THE EVALUATION OF THE SELECTED ON-SITE LOCATION FOR A NEW NUCLEAR FACILITY ON A MULTI-FACILITY SITE

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A New Facility

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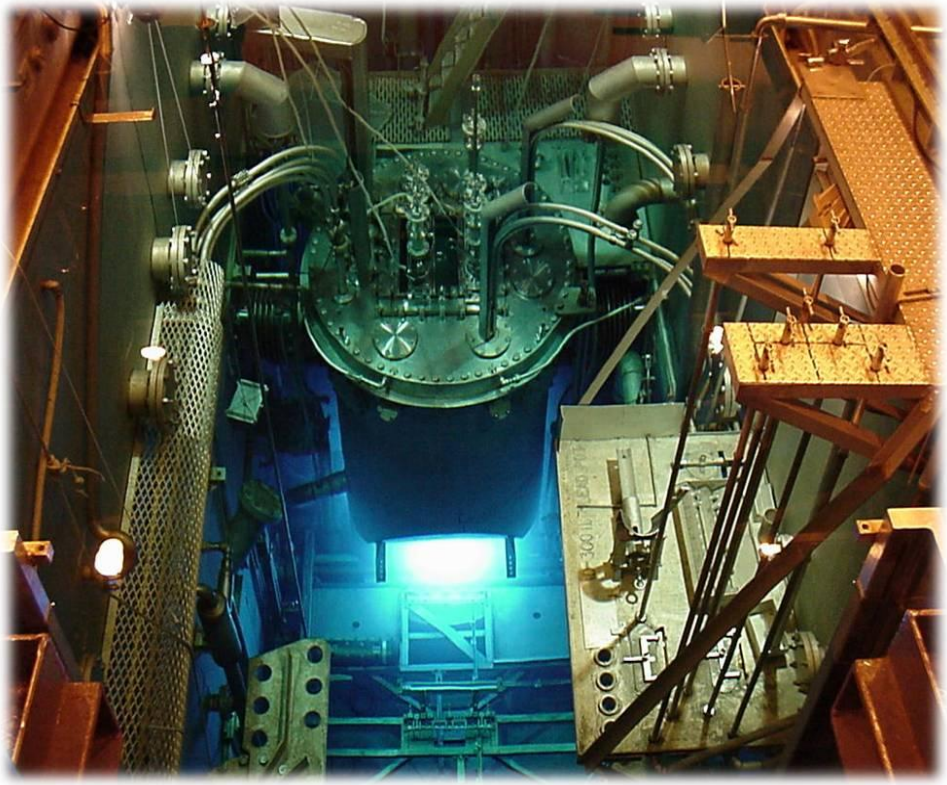
Dedicated Isotope Production

SAFARI-1:

- Materials Test Reactor
- Commissioned in 1965
- Commercial Isotope Production in the early 1990s

NTP is amongst the world's top three radiochemical producers, in particular I-131 and Mo-99, important isotopes for diagnostic nuclear medicine.

Our Future



- Free SAFARI-1 for training and research
- Establish a facility for dedicated isotope production

