



CAREM25

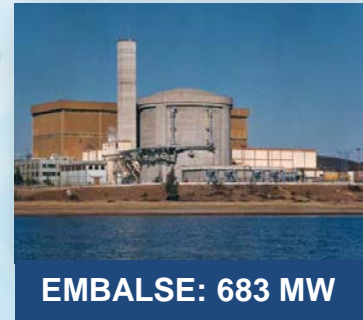
CAREM PROJECT

CAREM Management | National Atomic Energy Commission of Argentina (CNEA)



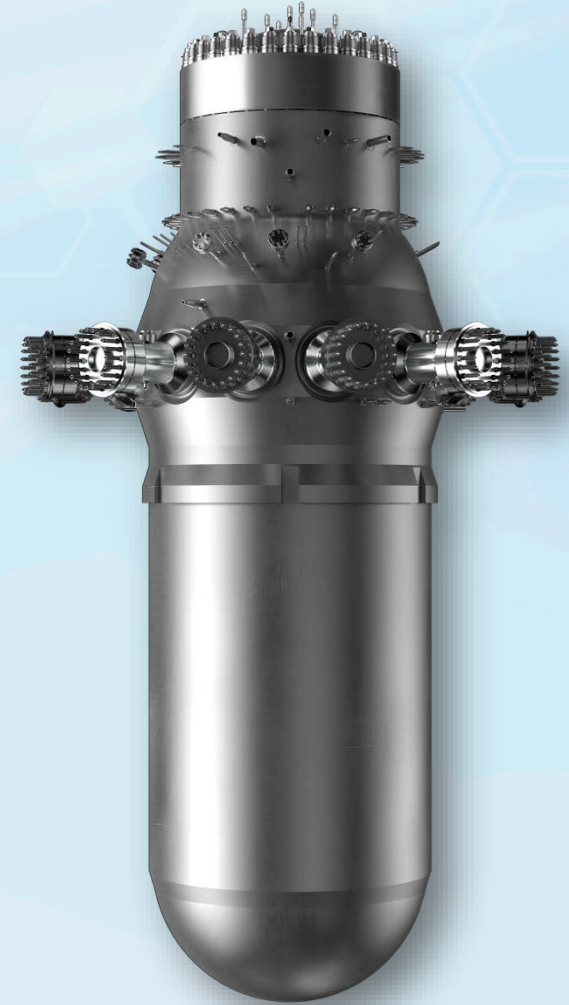
Comisión Nacional
de Energía Atómica

NUCLEAR GENERATION IN ARGENTINA



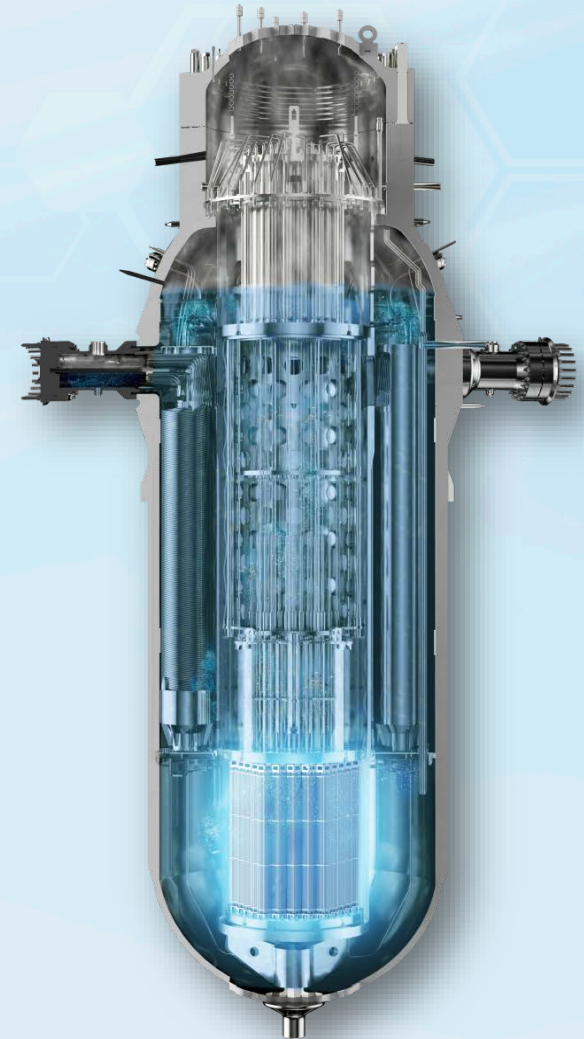
CAREM25 - BASIC PARAMETERS

- **First NPP fully designed in Argentina**
 - ✓ PWR type
 - ✓ 32 MWe gross
