

INAC 2013



CNEN

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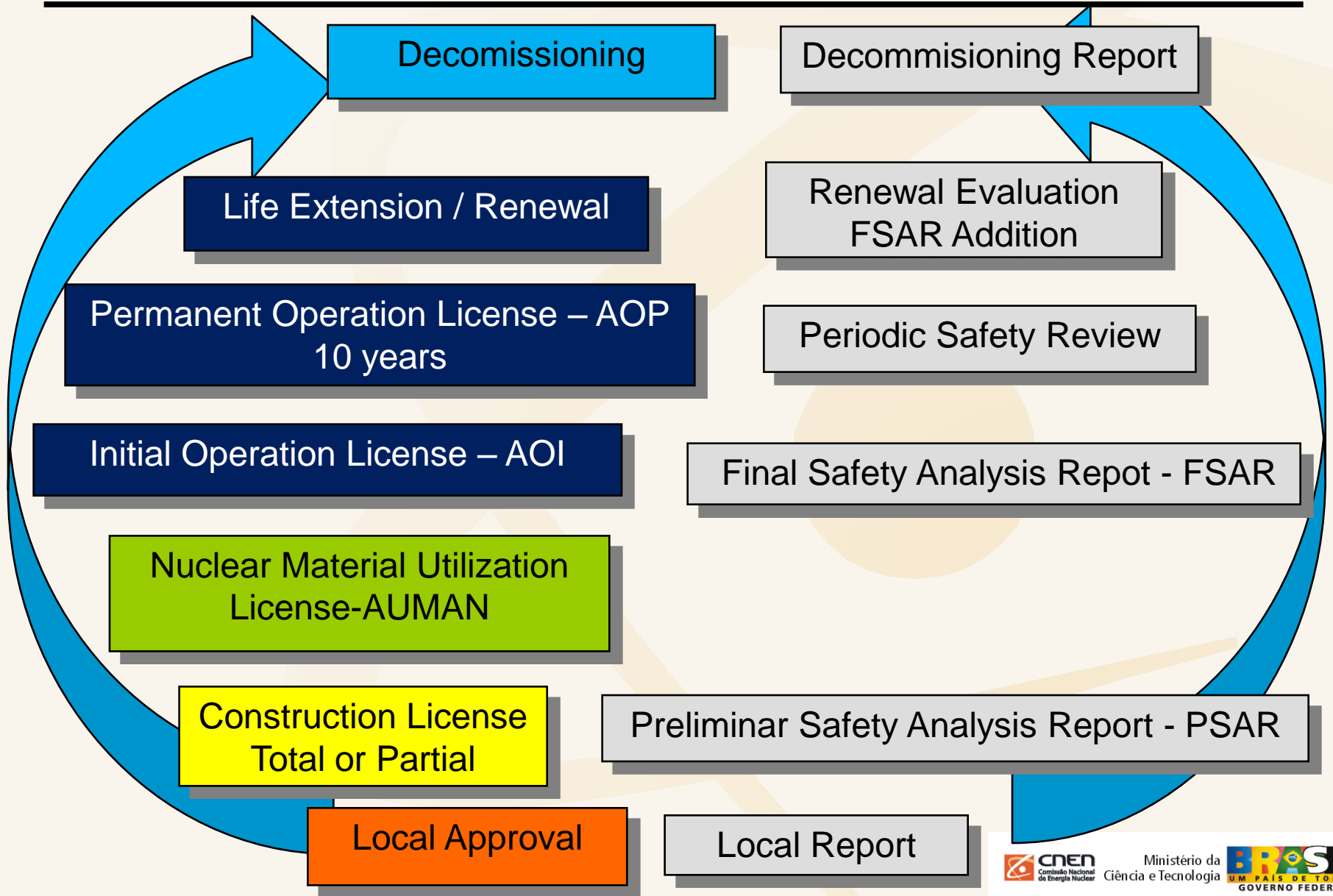
Radiation Protection and Nuclear Safety Directorate - DRS

