



# SOTERIA FINAL WORKSHOP

Miraflores de la Sierra | 25-27 June, 2019

## AGENDA

### SOTERIA WORKSHOP DAY 1

Tuesday 25 <sup>th</sup> June		
13:15 – 14:45	Welcome cocktail and registration	
14:45 – 15:15	Opening and introduction of SOTERIA	Christian ROBERTSON (CEA)
<b>Radiation effects on RPV and internals microstructure</b>		<b>Chair: Marta SERRANO (CIEMAT)</b>
15:15 – 16:00	Flux effects on RPV materials	Andreas ULBRICHT (HZDR)
16:00 – 16:45	Flux effects on internals	Mercedes HERNÁNDEZ-MAYORAL (CIEMAT)
16:45 – 17:15	Coffee break	
17:15 – 18:00	Mechanisms of formation of nano-features in RPV	Estelle MESLIN (CEA)
18:00 – 18:45	Dose-dependent nano-features and their effect on intergranular cracking susceptibility	Christian ROBERTSON (CEA)
20:00 – 21:30	Dinner (for guests of La Cristalera)	

\* Participants with posters can arrange them for the next day's poster session after the end of the presentations.

**SOTERIA WORKSHOP DAY 2**

<b>Wednesday 26<sup>th</sup> June</b>		
<b>Uncertainties in determination of RPV fracture toughness</b>		<b>Chair: Hieronymus HEIN (FRAMATOME)</b>
9:00 – 9:45	Effect of materials heterogeneities on mechanical properties at initial state	Marta SERRANO (CIEMAT)
9:45 – 11:15	Platform demonstration - Session 1**	Julien VIDAL (EDF) Shun HUANG (EDF) Amel GOSSET (PHIMECA)
11:15 – 11:45	Coffee break	
11:45 – 12:30	Effect of materials heterogeneities on microstructure and mechanical properties at irradiated state	Frank BERGNER (HZDR)
12:30 – 13:15	Effects of additional uncertainties and handling and mitigation of uncertainties	Hieronymus HEIN (FRAMATOME)
13:15 – 14:45	Lunch and coffee	
<b>Environmental effects on IASCC susceptibility of internals</b>		<b>Chair: Christian ROBERTSON (CEA)</b>
14:45 – 15:30	Irradiation effects on microstructural evolution	Wade KARLSEN (VTT) Grace BURKE (UoM)
15:30 – 16:15	Effects of the environment on the oxide properties	Susana MERINO (CIEMAT)
16:15 – 16:45	Coffee break	
16:45 – 17:30	IASCC testing	Sarah SHERRY (WOOD) Jonathan DUFF (UoM)
17:30 – 18:15	Poster session	
18:15 – 19:00	Poster session   ENTENTE proposal discussion	
19:00 – 19:45	ENTENTE proposal discussion	
20:00 – 21:30	Dinner (for guests of La Cristalera)	

\*\* Platform demonstrations are part of the session on 'Multiscale modelling tools'.

**SOTERIA WORKSHOP DAY 3**

<b>Thursday 27<sup>th</sup> June</b>		
<b>Environmental effects on IASCC susceptibility of internals</b>		<b>Chair: Christian ROBERTSON (CEA)</b>
9:00 – 9:45	Effects of He on IASCC susceptibility	Manuel POUCHON (PSI)
9:45 – 11:15	Platform demonstration - Session 2**	Julien VIDAL (EDF) Shun HUANG (EDF) Amel GOSSET (PHIMECA)
11:15 – 11:45	Coffee break	
<b>Multiscale modelling tools</b>		<b>Chair: Julien VIDAL (EDF)</b>
11:45 – 12:30	Nanofeature models due to irradiation for RPV and Internals	Christophe DOMAIN (EDF)
12:30 – 13:15	Prediction of dose-dependent fracture response evolutions based on material microstructure observations in RPV steels	Christian ROBERTSON (CEA)
13:15 – 14:45	Lunch and coffee	
14:45 – 15:30	Fracture models for RPV and for the IASCC of Internals	Mike FORD (WOOD)
<b>15:30 – 16:15</b>	<b>Closure, conclusions and future projects</b>	<b>Christian ROBERTSON (CEA)</b>

\*\* Platform demonstrations are part of the session on 'Multiscale modelling tools'.

## POSTER SESSION

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### **Internals: Full-field simulations using a FFT-based method and model for a porous FCC aggregate – Results for an irradiated stainless steel**

P-G. Vincent (IRSN), H. Moulinec (CNRS)

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### **Spatial discretization convergence analysis of CP-FEM and CP-FFT models employed for neutron-irradiated austenitic stainless steel**

S. El Shawish (JSI), P-G. Vincent (IRSN), H. Moulinec (CNRS), L. Cizelj (JSI), L. Gélébart (CEA)

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### **Characterization of brittle fracture initiations in selected reactor pressure vessel base materials and weld metals**

J. Lydman (VTT), C. Huotilainen (VTT), H. Hein (FRAMATOME), R. Korhonen (FORTUM), U. Ehrnstén (VTT), W. Karlsen (VTT)

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### **Characterization of the protective oxide layer formed on 316L SS in different simulated PWR environments**

S. Merino (CIEMAT), G. de Diego (CIEMAT), C. Maffiotte (CIEMAT)

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### **Contribution of Helium to grain boundary degradation in austenitic stainless steels**

E. Oñorbe (CIEMAT), S. Guerra (CIEMAT), M. Navas (CIEMAT), J. Chen (PSI), F. Duval (CNRS), M-F. Barthe (CNRS), P. Desgardin (CNRS), M. Hernández-Mayoral (CIEMAT)

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