 - ✓ 100 MW core thermal power
 - ✓ Integrated Primary System
 - ✓ Natural circulation
 - ✓ Self-pressurized
 - ✓ Enriched UO_2 fuel (3,1 and 1,8%)
 - ✓ Passive safety systems
 - ✓ Operating cycle length of 18 months



AIMS OF THE PROTOTYPE

- ✓ To qualify the whole concept in a small scale
- ✓ To generate developing capabilities within the CNEA, its associate companies and the private industry in Argentina (supplier development)
- ✓ To repeat the success obtained with the Research Reactors exportation.
- ✓ To become a worldwide referent of the new generation of nuclear reactors
- ✓ To commercially operate Argentinean NPPs



A NATIONAL PRIORITY

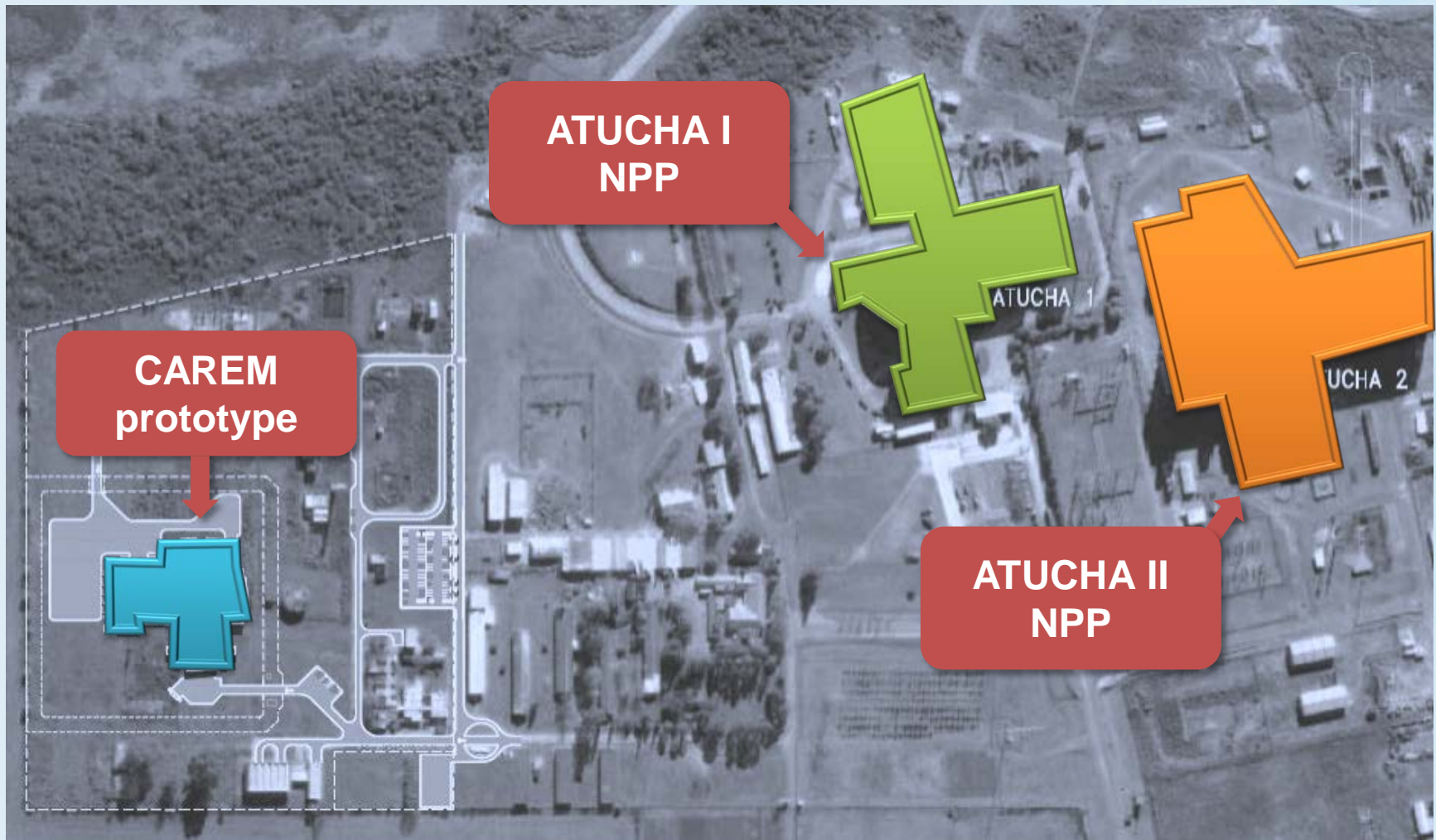
August 2006: A Presidential Decree declared of **National Interest** “*the construction and start-up of the Reactor CAREM Prototype*”.