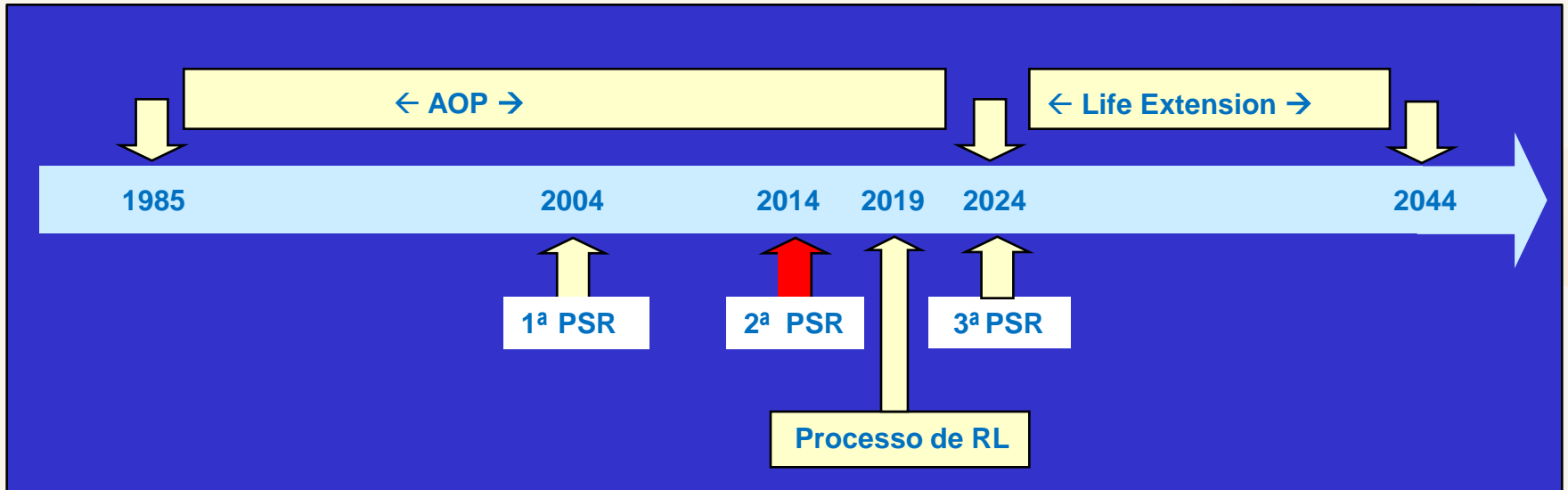
Comissão Nacional de Energia Nuclear – CNEN

Summary

- Introduction
- Initial References
- Regulatory Initiatives and Actions
- Technical Cooperations
- Forun Ibero Americano
- Additional References
- Conclusions

