ANNUAL REPORT

2020/21

NATIONAL NUCLEAR REGULATOR

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

This 2020/2021 Annual Report of the National Nuclear Regulator (NNR) is presented to the Mineral Resources and Energy in accordance with section 7(1)(j) and section 15(6)(d) of the National Nuclear Regulator Act (Act No. 47 of 1999).

The report reflects the activities of the NNR in relation to the health and safety of workers, the public and the environment associated with all sites regulated by the NNR, together with financial aspects in accordance with section 55(1)(d) of the Public Finance Management Act (Act No. 1 of 1999) and Chapter 28 of the Treasury Regulations.

Contents

PART D: HUMAN RESOURCE MANAGEMENT

PART E: REGULATION OF NUCLEAR ACTIONS

PART F: ANNUAL FINANCIAL STATEMENTS

GLOSSARY

List of Tables

List of Figures

A

GENERAL INFORMATION

PART A: GENERAL INFORMATION

1. Public Entity's General Information

REGISTERED NAME:	NATIONAL NUCLEAR REGULATOR
REGISTRATION NUMBER (if applicable):	NOT APPLICABLE
PHYSICAL ADDRESS:	ECO GLADES OFFICE PARK ECO GLADES 2, BLOCK G, 420 WITCH HAZEL AVENUE, HIGHVELD EXTENTION 75, ECO PARK, CENTURION, 0185
POSTAL ADDRESS:	P.O. BOX 7106 CENTURION, 0046
TELEPHONE NUMBER/S:	0027 12 674 7100
FAX NUMBER:	0027 12 663 5513
EMAIL ADDRESS:	enquiry@nnr.co.za
WEBSITE ADDRESS:	www.nnr.co.za
EXTERNAL AUDITORS:	AUDITOR-GENERAL OF SOUTH AFRICA
BANKERS:	ABSA GROUP LIMITED
COMPANY/ BOARD SECRETARY:	MS NONTSIKELELO KOTE (1 April 2020 – 31 August 2020) and FIRST CORPORATE TRANSFER SECRETARIES (PTY) LIMITED (1 September 2020 - present)

2. Acronyms, Abbreviations and Definitions

AA	Accounting Authority
ARMCOM	Audit and Risk Management Committee
AADQ	Annual Authorised Discharge Quantity
AFRA	African Regional Cooperative Agreement for Research, Development and Training related to Nuclear Science and Technology
AFS	Annual Financial Statements
ACR	Authorisation Change Request
AGSA	Auditor-General of South Africa
ALARA	As Low As Reasonably Achievable
ARPC	Assistant Radiation Protection Controller
ASDPL	Aerodynamic Separation Process
ASME	American Society of Mechanical Engineers
ASN	French Nuclear Regulatory Authority
CAA	Civil Aviation Authority
CAE	Compliance Assurance and Enforcement
CEO	Chief Executive Officer
CFO	Chief Financial Officer
CNS	Convention on Nuclear Safety
COE	Certificate of Exemption
COM	Chamber of Mines
COR	Certificate of Registration
CPI	Consumer Price Index
CSS	Commission on Safety Standards
DIPR	Dedicated Isotope Production Reactor
DSP	Dosimetry Service Providers
ECC	Emergency Control Centre
EPD	Electronic Personal Dosimeter
DoE	Department of Energy
ENIQ	European Network for Inspection and Qualification
EPSOC	Emergency Planning, Steering and Oversight Committee
FET	Further Education and Training
FNRBA	Forum for Nuclear Regulatory Bodies in Africa
GRAP	Generally Recognised Accounting Practice
HEU	Highly Enriched Uranium
HR	Human Resources
IAEA	International Atomic Energy Agency
ICRP	International Commission on Radiation Protection
ICT	Information Communication Technology
ILT	Initial Licence Training
INES	International Nuclear Event Scale
INPO	Institute of International Nuclear Power Operations
INSAG	International Nuclear Safety Advisory Group
ISI	In-Service Inspection
IT	Information Technology
JCC	Joint Coordinating Committee
KNPS	Koeberg Nuclear Power Station
KPI	Key Performance Indicator
LETF	Liquid-Effluent Treatment Facility
LEU	Low Enriched Uranium
LG	Licensing Guide
LLW	Low-Level Waste
LSA	Low Specific Activity
LTAM	Long-Term Asset Management
MDEP	Multinational Design Evaluation Programme
mSv	Millisievert

MW	Megawatt Electrical
NDR	National Dose Register
Necsa	South African Nuclear Energy Corporation
Nehawu	National Education, Health and Allied Workers' Union
NEPROC	Nuclear Emergency Preparedness Regulatory Oversight Committee
NERS	Network of Regulators of Countries with Small Nuclear Programmes
NGO	Non-Governmental Organisation
NIL	Nuclear Installation Licence
NNR	National Nuclear Regulator
NNRA	National Nuclear Regulator Act
NORM	Naturally Occurring Radioactive Material
NTWP	Nuclear Technology and Waste Projects
NUSSC	Nuclear Safety Standards Committee
NVL	Nuclear Vessel Licence
OTS	Operating Technical Specification
PFMA	Public Finance Management Act
PLEX	Plant Life Extension
PPC	Parliamentary Portfolio Committee
PSA	Public Safety Assessor
PSM	Power Station Manager
QMS	Quality Management System
RAIS	Regulatory Authority Information System
RASIMS	Radiation Safety Information Management System
RASSC	Radiation Safety Standards Committee
RDD	Radiological Dispensive Device
RED	Radiation Emission Device
RPO	Radiation Protection Officer
RTMC	Road Traffic Management Corporation
RSR	Railway Safety Regulator
SALTO	Safety Assessment of Long-Term Operation
SAMSA	South African Maritime Safety Authority
SAPS	South African Police Service
SARA	Standards, Authorisations, Reviews and Assessments
SARS	South African Revenue Service
SAT	Self-Assessment Tool
SCM	Special Case Mines
SGR	Steam Generator Replacement
SHEQ	Safety, Health, Environment and Quality Management
SHEQD	Safety, Health, Environment and Quality Management Department
SSRP	Safety Standards and Regulatory Practices
SQEP	Suitably Qualified and Experienced Person
TPU	Thermal Power Uprate
TRANSSC	Transport Safety Standards Committee
TSO	Technical Support Organisation
UFCOR	Nuclear Fuels Cooperation of South Africa
USNRC	United States Nuclear Regulatory Commission
WAC	Waste Acceptance Criteria
WASSC	Waste Safety Standards Committee
WiNSA	Women in Nuclear South Africa
WiN-NNR	Women in Nuclear National Nuclear Regulator


NATIONAL NUCLEAR REGULATOR

3. Foreword by the Chairperson

In 2020, the world faced the worst global health crisis in decades as COVID-19 brought unprecedented challenges, the consequences of which will remain with us for years to come. My thoughts, and those of the Board members, are with those who lost their lives or loved ones, and the people negatively impacted throughout this pandemic. I remain optimistic that ongoing vaccination programmes will mean the world can return to its new normal, however and whenever that may be.

Despite the restrictions presented by COVID-19, the NNR was able to continue its work with minimal disruption.

As Chairperson of the Board of Directors of the National Nuclear Regulator it is with pride that we present the Annual Report of the organisation for the financial year 2020/21.

At this time of great change and uncertainty, the NNR Board is pleased to have been able to successfully execute its fiduciary responsibilities as governed by the National Nuclear Regulator Act (Act No. 47 of 1999), the Public Finance Management Act (Act No. 1 of 1999) and the various other legislation which determines the actions of the Regulator.

There was a smooth transition from the outgoing to the incoming Board of Directors, with the Minister having reappointed four of the Board Members for the purpose of continuity.

In line with priorities set by national government as well as the NNR's own internal values, corporate good governance remains an integral part of ensuring the Regulator fulfils its mandate. The Board sub-committees of ARMCOM, the Technical Committee and the Transformation and Development Committee were vital organs that kept the organisation on track to efficiently and expertly deliver on its outcomes, initiatives and programmes. In this financial year a total of 12 internal audits were conducted by ARMCOM in various areas, with results discussed and action plans with target dates implemented to address any issues arising.

Despite restrictions imposed on international engagements, the NNR continues to hold to the international standards it subscribes to as a member of the International Atomic Energy Agency (IAEA), the Joint Convention on the Safety of Spent Fuel Management and Safety of Radioactive Waste Management. Continued collaboration with other national nuclear agencies has allowed for assistance in the growth and progress of South Africa's nuclear management.

The 2020/21 financial year saw Authorisation Fees amount to R212 million as per the audited Annual Financial Statements. This was gazetted in January 2021 and the interest levying on overdue accounts clause was published in the same gazette. This total was a 3.9% increase on the previous financial year. The State Grant was the second largest contributor to the Regulator's budget with an amount of R40.5 million. The

levying of interests on overdue accounts was delayed due to awaiting the Minister's approval, however, the NNR started with the process of charging interests on overdue accounts in January.

