

# Feedback on SSG-48 from EPRI

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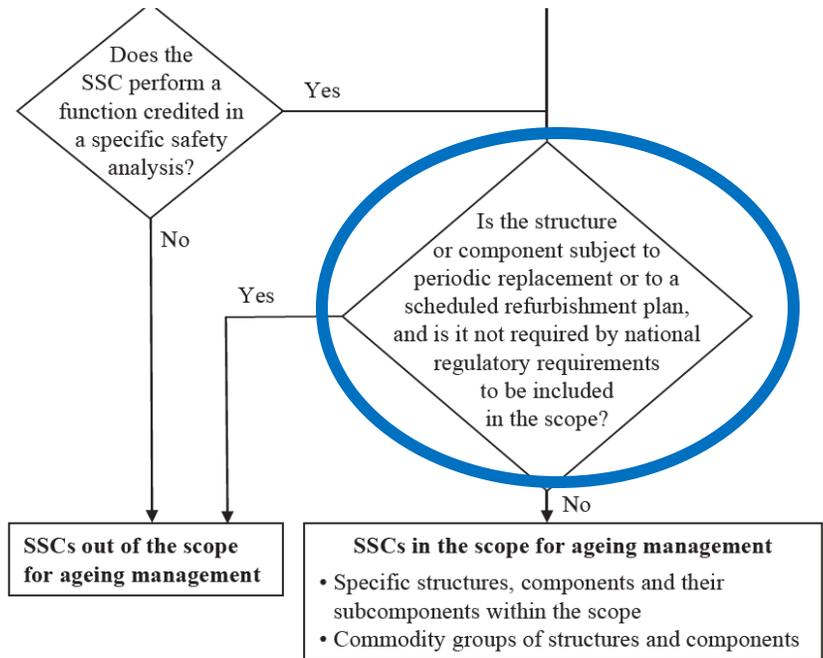
# Content of the presentation

- Ageing management of active SSCs.
  - Scope setting process
  - AMR process
  - Updates and improvements of Maintenance
- Equipment Qualification.
  - Update of section 4 of SSG-48
  - AMPs to support mild environment qualification
- Other comments



# Ageing Management for active SSCs

# Ageing Management for active SSCs



## Scope setting process:

- Active equipment (i.e valves, pumps, Actuator, etc.) in scope of AM are subject to maintenance practices where some “*sub-components*” may be subject to periodic replacement... this doesn’t exclude main equipment *per se* from AMR.
- SSCs originally excluded because they were included in *scheduled refurbishment plan* may need to be included in the scope of AM based on:
  - ageing evaluation that shows original practices (i.e manufacture recommendation) were not effective.
  - Change from TBM → CBM.
- It is not clear when or how these SSCs may be systematically included in scope of AM.