Main License Steps





1985 – Beginning of Commercial Operation

2004 - 1^a PSR

2014 - 2^a PSR

2019 – Final limit to submit renewal

2024 – 3^a PSR

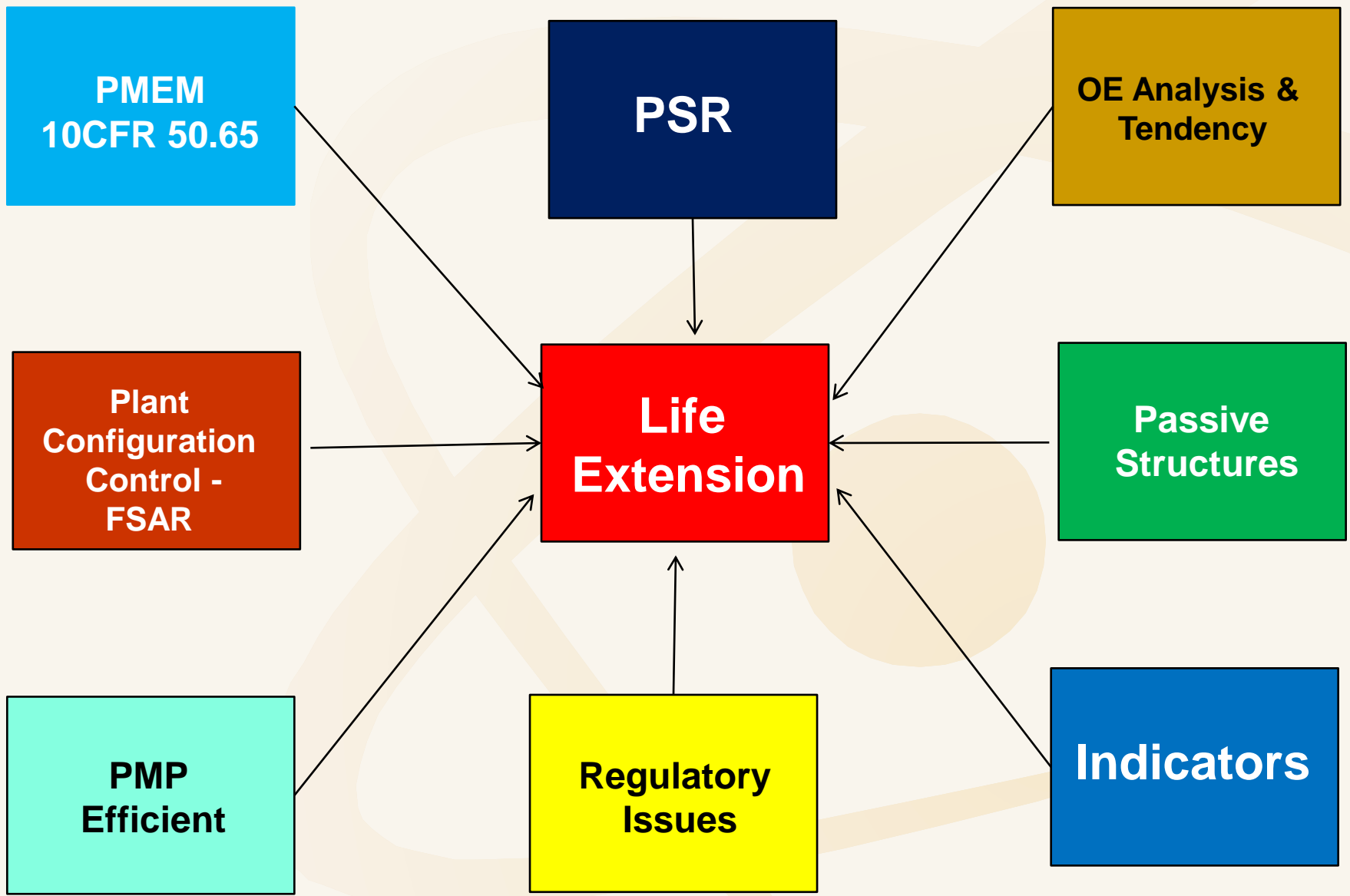
2024 – AOP Final and potential beginning of Long Term Operation