The NNR Board is appreciative of the continued support and guidance of the Minister of Mineral Resources and Energy and the department.

In these trying times it has been my honour to serve as Chairperson of the Board of this prestigious organisation, but none of the successes put forward would be possible without the enthusiastic commitment and diligence of the non-executive Directors, Board members and most importantly the devoted staff of the National Nuclear Regulator who persevere to put forth best efforts at all times to ensure the safety of the people of South Africa and our environment.

Dr Thapelo Motshudi
Chairperson: Board of Directors

4.Chief Executive Officer's Overview

I am honoured to present to you the 2020/21 Annual Report of the National Nuclear Regulator (NNR). This report covers the NNR's organisational performance as per the strategic plan and contains the nuclear safety regulatory performance activities for the reporting period.

In the 2020/21 financial year the NNR Annual Performance Plan (APP) contained seven outcomes and 13 output indicators and the NNR achieved a performance rating of 99.6%.

During the reporting period, the NNR operated under a disrupted environment caused by the outbreak of the global COVID-19 pandemic.

The NNR continues to implement regulatory programmes in a bid to ensure effective nuclear safety regulations by conducting compliance assurances activities (inspections) and undertaking reviews and assessments, and all planned activities were completed during the financial year.

Inspections and site visits to regulated facilities were hampered due to stringent level 5 restrictions. The NNR was, however, able to recover in this area in subsequent quarters of the year, thereby reaching its annual performance targets. A total of 34 inspections were carried out at Koeberg Nuclear Power Station (KNPS), with four (4) additional inspections being carried out.
Our turnaround times for feedback on reviews and assessments to clients were greatly improved, owing to the extended times that employees spent working from home. This resulted in an additional 149 reviews and assessments being conducted.

The Human Resource Plan in support of the safety review for the Long Term Operation (LTO) of KNPS beyond 2024 was developed and approved for implementation. In this financial year, the manufacturing was completed on three of the six Replacement Steam Generators (RSGs) at Shanghai Electric Nuclear Power Equipment (SENPEC) in China and successfully shipped to KNPS. They are being housed in interim storage at KNPS, pending finalisation of safety installation measures, with installation tentatively scheduled for January 2022.

Monthly meetings are held with ESKOM regarding SGR licencing to keep track of issues.

As part of the SGR project, Eskom applied on 5 May 2020 for the siting, construction, operation and decommissioning of the Transient Interim Storage Facility (TISF), of which the Original Steam Generator Interim Storage Facility (OSGISF) is a part, on the Koeberg site. Permission was granted but work subsequently stopped after ESKOM performed beyond the purview granted. A review was conducted and corrective measures prescribed.

The Board has since approved the recommendation by the NNR Executive for issuing the Nuclear Installation Licence (NIL) for construction of the OSGISF with relevant conditions.

The Unit 2 Reactor Pressure Vessel Head (RPVH) and Control Rod Drive Mechanisms (CRDMs), due for replacement in January 2022, is progressing as planned. It is currently in the manufacturing phase. The review of the unit in France had to be postponed due to COVID-19 restrictions, with other methods of inspection being looked into.

Monitoring the safe disposal of nuclear waste is a core responsibility of the NNR. During this financial year ESKOM conducted drop tests on the metal drums used to transport nuclear waste. The NNR observed these tests and required recommendations to be made where safety criteria were not met. A benchmark study of a regulatory framework for indoor radon was also conducted to ensure public safety from affected land or indoor radon, and a benchmarking report with recommendations was finalised.

Some public engagement sessions were delayed due to COVID-19 lockdown regulations. This resulted in the final leg of Nuclear Installation Site License (NISL) project for Thyspunt site not concluding on its projected timeframe. The public hearings have been rescheduled for the 2021/22 financial year.

I would like to extend my appreciation to the NNR Chairperson and Board Members for their oversight in ensuring that we make decisions that are in the best interest of our stakeholders. I would also like to thank all employees and management teams for their dedication and drive under challenging environmental conditions.

Dr Bismark Tyobeka
Chief Executive Officer

5. Statement of Responsibility and Confirmation of Accuracy for the Annual Report

To the best of my knowledge and belief, I confirm the following:

All information and amounts disclosed in the Annual Report is consistent with the Annual Financial Statements audited by Auditor-General of South Africa.

The Annual Report is complete, accurate and is free from any omissions.

The Annual Report has been prepared in accordance with the guidelines on the annual report as issued by National Treasury.

The Annual Financial Statements (Part F) have been prepared in accordance with the standards applicable to the public entity.

The Accounting Authority is responsible for the preparation of the Annual Financial Statements and for the judgements made in this information.

The Accounting Authority is responsible for establishing and implementing a system of internal control has been designed to provide reasonable assurance as to the integrity and reliability of the performance information, the human resources information and the Annual Financial Statements.

The external auditors are engaged to express an independent opinion on the Annual Financial Statements.

In our opinion, the Annual Report fairly reflects the operations, the performance information, the human resources information and the financial affairs of the public entity for the financial year ended 31 March 2021.

Yours faithfully,

Chief Executive Officer
Dr Bismark Tyobeka

Chairperson of the Board
Dr Thapelo Motshudi

6. Strategic Overview

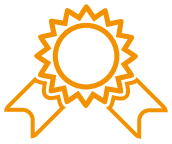
6.1. Vision

To be an independent leading nuclear regulator.

6.2. Mission

To provide and maintain an effective and efficient national regulatory framework for the protection of persons, property and the environment against nuclear radiation.

6.3. Corporate Values



Excellence

We endeavour to deliver outstanding quality, efficiently, effectively and innovatively.

Integrity

We strive for integrity based on non-biased, fair, objective, consistent, honest, reliable, principled attitudes and attributes.

Openness and Transparency

We strive for openness and transparency in the regulatory decision-making process and the communication of regulatory decisions.

Safety and Security

We endeavour to instil a culture of safety and security within the organisation, with holders of nuclear authorisations and in our interactions with all other stakeholders.

Teamwork

We strive to be a cohesive team that works in collaboration to realise common goals in order to deliver exceptional results.

Valuing People

We recognise and appreciate our people by valuing their input, showing empathy and creating a conducive and supportive working environment.

7. Legislative and Other Mandates

7.1. Legislative framework

The NNR operates within the following constitutional, legislative and policy frameworks:

- Constitution of the Republic of South Africa of 1996 (Act No. 108 of 1996)
- Nuclear Energy Act (Act No. 46 of 1999) (NEA)
- National Nuclear Regulator Act (Act No. 47 of 1999)
- Public Finance Management Act (Act No. 1 of 1999) (PFMA)
- National Treasury Regulations
- National Environmental Management Act (Act No. 107 of 1998) (NEMA)
- Promotion of Administrative Justice Act (Act No. 3 of 2000) (PAJA)
- Promotion of Access to Information Act (Act No. 2 of 2000) (PAIA)

7.2. Policy framework

The NNR is mandated to provide for the protection of persons, property and the environment against nuclear damage in South Africa. This mandate is conferred in a number of policy documents as reflected below:

7.2.1. Nuclear Energy Policy

The Nuclear Energy Policy of the Republic of South Africa was published in June 2008. It presents a framework within which prospecting, mining, milling and the use of nuclear materials, as well as the development and utilisation of nuclear energy for peaceful purposes by South Africa, shall take place.

The Policy covers:

- The prospecting and mining of uranium ore and any other ores containing nuclear properties and materials.
- The nuclear fuel cycle in its entirety, focussing on all applications of nuclear technology for energy generation. One of the 16 principles of this policy is that nuclear energy shall be used as part of South Africa's diversification of primary energy sources to ensure security of energy supply.

7.2.2. Radioactive Waste Management Policy and Strategy for South Africa.

In carrying out its regulatory mandate, the NNR ensures that policy guidelines and principles relating to radioactive waste management are supported for purposes of ensuring safety. The requirements related to the management of radioactive waste are assessed, and compliance of NNR authorisation holders is monitored.

7.2.3. International Atomic Energy Agency (IAEA) Member State

South Africa has been a member state of the International Atomic Energy Agency (IAEA) since 1957, and has entered into the following multilateral agreements:

- Agreement on the Privileges and Immunities of the IAEA
- Convention on the Physical Protection of Nuclear Material
- Convention on Early Notification of a Nuclear Accident
- Convention on Assistance in the case of a Nuclear Accident or Radiological Emergency
- Convention on Nuclear Safety
- Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management
- Revised Supplementary Agreement concerning the Provision of Technical Assistance by the IAEA
- African Regional Co-operative Agreement for Research, Development and Training related to Nuclear Science and Technology (AFRA) – Fourth Extension

Legally binding nuclear safety conventions

The IAEA facilitates the establishment of international conventions on nuclear safety. These are legally binding international instruments that are required to be ratified by the contracting party or member state before they can be implemented. The conventions place certain obligations on member states to implement measures aimed at ensuring nuclear safety. South Africa ratified the Convention on Nuclear Safety (CNS) in 1996, and its obligations commenced on 24 March 1997.

