NATIONAL NUCLEAR REGULATOR

For the protection of persons, property and the environment against nuclear damage.

IAEA EXPERT MISSION: NATIONAL DOSE REGISTRY FEASIBILITY STUDY

OVERVIEW OF NORM REGULATION IN SOUTH AFRICA

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1. South African Nuclear Governance framework
2. Government Responsibilities
3. Regulatory Responsibilities
4. Regulatory Control of NORM
5. Schedule for Dose Reports

Nuclear Governance framework

DEPARTMENT OF ENERGY

Act 46 of 1999 Nuclear Energy

-The promotional aspects of nuclear activities

Act 47 of 1999 National Nuclear Regulator

Provide for the protection of persons, property, and environment against nuclear damage

Radioactive Waste Management Policy and Strategy for the RSA was published in 2005

Act 53 of 2008 National Radio Active Waste Disposal Institute

-Provides for the establishment of a National Radioactive Waste Disposal Institute in order to manage radioactive waste disposal on a national basis5

DEPARTMENT OF HEALTH

Act 15 of 1973 Hazardous Substances

-Group III hazardous substances (e.g. electronic product generating X-rays); and

-Group IV hazardous substances (radioactive **sources**

Government Responsibilities

Services and Facilities for Radiation Protection

- PARC RGM
  - Radon Gas Monitoring services
- South African Bureau of Standards(SABS)
  - -Metrology for Calibration facilities RP instrumentation
  - -Personal dosimetry
  - -Environmental monitoring
- Nuclear Energy Cooperation of South Africa (NECSA)
  - -Radioanalysis facilities(beta, gamma, alpha techniques)
  - -Metrology for Calibration facilities RP instrumentation

Regulatory Responsibility

Safety Standards and Regulatory Practices, Regulation No. R.388

- Provides detailed technical rules to regulate the conduct of persons engaged in activities related to the use of and exposure to fissionable materials, ionizing radiation and natural sources.
- The Safety Standards and Regulatory Practices include:
  -Risk criteria which address the mortality risk from nuclear energy and radiation to the present and future generation
  -Exclusion, Exemption, registration, licensing and clearance
  -Radiation Dose limitation (individually and collectively)and the environment
  -Fundamental safety principles to ensure that the activities related to construction, operation and decommissioning of facilities are conducted in a safe manner
  -Emergency preparedness and response planning.
- Requirements documents (RDs),Guidance Documents & Technical Documents

Regulatory Responsibilities

Nuclear Authorisation issued by the NNR

- Nuclear Installation Licences-NIL
- Nuclear vessels licences-NVL
- Certificate of Registration-COR
- Certificate of Exemption-COE

Regulatory Responsibilities

Regulated actions by the NNR

- Koeberg Nuclear Power Station
- Nuclear Energy Corporation of South Africa(NECSA), Pelindaba site
- NECSA, Vaalputs National Radioactive Waste Repository
- ***NORM Actions/Facilities associated with NORM***
- Vessels propelled by nuclear power or having on board radioactive material

