

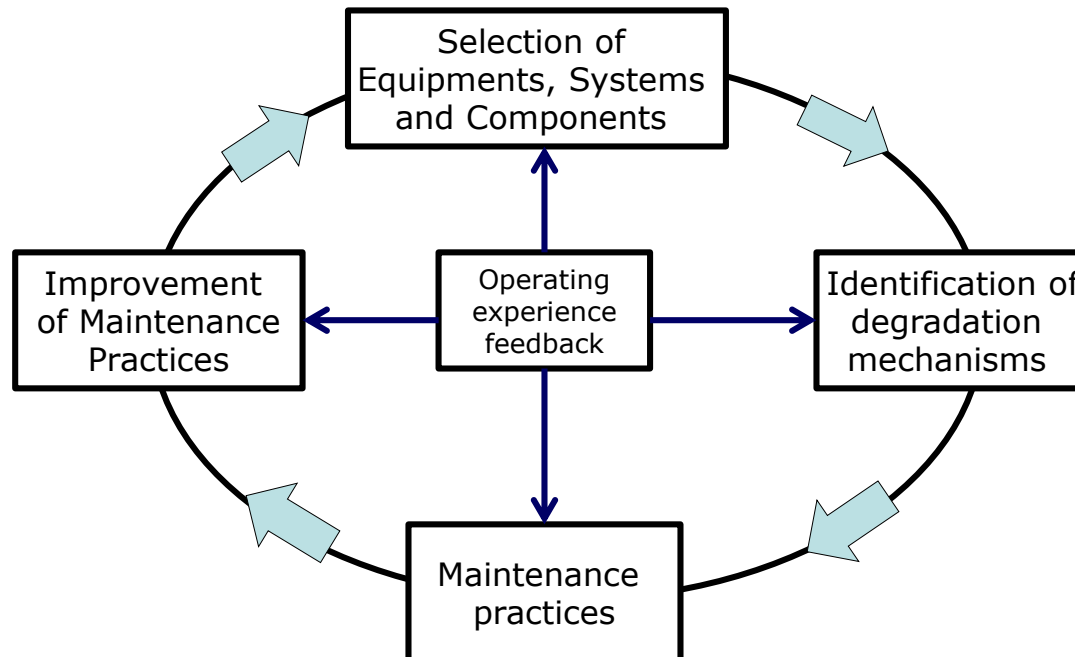
Ageing Management and Long Term Operation in Spanish NPP 's

A. Munuera
Nuclear Safety Technical Director (CSN)
WG1 Chair

1 | AGEING MANAGEMENT PROGRAM

Ageing management means *engineering, operations and maintenance actions to control within acceptable limits the ageing degradation of structures, systems and components*

Ageing management program require a technical understanding of ageing degradation mechanism, inspection and assessment techniques, prevention and mitigation measures and, as needed, guidance on repairs or replacements for each component



2 | **AGEING MANAGEMENT and LTO in Spanish NPPs**

- Since mid-90s, Operating Permit conditions include requirements for Ageing Management Review plans (AMR), and annual report.
- In 2009 CSN issued specific regulations (based on USNRC License Renewal and IAEA SSG-25) for developing:
 - AMR during PLiM (Plant Life Management up to 40 years life-time), and
 - AMR for PLEX (Plant Life Extension or LTO, PIEGE, in Spanish).
- Periodic Safety Review (every 10 years), must include provisions for LTO:
 - Criteria for Selection of SSC (same scope as 10CFR 54 license renewal, passive),
 - Identification of degradation mechanisms and feedback of operating experience,
 - Assessment of the maintenance practices, and
 - Time Limited Ageing Analysis (TLAA) studies: To ensure the SSC maintain safety functions throughout LTO.
- Active SSC controlled through Maintenance Rule CSN IS-15, and other NPP maintenance programs (ASME O&M, electrical and I&C surveillances, MOV and AOV, snubbers,...).
- CSN assess and inspect routinely Spanish NPP AMRs (included in Basic Inspection Plan)