November 2009: The **National Law 26.566** declared again the national interest for the CAREM Project, imposing CNEA to be in charge of its management.

SITING



ATUCHA NUCLEAR SITE



CAREM25 BUILDING

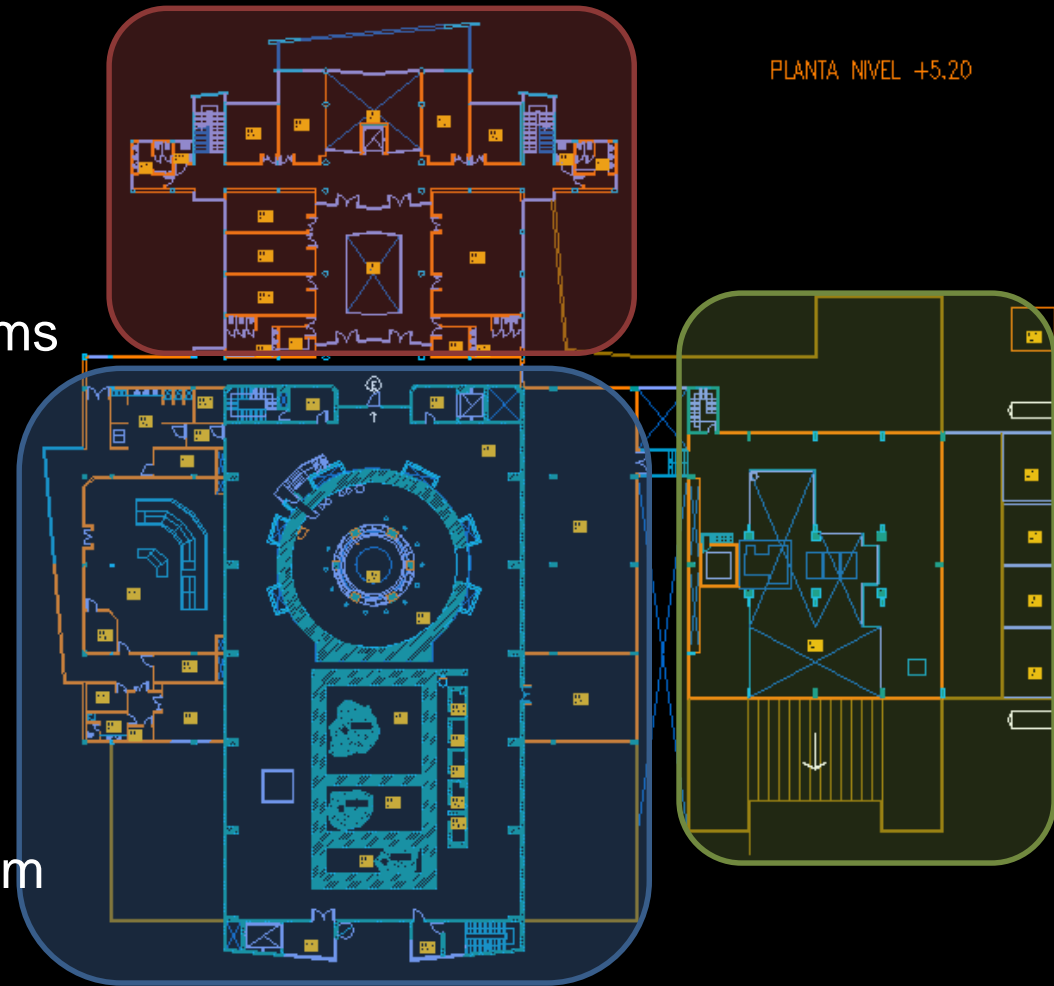
Reactor Building

- Containment
- Spent Fuel Pool
- Safety & Process Systems
- Control Room

Turbine Building

Service Building

- Offices
- Changing rooms
- Emergency Control Room



CONTAINMENT VESSEL

- ✓ 1,2m thick reinforced concrete external wall
- ✓ Inner surface lined with a steel liner (8mm)
- ✓ Design pressure = 5bar
- ✓ Design temperature = 155°C



Assembly of part of the steel liner
(before concrete stage)

