**FIRST-Nuclides**  
*(Contract Number: 295722)*

**DELIVERABLE (D-N°:5.11)**  
1st Workshop program

Author(s): AMPHOS 21

Reporting period: e.g. 01/01/12 – 31/06/13

Date of issue of this report: 01/10/12

Start date of project: **01/01/12**  
Duration: **36 Months**

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Project co-funded by the European Commission under the Seventh Euratom Framework Programme for Nuclear Research & Training Activities (2007-2011)
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Tuesday, 9th October 2012
Place: Radisson BLU Béke Hotel, Budapest, Hungary

14:30-15:30 ExCom meeting

15:30-16:30 EUG meeting.
   *(Restricted to EUG and ExCom members)*

16:30-17:00 **Coffee Break**

**Associated Group presentations**

17:00-17:30 Behaviour of UK Advanced Gas-cooled Reactor fuel in geological environments
   *David Hambley (NNL)*

17:30-18:00 Applicability of Past Spent Fuel Research in the US to a Salt-Based HLW Repository
   *Donald Reed (Los Alamos)*

18:00-18:30 Source term modelling for spent fuel elements in performance assessment
   *Artur Meleshyn (GRS)*

19:30-21:00 Dinner
Wednesday, 10th October 2012
Place: Radisson BLU Béke Hotel, Budapest, Hungary

08:30-09:00 Welcome
Bernhard Kienzler (KIT), Zoltán Hózer (EK)

WP1 plenary: Samples and tools
WP leader: Volker Metz (KIT)

09:00-09:20 Introduction: overview of activities within WP1 + Description of fuel segment (50.4 GWd/tHM burn-up) studied at KIT-INE within FIRST-Nuclides
Volker Metz (KIT)

09:20-09:30 Non-destructive analysis of a PWR fuel segment with a burn-up of 50.4 GWd/tHM
D.H. Wegen, D. Papaioannou, R. Nasyrow, R. Gretter (JRC-ITU)

09:30-09:40 HTR spent fuel - selected material for FIRST-Nuclides
Hilde Curtius (JÜLICH)

09:40-09:50 Selection and description of spent fuel samples selected for PSI studies in frame of the FIRST Nuclides project
A. Froideval Zumbiehl, E. Curti, I. Günther-Leopold (PSI)

09:50-10:00 Characterisation of SCK-CEN fuel samples used for leach tests in FIRST-Nuclides project
Karel Lemmens (SCK-CEN)

10:00-10:10 Radiolytic corrosion of grain boundaries onto the UO2 TRISO particle surface: Solid characterization and irradiation cells development
Johan Vandenborre (CNRS)

10:10-10:20 SNF selected for the FIRST Nuclides WP1

10:20-10:30 Characterisation of spent VVER-440 fuel to be used in the FIRST-Nuclides project

(D-N°:5.11) – 1st Workshop Program
Dissemination level: PU
Date of issue of this report: 01/10/12
Zoltán Hőzer (EK)

10:30-10:40 Sample Selection and Characterization at Studsvik
Olivia Roth (STUDSVIK)

10:40-10:50 Discussion on WP1 performance

10:50-11:20 -- Coffee Break --

WP2 plenary: Gas release + rim and grain boundary diffusion

WP leader: Detlef Wegen (JRC_ITU)

11:20-11:40 Introduction & Sampling and Measurement of Fission Gas from Spent Nuclear Fuel
D.H. Wegen, D. Papaioannou, W. de Weerd (JRC-ITU)

11:40-12:00 Determination of Gaseous Fission and Activation Products Released from 50.4 GWd/t PWR Fuel
E. Bohnert, E. González-Robles, M. Herm, B. Kienzler, M. Lagos, V. Metz (KIT)

12:00-12:20 Preparations and experimental start-up at Studsvik WP2
Olivia Roth (STIDSVIK)

12:20-12:40 Oxygen and Water Diffusion into 42 GWd/tHM UO₂ Fuel under Reducing Conditions
P. Carbol, I. Marchetti (JRC-ITU)

