Sunday 27 September 2015

18:00 - 19:00 Pre-registration
19:00 – 21:00 Welcome Drink

Monday 28 September 2015

8.30 - 9.00 Welcome Address
Prof. Dr. Eric van Walle, Director-General SCK•CEN
Dr. Leo Sannen, Manager Nuclear Materials Science (NMS) Institute, SCK•CEN, former chairman of the HOTLAB working group

9.00 - 10.30 Progress in Advanced Post Irradiation Examination Techniques
Chair:
Program of the Analysis and Research Laboratory for Fukushima-Daiichi and Advanced Techniques to be Applied in the Laboratory
Y. Sekio, H. Yoshimochi, I. Kosaka, H. Hirano, T. Koyama and H. Kawamura
Fukushima Research Infrastructural Creation Center, Japan Atomic Energy Agency, Fukushima 970-8026, Japan

Acoustic sensors devoted to non-destructive fission gas characterization of LWR nuclear rod in hot lab facilities
J.Y. Ferrandis1,2, G. Léveque1,2, V. Auret3, R. Blachier3
1University Montpellier, IES, UMR 5214, F-34000, Montpellier, France
2CNRS, IES, UMR 5214, F-34000, Montpellier, France
3EDF SEPTEN, Avenue Antoine Dutrievoz, F-69100 Villeurbanne, France

Integral LOCA tests at Studsvik
D. Minghetti, N. Snis
Studsvik Nuclear AB, SE-611 82 Nyköping, Sweden

Development of Large Blister Anneal Furnace for Testing Full Size LEU-10Mo Monolithic Fuel Plates
Francine J Rice, et al.
Idaho National Laboratory, 2525 N Fremont Ave, Idaho Falls, Idaho, 83415, USA

10.30 – 11.00 Coffee break

11.00 - 12.30 Progress in Advanced Post Irradiation Examination Techniques
Characterization of Neutron Irradiated CANDU-6 Inconel X-750 Garter Springs via Lift Out Three Point Bend Tests
C Howard, S Parker, Judge, M Griffiths, Hosemann
Swept Frequency Eddy Current Technique for Pool-Side Inspection of Zr-Alloy Fuel Assembly Members

G. Antonelli, J. Renshaw, R. Daum, B. Andersson and D. Lutz

Study on Micro-drilling Technology of Irradiated Fuel Pellet for Burn-up Analysis

Wei Zhu, Mingquan Feng, Xiaosong Liu

Design and manufacture of the IMGA system for PIE of coated fuel particles of HTR fuel element in INET

Malin Liu, Hongsheng Zhao, Youlin Shao, Bing Liu, Chunhe Tang

12.30 – 13.30 Lunch break

13.30 - 15.00 Remote Handling

Chair : Mike Wade (Spectra Tech, Inc.)

Telemannipulators - Enhancing yesterday’s technology to perform today’s tasks

H. Hafen, JM. Wagner, C. Reich

Innovative system of visualization in hot cells

F. Gobin, S. Kervoern

Reliability improvement of the evacuation route of fuel elements of PHENIX

F. Dominjon, H. Duport, F. Laurent

In-Cell Remotely Operated Equipment

D. Myers

15.00 – 15.30 Coffee break

15.30 - 17.00 Remote Handling

Chair : Mike Wade (Spectra Tech, Inc.)

Reuse of radiated beryllium under remote handling conditions

M. Kickulies
Development and installation of semi-hot cell equipment for irradiated miniaturized specimens preparation, manipulation and testing
I. Eliasova, M. Kytka, R. Kopriva

UJV Rez, a. s., Integrity and Technical Engineering Division Hlavni 130, Rez, 25068 Husinec, Czech Republic

BONA4INL
1 A. Robinson, 2 Y. Parthoens, 2 S. Van den Berghe
1 Idaho National Laboratory, 2525 N Fremont Ave, Idaho Falls, Idaho, 83415, USA
2 SCK•CEN, The Belgian Nuclear Research Centre, Boeretang 200, 2400 Mol

Keys Figures and Services at the CEA LECA-STAR Facility
D. Nozais, O. Dugne, V. Basini, M-C. Anselmet
CEA, Nuclear Energy Division, Department of Fuel Studies, CEA-Cadarache, 13108 Saint Paul lez Durance, France

