

CAREM

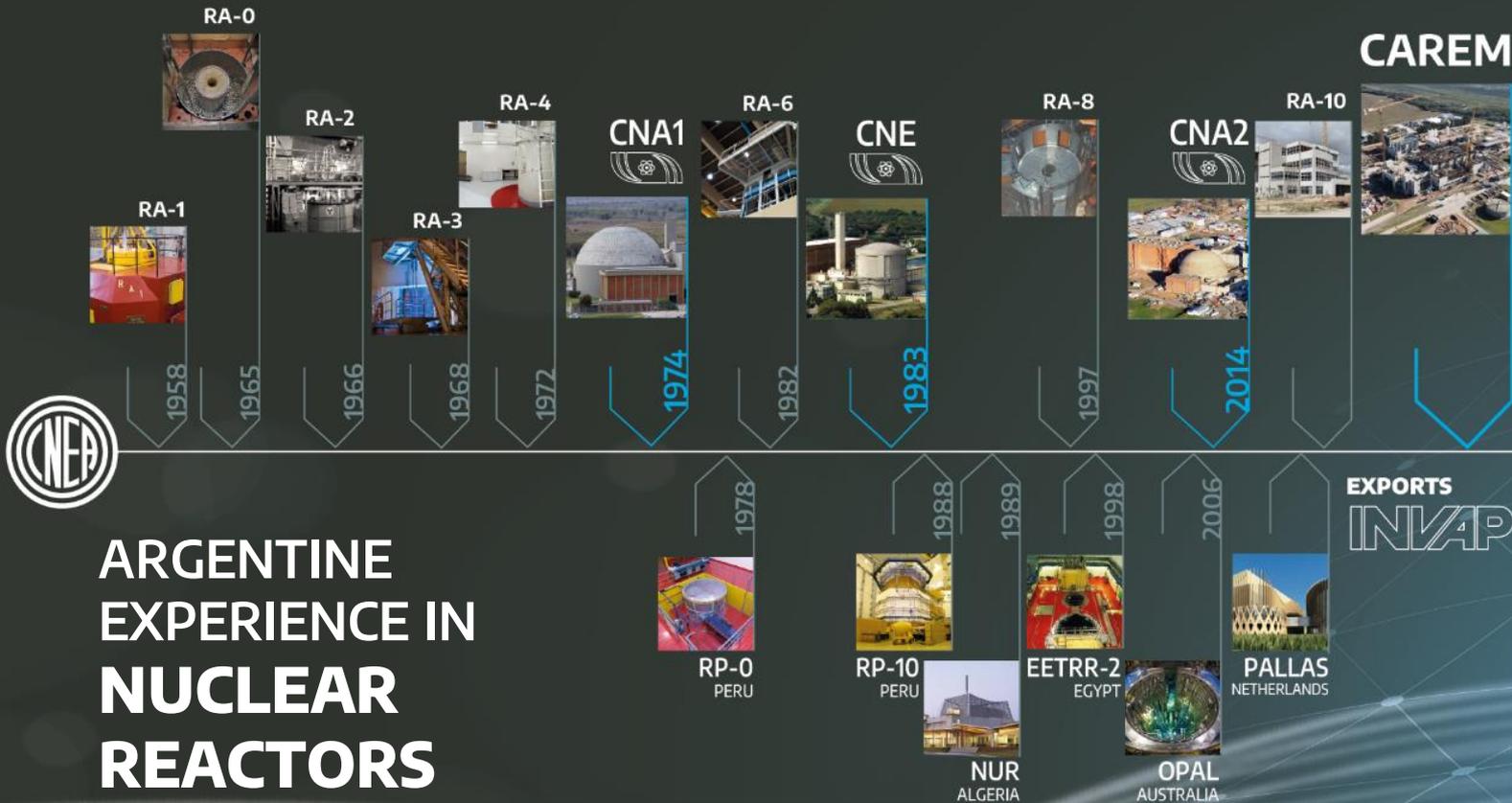
A PIONEER INTEGRATED DESIGN (PWR) SMR

Sol Pedre

CAREM Project – National Atomic Energy Commission of Argentina



2023



DESIGN LIFE
40 years



STATUS

Under construction



DESIGN CHARACTERISTICS

- Integrated primary cooling system
- Self-pressurized
- Core cooling by natural circulation
- In-vessel control rod drive mechanisms
- Passive safety systems



REACTOR TYPE

Small Modular Reactor (SMR)
Integral Pressurized Water Reactor (PWR)



LOCATION

Lima, Buenos Aires



INSTALLED CAPACITY

100MW (th) – 32MW (e)