In November 2006, South Africa acceded to the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management. The country's obligations under the Joint Convention commenced in February 2007.

As a member state of the IAEA, South Africa is required to fulfil its international obligations and promote international co-operation to enhance global nuclear safety. In terms of section 5(e) of the Act, the NNR is mandated to fulfil national obligations with respect to international instruments concerning nuclear safety, and to act as the national competent authority in connection with the IAEA's Regulations for the Safe Transport of Radioactive Material.

The NNR co-ordinates and implements South Africa's Contracting Party (CP) obligations to the IAEA (CNS), and the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management.

8. Organisational Structure Organogram

mineral resources & energy
Department:
Mineral Resources and Energy
REPUBLIC OF SOUTH AFRICA

Minister
Department of Mineral Resources & Energy

Dr Thapelo Motshudi
Chairperson Board of Directors

Dr Mzubanzi Bismark Tyobeka
Chief Executive Officer

Mr Orion Phillips
Executive: Nuclear Power Plant

Ms Ditebogo Kgomo
Executive: Nuclear Technology & NORM

Ms Louisa Mpete
Executive: Regulatory Improvement & Technical Services

Mr Dakalo Netshivhazwaulu
Chief Financial Officer

Ms Anita Simon
Executive: Corporate Support Services

Ms Ntsikie Kote
Manager: Strategy and Organisational Performance

Ms Phindile Masilo
Chief Audit Executive

Mr Fulufhelo Ndou
Senior Manager: Legal, Risk & Compliance

B

PERFORMANCE INFORMATION

PART B: PERFORMANCE INFORMATION

1. Auditor's Report: Pre-determined Objectives

The Auditor-General of South Africa (AGSA) currently performs the necessary audit procedures on the performance information to provide reasonable assurance in the form of an audit conclusion. The audit conclusion on the performance against pre-determined objectives is included in the report to management, with any material findings being reported under the pre-determined objectives heading in the report on other legal and regulatory requirements section of the Auditor's Report.

Refer to page 114 of the Report of the Auditors Report, published as Part F: Annual Financial Statements.

2. Situational Analysis

2.1. Service delivery environment

As experienced by the entire world, in the FY 2020/21 the NNR operated under a disrupted environment caused by the global COVID-19 pandemic. The impact of this disruption accelerated the use of technology by the organisation as working off-site became mandatory. Our turnaround times for feedback on reviews and assessments to clients were greatly improved, owing to the extended times that staff spent on their computers working from home.

Whilst the execution of the NNR business is mainly desktop-based, inspections and site visits to regulated facilities were hampered in the earlier part of the year due to stringent level 5 lockdown regulations. The Regulator was however able to recover in this area in subsequent quarters of the year, thereby reaching its annual performance targets.

Losses suffered directly by the National Nuclear Regulator due to COVID-19 are anticipated. This is based on the hardship suffered by the regulated facilities as a number of mining licenses have been surrendered. That is, the economic difficulty experienced by some of our clientele has caused a cessation of operations, thereby meaning future revenue from them to the Regulator is lost. This trend had already begun in 2018/19 and was exacerbated by the continuous pandemic lockdowns throughout 2020/21.

Additionally, major setbacks were experienced for some of our projects such as the Nuclear Installation Site Licence (NISL) project. The need to conduct public engagement sessions was severely delayed due to the requirements to keep COVID-19 regulations i.e., the non-assembling of large groups of people. This aspect constitutes the final leg of the NISL project for the Thyspunt site, meaning that the project could not conclude on time despite stellar performance on other milestones. The Regulator subsequently implemented other forms of public engagement such as talk radio, email correspondence and webinars where appropriate. The public hearings have been rescheduled for 2021/22 financial year.

2.2. Organisational environment

Whilst the organisation reached one of its highest performance levels yet, individual staff members have suffered major losses of family members and loved ones to the pandemic.

There was a semi-smooth transition from the outgoing to the incoming Board of Directors, with the Minister having reappointed four of the Board members for purposes of continuity. There were no high-level resignations experienced by the organisation.

The NNR is a lean and specialised organisation, therefore a loss of even one staff member due to resignation, regardless of their station, is impactful. Thankfully the succession plans and matrix structure in place in the technical areas particularly, allowed the organisation to continue seamlessly even in areas where we had resignations.

The organisation has had a very successful COVID-19 awareness and prevention campaign so far. Flexible working times and a shift system were introduced to allow deep cleaning and minimal office occupation whilst work continues. The provision of PPE such as face masks and sanitisers has been the daily practice since the pandemic broke out.

Staff members were credited with data capability to enable them to work from home without being hampered by lack of internet connectivity. As a result, the organisation experienced one of its most productive cycles ever in terms of attaining its performance targets.

2.3. Key policy developments and legislative changes

There were no changes or developments to key policies and legislation in the 2020/21 financial year.

2.4. Progress towards achievement of institutional impacts and outcomes

- The SANAS application form was submitted for the Gamma Spectrometry: Water Matrices accreditation. SANAS assessment on the submitted methods is expected in the new financial year (2021/22).
- The NNR continues to implement regulatory programmes in a bid to ensure effective nuclear safety regulation by conducting compliance assurance activities (inspections) and undertaking reviews and assessments. All planned activities were completed during the financial year and additional activities were also undertaken as follows:
    - Four (4) additional inspections which focussed on ageing management were conducted; and
    - An additional 149 reviews and assessments were undertaken; this is attributed to improved turnaround times.
- The criteria to review conditions of authorisation for three (3) Naturally Occurring Radioactive Materials (NORM) categories has been completed and the process of reviewing the conditions of authorisation will be undertaken in the next financial year (2021/22).
- In order to review various aspects of indoor radon regulation frameworks, mitigation mechanisms, funding mechanisms, public participation, compliance assurance and rollout methodologies among international counterparts, to determine international best practices for regulatory control of indoor radon, a benchmark exercise was conducted by the Contaminated Sites business unit, under the NORM Programme. The desktop benchmark study was conducted with:
    - United States of America
    - Canada
    - United Kingdom
    - European Union countries (Germany, Netherlands, Switzerland, Austria, Finland, Czech Republic, France and Sweden)

  The information gathered through this study will be used as a crucial input for the development of an indoor radon regulatory control framework for South Africa.
- The Human Resources Plan in support of the safety review for the Long Term Operation (LTO) of Koeberg Nuclear Power Station beyond 2024 was developed and approved for implementation.
- The Integrated Sustainability Plan which provides approaches to be deployed in raising revenue, establishing partnerships, and charging fees for specific deliverables and services by the Centre for Nuclear Safety and Security (CNSS), was approved. This plan will be utilised to develop the CNSS sustainability strategy in the next financial year.
- The 2020/21 financial year Authorisation Fees were gazetted in January 2021 and the interest levying on overdue accounts clause was published in the same gazette. The levying of interest on overdue accounts was delayed due to awaiting Minister of Mineral Resources and Energy approval, however the NNR started with the process of charging interest on overdue accounts from January 2021. A report is reflected in the Annual Financial Report.

2.5. Changes to the Strategic Plan 2020-2025

The following were amendments and additions to the Strategic Plan 2020-2025 in order to align with the prescripts of the revised framework (2019):

Under Part C: Measuring Our Performance:

- NNR Strategy Map 2020/21
- Table of Outcomes, Outputs, Performance Indicators and Targets

2.6. Changes to the Annual Performance Plan 2020/21

Under Part B: Our Strategic Focus: Situational Analysis of the NNR, the following tools were applied:

- Use of the problem-solution tree (Figures 2,3,4 and 5)
- Scenario planning
- NNR Strategy Map 2021/2022
- Table of Outcomes, Outputs, Performance Indicators and Targets

3. Institutional Programme Performance Information

3.1. Programmes

Programme 1: The Board of Directors

The Board sets the direction and governs the Regulator in accordance with the NNR Act. The Board develops the Strategic Plan and oversees the organisation's performance with regards to the stated strategic objectives as well as being responsible for overseeing the risk-based Internal Audit.

The Board Secretariat services the Board and reports to the Chairman of the Board.

Programme 2: Office of the CEO

As the face of the organisation, the Office of the CEO has the overall responsibility of the organisation.

Sub-programmes to the Office of the CEO include:

- Legal Services and Enterprise Risk Management.
- Strategy, Governance and Organisational Performance is responsible for the implementation of the organisation's Strategic Plan and oversees the performance of operations including the development of organisational performance, reporting, as well as the monitoring of strategic projects and maintaining order through governance; and
- Internal Audit (reporting to the Board's Audit and Risk Management Committee functionally and administratively to the CEO), is responsible for conducting risk-based internal audits in all divisions/departments of the NNR.

Programme 3: Financial Management

This programme portfolio provides organisational support in the area of financial management and administration.