Tuesday 29 September 2015

8.30 - 09.55 Transportation
Chair:
New transport regulations on fissile materials following the regulations for the Safe Transport of Radioactive Material 2012 Edition
Florian DARRAS
AREVA TN – 1 rue des Hérons – 78 180 MONTIGNY LE BRETONNEUX – France

Use of FENOSOLTM foam in the design of new transportation packages:
1 C. Dane, 2 A. Joudon
1 ROBATEL Industries, France
2 CEA, France

Expanded Contents of the Alpha Omega Services (AOS) Isotope Cask Series
1 T. Sloma, 1 P. Sewell, 1 C. Murphy, 2 T. Hedger
1 Daher-TLI, Engineering Services, 8161 Maple Lawn Blvd., Fulton MD, USA
2 Alpha-Omega Services, Inc., 9156 Rose St., Bellflower CA, USA

Status of the Flying Pig
Fabien HUE
AREVA TN – 1 rue des Hérons – 78 180 MONTIGNY LE BRETONNEUX – France

09.55 - 10.15 Post Irradiation Examination
Testing of concrete in Norway as radiation protection shielding
V. Andersson, J. Balak, B. C. Oberländer, J. H. Hansen
Institutt for energiteknikk, NO-2027 Kjeller, Norway

10.20 – 10.50 Coffee break
10.50 - 12.20 Post Irradiation Examination
Chair:

**Improvement of Fission Gas Analyzer**
H. Uehara, K. Komuro, Koji Usami, Yasuo Nihei, Masahito Nakata

*Department of Fukushima Technology Development, Nuclear Science Research Institute, 2-4 Shirakatashirane, Tokaimura, Naka-gun, Ibaraki-ken, Japan*

**Microstructural investigation of thermally annealed post neutron irradiated RPV alloys steels.**
Milan Konstantinovic

*SCK•CEN, The Belgian Nuclear Research Centre, Boeretang 200, 2400 Mol*

**Fission Gas Sampling and Fuel Pin Volume Measurements**
H.J.M. Chichester, D.A. Sell

*Idaho National Laboratory, 2525 N Fremont Ave, Idaho Falls, Idaho, 83415, USA*

**Investigation of failure of high burn up carbide fuel pin of FBTR through Post-Irradiation Examination**

*Metallurgy and Materials Group, Indira Gandhi Centre for Atomic Research, Kalpakkam 603102, India*

12.30 – 13.30 Lunch break

13.30 – 14.00 Poster session

14.00 - 15.00 Accountancy
Chair:

**Operation of the Analytical Services H.A. Laboratory and Dispensary.**
P.Watson

*B229, Sellafield, Seascale, Cumbria, CA20 1 PG*

**Changing workload for Highly Active Analysis**
A. Lee

*B229, Sellafield, Seascale, Cumbria, CA20 1 PG*

**Testing of the new integrated sample and order management software at PSI HOTLAB**

*1M. STREIT, 2C. KOST, 2M. KIEL, 2D. Salomon*

*1Paul Scherrer Institut, 5232 Villigen PSI, Switzerland*

*2IQS Ltd, 4800 Zofingen, Switzerland*

15.00 – 15.30 Coffee break

15.30 - 17.15 Post Irradiation Examination
Chair:

**Post Irradiation Evaluation at the UK's Windscale Laboratory**
M. Barker, M. Adam, G. Black, S. Morgan, N. Rutherford and F. Woodman

*National Nuclear Laboratory, Windscale Lab, Sellafield, Seascale, CA20 1PG, UK*

*Sellafield Ltd*
Metallography and microanalysis of Qinshan NPP spent fuel rods in CIAE Hot Cells
J.Qian, W.Bian, X.Wang
China Institute of Atomic Energy, P. O. Box 275-57, Beijing 102413, China

Experimental characterization of degraded/molten nuclear fuel at JRC-ITU
V.V. Rondinella, D. Bottomley, P. Pöml, S. Breimer, M. Laurie, D. Serrano-Purroy, D. Papcioannou
European Commission, Joint Research Centre, Institute for Transuranium Elements, Postfach 2340, 76125 Karlsruhe, Germany

