

PROGRAMME

10 December 2012

9:00-9:40	NEA Welcome and introduction of the attendees	<i>(Th. DUJARDIN, NEA)</i>
9:40-9:55	Introduction and background	<i>(J. GULLIFORD, NEA)</i>
9:55-10:05	Objectives of the workshop	<i>(K. PASAMEHMETOGLU, INL, USA)</i>

Session 1: Lessons learned from the Fukushima accident

Chair: K. Pasamehmetoglu (INL, USA)

10:05-10:25	Current understanding of the sequence of events	<i>(J. GULLIFORD, NEA)</i>
10:25-10:45	Overview of fuel behaviour and core degradation, based on modelling analyses	<i>(S. MASSARA, NEA)</i>
10:45-11:00	Additional information (from recent workshops etc.)	<i>(K. PASAMEHMETOGLU, INL, USA)</i>
11:00-11:20	<i>Coffee break</i>	
11:20-11:40	Key regulatory and safety issues emerging, NEA activities	<i>(J. NAKOSKI, NEA)</i>
11:40-12:00	Recent and current activities of the OECD/NEA Working Group on Fuel Safety (NEA/CSNI)	<i>(M. PETIT, IRSN, France)</i>
12:00-12:10	Summary of the current status of the lessons learned from Fukushima	<i>(K. PASAMEHMETOGLU, INL, USA)</i>

Session 2: Accident tolerant fuel design

Chair: K. Pasamehmetoglu (INL, USA)

12:10-12:30	Overview of Accident Tolerant Fuel Development	<i>Frank GOLDNER (DoE, USA)</i>
12:30-14:00	<i>Buffet Lunch</i>	
14:00-14:20	Evaluation of potential alternative nuclear fuel cladding materials for LWRs applications with increased margins in LOCA and beyond LOCA conditions at CEA	<i>Marion LE FLEM, Aurore MICHAUX, Jean-Christophe BRACHET (CEA, France)</i>
14:20-14:40	Silicon carbide materials for LWR application: current status and issues	<i>Tatsuya HINOKI (Kyoto Univ., Japan)</i>
14:40-15:00	Development of advanced claddings for suppressing the hydrogen emission in the accident condition	<i>Jeong-Yong PARK (KAERI, Rep. of Korea)</i>
15:00-15:20	Accident tolerant control rod	<i>Hirokazu OHTA, Takashi SAWABE, Takanari OGATA (CRIEPI, Japan)</i>
15:20-15:40	Fully ceramic microencapsulated fuel design and irradiation testing	<i>Lance SNEAD (ORNL, USA)</i>
15:40-16:00	Development of LWR Fuels with enhanced accident tolerance	<i>James TULENKO, Ghatu SUBHASH (Univ. Florida, USA)</i>

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- 16:00-16:30 *Coffee break*
- 16:30-16:50 **Enhanced accident tolerant fuel**
John STRUMPELL (AREVA-NP, USA)
- 16:50-17:10 **Developments in silicon carbide cladding for nuclear applications**
Christina BACK (General Atomic, USA)
- 17:10-17:30 **Suggestion of a novel failure tolerant fuel element**
Manuel POUCHON (PSI, Switzerland)
- 17:30-17:50 **Engineered zircaloy cladding modifications for improved accident tolerance of LWR Fuel**
Brent HEUSER (Univ. Illinois, USA)
- 17:50-18:00 First Day Close-Out
- 18:00 Adjourn

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11 December 2012

Session 3: Reactor operation, safety, fuel cycle constraints, economics & licensing

Chair: K. Pasamehmetoglu (INL, USA)

- 9:00-9:20 **Preliminary assessment of the impact of candidate accident tolerant fuels/cladding on the predicted reactor behavior at normal operating conditions and under DB (LOCA and RIA) and BDB (STSBO AND LTSBO) accident conditions**
Larry OTT (ORNL, USA)
- 9:20-9:40 **Fuel behaviour in severe accidents and potential ATF designs**
Bo CHENG (EPRI, USA)
- 9:40-10:00 **Safety of some fuel cladding materials, alternative to Zr alloys**
Georges HACHE, Bernard CLEMENT, Marc BARRACHIN (IRSN, France)
- 10:00-10.20 **Steam attack studies in SiC clad and advanced steel clad**
Kurt TERRANI, Lance SNEAD (ORNL, USA)
- 10:20-10.35 **Contributing to the design of accident tolerant fuels by applying the TRANSURANUS fuel performance code**
Paul VAN UFFELEN, A. SCHUBERT, V. DI MARCELLO, J. VAN DE LAAR (EC-JRC, EC)
- 10:35-10:50 **In-reactor testing capabilities at Halden relevant for ATF fuel**
Carlo VITANZA (OECD / Halden)
- 10.50-11:10 *Coffee break*
- 11:10-11:30 **Introducing a new type of fuel in EDF reactors: main issues**
Hing-Ip WONG, Marie MOATTI (EDF, France)
- 11:30-11:50 **Fuel licensing process for an industrial use**
Nicolas WAECKEL (EDF, France)
- 11.50-12:00 **Key items for discussion at break-out sessions** (NEA)
- 12:00-13:30 *Lunch break*
- 13:30 – 18:00 **Breakout discussions:**
- A. Safety issues**
- *Chair: Marc PETIT (IRSN, France)*
- *Rapporteur: Lars HALLSTADIUS (Westinghouse, Sweden) + NEA/CSNI Secretariat*
- B. Reactor performance, R&D and technology issues**
- *Chair: Larry OTT (ORNL, USA); Co-chair Mikhail VESHCHUNOV (IBRAE, Russian Fed.)*
- *Rapporteur: Nicolas WAECKEL (EDF, France) + NEA/NSC Secretariat*
- 18:00 *Adjourn*

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12 December 2012

Session 4: Synthesis and future programmes

Chair: K. Pasamehmetoglu (INL, USA)

9:00-10:40	Report from breakout sessions and discussion:	
	A. Safety issues (30')	(<i>M. PETIT, IRSN</i>)
	B. Reactor performance, R&D and tech. issues (30')	(<i>L. OTT, ORNL</i>)
	Discussion (40')	
10:40-11:00	International collaboration for development of accident resistant LWR fuel <i>Andrew SOWDER (EPRI, USA)</i>	
11:00-11:20	<i>Coffee break</i>	
11:20-12:45	Synthesis of reports and elements for a roadmap	(<i>Chairs of the Workshop</i>)
	<ul style="list-style-type: none">• Need for development of advanced modelling methods, experimental needs• Collaboration and future programmes of work• Role of international organisations	
12:45-13:00	Concluding remarks	(<i>NEA</i>)
13:00	Adjourn	