Sub-programmes to the Financial Management programme:

- Financial Planning and Management,
- Financial Reporting,
- Asset Management and Supply Chain Management (Procurement),
- Accounts Payable,
- Accounts Receivable and Cash Book Management, and
- Payroll Management.

Institutional outcomes that the Financial Management programme contributes towards according to the Annual Performance Plan:

- Develop and maintain mechanisms to ensure financial viability and sustainability of the organisation; and
- Accelerate equity in procurement.

Programme 4: Regulation of Nuclear Power Plant

The NPP programme focusses on a holistic approach towards regulating safety and security for nuclear power plants technology. In terms of its core function, it delivers on the compliance assurance and enforcement activities, reviews and assessments and general oversight of the KNPS licence.

Additionally, the programme focusses on issuing of authorisations for Nuclear Vessel Licences (NVL), licence change requests, and management of NPP projects throughout the facility life-cycle.

Institutional outcomes that the Nuclear Power Plant programme contributes towards according to the Annual Performance Plan:

- Implement regulatory programmes to assure effective nuclear and radiation safety regulation; and
- Strengthen regulatory framework Re-Long-Term Operation (LTO).

Programme 5: Regulation of Nuclear Technology and NORM (NTN)

The NTN programme provides a holistic approach towards regulating nuclear and radiation safety as well as nuclear and radiation security The programme focusses on the issuing of nuclear authorisations including Nuclear Installation Licences (NIL), Nuclear Vessel Licences (NVL), Certificates of Registration (CoR) and Certificates of Exemption (CoE) and amendments thereto as well as conducting reviews and assessments related to the safety of these facilities and activities. Further, it delivers on the compliance assurance and enforcement activities, which include conducting inspections, investigations, surveillances and environmental monitoring and sampling related to nuclear technology facilities and activities, and radioactive waste management at all identified NORM facilities.

Sub-programmes to Nuclear Technology **and** ***NORM:***

- The regulation of nuclear technology and waste projects including various nuclear and radiation facilities on the Necsa Pelindaba site and Vaalputs National Radioactive Waste Disposal Facility; and
- The regulation of facilities and activities involving NORM and public radiation exposure from previously contaminated NORM sites as well as radon.

Institutional outcomes that the Nuclear Technology and NORM programme contributes towards according to the Annual Performance Plan:

- Implement regulatory programmes to assure effective nuclear and radiation safety regulation.

Programme 6: Regulatory Improvement and Technical Services (RITS)

The RITS programme provides cross-cutting nuclear safety services to all the NNR's technical departments. A key component of this programme is the regulatory research and development which is conducted on emerging issues regarding nuclear and radiation safety housed under the flagship of the Centre for Nuclear Safety and Security (CNSS).

Sub-programmes to the RITS:

- In-depth nuclear safety reviews and assessments for all the regulated facilities.
- Independent verification by computer codes.
- Emergency preparedness and response services.
- Laboratory services.
- Development of regulatory standards and nuclear projects; and
- Co-ordination of nuclear security and the safety and security culture functions.

Institutional outcomes that the Regulatory Improvement and Technical Services programme contributes towards according to the Annual Performance Plan:

- Provide an independent radio-analytical verification capability and capacity.
- Establish and promote a positive safety culture; and
- Ensure the long-term sustainability of the CNSS.

Programme 7: Corporate Support Services

This programme provides strategic organisational support through the key functions listed below.

Sub-programmes to the Corporate Support Services include:

- Human Capital Management,
- Knowledge and Information Management,
- Integrated Management System,
- Facilities Management,
- Information Communication and Technology,
- Security and Occupational Health and Safety, and
- Communication and Stakeholder Relations Management.

Institutional outcomes that the Corporate Support Services programme contributes towards according to the Annual Performance Plan:

- Implement the ICT strategic deliverables; and
- Develop and implement an integrated strategy to enhance the corporate image and reputation of the NNR.

3.2. Outcomes, Outputs, Output Indicators, Targets and Actual Achievement

In the 2020/21 FY the NNR APP contained seven (7) outcomes and 13 output indicators. The performance level for the organisation is registered at 99.6 % based on the PoE provided. The RAGG indicators summary is reflected as follows:

Green (100% achievement of target)	12/13 indicators
Amber (85-99% achievement to target)	1/13 indicators
Red (non-achievement registered below 85% target)	0/13 indicators
Grey (set aside / not applicable)	0/13 indicators

ORGANISATIONAL PERFORMANCE

NNR Annual Organisational Performance for 2020/21

Programme: Regulatory Improvement &Technical Services (RITS)					
Outcome	Output	Output Indicator	Audited Actual Performance 2018/19	Audited Actual Performance 2019/20	
To provide an independent radio-analytical verification capability and capacity	SANAS Accreditation: Gamma Spectrometry Method: NORM Soil & Sediments	RM1: SANAS accreditation application form	New indicator for 2019-20/21	SANAS Assessment Report outstanding	
To establish and promote a strong safety culture	Implementation of the Safety Culture Improvement Plan	RM2: % of activities as per the Safety Culture Improvement Plan	New indicator for 2020/21	New indicator for 2020/21	

Programme: Regulation of Nuclear Technology & NORM (NTN) Regulation of Nuclear Power Plant					
Outcome	Output	Output Indicator	Audited Actual Performance 2018/19	Audited Actual Performance 2019/20	
To implement regulatory programmes to assure effective nuclear safety regulation	Compliance assurance activities conducted	RM3a: % implementation of the CAP	100%	100.30% of the CAP	
To implement regulatory programmes to assure effective nuclear safety regulation	Reviews and assessments undertaken	RM3b: % of planned reviews and assessment undertaken	100%	115.49% reviews and assessments per programme	

	Planned Annual Target 2020/21	Actual Achievement 2020/21 (until re-tabling in Jan 2021)	Deviation from Planned Target to Actual Achievement 2020-21	Reasons for Deviations	Reasons for Deviations to the Output/ Output Indicators/ Annual Targets
	SANAS accreditation application form	N/A	N/A	-	Ensuring alignment with the changed performance environment.
	100% of activities implemented	Safety Culture Improvement Plan approved	N/A	-	Ensuring alignment with the changed performance environment.

	Planned Annual Target 2020/21	Actual Achievement 2020/21 (until re-tabling in Jan 2021)	Deviation from Planned Target to Actual Achievement 2020/21	Reasons for Deviations	Reasons for Deviations to the Output/ Output Indicators/ Annual Targets
	100% implementation of the CAP.	90% implementation of the CAP (7/8 inspections conducted)	1 inspection not conducted	NPP inspection scheduled to coincide with outage 224 was postponed due to COVID-19.	-
	100% reviews and assessments per programme	100% reviews and assessments per programme (246/214 reviews and assessments undertaken)	N/A	-	-

Programme: Regulation of Nuclear Technology & NORM (NTN)					
Outcome	Output	Output Indicator	Audited Actual Performance 2018/19	Audited Actual Performance 2019/20	
To implement regulatory programmes to assure effective nuclear safety regulation	NORM: Conditions of authorisation reviewed	RM3c: No. of NORM conditions of authorisation reviewed	New indicator for 2019-20/21	Conditions in 2 categories reviewed	
To implement regulatory programmes to assure effective nuclear safety regulation	Regulation of public exposure resulting from radon	RM3d: Conduct benchmark studies on regulatory framework for radon in dwellings	New indicator for 2019-20/21	Developed framework Funding proposal document	

Programme: Regulation of Nuclear Power Plant					
Outcome	Output	Output Indicator	Audited Actual Performance 2018/19	Audited Actual Performance 2019/20	
To strengthen regulatory framework: re Long-Term Operation	Resource Plan for LTO	RM4: approved Resource Plan for LTO	New indicator for 2020/21	New indicator for 2020/21	

Programme: Regulatory Improvement &Technical Services (RITS)					
Outcome	Output	Output Indicator	Audited Actual Performance 2018/19	Audited Actual Performance 2019/20	
To ensure the long-term sustainability of the CNSS	Approved Integrated CNSS Sustainability Plan	RM5: Approved Integrated CNSS Sustainability Plan	New indicator for 2020/21	New indicator for 2020/21	

	Planned Annual Target 2020/21	Actual Achievement 2020/21 (until re-tabling in Jan 2021)	Deviation from Planned Target to Actual Achievement 2020-21	Reasons for Deviations	Reasons for Deviations to the Output/ Output Indicators/ Annual Targets
	3 categories reviewed	Review Category 3 conditions of authorisation	N/A	-	Ensuring alignment with the changed performance environment.
	Benchmark report on regulatory framework for radon in dwellings	N/A	N/A	-	Ensuring alignment with the changed performance environment.

	Planned Annual Target 2020/21	Actual Achievement 2020/21 (until re-tabling in Jan 2021)	Deviation from Planned Target to Actual Achievement 2020-21	Reasons for Deviations	Reasons for Deviations to the Output/ Output Indicators/ Annual Targets
	Approved Resource Plan for LTO	N/A	N/A	-	Ensuring alignment with the changed performance environment.