12:40-13:00 HTR Spent Fuel - Microstructure and Radionuclide Inventory
H. Curtius, (JÜLICH)

13:00-14:30 -- Lunch --

14:40-15:00 Radiolytic Corrosion of Grain Boundaries onto the UO2 TRISO Particle Surface
J. Vandenborre, A. Traboulsi, G. Blain, J. Barbet, M. Fattahi (CNRS)
**Topical session**

15:00-16:30 **Characteristics of Spent Nuclear Fuel**  
*Christoph Gebhardt, Wolfgang Goll (AREVA)*

16:30-18:00 **The potential of the TRANSURANUS code for source term calculation of spent nuclear fuel**  
*Paul Van Uffelen (DG JRC)*

19:00 **Workshop DINNER**
Thursday, 11th October 2012
Place: Radisson BLU Béke Hotel, Budapest, Hungary

WP3 plenary: Dissolution based release
WP leader: Karel Lemmens (SCK-CEN)

08:30-08:40 Introduction: overview of activities within WP3
Karel Lemmens (SCK-CEN)

08:40-08:55 Evaluation of activity concentration data measured at Paks NPP
Zoltán Hózer and Emese Slonszki (EK)

08:55-09:15 Overview of activities. Experimental set-up
Daniel Serrano-Purroy, Laura Aldave de las Heras, Jean Paul Glatz, Rosa Sureda, Frederic Clarens, Joan de Pablo, Ignasi Casas (JRC-ITU + CTM)

09:15-09:30 Preparations and experimental start-up at Studsvik WP3
Olivia Roth, Anders Puranen, Charlotta Askeljung (STUDSVIK)

09:30-09:45 Characterization of 50.4 GWd/t PWR fuel and set-up of dissolution experiments
E. González-Robles, B. Kienzler, A. Loida, N. Müller, V. Metz (KIT/INE)

09:45-10:00 Concept of leach tests for the experimental determination of IRF radionuclides from Belgian high-burnup spent nuclear fuel in FIRST-Nuclides
Thierry Mennecart, Karel Lemmens, Kevin Govers, Adriaensen Lesley, Christelle Cachoïr Dobney Andrew, Gysemans Mireille, Van Renterghem Wouter, Verwerft Marc (SCK-CEN)
10:00-10:15  **XRF/XAS feasibility study for radionuclides determination in spent fuel samples**
I. Günther-Leopold, E. Curti, A. Froideval Zumbiehl *(PSI)*

10:15-10:30  **Discussion of methods**

10:30-11:00  **Coffee Break**

**WP4 plenary: Modelling**

*WP leader: Joan de Pablo (CTM)*

11:00-11:20  **Summary of WP4 activities**
Joan de Pablo *(CTM)*

11:20-11:50  **Modelling of SF Saturation with Water (Approach, Preliminary Results and Potential Implications)**
Marek Pękala, Andrés Idiart, Lara Duro, Olga Riba *(AMPHOS21)*

11:50-12:20  **Modelling of boundary and initial conditions for upscaling migration / retention processes of fission products in the spent nuclear fuel structure**
Bernhard Kienzler, Chistiane Bube, Ernesto González-Robles Corrales and Volker Metz *(INE-KIT)*

12:20-12:50  **IRF modelling from high burn-up spent fuel leaching experiments**
Ignasi Casas *(UPC-CTM)*

12:50-13:00  **ITU activities in WP4**
*(ITU)*

13:00-14:30  **Lunch**
WP5 plenary: Knowledge, reporting and training

WP leader: Alba Valls (AMPHOS21)

14:30-15:00  **Status and overview of WP5**
Alba Valls (AMPHOS21)

15:00-15:30  **State of the art**
Lara Duro (AMPHOS21)

15:30-16:30  **Reporting by the Coordination Team**

16:30-17:00  **Coffee Break**

17:00-18:00h  **General Assembly**