

## EURATOM Collaborative Project CAST (Carbon-14 Source Term)

### Training Course

#### C-14 behaviour under repository conditions

**Tuesday, 5. July, 2016**

KIT-INE seminar room

- 9:00 Welcome, introduction to the course and practical information (V. Montoya, KIT-INE)
- 9:10 Overview on C-14 in waste streams from commercial light water reactors and its relevance to the long-term safety of C-14 bearing waste disposal (V. Montoya, KIT-INE)
- 9:55 Production of C-14 in fuel elements of light water reactors – introduction to calculation methods and related NEA databases (R. Dagan, KIT-INE)

*10:40 Coffee break*

- 11:00 Release of Instant Release Fraction of C-14 from Spent Nuclear Fuel under conditions of a deep geological repository (E. González-Robles, KIT-INE)
- 11:45 Waste management of (C-14 bearing) low / intermediate level waste (F. Himmerkus, WAK-HDB)

*12:30 Lunch break in KIT Cantina*

L/ILW facilities of Hauptabteilung Dekontaminationsbetriebe (KIT, Campus North)

- 13:30 Visit to low / intermediate level waste treatment, decontamination, conditioning and interim storage facilities (F. Himmerkus, WAK-HDB)
- 17:30 Pick-up and transfer to hotels in Karlsruhe
- 19:00 Dinner

**Wednesday, 6. July, 2016**

KIT-INE seminar room

- 9:00 Separation and analysis of gaseous / dissolved C-14 compounds in structural parts of irradiated LWR fuel elements (M. Herm, KIT-INE)
- 9:45 C-14 behaviour under repository conditions – application to geochemical based long-term safety analysis for a underground disposal system (V. Metz, KIT-INE)
- 10:30 Brief introduction into practical training, radiation protection instructions, filling-in forms (V. Metz, KIT-INE)

*10:40 Coffee break*

KIT-INE controlled area

- 11:00 Practical training for working with glove boxes, handling of radioactive laboratory waste and analytical techniques for determination and speciation of radionuclides under disposal relevant conditions (E.Bohnert / M. Herm, KIT-INE)

*12:30 Lunch break in KIT Cantina*

- 13:30 Visit to laboratories with open radioactivity, shielded box line with high level waste and C-14 separation and analysis facility (E. González-Robles / M. Herm, KIT-INE)

group (A) Raman-spectroscopy and optical microscopy of SNF in shielded box line  
group (B) surface analytics (SEM, XPS)

- 17:00 Summary discussion in INE seminar room

- 17:30 Pick-up and transfer to Karlsruhe