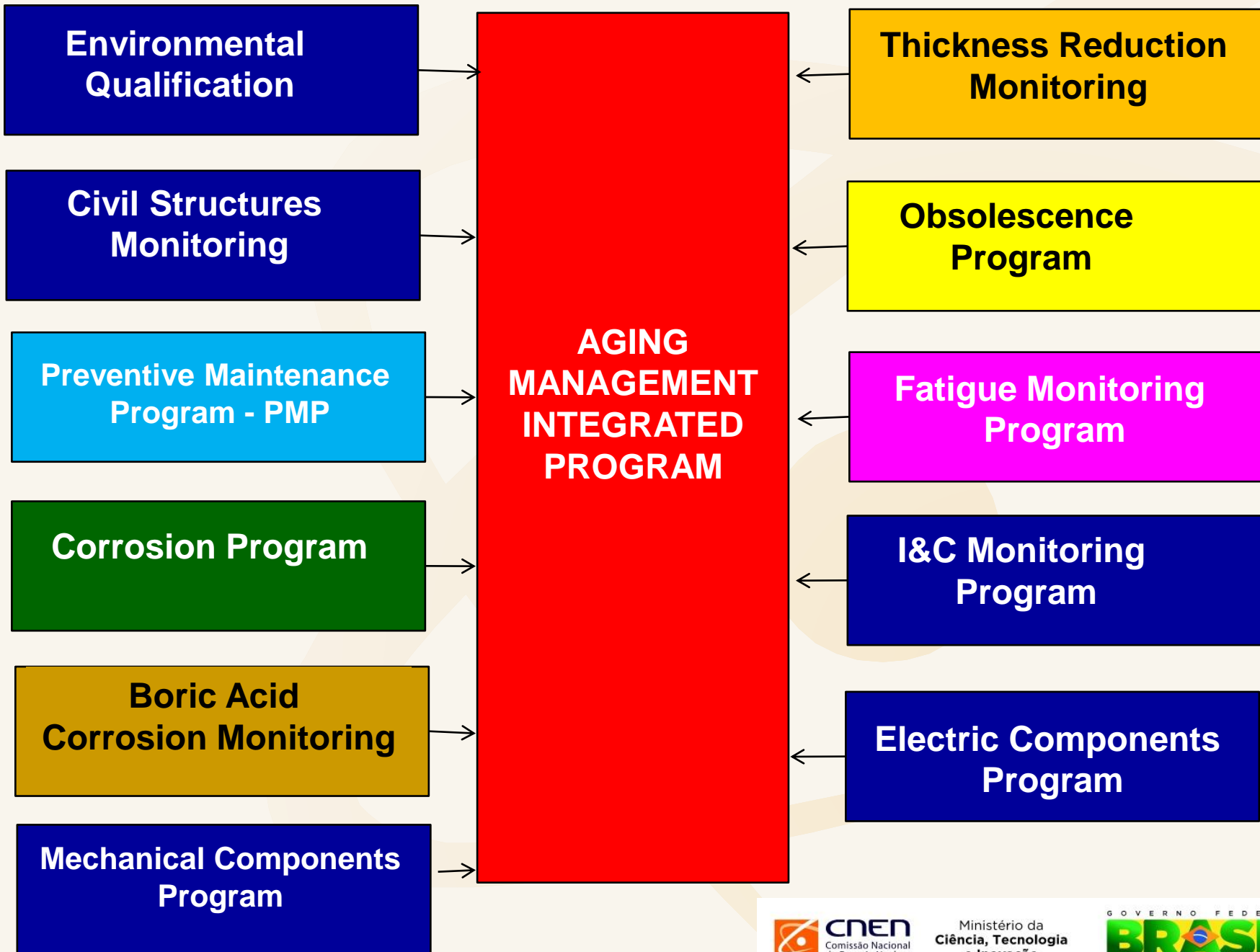
2034 – 4^a PSR and potential continuing of LTO

2044 – END of LTO and Potential decommissioning

Introduction

- Initial discussions considering the US Approach - 2005
- 1st Phase: Duke Engineering
 - Methodology
 - Procedures
 - Pilot study to RHR System
- 2nd Phase: Westinghouse
 - Review of Procedures and new procedures
 - Review of Pilot study - RHR
- 3rd Phase: Concremat and PUC
 - Civil Structures for Angra 1
- 4th Phase: Westinghouse
 - TLAA's
- 5th Phase: Westinghouse – EXELON - 2013
 - IPAs
 - Implementation