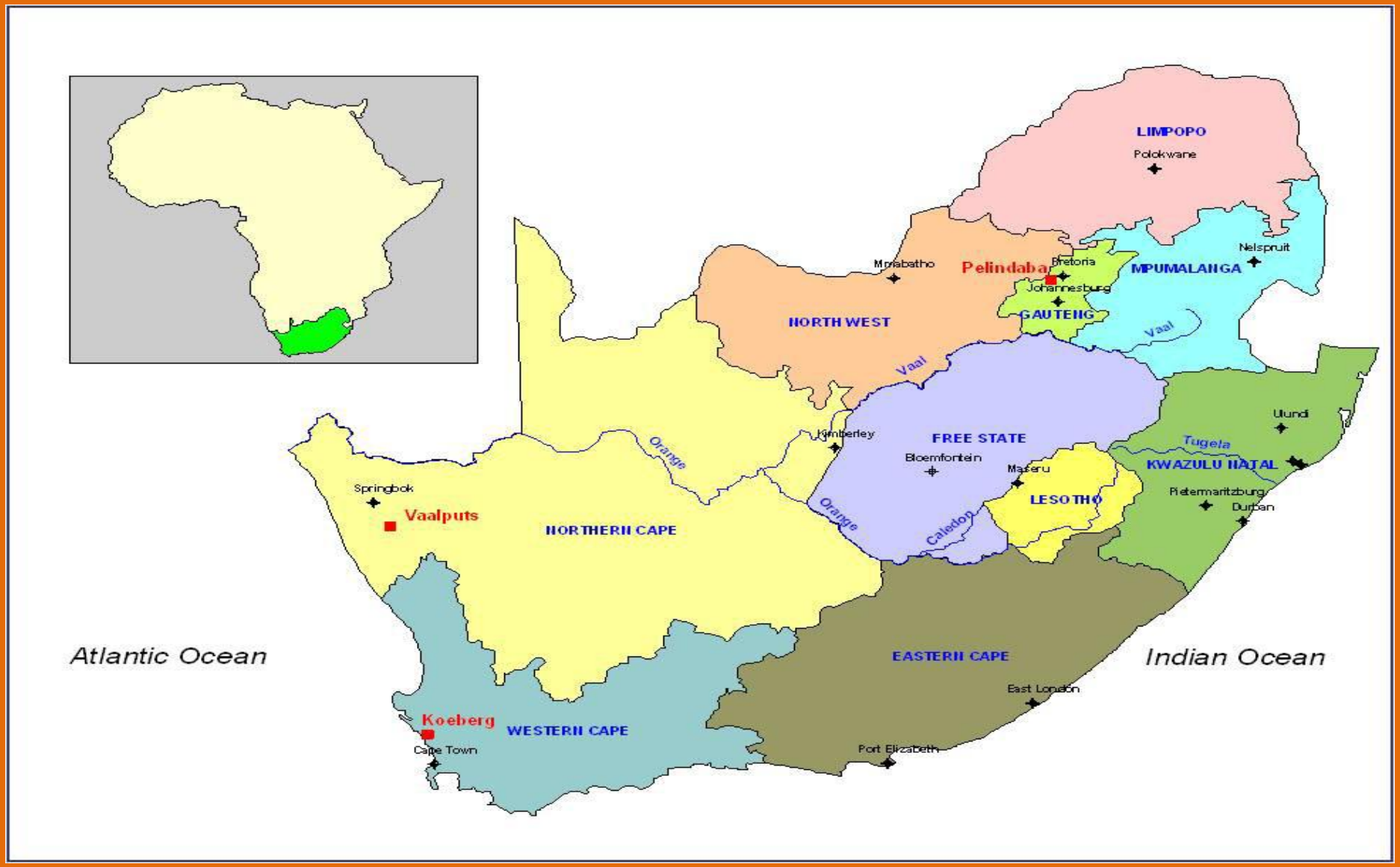
NORM Activities

- Prospecting, mining and processing of uranium, thorium, gold, copper, heavy minerals, phosphate rock and fertilizers production;
- Clearance of sites contaminated with NORM residue;
- Recycling of scrap material (i.e. ferrous and non-ferrous metals, plastic, stainless steel, etc) that is contaminated with NORM residues;
- Conducting tests in laboratories on small quantities of NORM samples for verification of proposed and existing actions, (including samples from prospecting activities).
- Some service providers authorised to cleanup identified sites contaminated with NORM residue.

CURRENT SITUATION

147 NORM Authorised Holders

SPREAD OF NUCLEAR FACILITIES/INSTALLATIONS AND NORM AUTHORISATION HOLDERS



GENERIC REGULATORY CONDITIONS-COR

- Scope
- Safety Assessments Reports-Workers and Public
- Decommissioning Plan and Strategy
- Operational radiation protection programme-Workers and Public
- Radioactive Waste programme
- Transportation-IAEA requirements
- Physical security system
- Occurrences and Emergency
- Quality management
- Schedule for Compliance

Authorisation Change Requests for variations

SCHEDULES FOR DOSE REPORTS

- Monthly
- Quarterly
- Six Monthly
- Annual

REGULATIONS AND REQUIREMENTS: DOSE REGISTER

Safety Standards an Regulatory Practice-No. R 388

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4.5.6 *Dose Register*
A *dose register of every occupationally exposed worker must be established and m*aintained.

RD006: Requirements for the control Of radiation hazards: Mining and minerals processing

3.Radiation Dose Register
3.1.A Radiation Dose Register which records the dose to occupationally exposed persons shall be maintained in a form approved by the NNR. This register shall be maintained by the Holder for a period of fifty years from the date of the last entry, unless otherwise directed by the NNR

Discussion Points : IAEA Mission

- **Points to be discussed with the DSPs**

- Structure and scope of the DSP data. Are standardized software used?
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- Identification of workers and facilities: How are the facilities and workers identified? How are persons working simultaneously in more than one facility identified? Do the DSPs use country wide unique identifiers (national number for person; unique registration number for companies?).
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- Possible formats that the DSP can export data into
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- Possible data exchange mechanisms with the NDR
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- It would be useful if each DSP would prepare an exemplary set of anonymized data for NDR tests
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- Are there also foreign workers involved? If so, are they also monitored, and how are they identified?
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- What is the frequency the doses will need to be received by the NDR? Is every dose measurement period always a fixed period (like 1 month) or will there be different periods (or even worse: different begin date and end date?).

Thank you for your attention!