**TBM: Time Based Maintenance; CBM: Condition Based Maintenance**

# Ageing Management for active SSCs

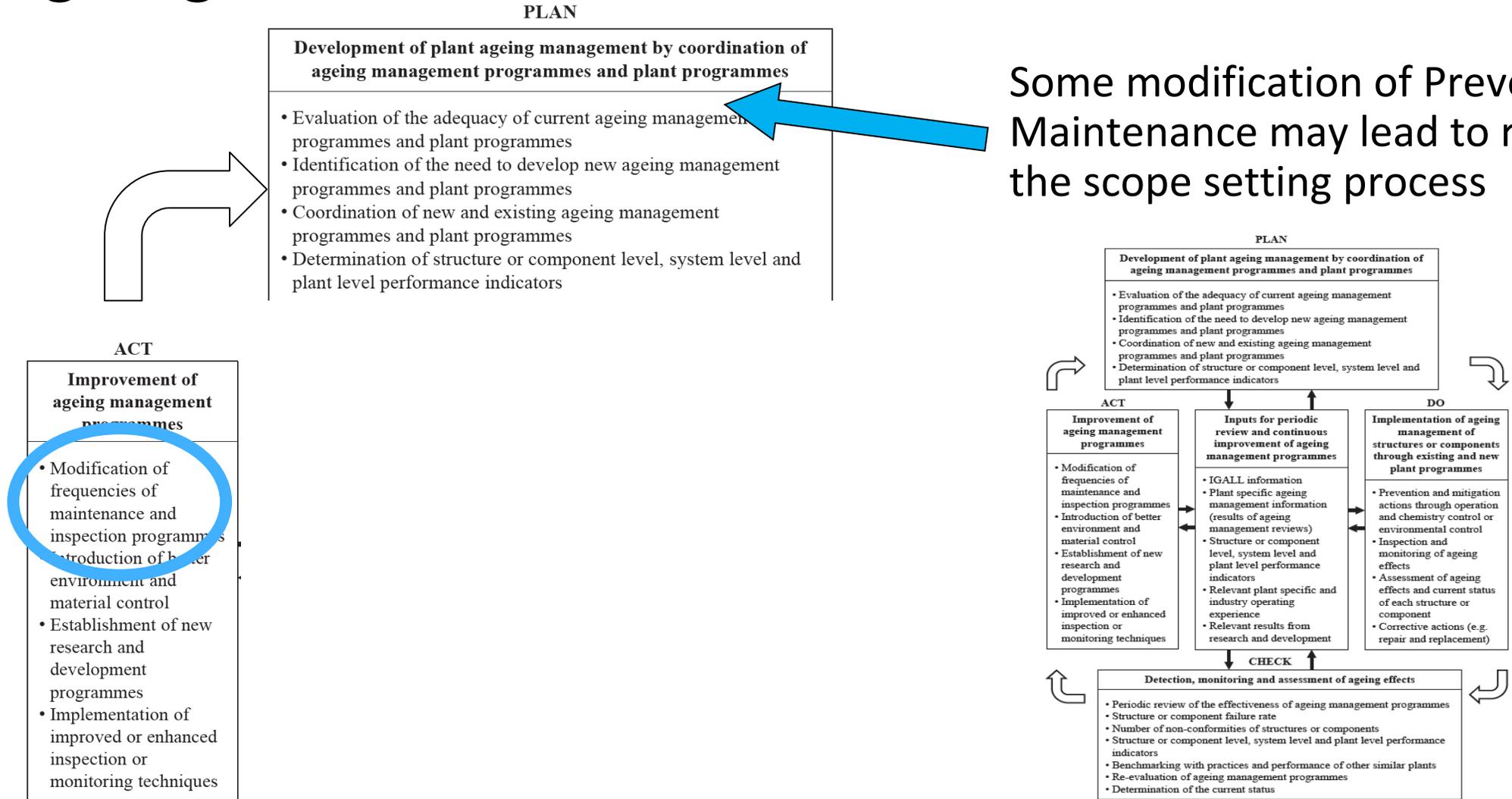
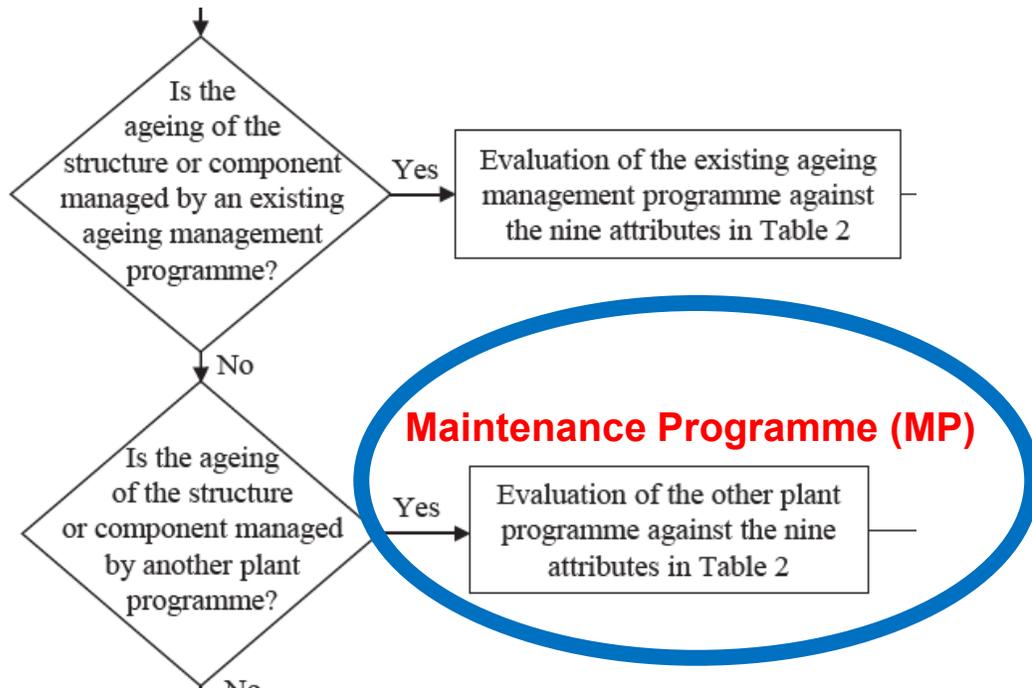


