

Working Group on Radiological Aspects of Decommissioning Activities at Nuclear Power Plants (WGDECOM)

Chair: -HALE, James Mike (US)

Vice-Chair: -CALAVIA, Ignacio (Spain)

Status of participation

- ISOE Terms and Conditions (2012-2015)
- **Official participants** include (as of March 2015):
 - 76 utilities in 29 countries
(349 operating reactors, 57 shutdown reactors)
 - 21 regulatory authorities in 19 countries (France and Slovenia are represented by two organisations)
- **Database:** 401 operating units and 81 units in some stage of decommissioning in 29 countries

Working Party on Decommissioning and Dismantling

Work Plan - Topics of WPDD focus

On-going

- Decommissioning costing (improve transparency , traceability, auditability, and reliability of decommissioning costing)
- Nuclear site restoration site restoration strategies during nuclear facility life cycle)
- Characterisation in decommissioning (physical and radiological characterisation, including toxic and hazardous materials for decommissioning planning and implementation)

Planned

- Transition from reactor shutdown to decommissioning (WPDD-14 Topic)
- Waste management logistics for decommissioning
- Organisational aspects of decommissioning
- Knowledge and record management (knowledge & experience retain and transfer; training & education; record keeping)
- Decommissioning in harsh and atypical conditions (transfer of decom experience from facilities after accident to normally operated ones)

Working Party on Decommissioning and Dismantling

Work Plan - Topics of WPDD focus

On-going

- Decommissioning costing (improve transparency , traceability, auditability, and reliability of decommissioning costing)
- Nuclear site restoration site restoration strategies during nuclear facility life cycle)
- Characterisation in decommissioning (physical and radiological characterisation, including toxic and hazardous materials for decommissioning planning and implementation)

Planned

- Transition from reactor shutdown to decommissioning (WPDD-14 Topic)
- Waste management logistics for decommissioning
- Organisational aspects of decommissioning
- Knowledge and record management (knowledge & experience retain and transfer; training & education; record keeping)
- Decommissioning in harsh and atypical conditions (transfer of decom experience from facilities after accident to normally operated ones)

Working group members

- **BELGIUM**
- VANHEMELRYCK, Fery Electrabel GDF Suez

- **BRAZIL**
- DE OLIVEIRA SEGABINAZE, Roberto Angra NPP
- LIMA DA SILVA, Tatiana Angra NPP

- **CANADA**
- ELLASCHUK, Bernard Canadian Nuclear Safety Commission (CNSC)
- GAGNON, Jean-Yves Gentilly-2 NPP

- **FRANCE**
- ABELA, Gonzague EDF DIN
- ARIES NASSER, Marie-Eve Autorité de Sûreté Nucléaire (ASN)
- DIDELOT, Nicolas Institut de Radioprotection et de Sûreté Nucléaire (IRSN)
- BONNET, Jean-Luc EDF – DPNT
- VAILLANT, Ludovic European Technical Centre (ETC)

- **GERMANY**
- BRENDENBACH, Boris Gesellschaft für Anlagen- und Reaktorsicherheit (GRS) mbH

- **ITALY**
- MANCINI, Francesco Sogin SpA

- **KOREA (REPUBLIC OF)**
- KIM, Byeong-Soo Korea Institute of Nuclear Safety (KINS)
- SOHN, Wook Korean Hydro & Nuclear Power (KHNP)

- **ROMANIA**
- SIMIONOV, Vasile Cernavoda NPP

Working group Members

RUSSIAN FEDERATION

- VOLKOV, Victor Rosenergoatom Concern OJSC

SPAIN

- CALAVIA, Ignacio Nuclear Safety Council (CSN)

SWEDEN

- ELLMARK, Christoffer AB SVAFO
- HANSSON, Petra Swedish Radiation Safety Authority

SWITZERLAND

- NEUKÄTER, Erwin Mühleberg NPP

UNITED STATES OF AMERICA

- ANDERSON, Ellen Nuclear Energy Institute (NEI)
- HALE, James Mike Kewaunee NPP
- MILLER, David .W. North American Technical Centre (NATC) D.C. Cook NPP

CORRESPONDING MEMBERS

CANADA

- MCQUEEN, Maureen C.N. Associates Inc.

UNITED STATES OF AMERICA

- ROBERTS, Sarah Oak Ridge Associated Universities (ORAU)
- TARZIA, James P. Radiation Safety & Control Services Inc.

JOINT SECRETARIAT

- MA, Jizeng International Atomic Energy Agency (IAEA)
- RAKHUBA, Aleksandr OECD Nuclear Energy Agency (NEA)
- GUZMAN, Olvido OECD Nuclear Energy Agency (NEA)

TERMS OF REFERENCE

- The objective of the Working Group on Radiological Aspects of Decommissioning Activities in Nuclear Power Plants is to provide a forum for experts to develop a process within the Information System on Occupational Exposure (ISOE) programme to better share operational RP data and experience for NPPs in various stages of decommissioning, or in preparation for decommissioning.

TERMS OF REFERENCE

- the areas of operational RP for NPPs planning decommissioning or in the process of decommissioning that are most relevant for effective management of occupational exposure;
- the operational data that can be collected through the ISOE databases in order to suggest trends and aspects that can be studied and used for benchmarking as a starting point for more in-depth analyses;
- a network of operational RP experts at NPPs who are planning decommissioning or who are in the process of decommissioning for the ISOE Management Board to see how they can be integrated into the ISOE programme to effectively exchange occupational exposure management experience;
- factors and aspects that play key roles in achieving good practices in decommissioning (knowledge and historical memory, experience, technology, regulatory requirements and guidance, worker involvement, information exchange and networking, radioactive waste management -low and medium level-, etc.), and analysing and quantifying their possible impact on occupational doses.
- The working group will manage all identified work as per the approved Program of Work and will report regularly on the status of all such work to the ISOE Management Board.