	Planned Annual Target 2020/21	Actual Achievement 2020/21 (until re-tabling in Jan 2021)	Deviation from Planned Target to Actual Achievement 2020/21	Reasons for Deviations	Reasons for Deviations to the Output/ Output Indicators/ Annual Targets
	Approved Integrated CNSS Sustainability Plan	N/A	N/A	-	Ensuring alignment with the changed performance environment.

Programme: Financial Management					
Outcome	Output	Output Indicator	Audited Actual Performance 2018/19	Audited Actual Performance 2019/20	
To develop and maintain mechanisms to ensure financial viability and sustainability of the organisation	Projected revenue report	FM1a: 100% implementation of the gazetted government notice	New indicator for 2019-20/21	Board-approved government notice	
To develop and maintain mechanisms to ensure financial viability and sustainability of the organisation	Sustainability of the CNSS	FM1b: 100% implementation of the pilot plan	New indicator for 2019-20/21	90% report completed, awaiting ministerial approval	
To accelerate equity in procurement	Procurement report	FM2: 50% of procurement spend on designated groups in terms of the PPPFA	88%	164% of procurement spend on designated groups	

Programme: Corporate Support Services					
Outcome	Output	Output Indicator	Audited Actual Performance 2018/19	Audited Actual Performance 2019/20	
To implement the ICT strategic deliverables	Effective automation of processes	PM1: 100% implementation of the approved ICT	100%	98.7% of annual deliverables	
To develop and implement an integrated strategy to enhance corporate image and reputation of the NNR	Implementation of the approved strategy	LM1:100% implementation of the approved strategy	New indicator for 2020/21	New indicator for 2020/21	

	Planned Annual Target 2020/21	Actual Achievement 2020/21 (until re-tabling in Jan 2021)	Deviation from Planned Target to Actual Achievement 2020/21	Reasons for Deviations	Reasons for Deviations to the Output/ Output Indicators/ Annual Targets
	Revenue report	N/A	N/A	-	-
	Report on pilot outcomes	N/A	N/A	-	The approval of the fee structure was dependent on the gazetted government notice which was delayed in the previous year.
	50% of procurement spend on designated groups in terms of the PPPFA	N/A	N/A	-	Ensuring alignment with the changed performance environment.

	Planned Annual Target 2020/21	Actual Achievement 2020/21 (until re-tabling in Jan 2021)	Deviation from Planned Target to Actual Achievement 2020/21	Reasons for Deviations	Reasons for Deviations to the Output/ Output Indicators/ Annual Targets
	100% implementation of all the approved ICT strategic deliverables	(100%) implementation plan for 2020/21 ICT approved	-	-	Ensuring alignment with the changed performance environment.
	100% implemented integrated strategy	100% (integrated strategy approved)	-	-	Ensuring alignment with the changed performance environment.

Revised Post-COVID-19 Impact APP

Programme: Regulatory Improvement &Technical Services (RITS) The RITS programme provides cross-cutting nuclear safety services to all the NNR's technical departments. In terms of its core functions, RITS performs in-depth nuclear safety reviews and assessments for all the regulated facilities, conducts independent verification by computer codes, delivers emergency preparedness and response services, laboratory services, development of regulatory standards and nuclear projects, co-ordination of nuclear security and the safety and security culture functions.					
Outcome	Output	Output Indicator	Audited Actual Performance 2018/19	Audited Actual Performance 2019/20	
Provide an independent radio-analytical verification capability and capacity	Completed SANAS accreditation application form	RM1: Application for accreditation with SANAS	New indicator for 2019-20/21	SANAS Assessment Report outstanding	
Establish and promote a strong safety culture	Safety culture improvement plan report aimed at improving the safety culture plan as per IAEA recommendations	RM2: % implementation of safety culture improvement plan	New indicator for 2020/21	New indicator for 2020/21	

Programme: Regulation of Nuclear Technology & NORM (NTN) The NTN programme provides a holistic approach towards regulating nuclear and radiation safety as well as nuclear and radiation security. The programme focusses on the issuing of nuclear authorisations including Nuclear Installation Licences (NIL), Nuclear Vessel Licences (NVL), Certificates of Registration (CoR) and Certificates of Exemption (CoE) and amendments thereto as well as conducting reviews and assessments related to the safety of these facilities and activities.

	Planned Annual Target 2020/21	Actual Achievement 2020/21	Deviation from Planned Target to Actual Achievement 2020/21	Reasons for Deviations
	Submitted SANAS application form	SANAS accreditation application form submitted successfully	N/A	N/A
	100% implementation of safety culture improvement plan as per IAEA recommendations	100% of the Safety Culture Improvement Plan, PLN-RITS-20-04, implemented and Annual Report compiled	N/A	N/A

Programme: Regulation of Nuclear Power Plant (NPP) The NPP programme focusses on a holistic approach towards regulating safety and security for Nuclear Power Plants. In terms of its core functions, it delivers on the compliance assurance and enforcement activities, reviews and assessments and general oversight of the KNPS licence. Additionally, the programme focusses on the issuing of authorisations for Nuclear Vessel Licences (NVL), Licence Change Requests, and management of NPP projects throughout the facility life-cycle.					
Outcome	Output	Output Indicator	Audited Actual Performance 2018/19	Audited Actual Performance 2019/20	
Implement regulatory programmes to assure effective nuclear safety regulation	Approved inspection reports	RM3a: % of implementation of the CAP	100%	100.30% implementation of the CAP	
Implement regulatory programmes to assure effective nuclear safety regulation	Letter to holder of nuclear authorisation or applicant, informing of review outcomes Quarterly Review Plan	RM3b: % of planned reviews and assessments undertaken	100%	115.49% reviews and assessments per programme	

Programme: Regulation of Nuclear Technology & NORM (NTN) The NTN programme provides a holistic approach towards regulating nuclear and radiation safety as well as nuclear and radiation security. The programme focusses on the issuing of nuclear authorisations including Nuclear Installation Licences (NIL), Nuclear Vessel Licences (NVL), Certificates of Registration (CoR) and Certificates of Exemption (CoE) and amendments thereto as well as conducting reviews and assessments related to the safety of these facilities and activities.					
Outcome	Output	Output Indicator	Audited Actual Performance 2018/19	Audited Actual Performance 2019/20	
Implement regulatory programmes to assure effective nuclear safety regulation	Approved developed criteria for NORM categories 3,4,5	RM3c: Developed criteria to review conditions of authorisation for NORM categories 3,4,5	New indicator for 2019-20/21	Conditions in 2 categories reviewed	
Implement regulatory programmes to assure effective nuclear safety regulation	Approved benchmark report	RM3d: Conducted benchmark study on regulatory framework for radon in dwellings	New indicator for 2019-20/21	Developed framework	
				Funding proposal document	

	Planned Annual Target 2020/21	Actual Achievement 2020/21	Deviation from Planned Target to Actual Achievement 2020/21	Reasons for Deviations
	100% implementation of the CAP.	102.34% (175/171 inspections conducted)	4	4 additional inspections were conducted.
	100% reviews and assessments per programme	117.78% (987/838 reviews and assessments undertaken)	149	Additional reviews and assessments were undertaken due to improved turnaround time.

	Planned Annual Target 2020/21	Actual Achievement 2020/21	Deviation from Planned Target to Actual Achievement 2020/21	Reasons for Deviations
	Approved reviewed criteria for NORM categories	Criteria for review of NORM categories developed and approved	N/A	N/A
	Approved benchmark report	Benchmark study conducted, report compiled and approved	N/A	N/A

Programme: Regulation of Nuclear Power Plant (NPP) The NPP programme focusses on a holistic approach towards regulating safety and security for Nuclear Power Plant. In terms of its core functions, it delivers on the compliance assurance and enforcement activities, reviews and assessments and general oversight of the KNPS licence. Additionally, the programme focusses on issuing of authorisations for Nuclear Vessel Licences (NVL), Licence Change Requests, and management of NPP projects throughout the facility life-cycle.					
Outcome	Output	Output Indicator	Audited Actual Performance 2018/19	Audited Actual Performance 2019/20	
Strengthen regulatory framework re: Long-Term Operation	Approved LTO resource plan	RM4: Developed resource plan for LTO	New indicator for 2020/21	New indicator for 2020/21	

Programme: Regulatory Improvement & Technical Services (RITS) The RITS division provides cross-cutting nuclear safety services to all NNR's technical departments. In terms of its core functions RITS performs in-depth nuclear safety reviews and assessments for all the regulated facilities, conducts independent verification by computer codes, delivers emergency preparedness and response services, laboratory services, development of regulatory standards and nuclear projects, co-ordination of nuclear security, and the safety and security culture functions.					
Outcome	Output	Output Indicator	Audited Actual Performance 2018/19	Audited Actual Performance 2019/20	
Ensure the long-term sustainability of the CNSS	Approved Integrated CNSS Sustainability Plan	RM5: Developed Integrated CNSS Sustainability Plan	New indicator for 2020/21	New indicator for 2020/21	

	Planned Annual Target 2020/21	Actual Achievement 2020/21	Deviation from Planned Target to Actual Achievement 2020/21	Reasons for Deviations
	Approved resource plan for LTO	Resource plan for LTO developed and approved	N/A	N/A

	Planned Annual Target 2020/21	Actual Achievement 2020/21	Deviation from Planned Target to Actual Achievement 2020/21	Reasons for Deviations
	Approved Integrated CNSS Sustainability Plan	Integrated CNSS Sustainability Plan developed and approved	N/A	N/A

Programme: Financial Management (Finance)
Programmes in this portfolio provide organisational support in the area of financial management and administration. This is done through key functional streams of financial planning and management, financial reporting, asset management and supply chain management (procurement), accounts payable, accounts receivable and cash book management, and payroll management.

