



International Atomic Energy Agency

FaSa NPP Test Case WG - Activities in 2011

**4th Joint Working Group Meeting
FaSa Project, Vienna 21-25 November 2011**

Objectives of the NPP Test Case WG

- Illustrate the application of the safety assessment methodology developed during the **DeSa** project to a decommissioning of a specific NPP (KKR Rheinsberg) and to illustrate ways how the results of the safety assessments have been implemented in that specific NPP.
- Provide practical and useful recommendations on the evolution and use of safety assessment to be fed back to the **Deco Planning** and **Deco Conduct** WGs reports and, if possible, to **DeSa report**



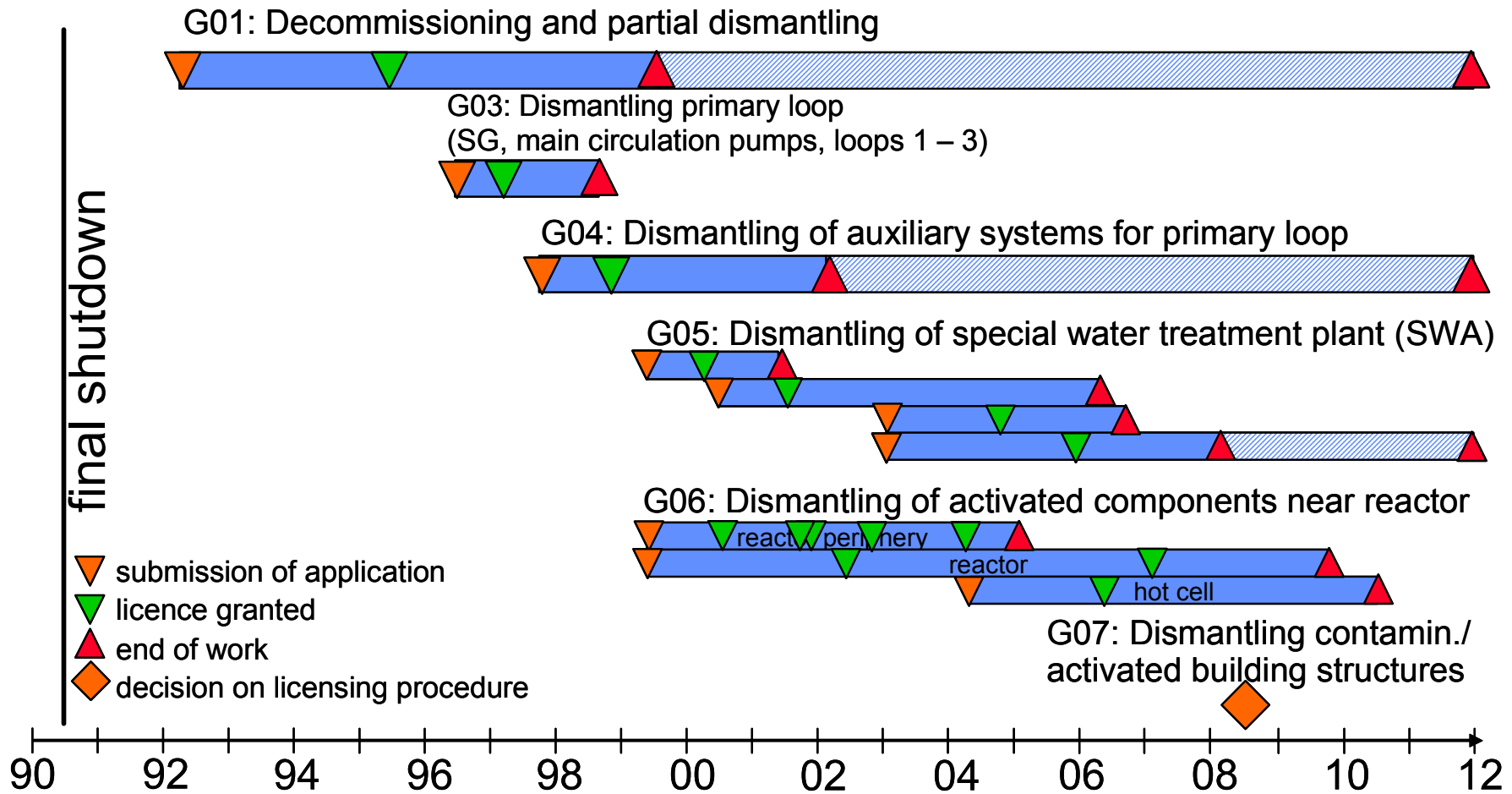
NPP TC WG work plan (1)

- Analysis of the Overarching Safety Assessment developed in support of the KKR (Rheinsberg NPP) Deco Plan:
- To investigate its conformance with the **DeSa Safety Assessment Methodology** and to, possibly, fed back recommendations to DeSa Report;
 - To investigate its conformance with **Decommissioning Planning WG Report** to provide practical and useful recommendations on the evolution and use of safety assessment in the FaSa Deco Planning WG Report.

NPP TC WG work plan (2)

- Analysis of the **Detailed Safety Assessments** developed in the KKR (Rheinsberg NPP) Deco Conduct phases:
- To investigate its conformance with the **DeSa Safety Assessment Methodology** and to, possibly, fed back recommendations to DeSa Report;
 - To investigate its conformance with **Deco Conduct WG Report** to provide practical and useful recommendations on the evolution and use of safety assessment in the FaSa Deco Conduct WG Report.

