

ISOE Programme Update



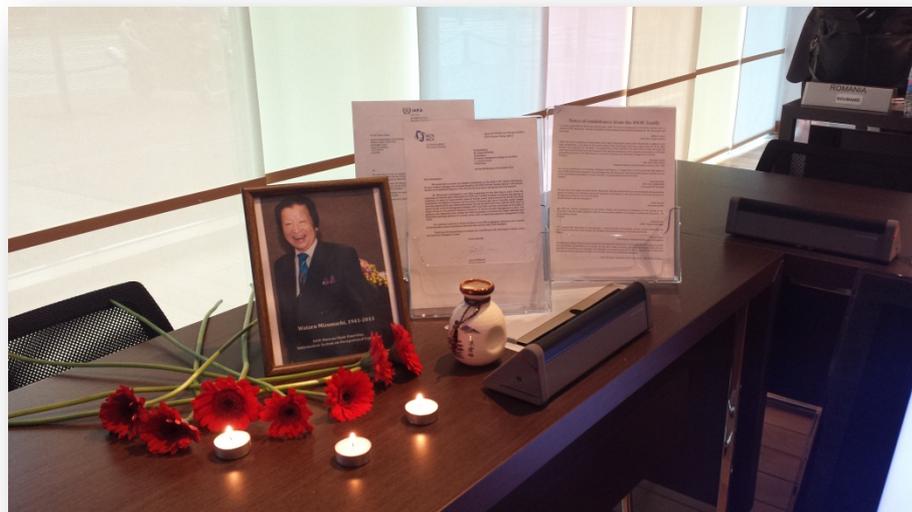
Halil Burçin OKYAR
ISOE Scientific Secretary

OECD NEA
Radiation Protection & Radioactive
Waste Management Division



Wataru Mizumachi, 1941-2013

ISOE Bureau Chair Emeritus,
Information System on Occupational Exposure



Le Directeur général
The Director-General

Agence de l'OCDE pour l'énergie nucléaire
OECD Nuclear Energy Agency

His Excellency
Mr. Kazuo KODAMA
Ambassador
Permanent Delegation of Japan to the OECD
11, avenue Hoche
75008 Paris
Issy-les-Moulineux, 6 November 2013

Dear Ambassador,

We would like to convey our deepest condolences on the death of Mr. Wataru Mizumachi. He was a valued colleague who devoted himself to the OECD Nuclear Energy Agency's Information System on Occupational Exposure. We will miss his wise advice and gentle, personal manner.

Mr. Mizumachi participated in the ISOE programme for the first time in 2003. From the beginning, he showed great enthusiasm for ISOE, and worked tirelessly to advance the sharing of experience in order to reduce worker doses at nuclear power plants around the world. His frank presentation of relevant situations and his sense of humour and use of colourful, poetic images were key aspects of his very likable personality. He was the ISOE Chair from 2006 to 2008, Chair of Expert Group on Work Management between 2007 and 2009, and was nominated as the Chair of Expert Group on Occupational Radiation Protection in Severe Accident Management in 2011. His guidance and experience have helped the ISOE programme to become the largest database and experience exchange platform for nuclear power plant occupational exposure management in the world.

Our sadness is shared by all the members of the ISOE programme. Attached here I include all the heartfelt notes of condolences that have been sent by other ISOE members.

Thank you for transmitting our sadness and condolences to Mr. Mizumachi's family, and to his numerous colleagues in Japan.

Yours sincerely



Luis E. Echávarri
Director-General



Atoms for Peace

الوكالة الدولية للطاقة الذرية
國際原子能機構
International Atomic Energy Agency
Agence Internationale de l'Énergie Atomique
Международное агентство по атомной энергии
Organismo Internacional de Energía Atómica

Vienna International Centre, PO Box 100, 1400 Vienna, Austria
Phone: (+43 1) 2600 • Fax: (+43 1) 26007
Email: Official.Mail@iaea.org • Internet: <http://www.iaea.org>

In reply please refer to:
Dist. directly to attention: (+43) 2600-26173

HE Mr Toshiro Ozawa

Resident Representative of the Permanent
Mission of Japan to the IAEA
Andromeda Tower
Donas-City-Strasse 6
1220 VIENNA
AUSTRIA

2013-11-12

Sir,

We would like to convey our deepest condolences on the death of Mr Wataru Mizumachi. He was a valued colleague who devoted himself to the Information System on Occupational Exposure (ISOE) which is jointly operated by OECD/NEA and IAEA.