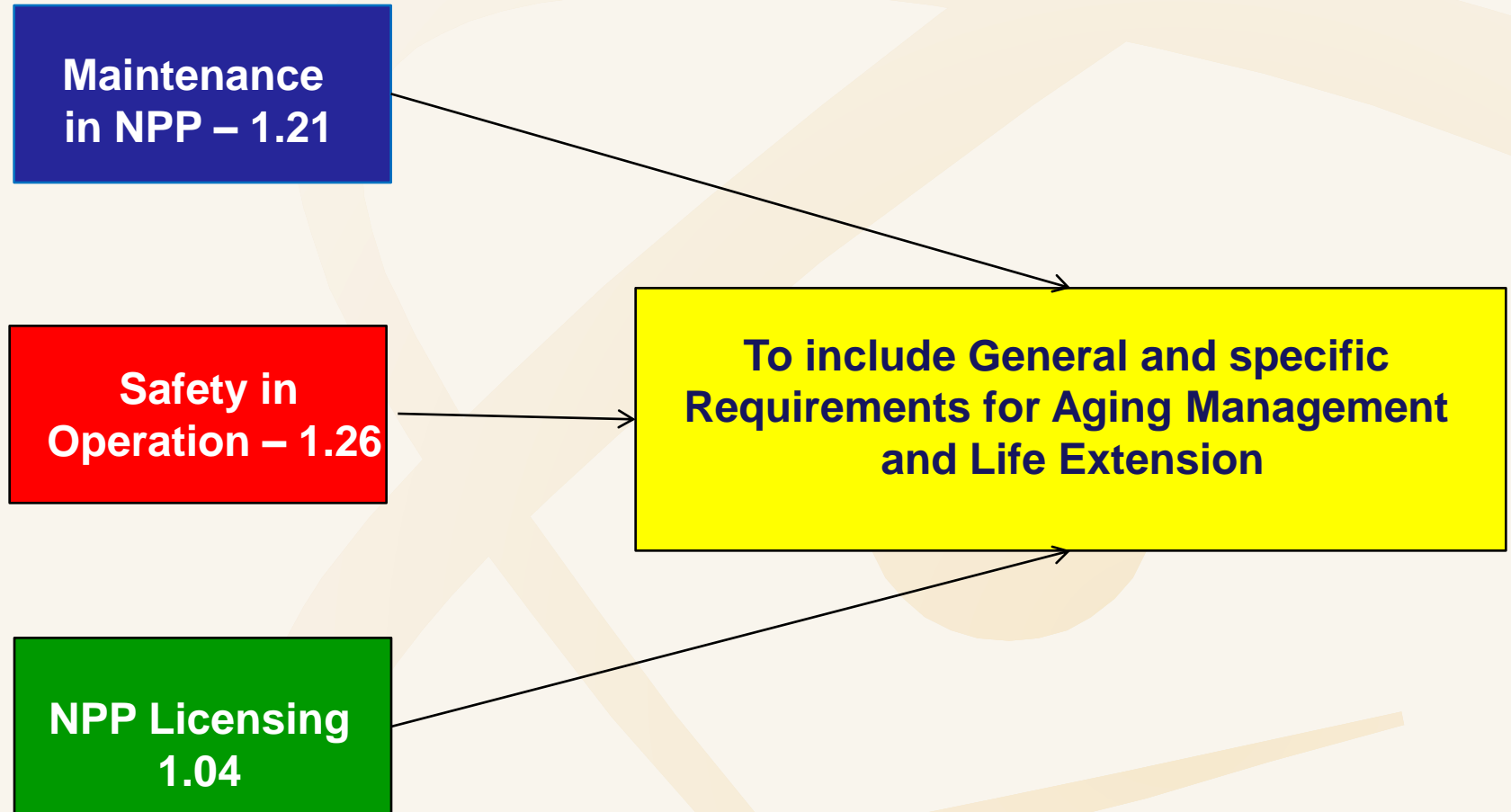
Initial References

- US NRC 10 CFR Part 54 – Requirements for Renewal of Operating Licenses for Nuclear Power Plants
- US NRC 10 CFR Part 65 – Maintenance Rule
- NUREG-1800 – Standard Review Plan for Review of Licensee Renewal Applications for NPP, rev 2005 / 2010
- NUREG-1801 – Generic Aging Lessons Learned (GALL) Report, US NRC, September 2005
- NEI 95-10 - “Industry Guideline for Implementing the Requirements of 10 CFR Part 54”

Initial References

- NUREG-1833 – Technical bases for Revision to the Licensee Renewal Guidance Documents, US NRC, October 2005
- NUREG-1850 – Frequent Asked Questions (FAQ) on Licensee Renewal of NPP, US NRC, 2006
- US NRC IP 71002 – Licensee Renewal Inspection, 2005
- US NRC IP 71003 – Post Approval Site Inspection for Licensee Renewal, 2008
- US NRC IMC 2516 – Policy and Guidance for Licensee Renewal Inspection Programs, 2005

