Department of Energy

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Introduction

Nuclear Energy in the Country is governed in terms of relevant policies, legislations and International Obligations

Legislation governing the Nuclear Sector in SA:

- Nuclear Energy Act (Act 46 of 1999)
- National Nuclear Regulator Act (Act 47 of 1999)
- National Nuclear Disaster Management Plan (2005)
- Integrated Resource Plan 2010-2030

International Obligations in utilization of nuclear energy

- Nuclear Non-Proliferation Treaty
- Pelindaba Treaty
Introduction

Main objectives for the expansion of nuclear programme/nuclear new build programme as part of the energy mix

- Attainment of global leadership and self-sufficiency in the nuclear energy sector in the long term
- Contribution to the country’s national programme of social and economic transformation, growth and development
- Improvement of the quality of human life and support the advancement of science and technology
Open and Closed Nuclear Fuel Cycle

Fuel Assemblies

Enriched Uranium

Fuel Fabrication

Fabrication of MOX Fuel

Depleted Uranium

Plutonium

Reprocessing of UFAs

Radioactive Waste

Interim Storage of UFAs and Radioactive Waste

Used Fuel Assemblies (UFAs)

Reprocessed Uranium

Used Fuel Assemblies (UFAs)

Radioactive Waste

Conditioning/Encapsulation & Disposal

Deep Geological Repository
Existing Business in the Nuclear Sector

• Manufacturers of Depleted Uranium Containers
• Laboratories (eg for Non-destructive Assay)
• Consulting services related to nuclear Energy
• Transportation of nuclear material
• Provision of security service for nuclear installations (~National Key Points)
• Uranium mining
• Electricity generation
• Radioactive waste Management
• Research and Development
• Training
• Feasibility studies related to nuclear energy
Careers in Nuclear
nuclear scientist/ engineer  nuclear reactor operator  government officers

nuclear technicians  nuclear security officers

nuclear regulator officers  radiation protection officer  oncologist
Future Nuclear Plans

According to the Intergraded Resource Plan (IRP):

- Full Plan covering the period 2010 to 2030
- It seeks to outline how South Africa will meet its energy needs while ensuring that this is achieved in an affordable manner
- Nuclear to provide 9.6 GW by 2030
- First plant online 2023
## Skills Needed for the Success of Nuclear

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Future Nuclear Plans

• 50 trainees were sent to China for basic nuclear training
• 250 more trainees are to be sent abroad
• The department offers bursaries and scholarships for the commencement of the nuclear build programme
Conclusion

• Careers in nuclear industry can offer you the following:
  ✓ A challenging work, opportunities and advancement;
  ✓ Working to protect the environment by supporting the initiatives that are emission-free of GHG to the atmosphere

• Join us in this fascinating industry!
Thank You
Q & A