


Information System on Occupational Exposure
Expert Group Report: Occupational Radiation Protection in Severe Accident Management

NEI
NUCLEAR ENERGY INSTITUTE

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Nuclear Regulatory Commission 2015 Regulatory Information Conference March 2015, Rockville, MD



ISOE Programme

- Created in 1992 by OECD/NEA as a forum for RP experts from utilities and regulatory authorities world-wide to
 - share dose reduction information and experience and
 - coordinate projects to improve optimisation of worker radiological protection at NPPs;
- Contains the world's largest occupational exposure database for commercial NPPs;
- Promoted and sponsored by NEA and IAEA;
- Four ISOE technical centres support local members in Asia, Europe, North America and IAEA.

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EG-SAM Background & Objectives

- May 2011: ISOE Management Board established the Expert Group on Occupational Radiation Protection in Severe Accident Management (EG-SAM) with the following objectives:
 - Contribute to occupational exposure management by providing guidance 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 a severe accident; and
 - Identify RP lessons learned from previous reactor accidents.

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Membership: 45 delegates from 19 ISOE Countries

Representatives from:

– Armenia	– Republic of Korea
– Belgium	– Romania
– Brazil	– Russian Federation
– Canada	– Slovak Republic
– Czech Republic	– Spain
– Finland	– Sweden
– France	– Switzerland
– Germany	– Ukraine
– Japan	– United Kingdom
	– United States of America
	– ISOE Joint Secretariat




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Report Topics

- **RP Management and Organization**
Emergency Response Plans, Command Facilities, Response Organization, Decision making and Prerequisites for On-site Radiation Protection Decisions
- **RP Training and Exercises related to Severe Accident Management**
Preparedness program activities, development of training instructions, Types, Qualification, RP aspects for SAM, and Management of the Administrative Aspects
- **Facility Configuration and Readiness**
Design features, Portable ER requirement and supplies
- **Overall Approach for Worker Protection**
Reference levels, Protective measures, Planning, Permits and Execution and Control, Exposure control, non-radiological health aspects and health surveillance
- **Monitoring and Managing the Radioactive Releases and Contamination**
Radiological releases (gaseous, liquid), on-site and off-site contamination monitoring, management of contamination
- **Key Lessons Learned from Past Accidents**
Chernobyl, Three Mile Island-2 and Fukushima

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International Workshop



- 66 participants from 17 countries
- Four plenary session and five break-out sessions were organized to capture global (ICRP, IAEA, USNRC, CNSC), utility (TEPCO, Electrabel, EDF, Exelon) and regulatory authority (CNSC, ASN, USNRC, KINS, STUK) perspectives.
- The workshop provided suggestions for improvement and some additional points to improve the interim report.

Proceedings of the workshop are available at the ISOE website: www.iso-network.net and in the final report.


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Report Conclusions - continued

- During the emergency and post-accident mitigation phases, radioactive and contaminated materials released internally and externally from the affected facility require extensive radiological controls to avoid or minimize radiation exposures to emergency workers/responders and the public.
 - Radioactive releases must be monitored and controlled within the plant and offsite using robust monitoring equipment and engineering controls as necessary.
- The lessons learned from past accidents such as TMI, Chernobyl and Fukushima Daiichi teach us that comprehensive emergency plan development, routine training and exercising of emergency all workers/responders, remote radiological monitoring, high dose detection equipment and robotic equipment are imperative when responding to a severe accident at a nuclear power plant.
 - Continuing the collection and analysis of feedback experience from the past accidents is an essential source of improvement of the preparedness of severe accident management.

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EG-SAM Report

Occupational Radiation Protection in Severe Accident Management

is available for download at:

<http://www.isoe-network.net/index.php/publications-mainmenu-88/others.html>

or

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

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Thank you for your attention

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More information @ <http://www.oecd-nea.org/jointproj/isoe.html>
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