FIG. 5. Development, implementation, review and improvement of ageing management programmes.

# Ageing Management for Active SSCs

- AMR process for in scope SSCs:
  - The activities related to AM are performed mostly within Maintenance Programme.



Currently in “Development of AMP” it states that *..If a programme is of such a nature that it does not meet all nine attributes, its use should be properly justified and the justification should be documented.*

The same is valid during AMR process for plant programmes such as Maintenance when their effectiveness is proven.

# Ageing Management for Active SSCs

- SSG-48 section 4 refers to NS-G-2.6 superseded by SSG-74. This SSG includes consideration for Aging Management (7.4 to 7.8) PLANTS DESIGNED TO EARLIER STANDARDS (7.9)

## IAEA Safety Standards

for protecting people and the environment

Maintenance, Testing,  
Surveillance and Inspection  
in Nuclear Power Plants

Specific Safety Guide

No. SSG-74



*“To manage ageing, the programmes of MTSI activities should:...adequate and up to date methods for detecting and monitoring ageing*

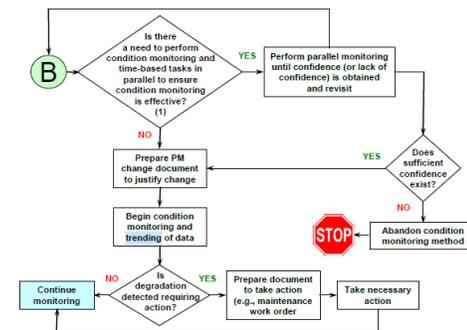
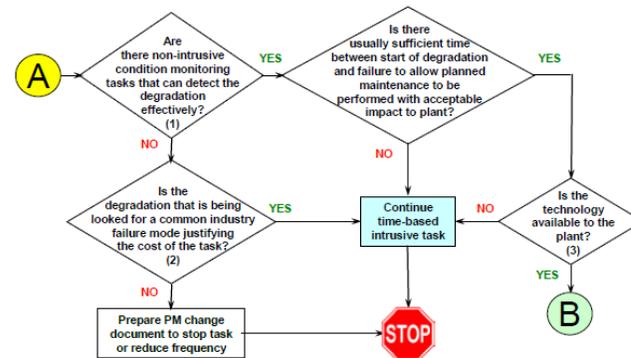
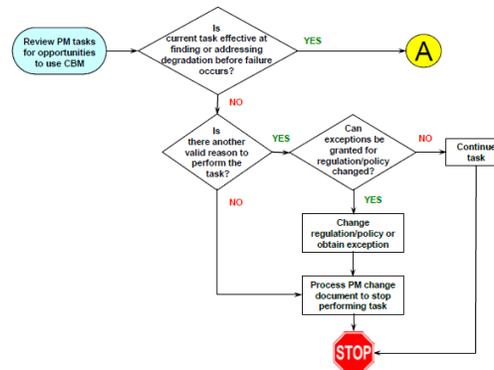
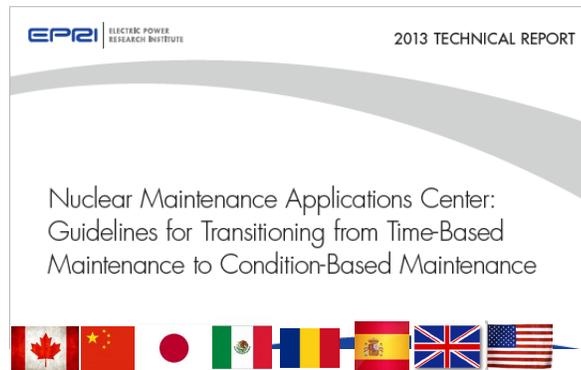
*...the operating organization should take into account any differences between the original and the current standards and should consider what can be done at the plant to address these differences. For this purpose, the MTSI programmes should be reviewed and adjusted in such a way as to make the maximal contribution to maintaining the plant within established safety limits”*

