fuel cycle Spent Fuel: Dry storage <u>J. Depuydt, Bel V</u>
9:00 - 10:00	<p><b>Welcome speech</b> (VTT director, 20 min)</p> <p><b>General presentations VTT:</b> (T. Ikonen, 10 min)</p> <p><b>ETSON Presentation</b> (M. Prévost, 15 min)</p> <p><b>General presentation of NRA</b> (M. Ishii, 15 min)</p>	<p><b>General presentation of CVR</b> (B. Miglierini 10 min)</p> <p><b>Radiolysis and thermolysis issues for the transport of radioactive materials</b> (P. Xidy, 30 min)</p> <p><b>Transport in Belgium Transport on site</b> (J. Depuydt 20min)</p>	<p>7:00 take-off in front of the Radisson Blu Espoo hotel</p>	<p><b>General presentation of GRS</b> (Aziz, 10 min)</p> <p><b>French back end of the fuel cycle, reprocessing</b> (M. Moutarde, 50 min)</p>	<p><b>General presentation of BEL V</b> (N. Tang, 10 min)</p> <p><b>Damaged Spent Fuel rods</b> (P. Janssen, 45 min)</p>
10:00	Coffee break	Coffee break		Coffee break	Coffee break
10:30 - 12:30	<p>Front end of the fuel cycle:</p> <p><b>Mining and Conversion</b> (M. Wehrfritz, 60 min)</p> <p><b>Chemistry of UF6 and Enrichment</b> (C. Lecarme, 60 min)</p>	<p><b>RBMK Fuel transportation from Unit1 to Unit2</b> (T. Kaliatka 30min.)</p> <p><b>General presentation about fuel modelling.</b> (T. Ikonen, 20 min.)</p> <p><b>Fuel modelling</b> (T. Ikonen, 20min)</p> <p><b>Mechanical testing of nuclear materials, cladding creep experiments</b> (S. Huutilainen, 20min.)</p> <p><b>Fast Reactor Fuel Management</b> (M. Vanderhaegen, 20min.)</p>	<p>11 :00 Arrival at Olkiluoto</p> <p>11 :30 Introduction to TVO and Posiva</p>	<p><b>Dry and wet storage in Belgium</b> (J. Depuydt, 20 min)</p> <p><b>Wet &amp; Dry fuel storage experience in Ignalina NPP</b> (T. Kaliatka, 20 min)</p> <p><b>SEC NRS experience on SNF storage safety review</b> (A. Kirkin, 20 min)</p> <p><b>Pool side inspection</b> (M. Mala, 20 min)</p> <p><b>Safety upgrading of "wet" SNF storage at ChNPP before its transfer for "dry" storage</b> (O. Kilina, 20 min)</p>	<p><b>Dry storage of spent fuel</b> (M. Wehrfritz, 45 min)</p> <p><b>Dry storage: civil engineering issues</b> (N. Tang, 45 min)</p>
12:30	Lunch	Lunch	Lunch	Lunch	Lunch
13:30 - 15:00	<p><b>Approaches to the new fuel licensing in Ukraine</b> (R. Serafyn, 40 min)</p> <p><b>SEC NRS general presentation</b> (G. Arbaev, 10 min)</p> <p><b>Safety issues in nuclear fuel fabrication</b> (S. Shiyarov 40 min)</p> <p><b>General presentation SUJB</b> (T. Markova, 10 min)</p>	<p><b>T-H analysis of VVER 440 fuel during normal operation (or during DBA conditions) done by RELAP5 code.</b> (S. Bebjak 20min.)</p> <p><b>Behaviour of fuel under SA scenarios</b> (G. Mazzini, 25min)</p> <p><b>Simulation of fuel assemblies in SCALE code</b> (B. Miglierini, 25min)</p>	<p>Visits to Olkiluoto 1/2, Olkiluoto 3 sites</p> <p>Visit to the underground low/medium level waste facilities Coffee break</p> <p>20 :30 Arrival back at the Radisson Blu Espoo hotel</p>	<p><b>Spent fuel storage "CASTOR containers "</b> (V. Dolecek, 20 min)</p> <p><b>Analysis of Processes in Fuel Rods During Normal Operation, Wet and Dry Storage in Ignalina NPP</b> (T. Kaliatka, 20 min)</p> <p><b>Status of air oxidation knowledge and application to SFP</b> (L. Fernandez-Moguel, 20 min)</p> <p><b>Severe Accident analysis for Spent Fuel Pool with different loadings using MELCOR 1.8.5 computer code for VVER fuel</b> (O. Kotsuba, 20 min)</p>	<p><b>Workshop on dry storage or wet storage</b> (J. Depuydt, 20 min introduction, 1h workshop)</p>
15:00	Coffee break	Coffee break		Coffee break	Coffee break
15:30 - 17:00	<p><b>Practical exercises on UF6 accident</b> (C. Lecarme)</p>	<p><b>Simulation of fuel assembly behaviour</b> (G. Mazzini)</p>			Feedback + departures
Evening	Helsinki city visit/tour	JSP meeting (Only for delegates)		Dinner	