EUROPEAN COMMISSION

Community Research

SEVENTH FRAMEWORK PROGRAMME

CARBOWASTE

Treatment and Disposal of Irradiated Graphite and Other Carbonaceous Waste

Grant Agreement Number: FP7-211333

Deliverable
D 1.7.1 Organisation and Management of the Carbowaste User Group

T 1.7.4 Dissemination of Reports to User Group

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Dissemination Level		
PU	Public	
RE	Restricted to the partners of the CARBOWASTE project	X
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Distribution list

Person and organisation name and/or group	Comments
Carbowaste Consortium Members	

CARBOWASTE		
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Document title

D 1.7.1 Organisation and Management of the Carbowaste User Group

Including T 1.7.4 Dissemination of Reports to User Group

Executive summary

The Carbowaste User Group (CUG) was established in 2008 to promote the exchange of views and knowledge on the management of irradiated graphite. The membership of the CUG included utilities, regulators, waste management authorities, engineering groups, research & technology organisations and academia.

An international meeting of the CUG was held annually to facilitate this exchange and to report on the progress made by Carbowaste throughout the course of the project. CUG meetings were held in France (2008), Germany (2009), Spain (2010), Sweden (2011) and Italy (2012). In addition to these meetings, the CUG members were provided with access to a special Carbowaste User Group forum on the SINTER document management system to aid dissemination of Carbowaste findings.

Revisions

Rev.	Date	Short description	Author	Internal Review	Task Leader	WP Leader
01	27 March 13	Issue 1	AW Banford NNL	L Abrahamsen	A Wareing NNL	AW Banford NNL
02	31 May 13	Issue 2 (final)	AW Banford NNL	L Abrahamsen	A Wareing NNL	AW Banford NNL

1 Introduction

The Carbowaste User Group (CUG) was established in the first year of the Carbowaste Project (2008) as a forum for interested parties from the international graphite community to:

- share knowledge on the broader international irradiated graphite landscape,
- inform users of progress made during the Carbowaste project,
- disseminate of the outputs of the Carbowaste project, and
- provide a forum for the user community to advise the Carbowaste consortium

The membership of the CUG included utilities, regulators, waste management authorities, engineering groups, research & technology organisations and academia.

2 Carbowaste User Group Meetings

It was agreed at the first Carbowaste Steering Group Meeting in 2008 that a CUG meeting would be held annually and in parallel with an existing international meeting to encourage a broad attendance and to minimise the travel implications for CUG members.

The first CUG meeting was held alongside the 7th EPRI International Decommissioning and Radioactive Waste Workshop in Lyon, France, 2008. The CUG was well attended with vigorous discussion and debate of benefit to both Carbowaste partners and the wider graphite community. After this initial success, subsequent CUG meetings were held in parallel with this workshop (Table 1).

Table 1 Carbowaste User Group Meetings

Date	CUG Event	Location
29 October 2008	7th EPRI International Decommissioning and Radioactive Waste Workshop	Lyon, France
7 October 2009	8th EPRI International Decommissioning and Radioactive Waste Workshop	Hamburg, Germany
4 November 2010	9th EPRI International Decommissioning and Radioactive Waste Workshop	Madrid, Spain
21 September 2011	10th EPRI International Decommissioning and Radioactive Waste Workshop	Sweden
24 October 2012	11th EPRI International Decommissioning and Radioactive Waste Workshop	Rome, Italy

3 Dissemination of Information.

The CUG meetings featured presentations from various Carbowaste Work Packages, other graphite R&D programmes and industrial and user perspectives, which are detailed in the meeting agendas (see Appendix).

In addition to the dissemination of information at the meetings, members of the user group were given access to a special forum on the project SINTER document management system.

4 Appendix Carbowaste User Group Agendas 2008 - 2012

Meeting Agenda

7th EPRI INTERNATIONAL DECOMMISSIONING AND RADIOACTIVE WASTE WORKSHOP (IN COLLABORATION WITH EDF-CIDEN)
PRELIMINARY AGENDA

- **WEDNESDAY – OCTOBER 29, 2008 (continued)**

PARALLEL GENERAL SESSION (TRACK A continued) Meeting Room: Tête d'Or C&D

(3:15 - 3:35 pm BREAK)

3:35 pm Session VIIA (Continued): License Termination Activities:

- Lessons Learned from the Decommissioning of the Saxton Nuclear Experimental Corporation Facility- J. Byrne, First Energy Nuclear Operating Company, USA
- US Experience with the Characterization and Remediation of Soil and Bedrock-R. McGrath, EPRI
- Optimization of Soil and Groundwater Release Limits for the Jose Cabrera Plant- R. McGrath*, EPRI; E. Gimeno, SOCOIN; N. Martín, ENRESA, Spain
- Exploiting the Potential of the Chernobyl Exclusion Zone in Improving the Understanding of Radioisotope Dispersion - A. Wickham, Nuclear Technology Consultancy, UK

PARALLEL GRAPHITE WASTE SESSION (TRACK B) Meeting Room: Lumière

9:00 am SPECIAL CARBOWASTE PARALLEL SESSION

- 9:00: W. von Lensa, Forschungszentrum Juelich: Objectives of the CARBOWASTE Project
- 9:15: A.W. Banford, Nexia Solutions: Integrated Waste Management Approach
- 9:30: M.J. Grave, Doosan Babcock: Retrieval & Segregation of i-Graphite from MAGNOX and UNGG reactors
- 9:45: G. Cardinal, CEA: Graphite Management Options for High-Temperature Reactors & Segregation of Coated Particles
- 10:00: G. Pina, CIEMAT: Characterisation of i-Graphite
- 10:15: B.J. Marsden, The University of Manchester: Modelling of i-Graphite

(10:30-10:50 am: Break)

- 10:50: J. Fachinger, Forschungszentrum Juelich: Treatment & Purification of i Graphite
- 11:05: D. Bradbury, Bradtec Decon Technologies: Recycling & New Products
- 11:20: B. Grambow, SUBATECH: Disposal Behaviour of i-Graphite & Other Carbonaceous Waste
- 11:35: O. Ozanam, ANDRA: Requirements of Waste Management Agencies
- 11:50: NN, EDF: Needs from a Utility Point of View
- 12:05 - 12:30: Discussion

12:30 pm END: SPECIAL CARBOWASTE SESSION

12:30 to 2:00 pm LUNCH – Tête D'Or A&B

ELECTRIC POWER RESEARCH INSTITUTE

8th EPRI International Decommissioning and Radioactive Waste Workshop
October 7, 2009
Hamburg, Germany

CARBOWASTE
Treatment and Disposal of Irradiated Graphite and Other Carbonaceous Waste
EURATOM Grant Agreement Number: FP7-211333

CARBOWASTE USER GROUP SESSION

- 9:00: W. von Lensa, Forschungszentrum Juelich, DE: *Objectives & Progress of the CARBOWASTE Project*
- 9:15: A.W. Banford, National Nuclear Laboratory, UK: *Integrated Waste Management Approach*
- 9:30: M.J. Grave, Doosan Babcock, UK: *Retrieval & Segregation of i-Graphite from MAGNOX and UNGG reactors*
- 9:45: G. Cardinal, CEA, FR: *Graphite Management Options for High-Temperature Reactors*
- 10:00: G. Pina, CIEMAT, ES: *Characterisation of i-Graphite*
- 10:15: D. Vulpius, Forschungszentrum Juelich, DE: *Treatment & Purification of i-Graphite*

(10:30-10:50 am: Break)

- 10:50: D. Bradbury, Bradtec Decon Technologies, UK: *Recycling & New Products*
- 11:05: B. Grambow, SUBATECH, FR: *Disposal Behaviour of i-Graphite & Other Carbonaceous Waste*
- 11:20: C.E. Vaudey, IPNL, FR: *Thermal and radiolytic effects on chlorine behaviour in nuclear graphite*
- 11:35: L. Petit, EDF, FR: *EDF analyses on the origin of C-14 in UNGG cores*
- 12:05 - 12:30: Discussion

12:30 pm END: SPECIAL CARBOWASTE SESSION

Homepage: www.carbowaste.eu

ELECTRIC POWER RESEARCH INSTITUTE

9th EPRI International Decommissioning and Radioactive Waste Workshop
November 4, 2010
Meliã Madrid Princesa Hotel
Madrid, Spain

CARBOWASTE
Treatment and Disposal of Irradiated Graphite and Other Carbonaceous Waste
EURATOM Grant Agreement Number: FP7-211333

