International Atomic Energy Agency

Fuel Fabrication Facility Test Case

Feedback 2011

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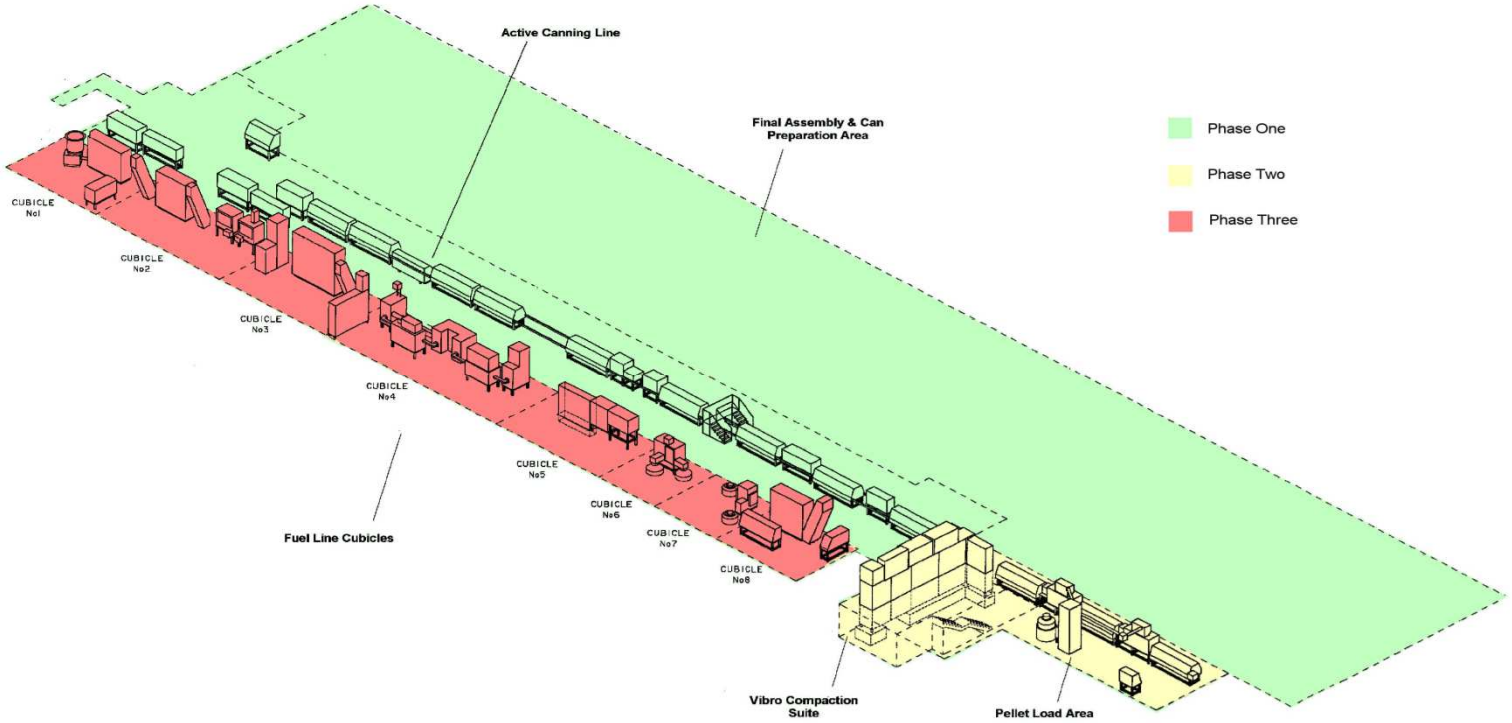
Background to Test Case

- The SEP PFR fuel fabrication facility operated from 1971 to 1992
- Manufactured Mixed-oxide (MOX) fuel assemblies for the Dounreay Prototype Fast Reactor.
- It consists of five 5 key areas:
  - Fuel Line
  - Pellet Load & Vibro-compaction Suite.
  - Active Canning Line.
  - Final Assembly & Can Preparation.
  - Ventilation system.

Aerial Photograph of the Facility

Decommissioning Strategy



Decommissioning strategy

- Facility to be decommissioned using a Phased approach, tackling each area in order.
- Aim was to move from areas of low contamination through to areas of greater contamination therefore gaining experience of decommissioning tools and techniques as task progressed.

Decommissioning Strategy

- Phase Three.

  Decommissioning of Fuel line, using both manual and remote techniques.