PHYSICAL PROTECTION SYSTEM (PPS) LEGAL FRAMEWORK

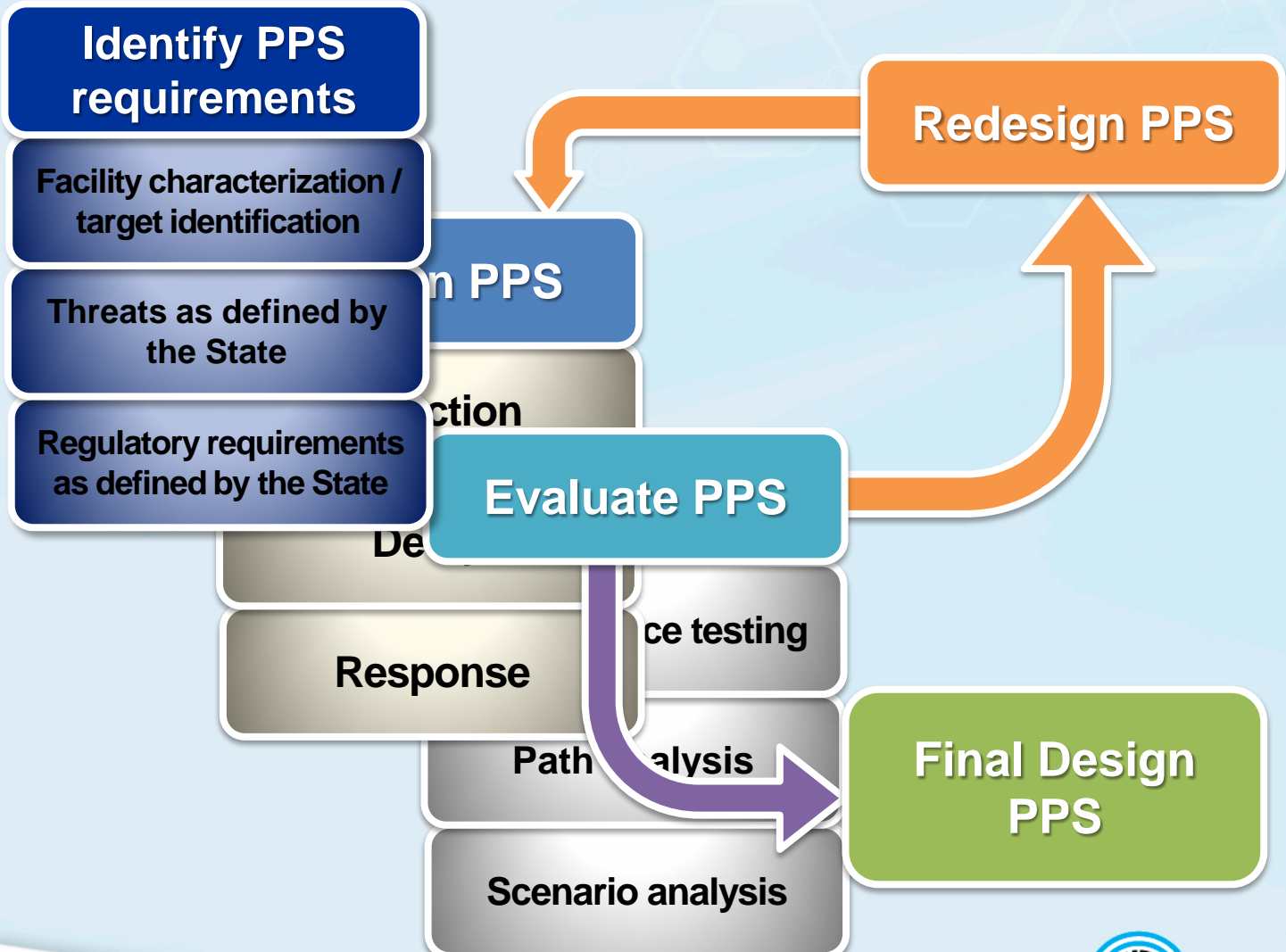
ARN (*Nuclear Regulatory Authority of Argentina*)

- **AR 10.13.1. Rev. 1 Standard of physical protection of nuclear materials and facilities** (*Norma de protección física de materiales e instalaciones nucleares*)

IAEA

- **IAEA-TECDOC-1276 Handbook on the physical protection of nuclear materials and facilities** (2002)
- **INFCIRC/225/Rev.5 The Physical Protection of Nuclear Material and Nuclear Facilities** (2018)