CARBOWASTE USER GROUP SESSION

- 9:00 W. von Lensa, Forschungszentrum Juelich, DE: *Objectives & Progress of the CARBOWASTE Project*
- 9:15 A.W. Banford, National Nuclear Laboratory, UK: *Integrated Waste Management Approach*
- 9:30 M.J. Grave, P. Fisher, Doosan Babcock, UK: *Retrieval & Segregation of i-Graphite from MAGNOX and UNGG reactors*
- 9:45 W. von Lensa, Forschungszentrum Juelich, DE: *Graphite Management Options for High-Temperature Reactors*
- 10:00 G. Pina, CIEMAT, ES: *Characterisation of i-Graphite*
- 10:15 R. Holmes, The University of Manchester, UK: *Characterisation and Leaching of Nuclear Graphite*

10:30-10:45 am: BREAK

- 10:45 D. Vulpius, Forschungszentrum Juelich, DE: *Treatment & Purification of i-Graphite*
- 11:00 D. Bradbury, UK: *Recycling & New Products*
- 11:15 B. Grambow, SUBATECH, FR: *Disposal Behaviour of i-Graphite & Other Carbonaceous Waste*
- 11:30 G. Dietrich, HKG, DE: *THTR 300: Why Safe Enclosure? Health Physics and Final Repository*
- 11:50 M. Sánchez, Westinghouse, ES: *Vandellós 1 NPP Silos. Retrieval, sorting and preconditioning of the radioactive wastes* (presentation plus video)
- 12:10 Discussion

12:30 pm: END of SPECIAL CARBOWASTE SESSION

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The 10th EPRI International Decommissioning and Radioactive Waste Workshop

Agenda

Wednesday, September 21, 2011
TRACK B - Irradiated Graphite Management

Track B: SPECIAL EU CARBOWASTE SESSION

9:00 AM	W. von Lensa, Forschungszentrum Juelich, DE: Objectives & Progress of the CARBOWASTE Project
9:20 AM	A.W. Banford, National Nuclear Laboratory, UK: Integrated Waste Management Approach
9:35 AM	J Clifford, Sellafield Ltd, UK: Graphite Management Challenges at Sellafield
9:55 AM	M.J. Grave, Doosan Babcock, UK: Retrieval & Segregation of i-Graphite from MAGNOX and UNGG Reactors
10:10 AM	G. Pina, CIEMAT, ES: Characterisation of i-Graphite
10:25 AM	G. Black, A. Jones and B. Marsden, The University of Manchester, UK: Irradiated Graphite Waste: Analysis and Modelling of Radionuclide Release with a View to Long Term Disposal
10:40 PM	Break
11:00 AM	D. Vulpius, Forschungszentrum Juelich, DE: Treatment & Purification of i-Graphite
11:15 AM	D. Bradbury, UK: Recycling & New Products
11:30 AM	B. Grambow, SUBATECH, FR: Disposal Behaviour of i-Graphite & Other Carbonaceous Waste
11:45 AM	G. Duškesas, CPST; G. Poškas, LEI, LIT: Decommissioning of RBMK-1500 Reactors in Lithuania: Context and Challenges
12:00 PM	Discussion
12:20 PM	Lunch

EPRI International Decommissioning and Radioactive Waste Management Workshop

October 24, 2012 Rome, Italy

CARBOWASTE
Treatment and Disposal of Irradiated Graphite and Other Carbonaceous Waste
EURATOM Grant Agreement Number: FP7-211333

CARBOWASTE USER GROUP SESSION (October 24, 2012)

- 9:00 W. von Lensa, Forschungszentrum Juelich, DE: *Objectives & Progress of the CARBOWASTE Project*
- 9:20 H. Katsavos, Sogin, IT: *Mechanical technologies for graphite extraction from Latina NPP*
- 9.40 A. Jones, The University of Manchester, UK: *Characterization and treatment of British i-graphites*
- 10:00 M. Capone, ENEA, IT: *Investigations on i-graphite at ENEA*
- 10:20 C. Rizzato, Forschungszentrum Juelich, DE: *Gaseous emissions during thermal treatment of graphite*

10:45-11:15: BREAK

- 11:20 G. Pina, CIEMAT, ES: *Results & 'Cooking Books' from Round Robin Tests*
- 11:40 L. Petit, ANDRA, FR: *Overview of ^{36}Cl data in French graphite waste*
- 12:00 A. Blondel, IPNL, FR: *Radiolysis and irradiation effects on the behaviour of chlorine in nuclear graphite*

12:30 – 13:15: LUNCH

- 13:20 L. McDermott, The University of Manchester, UK: *Review of leach data on irradiated-graphite*
- 13:40 J. Fachinger, FNAG, DE: *Impermeable glas/graphite matrix*
- 14:00 Discussion

14:30 pm: END of SPECIAL CARBOWASTE SESSION

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