Draft Work Plan Outline

- Identify a network of radiation protection experts associated with decommissioning
- Consider on an ongoing basis membership of our committee
- Create a Frequently Asked Questions List on RP in decommissioning
- Do benchmarking visits to sites in decommissioning
- Prior to visit, prepare questions for the decommissioning site and also gather questions from the site requiring input
- Prepare a report summarizing the main findings of the benchmarking visit
- Present results of benchmarking visit to the board

Draft Work Plan Outline (cont)

- Work with the subgroups of WPDD
- Review the work of the sub-group on characterization and identify if the initial characterization strategies are adequate to provide information required for radiation protection
 - –Identify and provide input to the strategies to provide the required information
 - –Identify if any further work is required
- Work with other subgroups as necessary to integrate radiation protection into decommissioning strategies
- Create, populate and promote a searchable tool which provides radiation protection information (dose, practices, source term, contacts, reports, relevant regulatory requirements, waste management information, national constraints, incidents and challenges) which can be used by Radiation Protection experts to support RP in decommissioning

Actions completed to date

- Two meetings were held at OECD NEA, Issy-les-Moulineaux, France
- 1st (8-9 June) and 2nd (26-27 October) summary record of the 1st meeting is posted on the ISOE website
- 1st station visit on April 18, 2016 in the USA is confirmed.
- 2nd station visit in October in Spain, plans for organising in process
-
- 2 station visits in 2017 – in Sweden and Switzerland preliminary agreement

Actions completed to date (cont)

Items posted on the ISOE website under WGDECOM

- Current membership list
- Benchmarking reports
 - Zion
 - La Crosse
- Numerous PowerPoint presentations and reports on ORP in decommissioning
 - List of Position Papers developed in decommissioning-- Dominion

Actions completed to date (cont)

- During the last WGDECOM meeting, it was reaffirmed that WGDECOM and WPDD shall collaborate in future.
- To achieve this, Erwin Neukaeter will act as liaison officer of WGDECOM for any issues concerning the co-operation with WPDD.
- Erwin Neukaeter will attend 16th meeting of the Working Party on Decommissioning and Dismantling (WPDD), to be held on 23-25 November 2015 at the NEA offices.
- Special sub-section has been created for WGDECOM Forum on the ISOE website.

Actions Pending

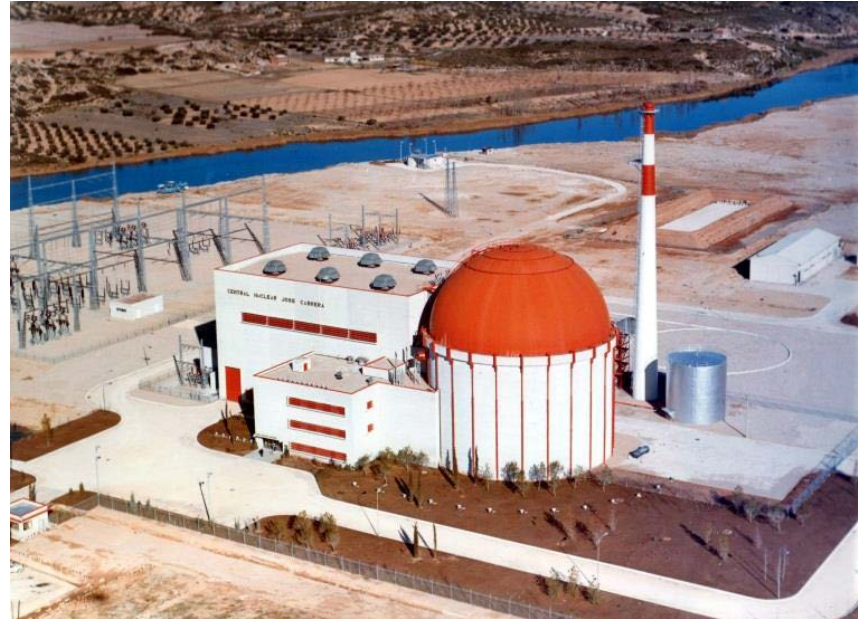
- Site Benchmarking template is under preparation
- Review of ISOE D trial Data Collection Template
- Review of Dose data breakdown from José Cabrera NPP decommissioning project

NEXT Meeting April 18-22-2016

- Site selected Kewaunee Power Station (USA)
- Meeting with the NRC in Chicago (not confirmed)
- Zion benchmarking visit (confirmed)
- Invite the other U.S. RPM's to join us at KPS (5 commitments to date)
- Draft schedule
 - Monday meet with the NRC in Chicago
 - Tuesday go to Zion and drive up to Green Bay after the benchmarking
 - Meet at KPS on Wednesday
 - review of NRC discussion and Zion Visit
 - Meet with U.S. RPM's.
 - Thursday perform benchmarking/plant tour, observe Dry Cask campaign
 - Friday review, lessoned learned, confirm next meeting date/location

José Cabrera NPP decommissioning project

- Reactor internals
 - ❑ Preparatory activities **10.8 mSv-p completed**
 - ❑ Removal of internals **1.67 mSv-p completed**
 - ❑ Radiological characterization **0.22 mSv-p completed**
 - ❑ Dismantling/segmentation **111.95 mSv-p completed**
 - ❑ Waste packaging **0.45 mSv-p completed**
 - ❑ Hi level activity waste Dry casks (loading+storage ISFSI) **17.69 mSv-p completed**
 - ❑ Data point 42% of all dose to date were in high dose rates, 58% of all dose to date were in low dose rates
 - ❑ Information provided by JOSE CAMPOS MENDIA



QUESTIONS