We appreciate very much Mr Mizumachi's Cooperation with the IAEA ISOE Technical Centre and his leadership when he was the ISOE chair. His personal qualities and professionalism left a deep impression on his ISOE colleagues.

Thank you for transmitting our sadness and condolences to Mr Mizumachi's family, and to his numerous colleagues in Japan.

Accept, Sir, the assurances of my highest consideration.

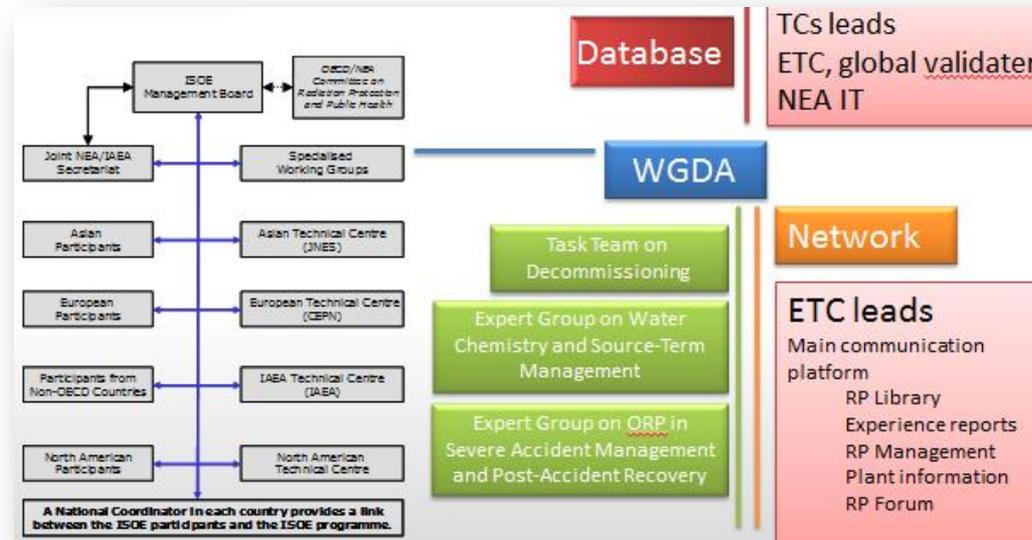


Pi-Soo Hahn
Director
Division of Radiation, Transport and Waste Safety

Agenda

- Status of participation
- Database management
- MADRAS analysis and Network
- Progress in the implementation of ISOE TC PIs
- EG reports & Workshop
- ISOE / CPD co-operation in decommissioning
- Regular / upcoming activities-meetings

ISOE - Management



- 2013 meetings (April & November)
- MB Meeting; managerial issues, details of programme implementation, and future plans
- ISOE Chair- Mr. Willie HARRIS (US)
- Vice-Chair- Dr. Swen-Gunnar JAHN (Switzerland)
- Chair-elect- Dr. Tae-Won HWANG (Republic of Korea)

Status of participation

- ISOE Terms and Conditions (June 2013)
- 21st MB meeting resolution- collection of signed acceptance forms

Official participants include (as of Dec 2013):

- 58 utilities in 25 countries
(272 operating reactors, 30 shutdown reactors)
- 18 regulatory authorities in 17 countries (France is represented by ASN & IRSN)

Database: 401 operating units and 81 units in some stage of decommissioning

In process:

Rosenergoatom Concern OJSC (Russian Federation)

Dominion Generation & Southern Company (NATC)

CNNP Jiangsu Nuclear Power Corporation (China)

