International Experts' Meeting
on
Severe Accident Management in the Light of the Accident at the Fukushima Daiichi Nuclear Power Plant

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OSART results in the area of Accident Management

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IAEA
International Atomic Energy Agency

Content

- OSART programme
- SAM module
- Issues and good practices from OSART missions

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OSART PROGRAMME

OSART Objectives

- To improve operational safety
- Objectively assess status of key operational safety areas
- Exchange information and experiences

Regional distribution of past missions

176 OSART missions:

Western Europe	58
Central Europe	28
Eastern Europe	33
Asia	30
North America	15
South America	8
Africa	4

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Standard or custom-tailored scope

Standard areas:

- **LAM** Leadership and Management
- **TQ** Training and Qualification
- **OPS** Operations
- **MA** Maintenance
- **TS** Technical Support
- **OEF** Operating Experience Feedback
- **RP** Radiation Protection
- **CH** Chemistry
- **EPP** Emergency planning and preparedness
- **SAM** Severe Accident Management

Optional areas:

- **ISCA** Independent Safety Culture assessment
- **LTO** Long Term Operation
- **COM** Commissioning
- **PSAA** PSA applications
- **TRA** Transition to Decommissioning

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OSARTs with SAM

- OSART SAM module was developed in 2010
- First OSART mission with SAM module-Koeberg, South Africa in August 2011
- TM in November 2011-SAM standard OSART area
- 10 OSART missions with SAM module conducted
- Requirements SSR-2/2 and Guide NS-G-2.15 basis for each issue
- OSART SAM module revised in 2013

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14.1 Development of severe accident management strategies

- **GP: Development and implementation of Severe Accident Management Guidance (SAMG) for shut-down conditions.**

- **GP: There are capabilities for severe accident analysis, PSA and SAM guideline development within the company.**

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14.1 Development of severe accident management strategies

- Although a schedule exists, the Severe Accident Management Program is not yet implemented and the schedule is challenging.

- The instructions provided by AMM / SAMG procedures, on priorities and on rules for effective implementation during emergency situations, and the assessment of negative impacts are not provided in detail.

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14.1 Development of severe accident management strategies

- **The plan for provisions of severe accident mitigation does not sufficiently address all the challenges to the containment based on the station-specific features.**

14.2 Development of procedures and guidelines

- GP: Severe Accident Management Guidelines have been expanded to scope accidents during shutdown conditions and accidents involving the spent fuel pool. This includes plant modifications and training.
- GP: The accident management of the plant is supported by a set of special aids and guidance documents

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14.2 Development of procedures and guidelines

- GP: TSC Manual was developed to form technical bases for decision making process performing by TSC staff during the implementation of the EOPs by Control Room Operating Crew.
- GP: Volumetric flood protection of the plant is supported by special technical guidance documents.
- GP: Use of an industrial network for continuous and proactive monitoring of external industrial activity around the site.

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14.2 Development of procedures and guidelines

- The plant Severe Accident Management Programme (SAMP) is not broad enough to cover all situations.
- The Severe Accident Management Guidelines (SAMG) in place do not cover all operation modes of the reactors and spent fuel pool.
- Currently available plant specific inputs for mitigative accident management actions in SAMGs are not sufficient for validation of SAMGs

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14.2 Development of procedures and guidelines

- The currently available plant specific analyses for severe accident management actions are not sufficient for their validation and training.
- The use of the containment venting system under all expected conditions and the link to the use of the containment spray system is not clearly described in relevant documents: operating procedure, AMM and SAMG.
- The SAMG does not provide effective mitigation methods for severe accidents that are induced by beyond design basis seismic events and that may occur simultaneously on several units.

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14.3 Responsibility and plant emergency arrangement

- GP: The plant severe accident management program is reliably supported by a wide range of expertise and analytical tools.
- GP: Establishment of the External Event Review Team (EERT) and External Events Safety Re-assessment Project as a quick response to the Fukushima accident.

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14.4 Verification and validation of procedures and guidelines

- **The Severe Accident Management Programme is not yet fully implemented and lack of a comprehensive plan for future actions may lead to further delay.**

14.5 Training needs and training performance

- **GP: Connection of FSS with terminal in TSC by dedicated line has been established and on-line transmission of data from FSS to TSC is available.**

14.6 Accident management programme updating and revisions

- GP: The station has implemented backup cooling connections as a post-Fukushima action. The operation crews routinely carry out exercises to execute preventive accident management measures with these backups.