KKR Phased Approach to Decommissioning



Activities done in 2011 (1)

Overarching Safety Assessment for Deco Plan

- A formal investigation of the KKR Overarching safety assessment vs. DeSa methodology has been completed based on the outcomes from NPP TC WG meeting held during 3rd FaSa joint meeting (2010)
- The results of the investigation has been used to suggest modification of the Deco Plan WG report. That has been discussed during the CG meeting held in Rome 4-6 May 2011.
- The results of the investigation, in a tabular format, have been, temporarily, included, as Appendix, in the NPP TC WG report.



Activities done in 2011 (2)

Detailed Safety Assessment for Deco Conduct

- A formal investigation of the KKR detailed safety assessment for “RPV removal one piece” phase G06 vs. DeSa methodology has been performed based on the outcomes from NPP TC WG meeting held during 3rd FaSa joint meeting (2010)
- The results of the investigation have shown minor recommendations to the Deco Conduct WG report that have been transferred to the Deco Conduct WG for consideration.
- The results of the investigation, in a tabular format, have been, temporarily, included, as Appendix, in the NPP TC WG report.



List of participants at Rome meeting (May 24-27)

Name	Affiliation	Country
Ivana Davidova	Czech Power Company	Czech Republic
Philippe Auffray	EdF - CIDEN	France
Hakan Lorentz	Barsebäck Kraft AB	Sweeden
Hermann Langer	Vattenfall	Germany
Stefan Thierfeldt	Brenk Systemplanung GmbH	Germany
Jörg Möller	Kernkraftwerk Rheinsberg	Germany
Alvio Bassanelli	SOGIN SpA	Italy
Mirsolav Drahos	Nuclear Regulatory Authority (UJD)	Slovak Republic





Rome meeting objectives

- Review of the NPP TC WG Report as modified and updated by A. Bassanelli and S. Thierfeldt according the outcomes from the previous Vienna meeting.
- Issue recommendations for the finalised version to be presented al FaSa Joint meeting in November 2011

Major outcomes (1)

- Two additional phases have been investigated and reported :
 - Removal of SG, and
 - End State
- The explicit reference to KKR plant remains in the report, pending the homogeneity with other TC reports,
- Appendices' list have been modified and new Appendices on “SG removal” and “RPV cutting in situ” have been added;
- Differences between the application of the terms “Safety measure” and “Engineering Analysis” need to be clarified within CG thus to address properly the subject in the new version;



Major outcomes (2)

- The updated report describes the reasons on why KKR modified its approach from “RPV cutting in situ” to “RPV removal in one piece”,
- Section dedicated to the investigation of KKR report against Deco Plan and Deco Conduct WG report has been reduced and the tables reporting the comparison have been moved to the last Appendix of the report to be, eventually, removed after a discussion within the CGW,



Table of Contents of NPP TC WG report (1)

- Section 1 – Introduction
- Section 2 - Description of the facility and decommissioning activities
- Section 3 - Safety Assessment Framework
- Section 4 - Overarching Safety Assessment
 - Subsection 4.1 - Hazard Analysis : Identification and screening
 - Subsection 4.2 - Hazard Analysis : Evaluation
 - Subsection 4.3 - Engineering Analysis
 - Subsection 4.4 - Evaluation of results and safety measures
- Section 5 - Safety assessment for Individual Phases
 - Subsection 5.1 – Safety Assessment of the removal of SG
 - Subsection 5.1.1 - Hazard Analysis : Identification and screening
 - Subsection 5.1.2 – Hazard Analysis : Evaluation
 - Subsection 5.1.3 - Engineering Analysis
 - Subsection 5.1.4 - Evaluation of results and safety measures



Table of Contents of NPP TC WG report (2)

- Subsection 5.2 – Safety Assessment of the direct dismantling of RPV
 - Subsection 5.2.1 - Hazard Analysis : Identification and screening
 - Subsection 5.2.2 – Hazard Analysis : Evaluation
 - Subsection 5.2.3 - Engineering Analysis
 - Subsection 5.2.4 - Evaluation of results and safety measures
- Subsection 5.3 – Safety Assessment for removal of RPV in one piece
 - Subsection 5.3.1 - Hazard Analysis : Identification and screening
 - Subsection 5.3.2 – Hazard Analysis : Evaluation
 - Subsection 5.3.3 - Engineering Analysis
 - Subsection 5.3.4 - Evaluation of results and safety measures
- Section 6 - Graded Approach
- Section 7 - Confidence Building in the safety assessment
- Section 8 - Use of the safety assessment results
 - Subsection 8.1 - Use by KKR as part of the licensing procedures
 - Subsection 8.2 – Use within FaSa project
- Section 9 - Summary and Lesson Learned

Table of Contents of NPP TC WG report (3)

- Section 10 : References
- Section 11 : Contributors to drafting and review
- Section 12 : Appendices :
 - Appendix A : Description of the site and the facility
 - Appendix B : Description of the SG dismantling
 - Appendix C : Description of the RPV cutting in situ
 - Appendix D : Description of the removal of the ROV in one piece
 - Appendix E : Content of the safety report for NPP Rheinsberg of 29 October 1993
 - Appendix F : Available documents,
 - Appendix G : Comparison against the reports of the Deco Plan WG and the Deco Conduct WG (December 2010 issues)



Agenda for NPP TC WG meeting during FaSA Joint meeting (Vienna 2011)

Two days meeting during which the following activities are foreseen:

- Review entire NPP TC WG report dated November 2011, with special attention to new text for Section 7, 8 and 9.
- Give a finalised form and contents to the entire report,
- Search for voluntaries for additional proof reading in 2012.