NATC domain-current

United States	American Electric Power Co. Arizona Public Service Co.	D.C. Cook 1, 2 Palo Verde 1,2,3	
	Constellation Energy Nuclear Group (CENG LLC) Detroit Edison Co. Exelon Nuclear Corporation	Calvert Cliffs 1, 2 Ginna 1 Fermi 2 Braidwood 1, 2 Byron 1, 2 Clinton 1 Dresden 2, 3 LaSalle County 1, 2	Nine Mile Point 1, 2
	First Energy Nuclear Operating Co.	Beaver Valley 1, 2 Davis Besse 1	Limerick 1, 2 Oyster Creek 1 Peach Bottom 2, 3 Quad Cities 1, 2 TMI 1 Perry 1
	South Carolina Electric & Gas Co. XCel Energy	Virgil C. Summer 1 Monticello Prairie Island 1,2	
	Dominion Generation	Kewaunee	
	Exelon Nuclear Corporation	Dresden 1 Peach Bottom 1	Zion 1, 2

RA: US NRC

NATC domain -current

Canada	Bruce Power Hydro Quebec New Brunswick Electric Power Commission Ontario Power Generation	Bruce A1, A2, A3, A4 Gentilly 2 Point Lepreau Darlington 1, 2, 3, 4	Bruce B5, B6, B7, B8 Pickering 1, 4 Pickering 5, 6,7, 8
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RA: CNSC

New & upcoming

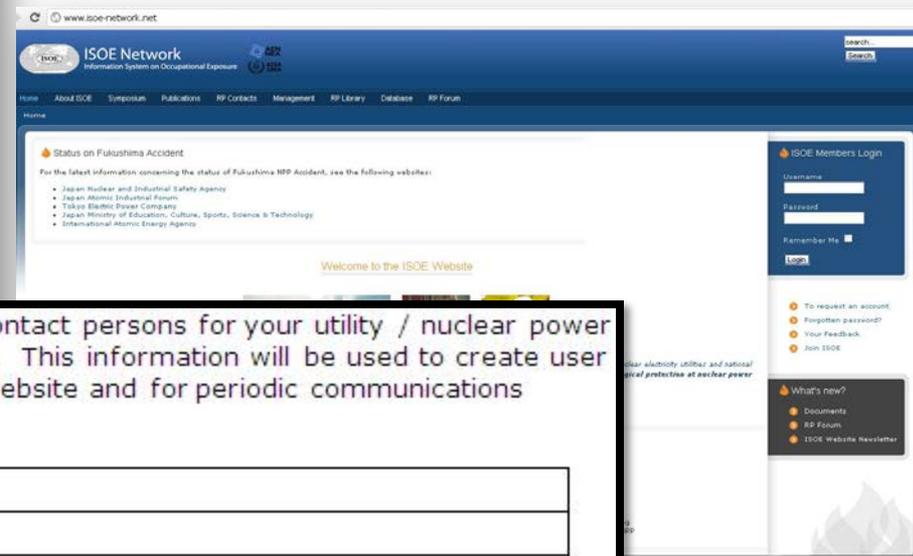
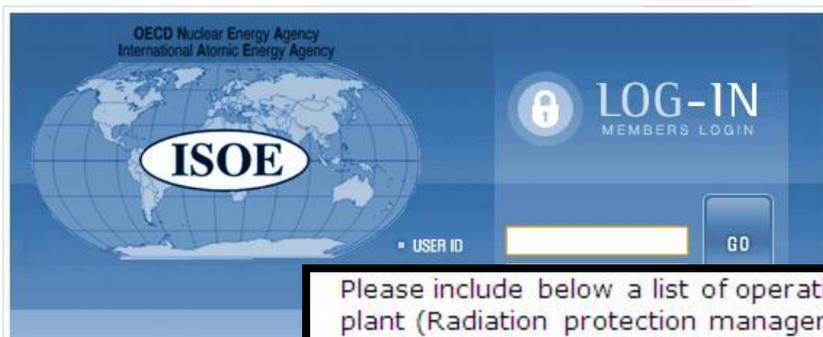
- NATC