Regulatory Initiatives – Update Standards



Technical Cooperation

-Technical Cooperation with Forum Ibero-Americano

- Spain
- Mexico
- Argentina

-Technical Cooperation with European Community

- Spain
- Hungary
- France

-Technical Cooperation with IAEA - To be Initiated in 2014

- Technical Cooperation with GRS – To be expanded

- Technical Cooperation with NRC – to be initiated

Forum Ibero Americano

- **Procedure of DIIRA for Inspection in Aging Aspects** used as initial reference
- **Regulatory Inspection Guide for Aging Management Programs and Long Term Operation or Life Extension or Renewal.**
- **Developed in 2010**
- **Knowledge Management - Detailed used in order to allow junior engineers to understand and use the guide**
- **General Guide to be used by:**
 - **Brazil**
 - **Argentina**
 - **Spain**
 - **Mexico**
 - **Cuba and Chile**

Forum Ibero Americano

Main Topics

1 – Introduction and Definitions

2 – Objective

3 – Scope

4 – Regulatory Inspection

4.1 – Inspection during the lifetime of NPP of **Aging Program associated with the Authorization for Operation**

4.2 – Inspection and **Analysis of the Methodology and the Development of the Aging Management Program for The Life extension**

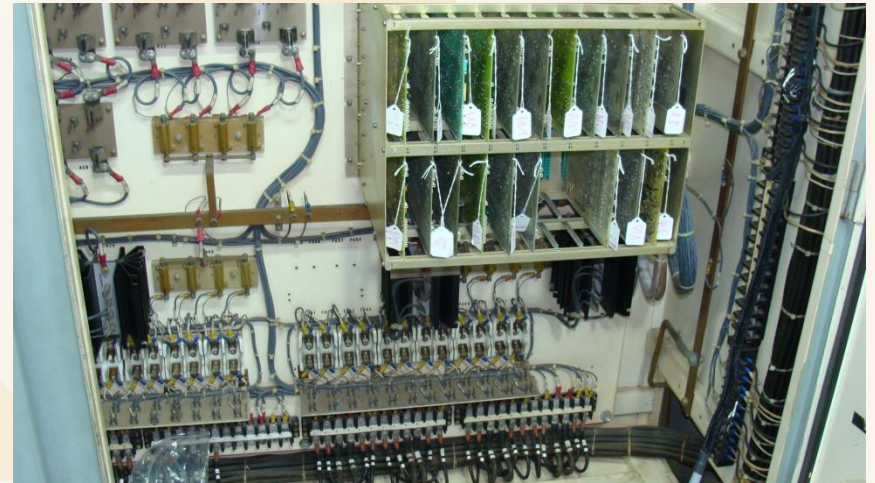
4.3 – Inspection of the **Implementation of the Aging Management Program during the Lifetime Extension**

Forum Ibero Americano - Inspections

- **Organization and Management**
- **Scope of SCCs**
- **Analysis of the Review of the Aging Management**
- **Inspection of the results of the Aging Management Program .**
- **Inspection of the Action Plans related with the results**
- **Inspection of design modifications and replacements of components due aging**
- **Inspection of Technical support procedures and documents.**
- **Inspection of Identification and associated corrective actions for Generic Safety Issues applicable to the NPP**
- **Inspection of Time-Limited Aging Analysis (TLAA)**
- **Inspection of Obsolescence Program.**

Additional References

1. **IAEA Safety Guide No. NS-G-2.10 – Periodic Safety Review of Nuclear Power Plants, 2003**
2. **IAEA Safety Guide No. NS-G-2.12 – Ageing Management for Nuclear Power Plants, 2009**
3. **IAEA Safety Reports Series No.57 – Safe Long Term Operation of Nuclear Power Plants, 2008**
4. **IAEA Technical Report Series 448 - Plant Life management Management for Long Term Operation of LWR, 2006**
5. **IAEA IGALL – International Generic Ageing Lessons Learned, Final Report (draft)**
6. **German Rule KTA 1403 – Ageing Management in Nuclear Power Plants**





**PZR – Sobrecamada de solda –
Corrosão sob tensão**



**Controle de fadiga e extratificação
térmica**

➤ Conclusion:

- 1 - The Aging Management Process has began but needs to be completed, finished and implemented
- 2 - The Aging Management Program has to be Integrated
- 3 – CNEN Standards needs to be updated
- 4 – Evaluate Additional references
- 5 – **Agressive use of Technical Cooperation**



Many Thanks



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