Nuclear Safety Standards Committee

37th Meeting

1 – 4 July 2014

Agenda item 2.5

DS360 Draft Safety Guide on Safety of Nuclear Fuel Reprocessing Facilities

Vivian Carr

Research Reactor Safety Section-NSNI
Introduction

- DS360 is a facility specific Safety Guide on meeting the requirements of IAEA Safety of Nuclear Fuel Cycle Facilities NS-R-5 (Rev. 1) for Nuclear Fuel Reprocessing facilities, particularly the recently published Appendix IV (Reprocessing) and incorporating the best practices of Member States.
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. examples of OLCs)
In 2004 NUSSC agreed to development of an *SSG dedicated to **RFs

Delayed until Appendix IV of NS-R-5 was published in 2013

Second consultancy meeting to finalise the development of DS360 in November 2013

Cleared by the Coordination Committee in April 2014

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

• Comments from 7 members, incl. EC and ENISS

• 277 Comments:
  • 220 (80 %) Accepted
  • 29 (10 %) Accepted with (minor) modifications
  • 28 (10 %) Rejected (future references, inconsistent with text or scope, etc.)

• No unresolved comments

• 1 Query raised (by two commentators)
Committees’ Members Comments

• All committees’ members comments were carefully considered and addressed.

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

• Approved by: RASSC/NSGC & WASSC
Committees’ Members Comments

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 Reprocessing facility Appendix IV has only just been published.
• The majority of “shall” statements for Reprocessing facilities will remain unchanged by revision of NS-R-5.
• Significant unnecessary delay: A guide based upon NS-R-5 revision (DPP478) would not be available for several years.

Comment 1: ‘Not alternatives: 1st is DBA & 2nd is BDBA, generally’.
Comment 2: ‘4.132-133 should be discussed at NUSSC (with the view of understanding if such practice is relevant to all kind nuclear installations)’.
Comment 3: ‘Add as 3.134: Develop an approach that incorporates more quantitative risk assessment and PRA for RFs’.

IAEA response: Replace paras. 4.132 & 4.133 with a new paragraph referencing GSR Part 4 (Safety Assessment for Facilities and Activities) & relevant parts of its supporting Guides for assessing accident consequences. Reason: Beyond the scope of this guide & not facility specific as applies to all fuel cycle facilities according to a graded approach.
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. Request from the Committees & Commission to limit the scope in Specific Safety Standards to “Preparation for Decommissioning” (as in NS-R-5 revision)
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(s): Use “aerosol(s)” in place of particulates (and droplets) as a more appropriate/preferred term

IAEA response: Rejected. “Aerosols” are colloidal dispersions - not all particulates etc. of concern are known to be colloidal.
Requested Action

NUSSC approval for MSs comments