PIE Technique for high density $U_3Si_2$ fuel plate
B. Briyatmoko, Supardjo, A. Rozak, Dadang, Suhardyo, A. Wardani, Susworo, Purwanta
BATAN, Indonesia

Determination of hydrogen concentration in Zirconium alloys by differential scanning calorimetry (DSC)
M. MINCU, R. MARINESCU
Institute for Nuclear Research Campului Str., Nr. 1, POB 78, 115400 - Mioveni, Arges, Romania

Wednesday 30 September 2015

8.30 - 09.55 Post Irradiation Examination
Chair:
Status of Post-Irradiation Examinations at the Irradiated Materials Characterization Laboratory
B. D. Miller, C. Knight, K. Wright, A. Aitkaliyeva, D. Blanton, and J. Madden
Idaho National Laboratory, 2525 N. Fremont Ave, Idaho Falls, Idaho, 83401, United States of America

TEM investigation of neutron irradiated and electron beam exposed tungsten
W. Van Renterghem, I. Uytdenhouwen
SCK•CEN, The Belgian Nuclear Research Centre, Boeretang 200, 2400 Mol

Post irradiation examination of high burn up PHWR fuels
Post Irradiation Examination Division, Bhabha Atomic Research Centre, Trombay, Mumbai, India
1Nuclear Power Corporation of India Limited, Anushaktinagar, Mumbai, India

Examination of UK Advanced Gas-cooled Reactor Fuel Cladding (Ex-reactor and Ex-storage)
S. Morgan, D. Hambley, R. Foster, N. Rutherford, M. Adam, M. Barker, F. Woodman
National Nuclear Laboratory, Windscale Lab, Sellafield, Seascale, CA20 1PG, UK
Sellafield Ltd

09.55 - 10.15 Infrastructure
Chair:
The US Nuclear Science User Facilities
J. Rory Kennedy
Idaho National Laboratory, P.O. Box 1625, Idaho Falls, Idaho, U.S.A.

10.20 – 10.50 Coffee break
10.50 - 12.20 Infrastructure

Construction of a gas-mixing and analysis facility for fission gas release and analysis studies.
E. Fontana, D. Bottomley, V.V. Rondinella
European Commission, Joint Research Centre, Institute for Transuranium Elements, Postfach 2340, 76125 Karlsruhe, Germany

New alpha-laboratory at IFE Kjeller, Norway, for experimental MOX pellet and fuel rod production for Halden reactor tests
B.C. Oberländer, H.J. Kleemann, M. Sobieska
Institutt for energiteknikk, NO-2027 Kjeller, Norway

The CANS Post-Irradiation Examination Facility at McMaster University
1John Luxat, 1Ian Love, 2Valerie Walker, 2Frank Granadino, 2John Buckle
1McMaster University, Hamilton, Ontario, Canada
2Merrick and Company, Aurora, Colorado, USA

Current status of the ESS Active Cells Facility
M. Göhran, L. Åström, S. Vareskic, P. Erterius
European Spallation Source ESS AB, P.O. Box 176, S-22100 Lund, Sweden

12.20 – 13.30 Lunch break

13.30 - 15.00 Infrastructure

Chair:

Development of Engineering Scale Pyroprocessing Facility – PRIDE
I. Cho, J. Han, S. Yu, D. Ryu, J. Lee, S. Kim, B. Park, K. Kim, D. Ahn
Korea Atomic Energy Research Institute, 1045 Daedeok-daero, Yuseong-gu, Daejeon 305-353, Republic of Korea

Design and Restructure of Nuclear Material Mechanics Semi-hot Cell
X-P. Zhang, B. Wen, X-S. Liu, M-Q. Feng
Nuclear Power Institute of China, Chengdu, 610041

An update on the new VTT hot cell
1W. Karlsen, 2F. Butze
1VTT Technical Research Centre of Finland Ltd., wade.karlsen@vtt.fi, Finland
2Isotope Technologies Dresden GmbH, frank.butze@isotope-td.de, Germany