14.6 Accident management programme updating and revisions

- The Severe Accident Management Guidelines do not cover accidents occurring at all plant states, in spent fuel pools, and occurrence of multiunit accidents.
- Severe Accident Management Programme is not yet fully implemented and the execution plan for future steps is insufficient.

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14. Severe Accident Management Guideline (2013)

- 14.1 Overview of severe accident management
- 14.2 Analytical support for severe accident management
- 14.3 Development of procedures and guidelines
- 14.4 Plant emergency arrangements with respect to SAM
- 14.5 Verification and validation of procedures and guidelines
- 14.6 Training needs and training performance
- 14.7 Severe Accident Management updating and revisions

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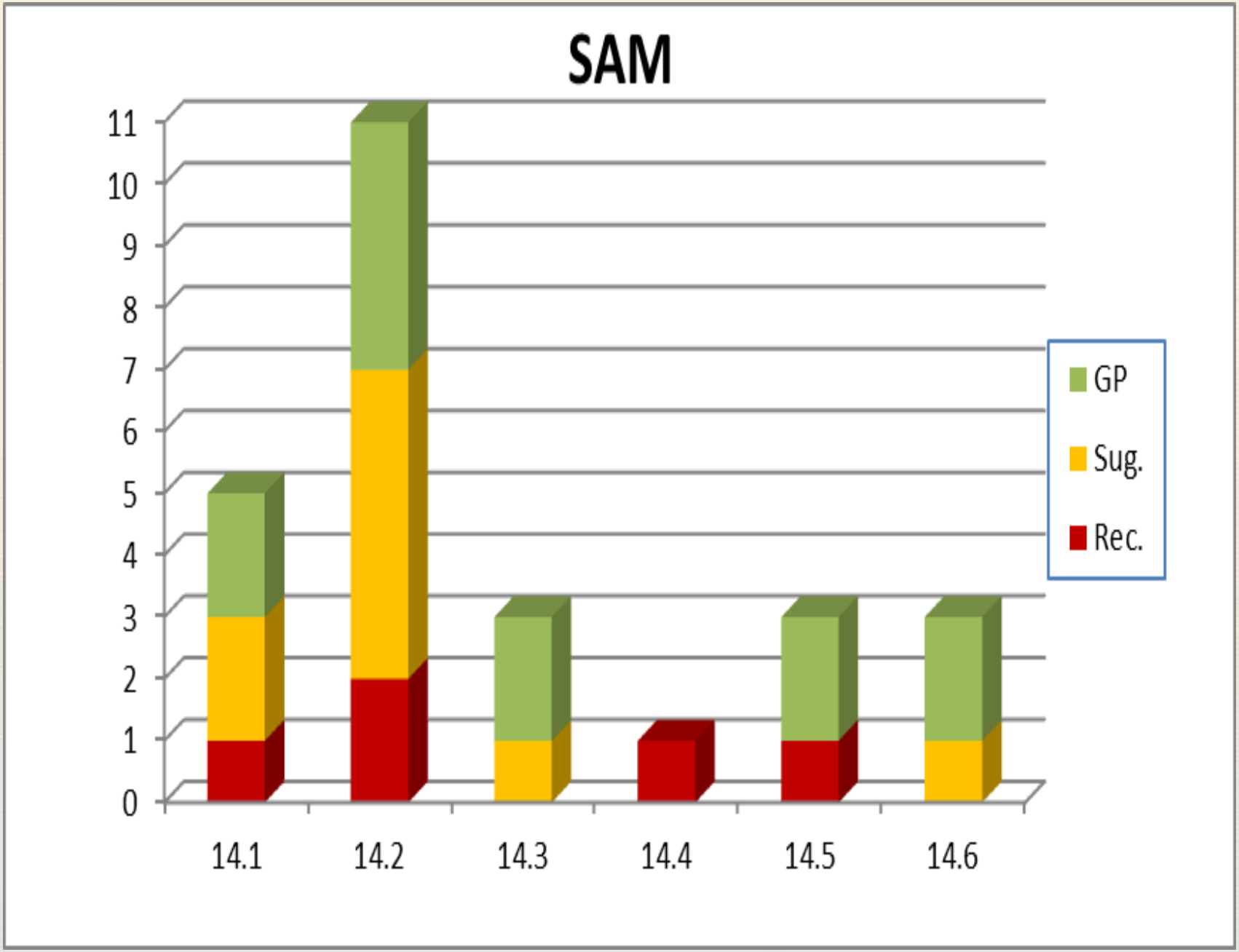
SAM
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Thank you for Your attention