	Country	Utility Name	Plant Name
1.	USA	Wolf Creek Op Corp	Wolf Creek Generating Station
2.	USA	STP Nuclear	South Texas Project 1,2
3.	USA	Southern Calif Edison	San Onofre 2,3
4.	USA	Entergy	Indian Pont 2,3
5.	USA	Detroit Edison Company	Fermi 2
6.	USA	Southern Company	Vogtle 1,2 Hatch 1,2 Farley 1,2 Vogtle 3,4
7.	USA	Exelon Corp (Management)	Fort Calhoun
8.	USA	Dominion Generation	Kewaunee, North Anna 1,2 Surry 1,2
9.	USA	Arizona Public Service	Palo Verde 1,2,3
10.	USA	Xcel Energy	Monticello Prairie Island 1,2

- Signed acceptance forms are expected from NATC

ISOE Database

Please log-in



Please include below a list of operational contact persons for your utility / nuclear power plant (Radiation protection managers, etc). This information will be used to create user accounts for access to the ISOE Network website and for periodic communications concerning ISOE topics.

Title	
First Name *	
Family Name **	
Email address **	
Phone Number	
Function performed	
Utility *	
Nuclear Power Plant **	

* Mandatory information

(duplicate this table as needed)

Removal of restrictions

Management Board November 2013 meeting

ONR presentation (expectations of RAs)

Policy Debate on restrictions

- MB agreement: **Removal of all restrictions** for RA users
 - Feedback from 2012 resolution
 - Permission to the ISOE participating RAs to review the completeness data for other countries (detailed data on jobs/tasks)
- T&Cs: Modification of annex-2 and delegation for annex-3 according to the current official participation (to be reviewed in April 2014 meeting)

Database

ISOE Database management

Status of data collection

ISOE 1 - 2012 data for operating reactors

- All participants used the ISOE 1 questionnaire data entry on the web, except 3 countries:
 - **Armenia** (1 operational reactor)
 - **Russian Federation** (16 operational/2 shutdown reactors)
 - **Germany** (8 operational/3 shutdown reactors) (positive trends to move web entry)
- **ISOE Data Collection and completeness**
 - Web entry significant progress
 - XML import file (initiated as an US project) – **FUTURE (e-reporting)**
- **ISOE – “reactor status”**
 - Pre-operational
 - Operational
 - Shutdown (transition period, safe storage/defueled, under decommissioning)



ISOE Database management

Other management activities

- ISOE Database
 - Data are available as soon as questionnaires are validated, for those entered directly on the web
 - Regular updates with data received on Access
- ISOE D (*first year of the trial period*)
 - Too detailed and complicated, try to be as much as simple
 - Collect as much as possible input
 - Keep the current questionnaire
- MADRAS
 - New analyses and improvements (removal of limitation of number of units, plants, countries... in the analysis for intercomparison)
 - Notes/warning interpreting the results
 - Almost a complete set (more than 80 analysis)
 - An issue for the WGDA (approaching to the end of its mandate)

MADRAS- Top 10 Analyses

Analysis	#
Total annual collective dose benchmarking: 1 unit vs. other units	993
Average annual collective dose per reactor benchmarking: 1 country vs. other countries for 1 reactor type	677
Total outage collective dose and outage duration	479
PWR primary piping dose rates: cold leg for 1 plant unit	441
Rolling average collective dose per reactor benchmarking: 1 country vs. other countries for 1 reactor type	400
Average annual collective dose per reactor benchmarking: 1 unit vs. its sister unit group and other sister unit groups	381
List of reactors by sister unit group for 1 reactor type	369
PWR primary piping dose rates: hot leg for 1 plant unit	351
Average annual collective dose per reactor benchmarking: 1 unit vs. its sister unit group and its reactor type	342
Collective dose per job benchmarking: 1 unit vs. its sister unit group and other sister unit groups	339