Hot cell facility in CVR, shielding part ready
1O. Srba, 2M. Mikloš, 3D. Merhout, 3P. Svoboda
1Structural and System Diagnostics, Centrum vyzkumu Rez s.r.o. (Research Centre Rez Ltd.), Rez, Czech Republic
2Operation management, Centrum vyzkumu Rez s.r.o. (Research Centre Rez Ltd.), Rez, Czech Republic
3Design department, Centrum vyzkumu Rez s.r.o. (Research Centre Rez Ltd.), Rez, Czech Republic

15.00 – 15.30 Coffee break

15.30 - 16.30 Infrastructure

Chair:

Decontamination hot cell
M. Kartaman, B. Briyatmoko, Sungkono, A. Gogo, Basiran, Dadang, Suhardyo, A. Wardani, Susworo, Purwanta
BATAN, Indonesia
System Architecture and Operational Concept for PIECE (PIE Cells at ESS)

Y. Lee, M. Göhran, M. Hartl, M. Everett

Target Division, European Spallation Source ESS-AB, Box 176, 22363 Lund, Sweden
Science Division, European Spallation Source ESS-AB, Box 176, 22363 Lund, Sweden

Refurbishing ACPF for pyroprocessing technology development at KAERI

K. Kim, B. Park, S. Yu, I. Cho, D. Ahn

Korea Atomic Energy Research Institute, 989-111 Daedeok-daero, Yuseong-gu, Daejeon 305-353, Republic of Korea

16.30 – 17.00 Closing session

Justin Dexter, President American Glovebox Society
Ann Leenaers, chair working group Hot Laboratories and Remote Handling
Vincenzo V. Rondinella, Head, Safety of Irradiated Nuclear Materials, European Commission, Joint Research Centre, Institute for Transuranium Elements (ITU)

18.00 – 20.00 Visit to AB Inbev brewery (Stella Artois)
**Poster session**

**Shielded Field Emission EPMA for the Examination of Nuclear Materials on Sections with Polished and Fracture Surfaces**
R Restani, R Grabherr  
*Paul Scherrer Institute, 5232 Villigen PSI, Switzerland*

**Hot cell facility in CVR, shielding part ready**
O. SRBA, M. MIKLOŠ, D. MERHOUT, P. SVOBODA  
1Structural and System Diagnostics, Centrum vyzkumu Rez s.r.o. (Research Centre Rez Ltd.), Rez, Czech Republic  
2Operation management, Centrum vyzkumu Rez s.r.o. (Research Centre Rez Ltd.), Rez, Czech Republic  
3Design department, Centrum vyzkumu Rez s.r.o. (Research Centre Rez Ltd.), Rez, Czech Republic

**Expanded Contents of the Alpha Omega Services (AOS) Isotope Cask Series**
T. Sloma, P. Sewell, C. Murphy, T. Hedger  
1Daher-TLI, Engineering Services, 8161 Maple Lawn Blvd., Fulton MD, USA  
2Alpha-Omega Services, Inc., 9156 Rose St., Bellflower CA, USA

**Investigation on radon emission throughout Hot Cells facilities**
L. Velnom, M. Uhlig, Y. Kintz, J.-P. Glatz, V.V. Rondinella  
*European Commission, Joint Research Centre, Institute for Transuranium Elements, Postfach 2340, 76125 Karlsruhe, Germany*

**Development of a gas trapping system for gaseous fission products throughout dissolution of irradiated fuels in hot cells.**
G. FERLAY  
*CEA, DEN/DRCP/ERA/LED, Bdg 166, BP 17171, CEA/MARCOULE, F-30207 Bagnols sur Cèze Cedex*

**Effects of radiation and contamination on focused ion beam (FIB) system components**
A. Aitkaliyeva, J.W. Madden, D. Miller, J. I. Cole, J. Gan, B. Van Leer  
1Idaho National Laboratory, P. O. Box 1625, M. S. 6199, Idaho Falls, ID 83415-6188  
2FEI, Hillsboro, OR, 97124

**Progress towards the first experiment in NNL Central Laboratory hot cell facility.**
S. E. Woodbury and K. HG Clark  
*NNL Central Laboratory, Sellafield, CA20 1PG, UK.*

**Blister Anneal Testing Interim Results of LEU-10Mo Monolithic Fuel Plates**
Francine J Rice, et al.  
*Idaho National Laboratory, 2525 N Fremont Ave, Idaho Falls, Idaho, 83415, USA*