Outcome	Output	Output Indicator	Audited Actual Performance 2018/19	Audited Actual Performance 2019/20	
Develop and maintain mechanisms to ensure financial viability and sustainability of the organisation	Financial report on interest charged Revenue report	FM1a: % implementation of the gazetted government notice on interest levies	New indicator for 2019-20/21	Board-approved government notice	
Develop and maintain mechanisms to ensure financial viability and sustainability of the organisation	Approved fee structure for CNSS	FM1b: Approved fee structure for the CNSS	New indicator for 2019-20/21	90% report completed, awaiting ministerial approval	
Accelerate equity in procurement	Procurement report	FM2: % of procurement spend on designated groups	88%	164% of procurement spend on designated groups	

Programme: Corporate Support Services (CSS)
This programme provides strategic organisational support through the key functions of human capital management, knowledge and information management, integrated management system, facilities management, information communication and technology, security and occupational health and safety communication and stakeholder relations management.

Outcome	Output	Output Indicator	Audited Actual Performance 2018/19	Audited Actual Performance 2019/20	
Implement the ICT strategic deliverables	Integrated ICT plan 2020/21	PM1: % implementation of the approved ICT strategic deliverables	100%	98.7% of annual deliverables	
Develop and implement an integrated strategy to enhance corporate image and reputation of the NNR	Integrated implementation plan Quarterly reports	LM1: % implementation of the approved integrated strategy	New indicator for 2020/21	New indicator for 2020/21	

	Planned Annual Target 2020/21	Actual Achievement 2020/21	Deviation from Planned Target to Actual Achievement 2020/21	Reasons for Deviations
	Revenue report	Interest charged on overdue accounts reflected in the annual revenue report for 2020/21	N/A	N/A
	Approved fee structure	The proposed fee structure for the costing of CNSS services was developed and approved	N/A	N/A
	50% of procurement spend on designated groups in terms of the PPPFA	63% of procurement spent on designated groups in terms of the PPPFA	13%	An additional 13% was spent on designated groups in terms of the PPPFA.

	Planned Annual Target 2020/21	Actual Achievement 2020/21	Deviation from Planned Target to Actual Achievement 2020/21	Reasons for Deviations
	100% implementation of all the approved ICT strategic deliverables	95.89% of approved ICT strategic deliverables implemented	4.11%	Delays with procurement of laptops. Scheduled training for ISO 38500 was not completed.
	100% implemented integrated strategy	100% of the integrated strategy implemented	N/A	N/A

Strategy to overcome areas of under performance

The performance gaps in the Annual Report which was related to delays in the procurement of laptops and providing training to ICT employees, are scheduled to be completed in the 2021/22 financial year.

Reporting on the institutional response to the COVID-19 pandemic

Table 1: Progress on institutional response to the COVID-19 pandemic

Programme/Sub-programme	Intervention	Geographic Location (Province/ District/ Local Municipality) (Where Possible)	No. of Beneficiaries (Where Possible)	Disaggregation of Beneficiaries (Where Possible)	
ICT	Digital signatures Online collaboration tools	Gauteng and Western Cape	178	35 178 35	
CSR	Printed and displayed staff awareness posters Distributed staff newsletter bulletins Implemented email communications as and when required Uploaded staff safety awareness messages on the intranet Published NNR response to COVID on website Developed and distributed staff awareness messages via email and WhatsApp	Gauteng and Western Cape	178		
Occupational Health and Safety	PPE Other activities (e.g. cleaning, sanitisation)	Gauteng Western Cape	178		
CSS	COVID-19 plan developed and implemented	Gauteng and Western Cape	178		

	Total Budget Allocation Per Intervention (R'000)	Budget Spent Per Intervention	Contribution to the Outputs in the APP (Where Applicable)	Immediate Outcomes
	Total spend	Digital signatures: R292 000 MS Teams: R65 313 Cisco WebEx: R122 000 Data costs Laptops for trainees	Allowed employees to meet targets and continue working without impacting deliverables	Employees worked from home without disruption
	R2 462	-	Management of disruptions due to COVID infections	No deaths or hospitalisations No inter-office transmission
	R171 000	PPE for employees Fumigation and deep cleaning costs Additional service provider costs e.g. air conditioning	No major disruption of business due to COVID-19	Safe workplace
	R0	None – done in house	Management of disruptions due to COVID infections	No deaths or hospitalisations No inter-office transmission

Linking performance with budgets

Table 2: Linking performance with budgets

			2020/2021			2019/2020		
Programme	**Code**	**Description**	**Budget**	**Actual**	**Variance Under/(Over)**	**Budget**	**Actual**	**Variance Under/(Over)**
			R'000	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**
To process applications for nuclear authorisations in a timely and accurate manner	135, 137, 138, 146, 147, 148 & 149	Personnel	29 047	21 445	7 602	26 038	21 651	4 387
		Goods & Services	20 009	18 352	1 657	16 496	16 944	(448)
	Total		**49 056**	**39 797**	**9 259**	**42 534**	**38 594**	**3 939**
To ensure effective implementation of nuclear security measures by authorisation holders	139 & 175	Personnel	4 164	3 965	199	3 956	3 969	(12)
		Goods & Services	339	171	168	384	356	28
	Total		**4 502**	**4 136**	**366**	**4 340**	**4 325**	**16**
To establish an independent verification capability for the NNR	136 & 140	Personnel	9 625	7 329	2 296	9 698	8 717	981
		Goods & Services	451	111	340	839	346	493
	Total		**10 075**	**7 440**	**2 635**	**10 537**	**9 063**	**1 474**
To provide assurance of safety performance of authorisation holders through inspections, audits, investigation and taking enforcement action for identified non-compliance	171-174, 176-179	Personnel	43 402	36 928	6 474	39 978	35 176	4 802
		Goods & Services	3 200	1 046	2 154	5 082	3 166	1 917
	Total		**46 602**	**37 974**	**8 628**	**45 060**	**38 342**	**6 719**
Good governance	124 - 128	Personnel	15 779	14 524	1 255	14 517	14 902	(385)
		Goods & Services	6 452	1 870	4 582	7 879	6 132	1 747
	Total		**22 231**	**16 394**	**5 837**	**22 396**	**21 034**	**1 362**
Financial viability and sustainability	155, 156 & 158	Personnel	15 001	28 348	(13 347)	12 706	30 184	(17 478)
		Goods & Services	23 896	31 665	(7 769)	22 900	24 520	(1 620)
	Total		**38 897**	**60 013**	**(21 116)**	**35 606**	**54 704**	**(19 097)**
High performance culture, effective human capital management	142, 144, & 145	Personnel	9 941	9 426	515	9 405	9 645	(241)
		Goods & Services	7 322	5 803	1 519	10 350	6 079	4 271
	Total		**17 264**	**15 229**	**2 035**	**19 755**	**15 724**	**4 030**
Sound organisational infrastructure	143	Personnel	5 266	4 291	975	4 607	3 773	834
		Goods & Services	16 577	15 453	1 124	13 852	10 978	2 874
	Total		**21 843**	**19 744**	**2 099**	**18 459**	**14 751**	**3 708**
Stakeholder relations and corporate image	141	Personnel	3 164	2 770	394	2 783	2 652	131
		Goods & Services	4 073	2 107	1 966	3 999	3 643	356
	Total		**7 237**	**4 877**	**2 360**	**6 782**	**6 296**	**486**
To provide an independent analytical verification capability and capacity	160 - 167	Personnel	51 119	44 474	6 645	41 919	38 959	2 959
		Goods & Services	16 573	6 370	10 203	19 368	12 038	7 330
	Total		**67 691**	**50 844**	**16 847**	**61 287**	**50 997**	**10 289**

4. Revenue Collection

Table 3: Revenue

	2020/2021			2019/2020		
Sources of revenue	**Budget**	**Actual**	**Variance Under/(Over)**	**Budget**	**Actual**	**Variance Under/(Over)**
	R'000	**R'000**	**R'000**	**R'000**	**R'000**	**R'000**
Authorisation fees	235 745	212 715	23 030	199 926	196 440	3 486
Application fees	17 200	22 435	(5 235)	17 736	23 152	(5 416)
State grant	40 467	40 467	-	43 096	43 096	-
Other revenue	7 941	5 738	2 203	5 998	8 073	(2 075)
Total	**301 353**	**281 354**	**19 999**	**266 756**	**270 761**	**(4 005)**

Total revenue realised for the 2020/21 financial year amounted to R281 million, against a budget of R301 million. This is an increase of 3,9 percent in comparison to the previous financial year. Authorisation fees account for 76 percent of total revenue. Application fees remain unpredictable, and fluctuates year on year based on applications received and additional work agreed upon with applicants on ongoing projects. State grant decreased by 6,5 percent from R43 million to R40,4 million. This decrease is partly attributed to the contribution by the NNR to the government's Covid-19 funds reprioritization programme. Other revenue includes interest income and other recoveries from services rendered by the NNR on behalf of partner institutions, such as the IAEA, ENSTTI, etc.