Website

	Registered
Authority	126
Utility	717
EC	1
TCs	17
Secretariat	4
TOTAL	865

New RP Library:
 Reactor Cavity
 Decontamination at NPPs

ISOE TC PIs

- 1. ISOE DATABASE MANAGEMENT**
- 2. CONTRIBUTION AND FINALIZATION OF REPORTS**
- 3. ISOE NETWORK WEBSITE MANAGEMENT AND TC INPUT**
- 4. OTHER TOPICS (Meetings, symposiums, etc.)**
 - Bureau assessment
 - TC PIs are TOOLS for TCs to assess their performance
 - Improving in time, moving to the self assessment
 - Proposal for self assessment (use of colour codes)
 - Management Board meeting
 - Found satisfactory

Financial Aspects of TCs in 2013-2014

- No direct link with the NEA budget
- Joint project – separate budget (participating parties)
- Secretariat to collect info for MB meetings
- Report: Planned, actual and proposed budget (euro for currency)- regional breakdown
- Different from region to region
- Unit of Cost (UTC) is only used for European participants (one of reason for withdrawal last year)
- **2014**
 - ETC – new proposal
 - ATC- under reorganisation

Expert Groups activities

- Expert Group on Primary Water Chemistry and Source-Term Management (**EGWC**)

- Established in November 2010 (6 meetings were organized)
- 15 members (Utility, authority , TC representatives and EPRI)

Mandate

- Prepare a state of art report
- To review and analysis of current **knowledge, technology** and **experience** on RP aspects of primary water chemistry and source-term management
- To collect information and practical experience available in the nuclear industry on addressing operational aspects of primary water chemistry and source-term management
- To identify factors and aspects which play key roles in achieving good practices
- Facilitate the dialogue between RP and Chemists
- Mandate was extended for 1 year in 2012
- Report, approved by the WGDA and MB in Nov 2013 and EG disbanded
- In the pipeline for publication

Members list

David E. MILLER
 Colin PRITCHARD
 Gilles RANCHOUX
 Alain ROCHER (**Chair**)
 Ludovic VAILLANT
 Min-Chul SONG
 Ho-Yeon YANG
 Ivan SMIESKO
 Bernt BENGTTSSON
 Mattias OLSSON
 Ronald CHRZANOWSKI
 Willie O. HARRIS
 David W. MILLER
 David L. PERKINS
 Daniel M. WELLS

ISOE EG Water Chemistry

- Approved report “Radiation Protection Aspects of primary Water Chemistry and Source term Management”
 - Introduction of strategies and techniques
 - Radiation field measurement techniques
 - Measurement locations and indices
 - Remediation of contamination during outages
 - Radiation protection outcomes

RADIATION PROTECTION ASPECTS OF PRIMARY WATER CHEMISTRY AND SOURCE TERM MANAGEMENT

PART A - STRATEGIES AND TECHNIQUES

1. BACKGROUND ON RADIATION FIELD GENERATION				
2. MATERIAL ISSUES	PWR	VVER	BWR	PHWR
3. CHEMICAL METHODS				
4. REMEDIATION OF CONTAMINATION DURING OUTAGES				

PART B - RADIATION FIELD MEASUREMENT TECHNIQUES

1. DOSE RATE MEASUREMENT TECHNIQUES				
2. GERMANIUM DETECTOR				
3. CZT DETECTOR				

PART C - MEASUREMENT LOCATIONS AND INDICES

1. DOSE RATE MEASUREMENTS	PWR	VVER	BWR	PHWR
2. GAMMA SPECTROMETRY				

PART D - RADIATION PROTECTION OUTCOMES

PLANT SPECIFIC RESULTS	PWR	VVER	BWR	PHWR
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Expert Groups activities

- Expert Group on Occupational Radiation protection in Severe Accident Management and Post-Accident Recovery (**EG-SAM**)
 - Established in May 2011 (3 meetings 2011-2013)
 - 45 members from 19 ISOE Countries
 - Mandate : To develop a report
 - Contribute to occupational exposure management by providing a view on management of high radiation area worker doses;
 - Develop a state-of-the-art ISOE report on best radiation protection management practices for proper radiation protection job coverage during severe accident initial response and recovery phase; and
 - Identify RP lessons learned from previous reactor accidents
 - Finalization of **interim** report by November 2013 (general issues)
 - Available @ the workshop web-pages (NEA & ISOE Network)
- Approved by the WGDA and MB in Nov 2013