DEVELOPING AN INTEGRATED PPS



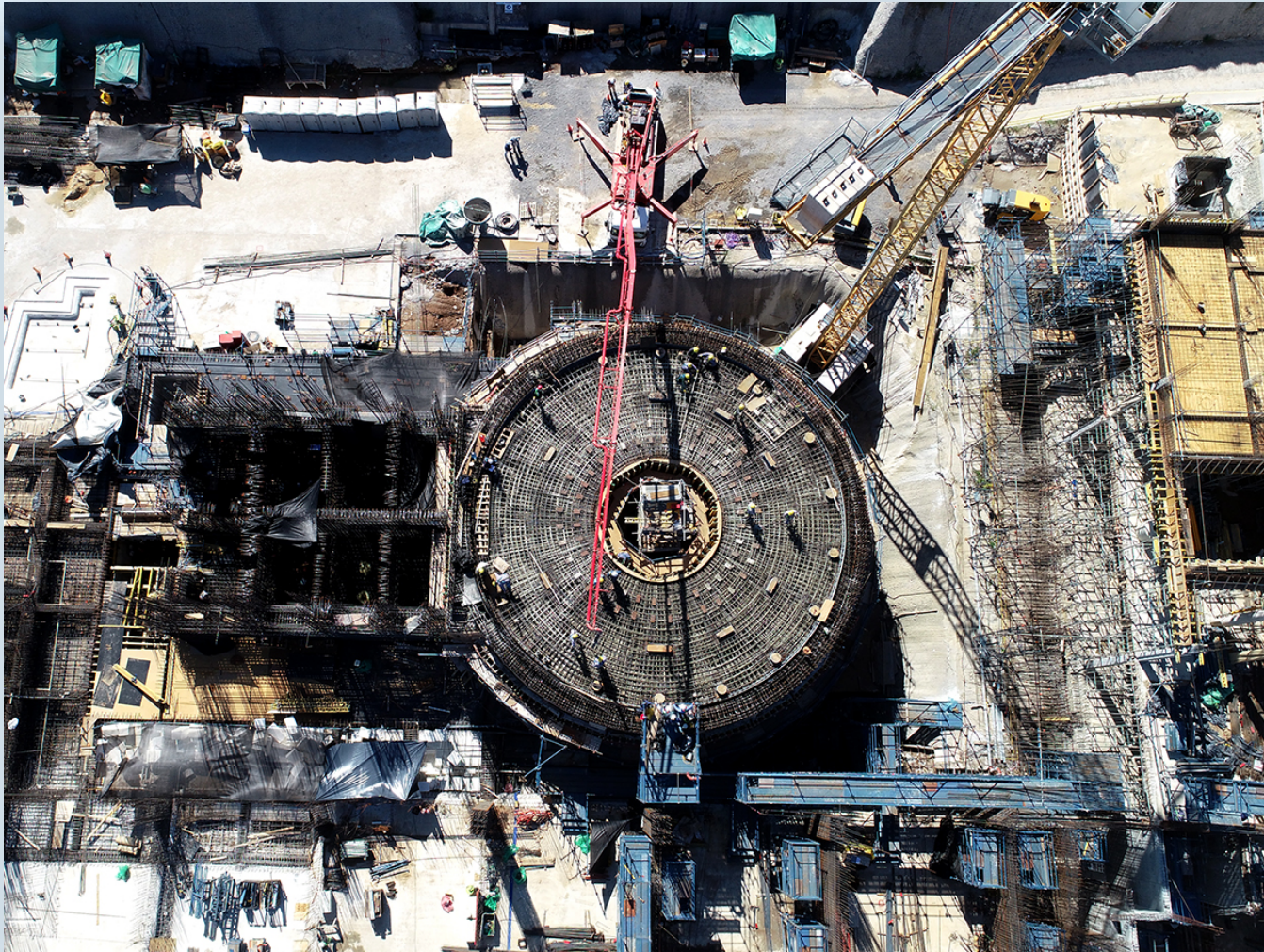
NUCLEAR SITE



STATUS



STATUS



STATUS

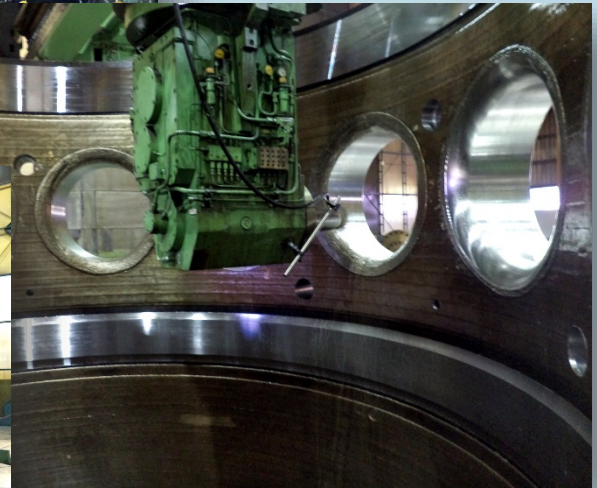


STATUS

CONTAINMENT LINER / MODULE N°8



STATUS RPV - FORGES



STATUS



THANK YOU FOR YOUR ATTENTION



Comisión Nacional
de Energía Atómica

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