Table 4: Performance with budgets

		2020/21			2019/2020		
Programme	Description	Budget	Actual	Variance Under/ (Over)	Budget	Actual	Variance Under/ (Over)
		R'000	R'000	R'000	R'000	R'000	R'000
Administration	Personnel	49 152	59 358	(10 206)	44 033	61 156	(17 124)
	Goods & Services	58 320	58 635	(315)	58 980	51 383	7 597
	Total	**107 472**	**117 993**	**(10 521)**	**103 013**	**112 539**	**(9 527)**
Nuclear Power Plants	Personnel	38 672	28 774	9 898	35 735	30 368	5 368
	Goods & Services	20 460	16 798	3 662	17 336	17 305	31
	Total	**59 132**	**45 572**	**13 560**	**53 071**	**47 673**	**5 399**
Nuclear Technology & NORM	Personnel	47 566	40 893	6 672	43 934	39 145	4 789
	Goods & Services	3 538	1 217	2 321	5 082	3 521	1 561
	Total	**51 104**	**42 110**	**8 993**	**49 016**	**42 666**	**6 350**
Regulatory Improvements and Technical Services	Personnel	51 119	44 474	6 645	41 904	38 959	2 944
	Goods & Services	16 573	6 297	10 276	19 752	11 992	7 760
	Total	**67 692**	**50 771**	**16 921**	**61 656**	**50 951**	**10 704**

Administration (Support Services)

Total expenditure on compensation of employees for this programme amounted to R59 million. The difference of R10 million against the budget was mainly attributed to the payment of performance bonuses which were provided for in the previous financial year. During the year, management implemented a revised annual cost of living adjustments agreement, as per the Ministerial directive and as approved by the NNR Board. In terms of this agreement, no salary adjustments were effected for members of the executive management and for employees earning above R1.5 million per annum.

Expenditure on goods and services increased by about 14 percent compared to the previous financial year. This expenditure is however in line with the approved budget for the 2020/21 financial year, and this can be attributed to the strict monitoring of spending by management.

Nuclear Power Plants (NPP)

The programme's expenditure on compensation of employees amounted to R28 million, compared to a budget of R38 million. The savings of about 25 percent can be attributed to the implementation of the revised annual cost of living adjustments, which only saw employees earning below R1.5 million getting salary increases. The movement of staff and the moratorium in the filling of new positions also contributed to these savings.

Expenditure on goods and services continued to be impacted by the COVID-19 pandemic and the lockdown. A total of R16 million was spent against a budget of R20 million, which is equivalent to savings of about 18 percent. Major savings were realised on training and travelling for both domestic and foreign travel.

Nuclear Technology and NORM (NTN)

The NTN division spent R40 million on compensation of employees compared to a budget of R47 million, in the year under review. The implementation of the revised cost of living adjustment agreement largely contributed to the variance of about 14 percent. This expenditure is, nonetheless, 4.5 percent more than the previous financial year.

Similarly, with the NPP division, expenditure on goods and services for this division was also impacted by COVID-19 and the lockdown. The division spent only about 34 percent of its budget for the period under review. The main areas of underspending included spending on catering, domestic training, and domestic travelling, due to travelling restrictions during the lockdown.

Regulatory Improvements and Technical Services (RITS)

The RITS division incurred total expenditure of R44 million on compensation of employees for the period under review. This is equivalent to an increase of about 14 percent from the previous financial year. The increase is attributed to increase in capacity for the division.

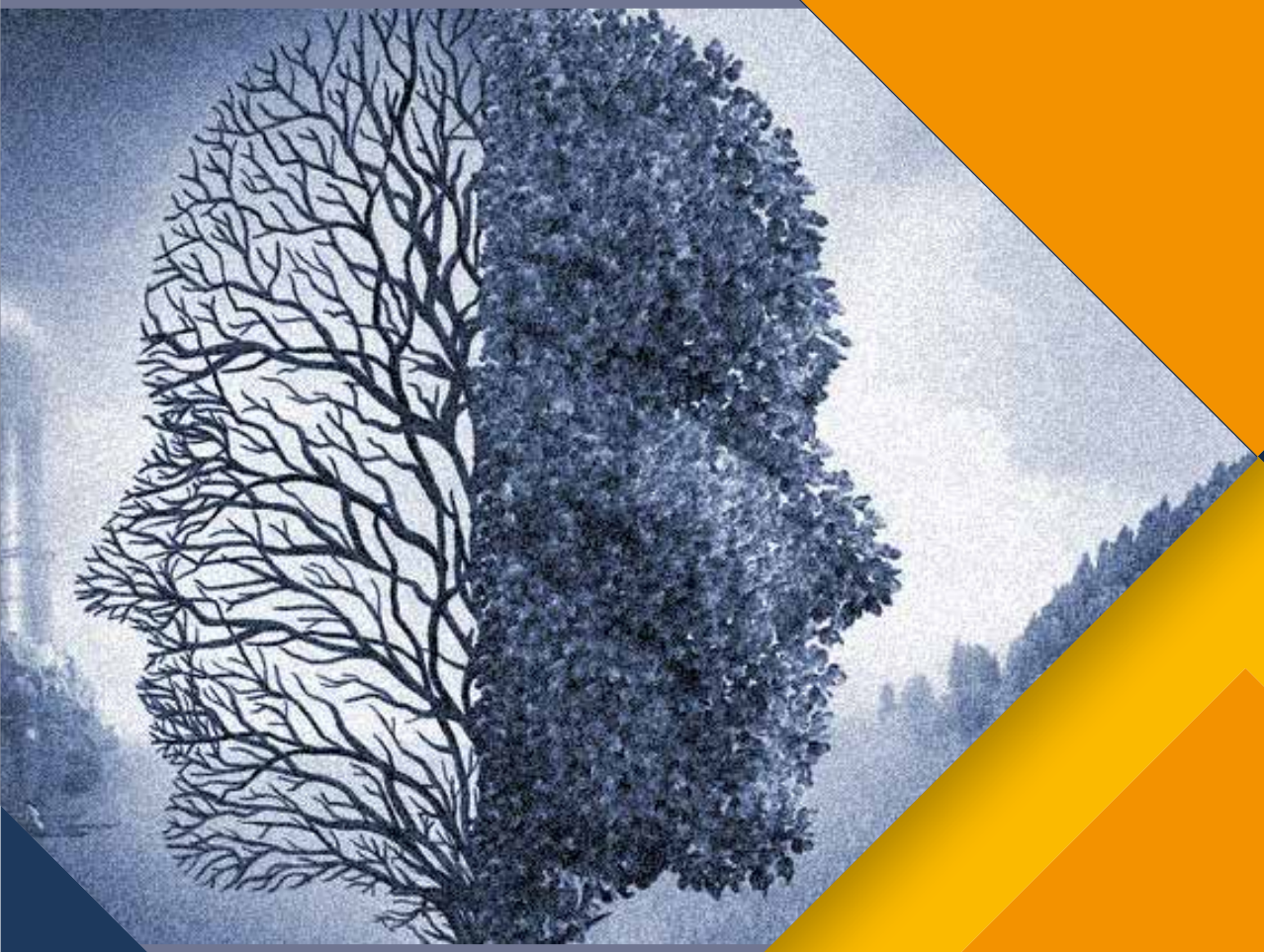
The impact of the COVID-19 pandemic and the lockdown also impacted on the total spending for this division. Expenditure on goods and services for the period under review amounted to R6 million, compared to R11 million spent in the previous financial year. The main areas of underspending included local and foreign training and travelling.

5. Capital Investment

Table 5: Capital investment, maintenance and asset management plan

	2020/21			2019/2020		
Sources of Revenue	Budget	Expenditure	Balance	Budget	Expenditure	Balance
	R'000	R'000	R'000	R'000	R'000	R'000
Regulatory emergency control centre	-	-	-	2 776	-	2 776
Cape Town office accommodation	12 947	53	12 894	10 281	110	10 171
Total	**12 947**	**53**	**12 894**	**13 057**	**110**	**12 947**

Spending on capital investments for the 2020/21 financial year amounted to R53 000. This expenditure was related to the construction of the Cape Town Site Office. This project was largely delayed by the lockdown due to the COVID-19 pandemic, and the commencement of the construction has been revised to start in the 2021/22 financial year.