<http://www.oecd-nea.org/jointproj/isoeworkshop/>

EG-SAM Interim report topics

- RP Management and Organisation
- RP Training and Exercises related to Severe Accident Management
- Facility Configuration and Readiness
- Overall Approach for Worker Protection
- Monitoring and Managing the Radioactive Releases and Contamination
- Key Lessons Learned from Past Accidents
- Conclusions

Next step – organization of an international workshop

ISOE Workshop

International Workshop on

Occupational Radiation Protection in Severe Accident Management

Sharing Practices and Experiences

17-18 June 2014

Washington, DC, USA

Co-sponsored by

OECD Nuclear Energy Agency

International Atomic Energy Agency



Hosted by
Nuclear Energy Institute



ISOE Workshop

- Background: ISOE, EG-SAM and interim report
- Objectives:
 - provide an international forum for information and experience exchange;
 - identify best ORP approaches in strategies, practices, as well as limitations
 - identify national experiences to be incorporated to the final version of ISOE EG-SAM report

Target Audience and Participation

The workshop is addressed to a broad cross-section of radiation protection professionals from nuclear utilities and national regulatory authorities, such as:

- Nuclear Electricity Utilities
- Radiation Protection and Emergency Management Authorities
- Technical Support Organisations
- International Organisations (e.g., OECD/NEA, IAEA, EC)

Registration

While there is no registration fee, workshop participation is limited and registration is required.

- To register: <http://www.oecd-nea.org/conf/dbconfdbconf2de-142>

Language

- The Workshop will be held in English.

Venue

- The workshop will be held at the NEI, 1201 F Street, N.W. Suite 1100 Washington, DC 20004, USA
Tel: +1 202 739 8000
Fax: +1 202 785 4019
- For practical information: www.nei.org

Key dates

- 2 December 2013 Registration open
- 28 April 2014 Final programme issued
- 30 May 2014 Deadline for registration
- 17-18 June 2014 Workshop

ISOE Objective

To provide a forum for radiation protection professionals from nuclear electricity utilities and national regulatory authorities worldwide to share dose reduction information, operational experience and information to improve the optimisation of radiological protection at nuclear power plants.



ISOE is the world's most comprehensive source of experience and information for occupational exposure management at nuclear power plants, and offers its members a variety of resources for occupational exposure management, including:

- A global network of radiation protection professionals from nuclear electricity utilities and national regulatory authorities
- The world's largest database on occupational exposure from nuclear power plants
- Detailed studies and analyses on current issues in occupational radiation protection
- Annual analysis of dose trends and an overview of current ISOE developments
- A forum for discussing occupational exposure management issues through ISOE International and regional Symposia
- Support through responses to special requests and the organisation of voluntary benchmarking visits for the sharing of good practice in occupational radiation protection
- The ISOE Network (www.iso-network.net): a "one-stop" information exchange website for ISOE members, providing access to ISOE products, resources, and on-line user forums.

OECD IAEA NEI

International ISOE WORKSHOP

OCCUPATIONAL RADIATION PROTECTION IN SEVERE ACCIDENT MANAGEMENT

Sharing Practices & Experiences

17-18 June 2014
Washington DC, USA

FIRST ANNOUNCEMENT
REGISTRATION

NEA Organized by the International System on Occupational Exposure
Co-sponsored by the OECD/NEA and the IAEA
Hosted by Nuclear Energy Institute

OECD IAEA NEI

- FIRST ANNOUNCEMENT -

Information System on Occupational Exposure (ISOE)

International Workshop on
Occupational Radiation Protection in Severe Accident Management

Sharing Practices and Experiences

17-18 June 2014
Washington DC, USA

<http://www.iso-network.net>
<http://www.oecd-nea.org>

Co-sponsored by
OECD Nuclear Energy Agency International Atomic Energy Agency

Hosted by
Nuclear Energy Institute

The Information System on Occupational Exposure invites you to attend the International Workshop on Occupational Radiation Protection in Severe Accident Management: Sharing Practices and Experiences, to be held 17-18 June 2014 in Washington DC, USA, co-sponsored by the OECD/NEA and the IAEA, and hosted by the Nuclear Energy Institute.

