Experiences and lessons learned: Jose Cabrera NPP Decommissioning Project

Supporting European Expertise in Nuclear Decommissioning
23rd January 2018
General Information - Enresa

State OWNED Company - RD 1984

Duties:

• Management of radioactive wastes
• Decommissioning of Nuclear Installations

Framework:

Responsible for managing funds and liabilities, in accordance with a periodical modification of the ‘General Radioactive Waste Plan’ approved by the Government
DECOMMISSIONING PROJECTS

José Cabrera NPP Dismantling Project

Madrid. PIMIC (CIEMAT)
- Duration: 2006-2017
- Reactor type: Research Reactor & reprocessing facilities
- Status: Site Restoration

Guadalajara. JOSE CABRERA NPP (ZORITA)
- Duration: 2010-2019
- Reactor type: PWR
- E. Power: 160 MWe
- Status: Dismantling

Tarragona. VANDELLOS 1 NPP
- Duration: 1998-2003
- Reactor type: GCR
- E. Power: 460 MWe
- Status: On dormancy
José Cabrera NPP Dismantling Project

- PWR (160 MW)
- 37 years in Operation.
- 2006: definitive shutdown.
- 2010: Start of execution of decommissioning project.

Jose Cabrera NPP: First complete dismantling in Spain
# DECOMMISSIONING SCHEDULE

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10 YEARS PROGRAMME

80% progress
Underwater segmentation with mechanical tools
STRATEGIES FOR WASTE MANAGEMENT

PRIMARY WASTES REPOSITORIES

CABRIL: Internals: 8 CE-2b
Vessel: 21 CE-2b

ISFSI JC NPP: Internals
4 HI-SAFE casks
Lessons learned

1. Effective for Cutting complex Geometry

2. Slower than others, BUT:
   1. Easy Implementation
   2. Low Rad Operational Impact
   3. Minimization of Secondary Waste

3. Characterization of rad waste

4. Preparatory & Final Works
   1. Visibility
   2. Cavities conditioning
   3. Final cleaning
REMOVAL OF ACTIVATED CONCRETE
SURFACE CHARACTERIZATION
RADIOACTIVE WASTE MANAGEMENT: DECONTAMINATION WORKSHOP
José Cabrera NPP Dismantling Project

SOIL WASHING PLANT
CHARACTERIZATION EQUIPMENT FOR SITE RELEASE
FINAL THOUGHTS

• Dismantling of Primary Circuit Components.
  • Segmentation technologies
  • Management of activated elements

• Adaption of proven technologies to decommissioning requirements.
  • Thermal cutting / Cold cutting
  • Robotics / Drones

• Material Management.
  • Optimization / waste volume reduction

• Site Remediation.
  • Characterization of the site
  • Soil treatments
Strategies for Waste Management (large components)

Refurbishment of former Turbine Hall as Decommissioning Auxiliary Building

- Conditioning of rad. waste from segmentation activities.
- Temporary storage of disposal units.
DECONTAMINATION OF BUILDINGS AND REMOVAL OF EMBEDDED ELEMENTS