Site Selection

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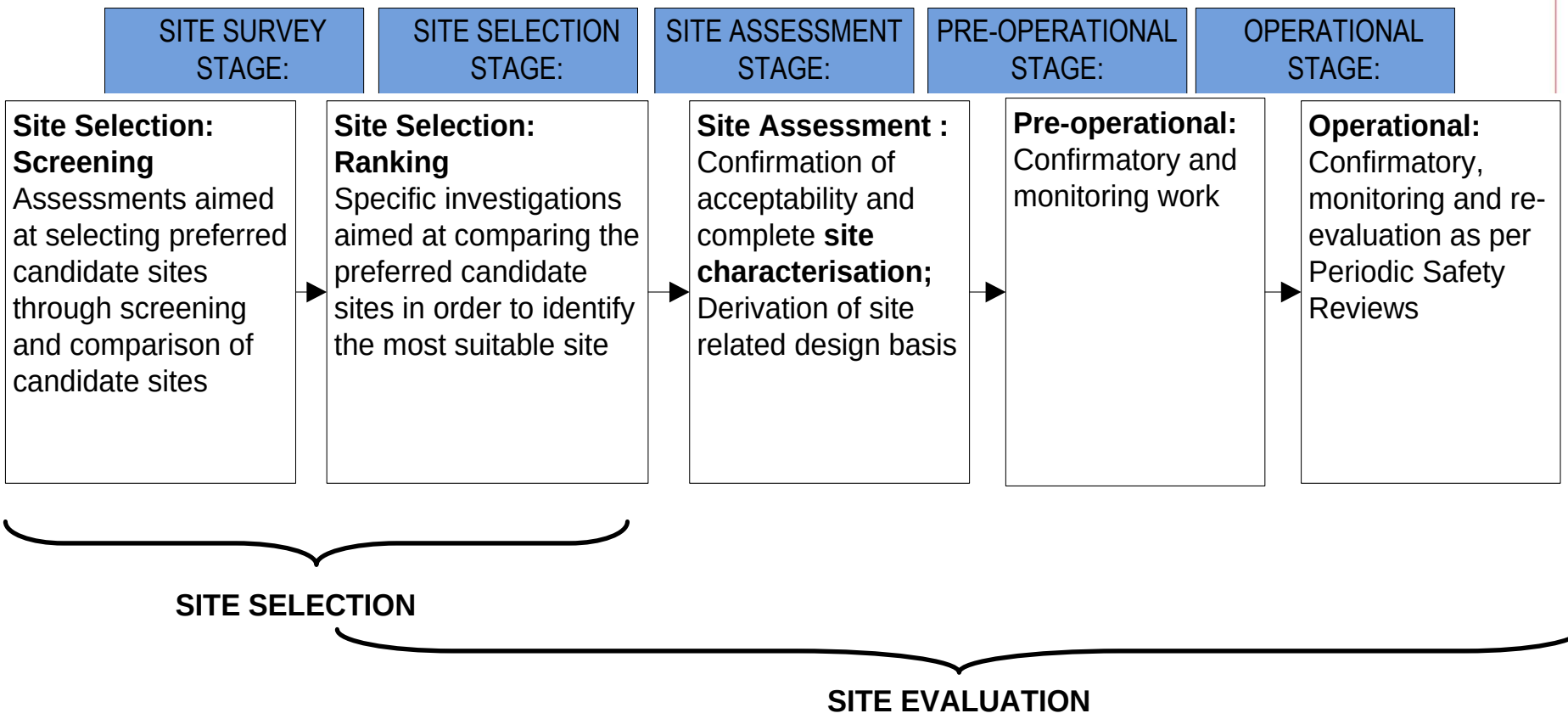
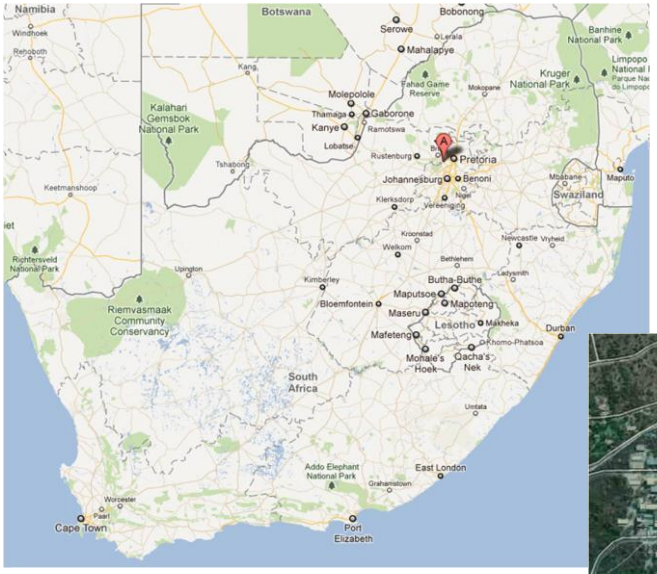
Siting Process