U⁹²

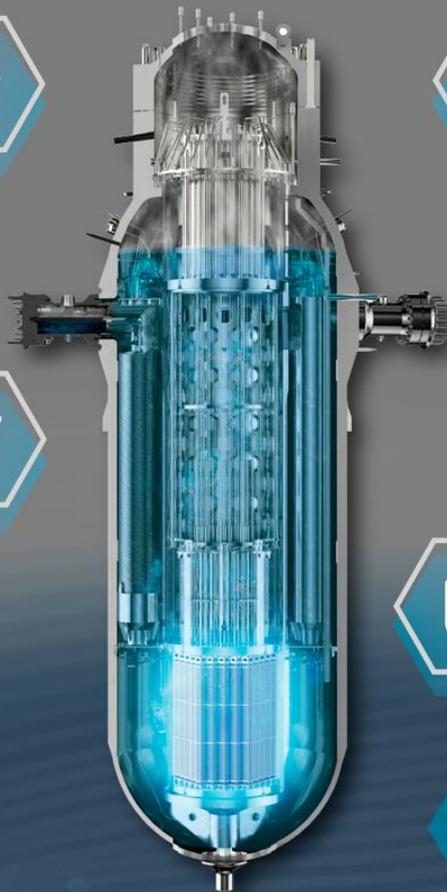
FUEL TYPE

UO₂ pellet – hexagonal
Enriched UO₂ fuel (3,1% and 1,8%)
61 fuel assemblies in the core



COOLANT AND MODERATOR

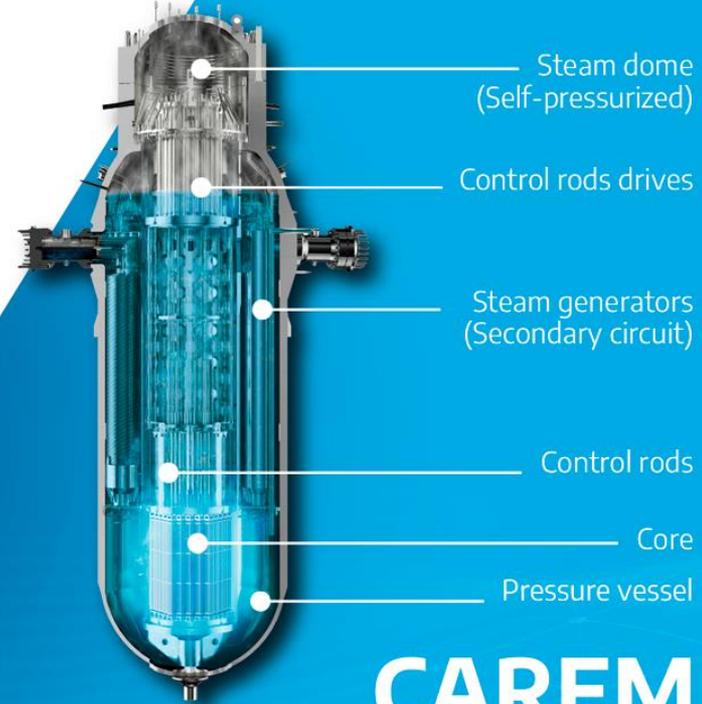
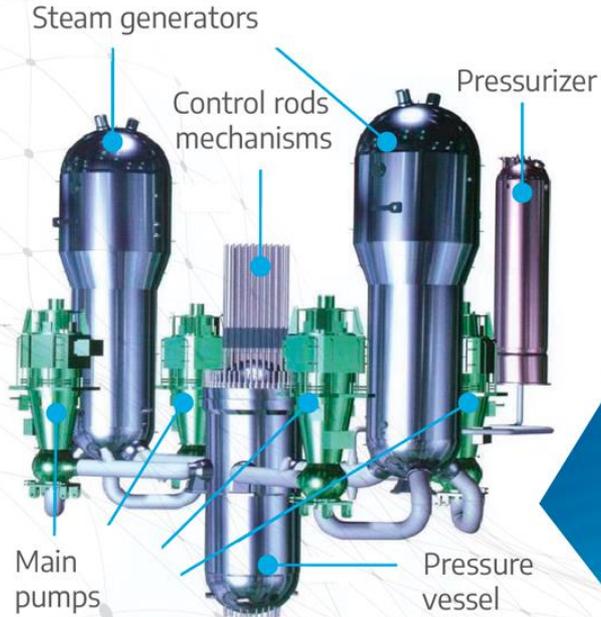
Light water