Announcement & registration through NEA web site

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- Joint projects
- Occupational Radiation Protection in Severe Accident Management: Sharing Practices and Experiences**
 - Key dates
 - Background
 - Workshop Objectives
 - Workshop Format
 - Target Audience and Participation
 - Workshop Outcomes
 - Date and Venue
 - Working Language
 - Registration, Deadlines and Accommodations
 - Optional Activities
 - Workshop Organisation and Contact Information
 - Preliminary Workshop Programme
 - Related Links

Information System on Occupational Exposure (ISOE) International Workshop on Occupational Radiation Protection in Severe Accident Management: Sharing Practices and Experiences

Co-sponsored by OECD Nuclear Energy Agency and International Atomic Energy Agency Hosted by the Nuclear Energy Institute

**Washington DC, USA
17-18 June 2014**



Key dates

2 December 2013	Registration open
28 April 2014	Final programme issued
30 May 2014	Deadline for registration
17-18 June 2014	Workshop

Background

The Information System on Occupational Exposure (ISOE), with its participating utilities and regulatory authorities, is a core group of experts for exchanging experience in developing safe, sustainable and societally acceptable strategies for emerging operational issues in the field of occupational radiation protection. In response to the Fukushima Daiichi nuclear power plant accident, the Expert Group on Occupational Radiation Protection in Severe Accident Management and Post-Accident Recovery (EG-SAM) was established by the ISOE in May 2011. The overarching objective of the group is to contribute to occupational exposure management (providing a view on management of high radiation area worker doses) in Fukushima with the ISOE participants, and to address the experience of various ISOE utilities with various occupational radiation protection management approaches in severe accidents, radiation protection management approaches for highly contaminated areas, selection of proper RP protective tools and clothes including remotely operated instruments, means to fix and eliminate contamination, access procedures to the site, shielding, emergency/accident individual dosimetry and its assessment, psychological aspects, etc. The final product of the group will be a report on best occupational radiation protection management procedures for proper radiation protection job coverage during severe accident, initial response and recovery efforts and radiation protection lessons learned from previous reactor accidents.

**Identify yourself to access
ISOE Workshop 2014 form**

Login or e-mail *

Password *

[Forgotten your password: go to the NEA password reminder](#)
 or if you think you're not known by the NEA [create an account](#)

<http://www.oecd-nea.org/jointproj/isoeworkshop/>

Workshop Format

- Series of **plenary presentations** providing overview of international practices and experiences in severe accident management and
- **Breakout sessions** discussing common themes and issues for possible inputs into the report.

Target Audience and Participation

The workshop is limited to 80 persons and cross-section of radiation protection professionals from nuclear utilities and national regulatory addressed to a broad authorities, such as:

- Nuclear Electricity Utilities
- Radiation Protection and Emergency Management Authorities
- Technical Support Organisations
- International Organisations (e.g., OECD/NEA, IAEA, EC)
- NEI, EPRI, INPO,...

Accommodations

Participants are responsible for their own travel, accommodation and evening meals.

NEI has secured a block of rooms at a rate of \$279 USD per night plus tax:

Hilton Garden Inn

815 14th Street N.W.,

Washington, District of Columbia, 20005, USA



Optional Activities

June 16: Evening Tour of Washington DC

This excursion around DC features sightseeing at popular monuments and memorials lit up at night; don't miss the opportunity to view DC by night!

The cost is approximately \$70 USD.



Optional Activities

June 19: Tour of the Calvert Cliffs Nuclear Power Plant in Lusby, Maryland

This tour includes a 1½ to 2 hour bus trip (depending on traffic) to the plant.

Due to September 11 security restrictions, this tour is available to only the first 15 persons who sign up for the tour.