No further guidance or reference is provided in SSG-74

**MTSI: Maintenance, Testing Surveillance and Inspection**

# Ageing Management for active SSCs

- Which guidance can be provided for updating MP for detection of ageing effects ? EPRI Nuclear Maintenance Applications Center
  - **1022951** Preventive Maintenance Program Guideline
  - **1002932** Guideline for Assessing Maintenance Effectiveness: A Self-Assessment Guideline for Nuclear Power Plants
  - **3002000493** Guidelines for Transitioning from Time-Based Maintenance to Condition-Based Maintenance





# Equipment Qualification Consideration in SSG-48

# Equipment Qualification

SSG-48 section 4 addressed Equipment Qualification. Considering the content of SSG-69 much of the text can be replaced by referring to SSG-69. Things to consider keeping/adding

- Difference between Environmental and Equipment Qualification
- Adding reference to SSG-67 (section 6 is devoted to Seismic Qualification).
- Explain why the EQ Programme can be considered as an AMP and a TLAA.
- Consider the implementation of Condition Base Qualification

# Equipment Qualification

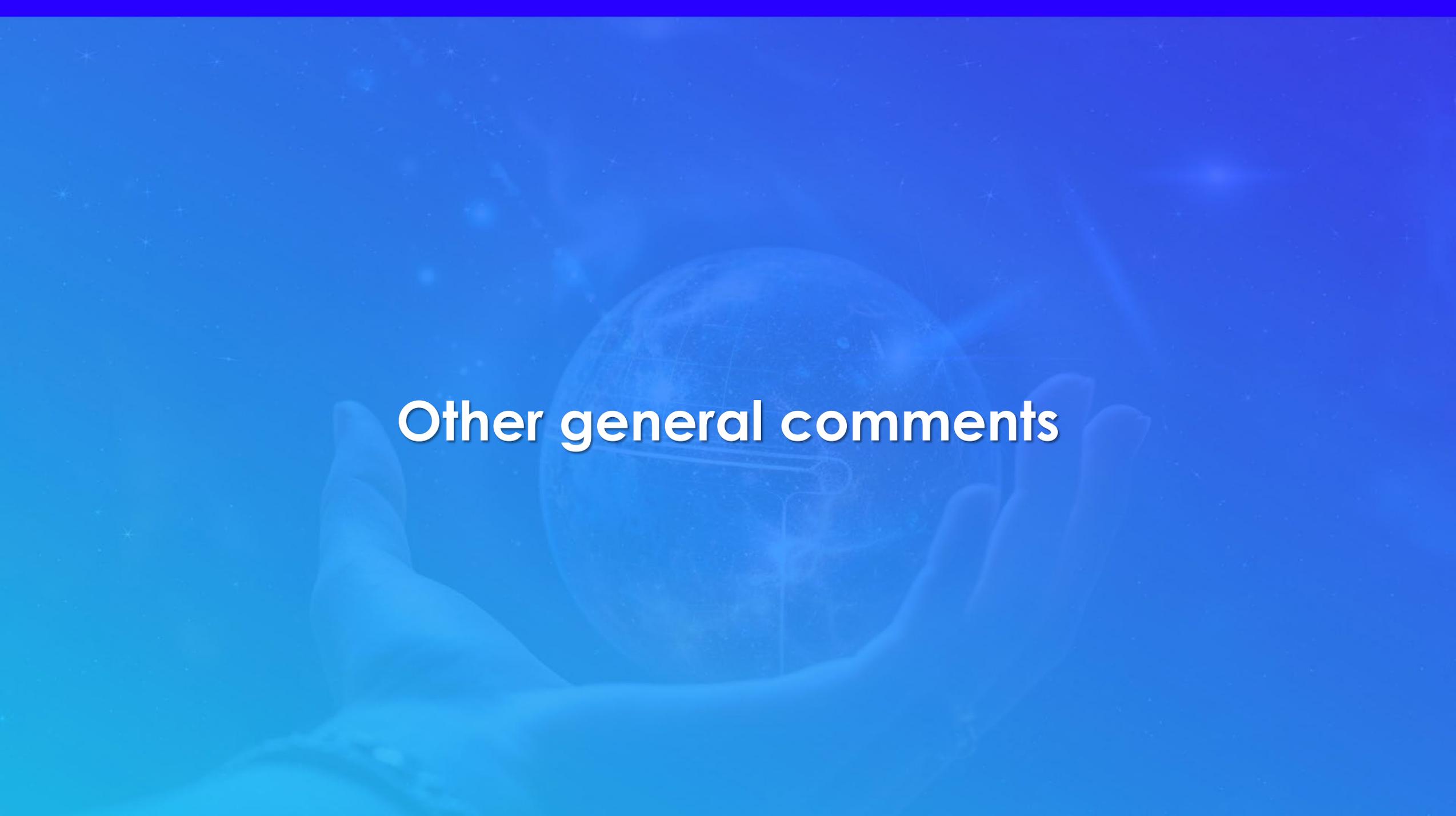


- SSG-69 was developed in agreement with IEC IEEE stds\*.
- Regarding qualification for mild environment IEC IEEE stds establish that “...a *qualified life is not required for equipment located in a mild environment and which has no significant ageing mechanisms..”*”

AMPs become a supportive programme for preservation of qualification for mild environment



**\*IEC IEEE 60780-323: Nuclear facilities - Electrical equipment important to safety - Qualification**



**Other general comments**

# Clarity Conciseness and Relevance

*2.20 The ‘act’ activity in Fig. 1 involves the timely correction of ageing effects on structures and components and the introduction of **further** preventive or mitigatory actions through appropriate maintenance and design modifications, including the repair and replacement of structures and components.*

- It may be misinterpreted as strictly meaning “additional,” whereas in practice, ageing management often requires replacing or modifying existing actions—not just adding more

Sections CONFIGURATION AND MODIFICATION MANAGEMENT PROGRAMMES, INCLUDING DESIGN BASIS DOCUMENTATION (4.9–4.15)

TIME LIMITED AGEING ANALYSES TLAA (5.64 paragraph 6)

- As it was highlighted in **Equipment qualification programme** some parts of SSG 48 provide extensive information that currently is covered in referenced IAEA documents. While relevant, their inclusion in SSG-48 may dilute the focus on ageing management. A more concise reference to existing guidance could improve clarity and maintain the document’s focus.



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