Tailoring the IAEA Process to a brownfield site and the Necsa situation

Pelindaba



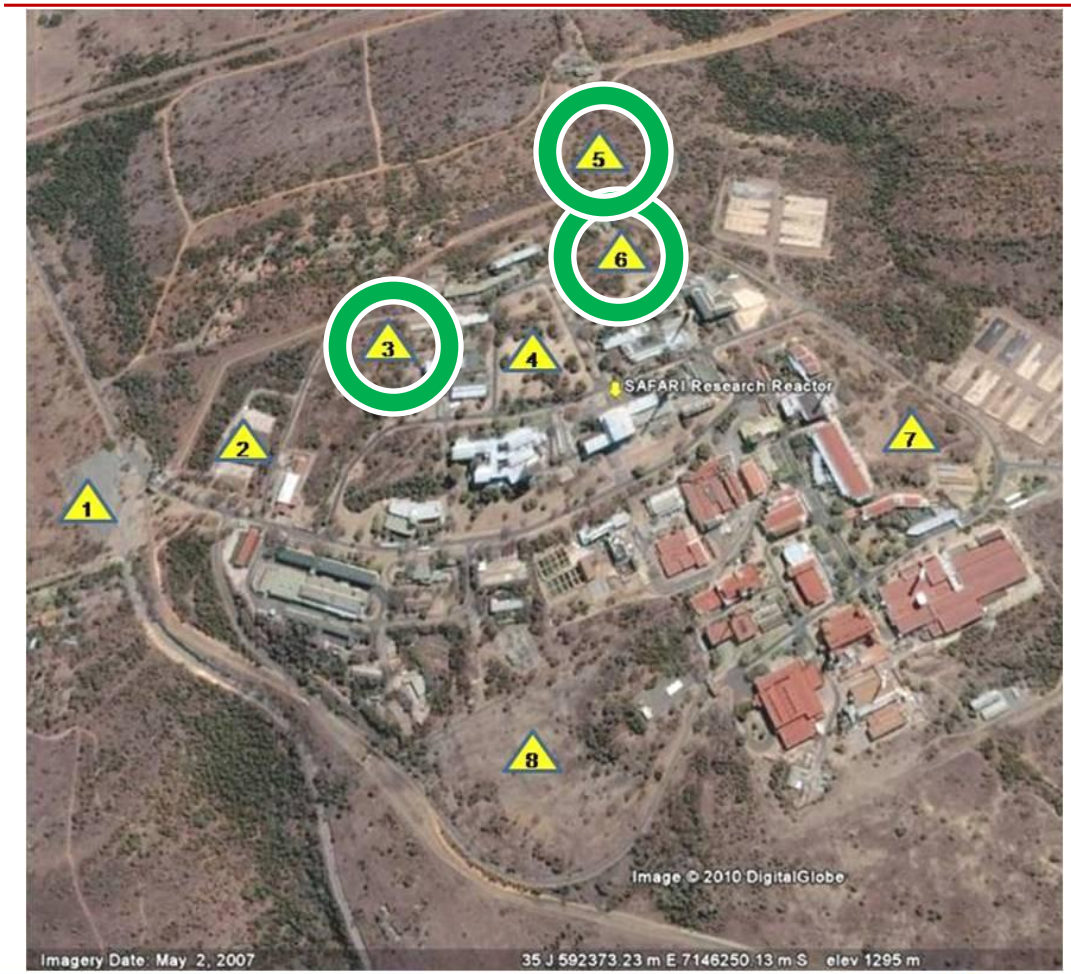
- North West Province
- 27km west of Pretoria
- Over 2362 hectares

- SAFARI-1
- NTP Hot Cell complex
- Various Chemical Facilities

Where to put a new reactor?

- HF Plant
- Integration with existing infrastructure
- Risk of transporting irradiated materials

Where to put a new reactor?



