Waste Safety Standards Committee

37th Meeting

23-27 June 2014

Agenda Item W8.3

DS360 – Safety of Nuclear Fuel Reprocessing Facilities

Vivian Carr
Research Reactor Safety Section, NSNI
Introduction

• DS360 provides guidance on meeting the requirements of NS-R-5 for Reprocessing Facilities, particularly the recently published Appendix IV and incorporating the best practices of Member States.

• DS360 is facility-specific, related to IAEA Nuclear Fuel Cycle Specific Safety Guides including:
  - SSG-5 Conversion and Uranium Enrichment Facilities
  - SSG-6 Uranium Fuel Fabrication Facilities
  - SSG-7 MOX Fuel Fabrication
  - SSG-27 Criticality Safety in the Handling of Fissile Material for Fuel Cycle Facilities
  - DS381 Safety of Nuclear Fuel Cycle Research and Development Facilities
CONTENTS

1. Introduction
2. General Safety Considerations for a Reprocessing Facility
3. Site Evaluation
4. Design
5. Construction
6. Commissioning
7. Operation
8. Preparation for Decommissioning
Annex I: Reprocessing Facilities: Main Process Routes
Annex II: Safety Functions (incl. example OLCs)
HISTORY

- In 2004 NUSSC agreed to development of an *SSG dedicated to **RFs
- First draft 2008
- Delayed until Appendix IV published in 2013
- Second meeting to finalise December 2013
- Coordination Committee Cleared in April 2014

*SSG = Specific Safety Guide
**RF = Nuclear Fuel Reprocessing Facility
Committee Members Comments

- Comments from 7 members incl. EC and ENISS
- All comments were carefully considered
- 277 Comments:
  - 220 (80 %) Accepted
  - 28 (10 %) Accepted with (minor) modifications
  - 29 (10 %) Rejected (24 editorial/references)
  - No unresolved comments
- 1 Query raised (by two commentators)
Comments

• All comments were useful and supportive, their incorporation streamlined the text, improving wording, clarity, references with a small number of technical additions.

• All committee member comments carefully considered and addressed, several were supported by more than one committee member.
Query: ‘Why publish now when preparation of a revision of NS-R-5 has commenced.’

IAEA response:

- NS-R-5 (Rev.1) including the relevant R&D Appendix has only just been published.
- The majority of “shall” statements and thus corresponding elaboration will remain unchanged by revision of NS-R-5.
- A guide based upon NS-R-5 revision (DPP478, 2014) would not be available for several years.
Comments

Comment: Combine the separate sections on Radioactive Waste Management (and align titles etc.)

IAEA response: Rejected. One is in § 4. Design and the other in § 7. Operation (other 2 Parts of Comment accepted).

Comment: Reduce detail in § 3. Site Evaluation and refer ‘out’ to NS-R-3 and supporting Guides

IAEA response: Accepted. Reprocessing specific detail (e.g. for flooding) will be retained.
Comment: Requests for additional/updated references.

IAEA response: Accepted. References to documents in preparation will be checked prior to publication of the Guide and added as appropriate.

Comment: Change §8 Preparation for Decommissioning (back) to Decommissioning (as SSG-5 etc.) & consequent changes.

IAEA response: Rejected. Current IAEA guidance for the scope of this section in facility guides is: “Preparation for Decommissioning”. This is a change since SSGs -5, -6 and -7 were published.
Requested Action

WASSC approval for MS comments