39th Nuclear Safety Standards Committee
39th Waste Safety Standards Committee

30 June – 2 July 2015

Agenda item 2.9
DPP DS485 Ageing Management and Programme for LTO for NPPs

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IAEA
International Atomic Energy Agency
NS-G-2.12
Safety Guide
“Ageing Management for Nuclear Power Plants”

Current revision (DS485)
Background

• The previous guide published in 2009
• Connected safety standards were revised since this time (SSR 2/1, SSR2/2, SSG-25)
  ✓ SSR2/2, Req. 16 on Long Term Operation not supported by SG
• New supporting SRS 82 IGALL published
  ✓ Proven practices in Long Term Operation (LTO) preparation from Member States need to be incorporated
General objective of SG revision

• As defined in DPP, to fulfill task arising from „Long term structure of the IAEA Safety Standards“ – a new safety guide „…will also address the issues related to long term operation …“

• Provide comprehensive guidance on recommended ways of fulfillment of SSR-2/2 Requirement 14: Ageing management, and Requirement 16: Programme for long term operation

• Update obsolete sections

• Assure consistency of terminology
Specific objectives of SG revision

Update obsolete, insufficient or missing sections and incorporate a current state-of-the-art of industry practices and research and development results:

- Scope setting and screening of SSCs for ageing management and LTO;
- Ageing management review (update the content);
- Review of ageing management programmes;
- Management of obsolescence (update the content);
- Relevant plant documentation and programmes to AM and LTO;
- Programme for long term operation;
- Time limited ageing analysis
Specific objectives of SG revision

Fulfil also the following tasks:

• Assure the consistency (LTO, S&S, AMR, review of AMPs, TLAA etc.) with SSR-2/2 and a new IGALL Safety Report;
• Provide definitions and comprehensive guidance for physical ageing and technological obsolescence.
Status of Safety Guideline Revision

- Approval of DPP by WASSC and NUSSC: July 2014
- Approval of DPP by CSS: October 2014
- Preparation of Draft: February 2015
- NUSSC/WASSC JOINT SESSION - for submission to Member States for comments: July 2015
- Approval by SSCs for submission to CSS: June 2016
- Endorsement by CSS: October 2016
- Target publication date: March 2017
Comments Received

The following members have responded to the DPP:

- Argentina
- ENISS
- Finland
- France
- Germany
- Korea
- Sweden
- Ukraine
- USA
## Comments Received - statistic

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<th>Member State</th>
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Examples of rejected comments

- **Scope (described in p. 1.13 what is outside of the scope of this SG):**
  - Management of Knowledge Obsolescence, Human ageing, Safety upgrade

- **Level of details:**
  - Review radiological dose trends to assess impact on surveillance activities which may be required to support LTO

- **Contradiction to SS:**
  - Add “AM” to headings of Chapter 7 - Programme for long term operation as defined by SSR 2/2, Requirement 16

- **Others:**
  - Abbreviations – requirements to content and format do not allow us to have list of abbreviations
Comment:
• “Human” ageing shall also be considered in the guide.

Reason for rejection:
• According to approved DPP, this SG is focused on physical ageing of SSCs and technological obsolescence.
Examples of rejected comments

Comment:
• Section 7 is essentially focused on ageing management. Other aspect related to LTO are barely addressed. Make it consistent with 1.13

Reason for rejection:
• p. 1.13 presents the scope of this SG. Comparing to Requirement 16 of SSR 2/2 on Programme for LTO, only “safety upgrading and verification” is not covered.
Examples of rejected comments

Comment:
• Delete 4.9 to 4.17 (Configuration/ modification management)

Reason for rejection:
• Configuration/modification management, design basis information - are essential in preparation for LTO, as LTO is typically connected with many safety upgrades/ modifications.
Examples of rejected comments

Several comments:

• Plant programmes **essential to ageing management**
• Existing plant programmes listed below should be considered as essential to ageing management **and LTO:**
• Existing programmes which are credited for ageing management **and LTO** should be consistent with the nine attributes described in Section 5.

Reason for rejection:

• The programmes of concern are relevant for AM, but also for LTO and their appropriateness for LTO has to be evaluated – according to Req. 16 of SSR 2/2 and SRS 57, section 3.2 and 3.3.
Examples of rejected comments

Comment:
• Delete p. 7.8. (7.8 is confusing at it mixes areas where licensee has prime responsibility and area where the regulator has prime responsibility).

Reason for rejection:
• These are basic general principles which should be valid in each MS, for operators and regulators.
SSR-2/2 Requirement 14: Ageing management

The operating organization shall ensure that an effective ageing management programme is implemented to ensure that required safety functions of systems, structures and components are fulfilled over the entire operating lifetime of the plant.

- 4.50. The ageing management programme shall determine the consequences of ageing and the activities necessary to maintain the operability and reliability of structures, systems and components. The ageing management programme shall be coordinated with, and be consistent with, other relevant programmes, including the programme for periodic safety review. A systematic approach shall be taken to provide for the development, implementation and continuous improvement of ageing management programmes.

- 4.51. Long term effects arising from operational and environmental conditions (i.e. temperature conditions, radiation conditions, corrosion effects or other degradations in the plant that may affect the long term reliability of plant equipment or structures) shall be evaluated and assessed as part of the ageing management programme. Account shall be taken in the programme of the safety relevance of structures, systems and components.
SSR-2/2 Requirement 16: Programme for long term operation

Where applicable, the operating organization shall establish and implement a comprehensive programme for ensuring the long term safe operation of the plant beyond a time-frame established in the licence conditions, design limits, safety standards and/or regulations.

4.53. The justification for long term operation shall be prepared on the basis of the results of a safety assessment, with due consideration of the ageing of structures, systems and components. The justification for long term operation shall utilize the results of periodic safety review and shall be submitted to the regulatory body, as required, for approval on the basis of an analysis of the ageing management programme, to ensure the safety of the plant throughout its extended operating lifetime.
SSR-2/2 Requirement 16: Programme for long term operation

4.54. The comprehensive programme for long term operation shall address:
(a) Preconditions (including the current licensing basis, safety upgrading and verification, and operational programmes);
(b) Setting the scope for all structures, systems and components important to safety;
(c) Categorization of structures, systems and components with regard to degradation and ageing processes;
(d) Revalidation of safety analyses made on the basis of time limited assumptions;
(e) Review of ageing management programmes in accordance with national regulations;
(f) The implementation programme for long term operation.
Thank you for your attention!
Questions???
Approval for submission to Member States for comments