

CAREER DEVELOPMENT FOR WOMEN IN NUCLEAR

The South African Nuclear Energy Corporation SOC Ltd.

PM Boshielo, GM Nkosi



South African Nuclear Energy Corporation SOC Limited

INTRODUCTION

Nuclear technology is a broad and a highly specialized field with unlimited potential. Developing women professionals to fill this exciting need is an urgent requirement. There is a high demand for training, internships, fellowships, graduate degrees and professional networks.

NUCLEAR ENERGY

With electricity consumption constantly rising, more countries are viewing nuclear energy as a viable option for reducing carbon dioxide.

SOME CAREER CHOICES IN NUCLEAR ENERGY

- Reactor operators run the controls at a power plant to produce electricity
- Engineers design power plants
- Nuclear scientists explore ways to improve safety

NUCLEAR SECURITY

Nuclear engineers are involved in the policies associated with nuclear non-proliferation. Nuclear forensics: collection, analysis and evaluation of nuclear material-fused with law enforcement and intelligence, helps identify those responsible for planned and actual terrorist attacks.

Sample Career Choices in Nuclear Security

- Scientists and technicians perform analysis on nuclear materials
- Security officers maintain a safe and secure environment
- Safety professionals at the nuclear regulatory commission

MEDICAL SCIENCE

Discoveries based on nuclear technology have improved both longevity and quality of life. Approximately one-third of all patients admitted in hospitals in South Africa are diagnosed or treated using radioisotopes, which are also produced in the country. Physicians rely on x-rays to diagnose tumours without the need of invasive surgery. Radiation is being used to treat different types of cancers.

Sample Career Choices in Nuclear Medicine and Biology

- Health Physicists assure safe application of radiation
- Physicians use nuclear medicine to diagnose and treat diseases
- Nuclear Medicine technologists run tests in hospitals
- X-ray technicians and radiographers work with patients in hospitals

NUCLEAR CHEMISTRY

Nuclear chemists work with various isotopic forms of elements to study fission and fusion processes, or they delve into the effects of ionizing radiation on materials, living organisms (including people), and the environment. Nuclear chemists may work in laboratories, or they may do theoretical work—and often, they do some of both.

Nuclear chemists may work in academic or government laboratories doing basic, applied, or theoretical research. They may also work in private industry, at nuclear power plants, or in medical facilities that offer radiation treatments and medical imaging.

EDUCATION

- Technicians who handle radioactive materials require a bachelor's degree in chemistry, biology, geology, physics, or a related field.
- Research or professional staff require a PhD degree and postdoctoral fellowship experience
- A PhD and several years of postdoctoral experience required for teaching positions at the university level.



Cathryn Driver
PhD Graduate (Radiochemistry)
University of Cape Town
South Africa

Other Nuclear Related choices include: Nuclear engineering * Science education * Policy Making * Crime investigation * Health physics * Consider a career in nuclear science and technology. Take steps to identify gaps and needs in the current professional development offerings in your country. Look out for support programmes worldwide and develop your career as a woman professional.



ACKNOWLEDGEMENTS

I would like to thank Women in Nuclear South Africa and the South African Nuclear Energy Corporation SOC Ltd. for the opportunity to attend the 23rd WIN Global conference. I would also like to thank the International Atomic Energy Agency for funding.