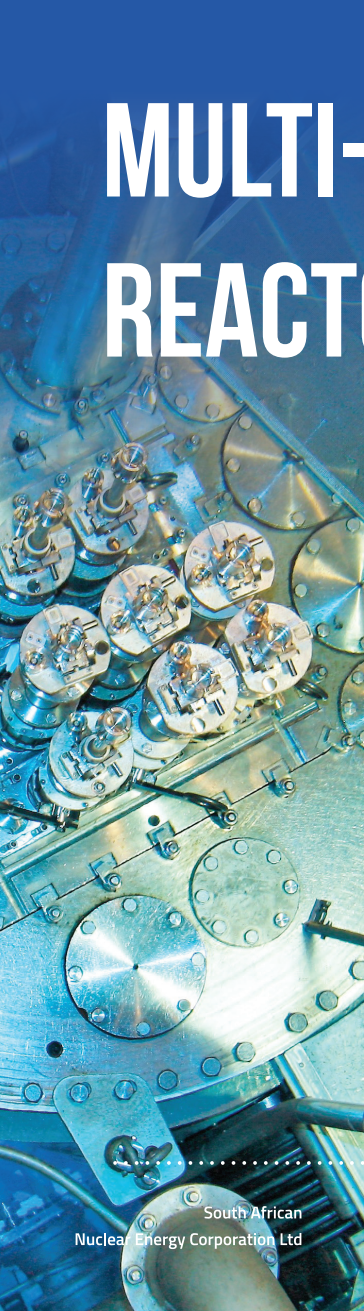
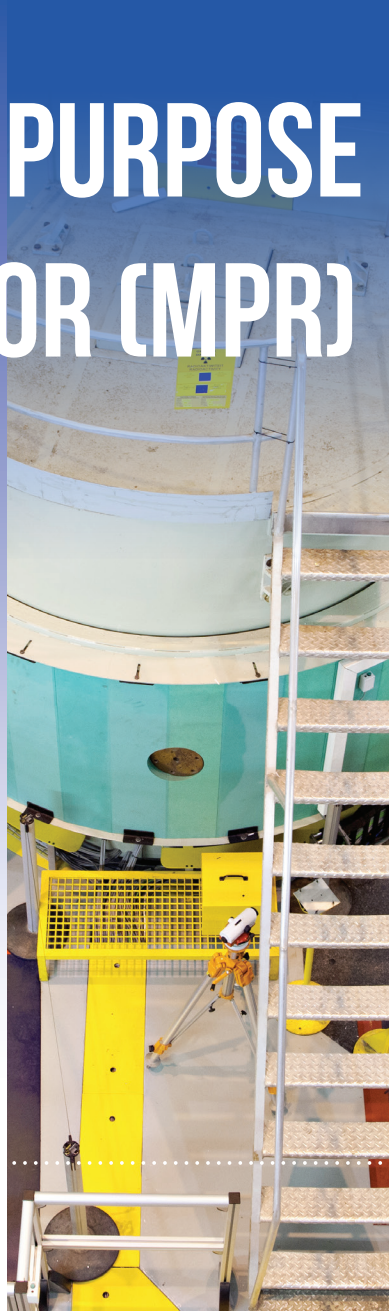


MULTI-PURPOSE REACTOR (MPR)

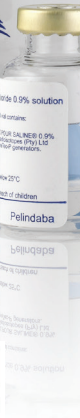


South African
Nuclear Energy Corporation Ltd



NovaTecP
Technetium-99m Generator

NTP
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Multi-Purpose Research Reactor Brochure

The Multi-Purpose Research Reactor will bring the latest nuclear technologies and innovations, enabling cutting edge applications in medical isotope products, beam line research infrastructure, and fuel and material testing capabilities

Necsa is in your world

The South African Nuclear Energy Corporation (Necsa) SOC Ltd is a state-owned company reporting to the Ministry of Electricity and Energy. The organisation is situated at Pelindaba in the North-West province.

Necsa's mandate is to develop and manage nuclear technology for socio-economic development through research and development, commercial applications, and skills development.

Necsa owns and operates the globally known South African Fundamental Atomic Research Installation 1 (SAFARI-1) research reactor, which was commissioned in 1965.

Necsa's MPR Project

Necsa is in the process of acquiring a new Multi-Purpose Reactor (MPR) to ensure continuation of operations, secure the future of nuclear technology based research and the production of medical radioisotopes.

An MPR is a versatile nuclear facility designed for the irradiation of medical and industrial isotopes, support materials testing, and provide high-intensity neutron beams for scientific research and industrial applications.

Fuel fabrication and target plate manufacturing forms part of the project, to ensure security of supply.

Value-addition of the MPR

To ensure reliable supply of life-saving medical isotopes.

To enable advanced research in material sciences, energy, and manufacturing using radiation and beams.

To support industrial applications and fuel testing.

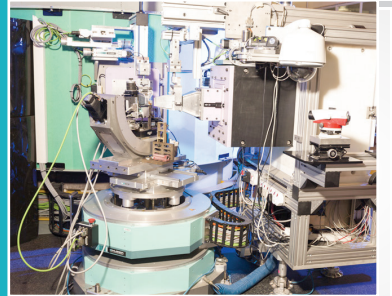
Increase socio-economic benefits such as localisation, job creation and skills development.

To provide a technological foundation for the nuclear new build.

To maintain regional leadership in nuclear technology.

Support the national nuclear build programme (IRP 2025) through materials and fuel testing.

Serve as a training platform for engineers and operators in preparation for the 5 200 MW nuclear programme.



Issuing of RFP

1

7

Commissioning and operation

Main contractor appointment

2

6

Construction started

Design initiation

3

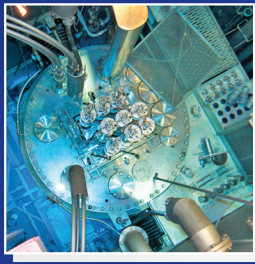
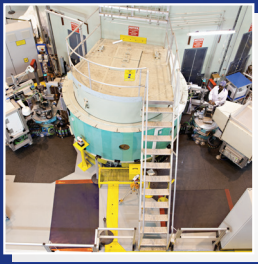
5

Nuclear Installation License (NIL) to construct granted by the NNR.

4

Environmental authorisation granted by the Department of Forestry, Fisheries and Environment (DFFE)

Upcoming focus goals



Milestones

Commissioning of
SAFARI-1

Fuel manufacturing

Production of
radioisotopes for
medical and industrial
use

1960's

1980's

1988

Cabinet approval for
MPR project

Conceptualised MPR

Conversion of SAFARI-1
from using high enriched
uranium (HEU) to low
enriched uranium (LEU)

2021

2012

2009

MPR Siting and
Environmental Impact
Assessment (EIA)
initiated

MPR Feasibility Study
Report approved

Request for Proposal
(RFP) initiated

2022

2024

2024

Nuclear Installation Site
License (NISL) application
submitted to the National
Nuclear Regulator (NNR)

National Treasury
funding awarded
for the design
development phase

2025

2025