Site Screening

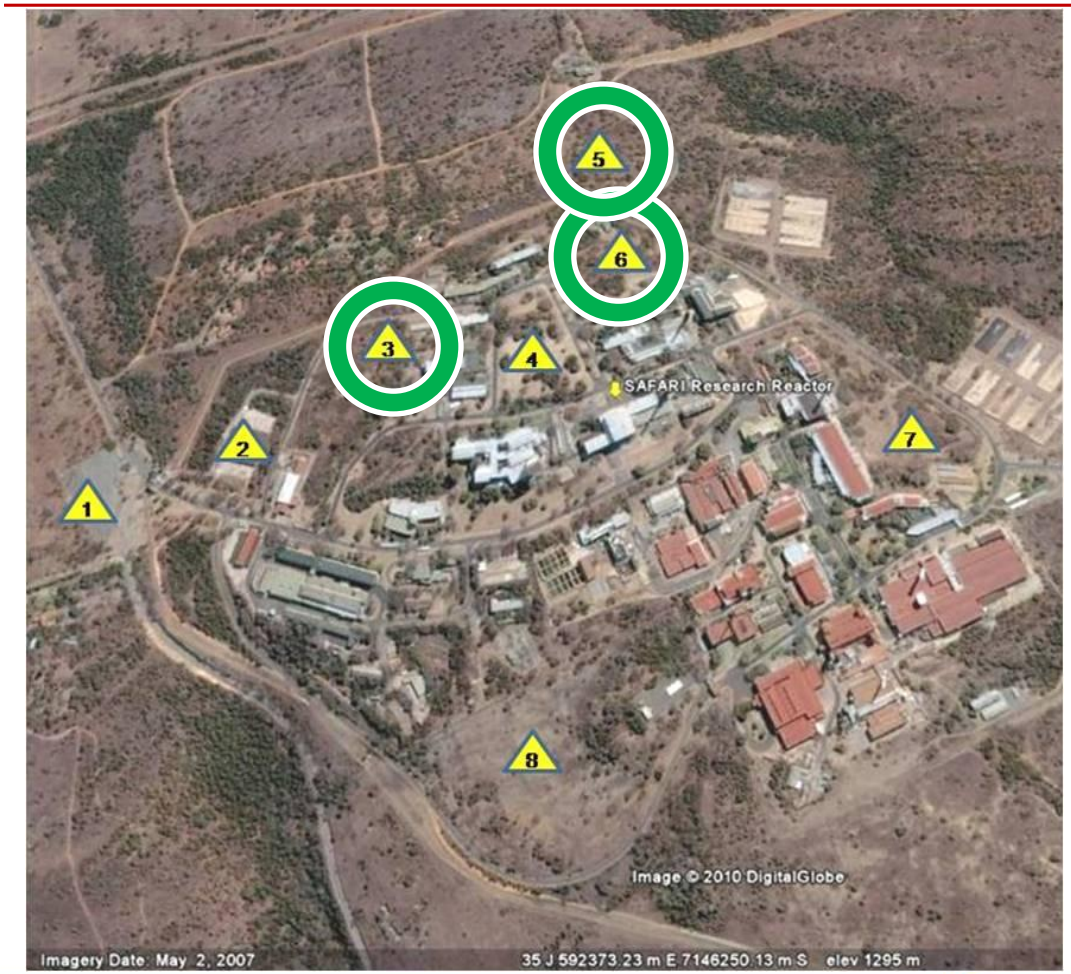
- Size of the site location

Through a multi-attribute analysis, less favourable site locations were screened out and then there were three...

- existing facilities and infrastructure
- Proximity to hazardous facilities
- Any other known disqualifier

Continues…

Where to put a new reactor?



Preferred Site Selection

- Geology
- Geotechnical and geophysical
- Seismology
- Environmental sensitivity
- Atmospheric dispersion (as an indicator for radiological impact)
- Security
- Utility requirements

Continues…

Site Characterization

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Characterization for Existing Site

Site Characteristic	Assessment strategy
Geography and site location	Pelindaba
Monitoring	Pelindaba & Site Location
Ecology	Pelindaba & Site Location
Demography	Pelindaba
Land use	Pelindaba
Nearby Transportation, Industrial and military facilities	Pelindaba & Site Location
Meteorology	Pelindaba
Hydrology and Hydraulics	Pelindaba
Geohydrology	Pelindaba & Site Location
Water Supply	Pelindaba
Geology and Geotechnical Characterisation	Pelindaba & Site Location
Seismic Characterisation	Pelindaba & Site Location
Ambient Radioactivity	Pelindaba & Site Location

Specific Site Location Studies

- Ambient Radiation
- Geology and Seismology
- Nearby transportation, industrial and military facilities
  - On-site Major Hazard Installations
  - Aircraft Crash Assessment
- Environmental Impact

Safety Assessment and Licensing

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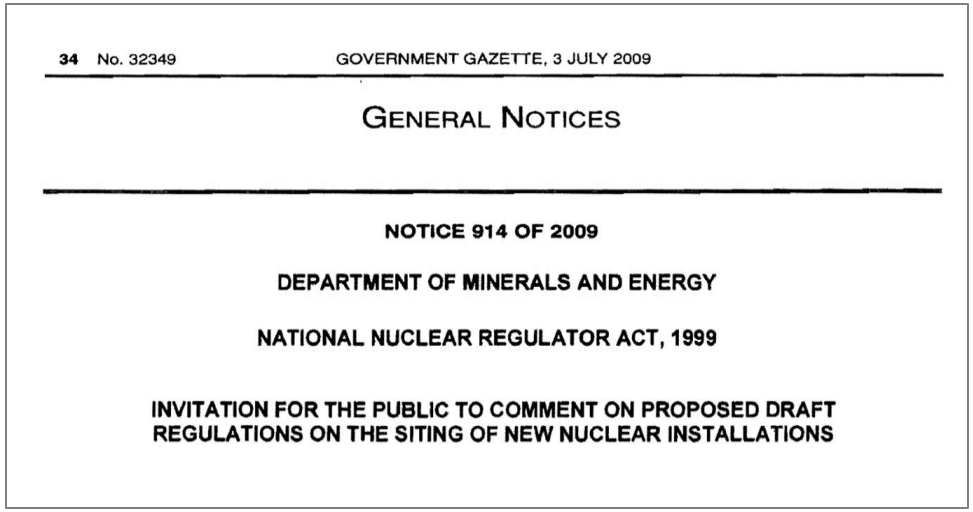
Safety Assessment

- Radiological Impact on the public from all the facilities at Pelindaba, including a new reactor.
- Regulations on a risk assessment for a site license



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GENERAL NOTICES

NOTICE 914 OF 2009

DEPARTMENT OF MINERALS AND ENERGY

NATIONAL NUCLEAR REGULATOR ACT, 1999

INVITATION FOR THE PUBLIC TO COMMENT ON PROPOSED DRAFT REGULATIONS ON THE SITING OF NEW NUCLEAR INSTALLATIONS

Engaging with the National Nuclear Regulator

- Early stages of engaging with the regulator
- Staged approach to licensing: siting, construction and operation.
- So far, we've had positive interactions. The siting of the Dedicated Isotope Production Reactor is progressing well and we have confidence that the Site Safety Report will be well received by the South African National Nuclear Regulator.

Questions?

Thank You