There is **no charge** for this tour and a light lunch will be provided.



Preliminary Programme

Session 1:

- EG-SAM Interim Report

Overall Presentation of the Report

Session 2:

- Utility and Regulatory views on approaches

Presentation from Participating Countries

Break-Out Sessions:

Radiation Protection Management, Organisation and Configuration

Radiation Protection Training and Exercises related to Severe Accident Management

Worker Protection, Controls and Logistics

Session 3:

- Conclusions and Results from the Workshop

Outcomes from each sessions

Summary, Recommendations and Direction Forwards for the finalization of the report

ISOE / CPD Co-operation in decommissioning



**NEA in
Decommissioning /
Background**

OECD NEA Radioactive Waste Management Committee	
WPDD	CPD
<i>Working Party on Decommissioning and Dismantling</i>	<i>Co-operative Programme for Decommissioning</i>
Since year of 2000	Since year of 1985
Open to all OECD NEA countries	Joint Project, Confidentiality, CPD Agreement (5ys renewal)
Governments	Companies
Strategy makers, regulators, implementers	Implementers from projects
Policies, strategies	Procedures, techniques
CPD provides an advice and technical input to WPDD	

Proposal

ISOE / CPD Co-operation in decommissioning



OECD NEA CRPPH	
CRPPH	ISOE
<i>Committee on Radiation Protection and Public Health</i>	<i>Information System on Occupational Exposure</i>
Since 1960s	Since 1992
Open to all OECD NEA countries	Joint Project, Confidentiality, Terms & Conditions
Governments	Utilities & RAs
Decision makers, regulators, implementers/inspectors	Operators, regulators
Policies, strategies	Procedures, techniques
ISOE provides technical input to CRPPH	

Co-operative Programme for Decommissioning

Current Status

- 26 Organisations, 63 Projects,
- 13 Countries + 1 Non-OECD member + EC
- All stages of decommissioning: Planned and On-going, Dormant, Terminated
- 38 NPPs and Research Reactors
 - PWR, BWR
 - GCR, AGR, HTGR, VVER
 - FBR
- 25 Fuel Cycle Facilities
 - Fuel plants, reprocessing facilities
 - Radio-chemical labs, fuel storage bays

A platform for sharing technical and scientific information amongst major international decommissioning projects, on confidentiality basis and 'give and take' principle

Management Board

- Representatives of companies

Technical Advisory Group

- Representatives of decommissioning projects report twice a year on project's progress
- Technical site visits, Topical sessions

Participants from Belgium, Canada, Chinese Taipei, France, Germany, Italy, Japan, Rep. of Korea, Russian Federation, Slovakia, Spain, Sweden, UK, USA, EC

Co-operation in decommissioning

- ISOE D questionnaire, *trigger*
- Bilateral meetings in November (ISOE Chair – CPD Chair)
- **Both ISOE and CPD are joint projects of the NEA**
- Brain storming until April 2014 (ETC regional symposium)
- Joint meeting with ISOE Bureau
- Joint Working Group (?)
- Any legal issue
- How to collaborate?, What to collaborate?
- Proposal for a Terms of References

Future
promising
activity

Regular / upcoming activities

- Reports (Annual, History Report, Information Sheets, News, Website Newsletter)
- Regular meetings (April & November 2014)
- Benchmarking visits (organised by TCs)
- Symposiums (regional and international- RPM & RB meetings)
 - 2014 North American Symposium (NATC, January)
 - 2014 European Symposium (ETC, June)
 - 2015 International Symposium (IAEA, Brazil)
 - 17-18 June 2014: International ISOE Workshop on Occupational Radiation Protection in Severe Accident Management
 - 1-5 December 2014: 2nd International Conference on Occupational Exposure (Vienna, Austria) (co-sponsored by the OECD NEA)



Thank you for your attention

Halil Burçin OKYAR

ISOE Scientific Secretary

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Eml: halilburcin.okyar@oecd.org

<http://www.oecd-nea.org/jointproj/iso.html>

<http://www.iso-network.net>