Decommissioning Strategy

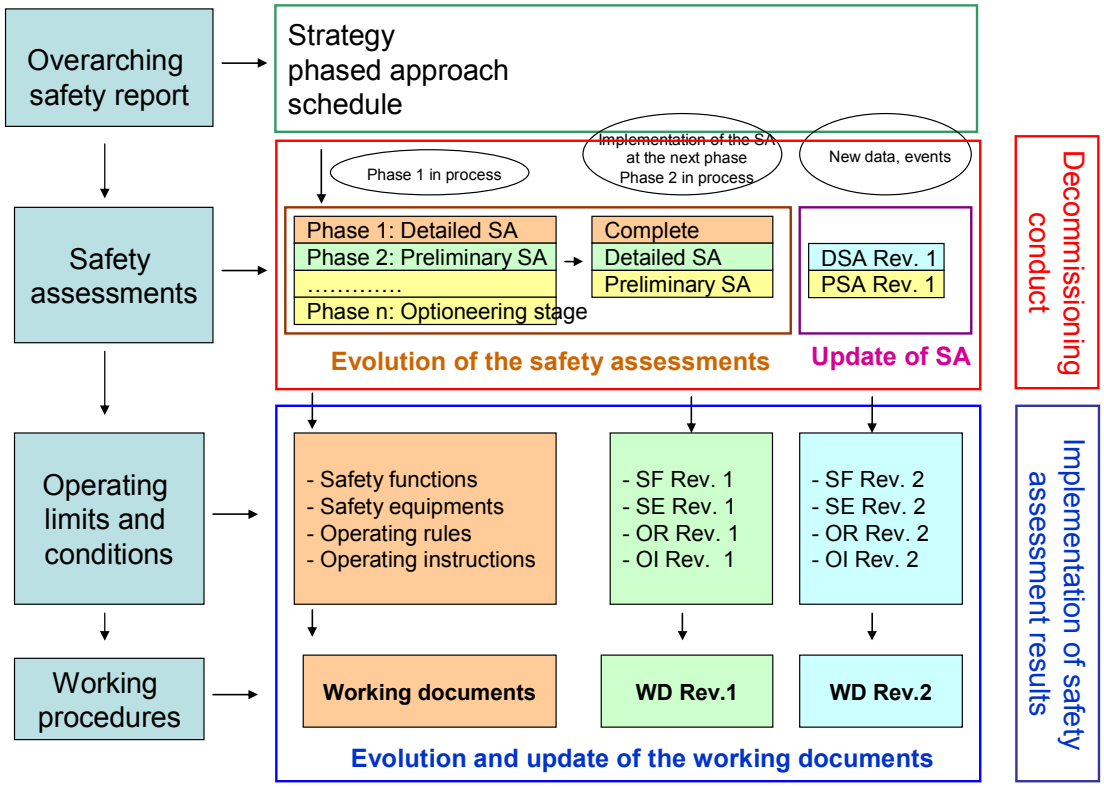
- Phase Four.

  Decontamination of the Vibro-compaction area and removal of the Building Extract System, including Mobile Filtration Unit.

Safety Assessment Strategy

- The Safety Assessment strategy also adopted a phased approach – mirroring the decommissioning strategy
- For each phase a Preliminary Safety Assessment was generated which was then updated to a Detailed Safety Assessment before being finalised for implementation.

Safety Assessment



Aim of the FFF Test Case Report

- The aim of the report is to provide the reader with a “real-life” example of the DeSa and FaSa approach to decommissioning safety assessment.

Suitability of the chosen facility

- This facility is considered to be a good example of phased decommissioning and a significant amount of assessment material is available.

Fuel Fabrication Test Case Working Group

Worked on Test Case during the main meeting in Vienna in 2010. Aim was to ensure the Test Case addressed all aspects of FaSa.

A joint 4 day meeting to review the overall FaSa report was hosted by SOGIN in Rome during May 2011.

Further dedicated work on the Test Case was completed at a 4 day joint meeting held at IRSN in Paris during September 2011.

List of participants

• Mark Pennington	Sellafield Sites, UK
• Patrice Francois	IRSN, France
• Stephen Dhlomo	NESCA, South Africa
• Philipe Auffrey	EDF, France
• Geraldine Palcoux	CEA, France
• Roger Tremblay	AECL, Canada
• Erik Strub	GRS, Germany
• Vladan Ljubenov	IAEA
• Audrey Halle	DSRL, UK

Test Case Report update

- During 2011 the structure of the test case report was discussed and revised. Test Case now has 3 parts.
- Part 1 Introduction & description of the facility
  Part 2 Illustration of FaSa approach
  Part 3 Illustration of DeSa methodology
- Detailed work was completed on the report, including incorporation of all the Working Group participants comments.
- The additional data required to update the report was highlighted and this has been sourced.
- All participants are willing to assist with report drafting this week.

Outline Work Plan for the Working Group

Presented below is the tentative outline work for the working group, for this week:

- Review of current Test Case Report
- Detailed review and update of Part 2 – Illustration of FaSa.
- Detailed review and update of Part 3 – Illustration of DeSa.
- Harmonisation with other FaSa test cases and confirmation that objectives of Test Case have been delivered

Questions and Answers

Questions and Answers from the meeting participants.