CAREM

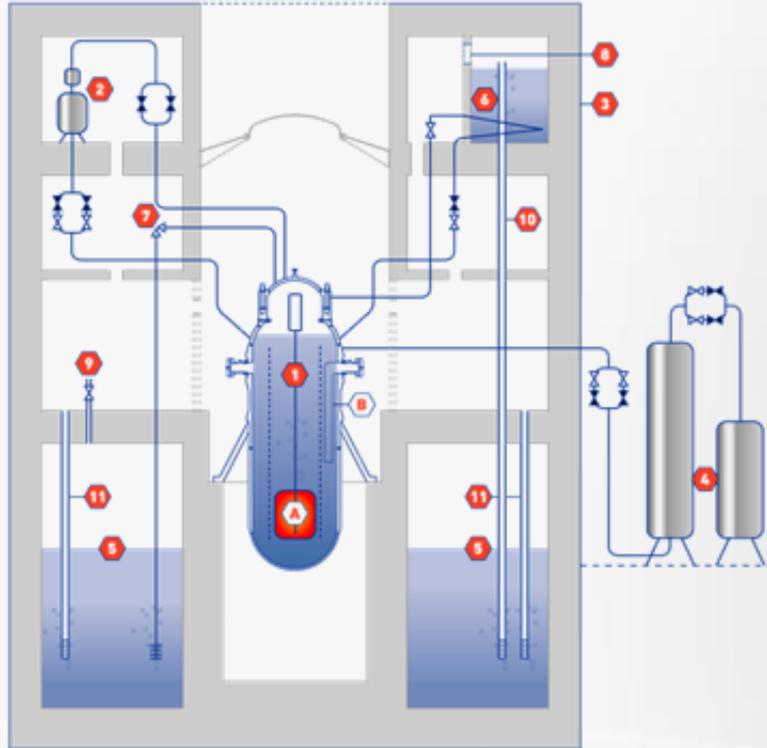
DEMONSTRATION PLAN

CLASSIC DESIGN



CAREM INTEGRATED DESIGN

PASSIVE SAFETY SYSTEMS



- A** Core (Hot Source)
- B** Steam Generators (Cold Source)
- 1** Safe Shutdown System
- 2** Diverse Shutdown System
- 3** Containment Building
- 4** Medium Pressure Injection System
- 5** Pressure Suppression Pool
- 6** Removal Heat Decay System
- 7** RPV Relief Valve
- 8**
- 9** Containment Building Pressure Equalizer
- 10**
- 11**

≥ 36_{HRS}
PASSIVE CAPABILITY

ENERGY SECURITY +
NET ZERO CHALLENGE

**A NEW ROLE OF NUCLEAR ENERGY
IN THE GLOBAL ENERGY TRANSITION**

BIG NUMBERS

USD
600M
INVESTMENT

+160

CONTRACTS IN PROGRESS

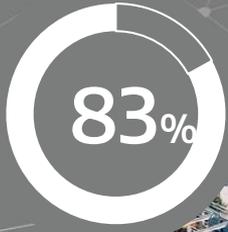
1775

TOTAL CONTRACTS

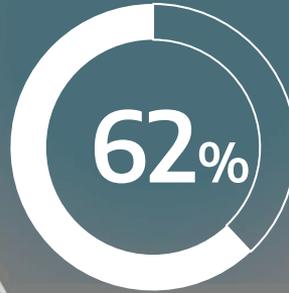
+1350

WORKERS
ON THE PROJECT

PHYSICAL ADVANCE GENERAL



REACTOR
BUILDING



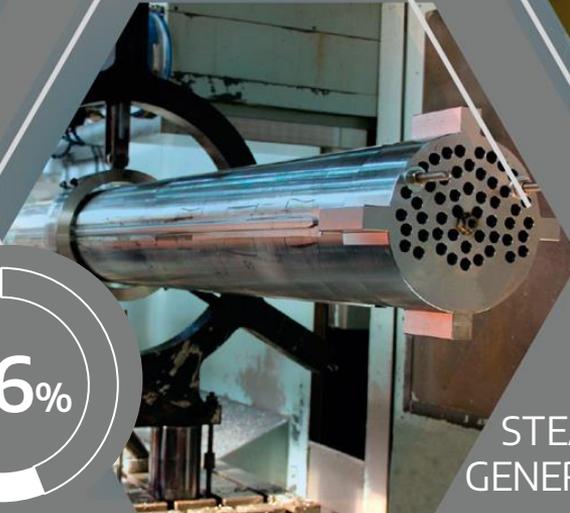
CONTAINMENT
AND LINER





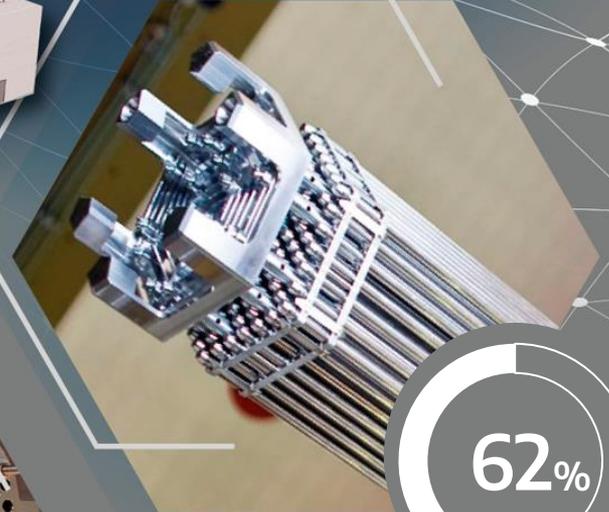
72%

REACTOR
PRESSURE
VESSEL



56%

STEAM
GENERATORS



62%

FUEL
ASSEMBLIES

THANK YOU

FOR YOUR ATTENTION



argentina.gov.ar/cnea/carem



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Comisión Nacional
de Energía Atómica