C

GOVERNANCE

PART C: GOVERNANCE

1. Introduction

The Board reviews the systems and processes of the organisation timeously, and can assure stakeholders that the Regulator was managed and operated in compliance with the principles set out in the King IV Report and the precepts of the Public Finance Management Act (PFMA), as appropriate.

2. Portfolio Committee

The NNR submitted copies of the 2019/2020 Annual Report to the Parliamentary Portfolio Committee on Energy in November 2020. The Annual Report provided assurance that there was substantial compliance with the conditions of authorisations from all nuclear installations and regulated entities under the purview of the NNR. There were no incidents identified relating to exposure of workers to undue levels of ionising radiation or which are capable of causing nuclear damage to the environment during the reporting period. The NNR fulfilled its fiduciary duties and continued to discharge its mandate in accordance with governance best practices whilst complying with regulatory and legislative requirements.

3. Executive Authority

The Minister of the Department of Mineral Resources and Energy serves as the Executive Authority.

4. Accounting Authority/Board of Directors

The Board of Directors is the Accounting Authority in terms of the PFMA and the NNR Act. The Board is appointed for a renewable period of three years by the Minister of Mineral Resources and Energy. In terms of Section 8 (1) and (2) of the NNR Act, the Regulator is governed and controlled, in accordance with the NNR Act, by a Board of Directors to ensure that the objectives of the NNR Act are carried out, and to exercise general control over the performance of the Regulator's functions.

The Board of Directors embraces the principles of good corporate governance and considers these as the underlying philosophy in creating organisational excellence at all levels within the Regulator.

The Board sets the tone in driving the ethics of good governance and the Directors, collectively and individually, acknowledge their responsibilities and duties in terms of the Board Charter and other governance, regulatory and legislative requirements.

4.1. Composition of the Board

The Board is comprised of nine non-executive Directors who are independently appointed by the Minister of Mineral Resources and Energy and an Executive Director (Chief Executive Officer). Board members, including the Chief Executive Officer, hold office for a maximum of three years, but are eligible for re-appointment.

Table 6: NNR Board Members

NNR Board Members for the Period September 2020–August 2023			
Title	**Full Name**	**Date Appointed**	**Stakeholder Represented**
Dr	T. Motshudi	1 September 2020	Chairperson of the Board
Ms	D. Peta	1 September 2020	Deputy Chairperson
Mr	P. Phili	1 September 2020	Board Member
Mr	K. Maphoto	1 September 2020	Board Member
Mr	D. Mamphitha	1 September 2020	Board Member
Dr	N. Z. Qunta	1 September 2020	Board Member
Ms	L. Dlamini	1 September 2020	Board Member
Mr	B.P. Petlane	1 September 2020	Board Member
Ms	D.V. Bendeman	1 September 2020	Board Member
Dr	M.B. Tyobeka	1 September 2020	Chief Executive Officer
Dr	P. Dube	7 Dec 2016	Board Member
Mr	J. Leaver	7 Dec 2016	Board Member
Ms	E. Monale	7 Dec 2016	Board Member
Mr	K.S. Kakoma	7 Dec 2016	Board Member
Dr	B. Sehlapelo	7 Dec 2016	Board Member
Mr	A.P. Le Roux	7 Dec 2016	Board Member
Ms	M.B. Mokoetle	7 Dec 2016	Board Member
Dr	T. Tshepe	1 August 2017	Alternate Board Member
Dr	M. Makgae	1 September 2017	Advisor to the Technical Committee
Mr	P. Fitzsimons	1 September 2017	Advisor to the Technical Committee

BOARD MEMBERS

Dr Thapelo Motshudi
Board Chairperson
Reappointed
1 September 2020

Ms Dineo Peta
Deputy Chairperson, TDC.
Appointment effective
1 September 2021

Dr Nomusa Zethu Qunta
Chairperson TDC, ARMCOM.
Appointment effective
1 September 2021

Mr Protas Phili
Chairperson ARMCOM.
Reappointed
1 September 2020

Ms. Lindelwa Nonjabulo Dlamini
ARMCOM, TDC.
Appointment effective
1 September 2021

Mr David Mamphitha
ARMCOM, TDC.
Appointment effective
1 September 2021

Mr Bernard Pelei Petlane
Chairperson Technical Committee, ARMCOM.
Appointment effective
1 September 2021

Dr Bismark Tyobeka
CEO
Reappointed
1 September 2020

Ms Devinagie Bendeman
Technical Committee
Reappointed
1 September 2020

Mr Katse Maphoto
Technical Committee
Appointment effective
1 September 2021

The following board members term expired on 31 August 2020.

- Prof P. Dube
- Ms B.M. Mokoetle
- Dr B. Sehlapelo
- Mr K.S. Kakoma
- Mr A. Le Roux
- Ms E. Monale

4.2. Board meetings

Table 7: Board meetings held (April 2020-March 2021)

Names	29 April 2020 Board Meeting	30 July 2020 Board Meeting	8 September 2020 Board Induction	9 September 2020 Board Induction	17 September 2020 Board Strategic Workshop	18 September 2020 Board Strategic Workshop	29 October 2020 Board Meeting	15 December 2020 Special Board Meeting	28 January 2021 Board Meeting	26 March 2021 Board Workshop
Dr T Motshudi Chairperson of the Board	P	P	P	P	P	P	P	P	P	P
Prof P. Dube- Deputy	P	A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Ms B.M. Mokoetle	P	P	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Ms V. Bendeman	P	P	P	P	P	P	A	A	P	P
Mr P. Phili	P	P	P	P	P	P	P	P	P	P
Dr M.B. Tyobeka	P	P	P	P	P	P	P	P	P	A
Dr B. Sehlapelo	P	P	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Mr K.S. Kakoma	P	P	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Mr A. Le Roux	P	P	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Mr K. Maphoto	P	P	P	P	P	P	P	P	P	A
Dr M. Makgae	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Mr P. Fitzsimons	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Ms D. Peta	N/A	N/A	P	P	P	P	P	P	P	P
Dr Z. Qunta	N/A	N/A	P	P	P	P	P	A	P	P
Mr D. Mamphitha	N/A	N/A	P	P	P	P	P	P	P	P
Ms L. Dlamini	N/A	N/A	P	P	P	P	A	P	A	P
Mr B. Petlane	N/A	N/A	P	P	P	P	P	P	P	P

P Member present at the meeting.

A Member not present but tendered an apology

N/A Not applicable refers to member not yet appointed to the Board/Board Committee or member resigned from such.

4.3. Committees of the Board

The following Board Committees assisted the Board in discharging its mandate over the period under review:

- Audit and Risk Management Committee (ARMCOM);
- Technical Committee; and
- Transformation and Development Committee (TDC).

Board Committees met at least once per quarter and provided feedback to the Board through Committee reports. Board Committees have each adopted formal terms of reference, which are reviewed annually to ensure continued relevance.

4.3.1. ARMCOM

The Audit and Risk Management Committee comprised of four non-executive Directors and a non-executive Director, who is not the Chairperson of the Board, chaired the Committee.

The ARMCOM assisted the Board in overseeing:

- The quality and integrity of the financial statements and the disclosure thereof.
- The scope and effectiveness of the internal audit function; and
- The effectiveness of the organisation's system of internal control.

The members of the ARMCOM for the reporting period were:

- Mr P. Phili (Chairperson)
- Mr K.S. Kakoma
- Ms B. Mokoetle
- Ms V. Bendeman
- Mr B. Petlane
- Dr Z. Qunta
- Mr D. Mamphitha
- Ms L. Dlamini

Table 8: ARMCOM meetings held (April 2020-March 2021)

Names	14 April 2020	22 May 2020	14 July 2020	13 October 2020	19 January 2021	16 February 2021 ARMCOM Workshop	15 March 2021 Special ARMCOM with Auditors and Board Chairperson
Mr P. Phili	P	P	P	P	P	P	P
Mr K.S. Kakoma	P	P	P	N/A	N/A	N/A	
Ms B. Mokoetle	A	P	P	N/A	N/A	N/A	
Ms V. Bendeman	P	A	A	N/A	N/A	N/A	
Mr D. Mamphitha	N/A	N/A	N/A	P	P	P	
Ms L. Dlamini	N/A	N/A	N/A	P	P	P	
Dr Z. Qunta	N/A	N/A	N/A	P	P	P	
Mr B. Petlane	N/A	N/A	N/A	P	P	P	
Dr T. Motshudi (Board Chair)							P

P Member present at the meeting.

A Member not present, but tendered an apology.

N/A Not applicable refers to member not yet appointed to the Board/Board Committee or member resigned from the Board/Board Committee

4.3.2. Technical Committee

The Technical Committee comprised of four non-executive Directors and two independent technical advisors who are experts in the technical/legal or environmental field. The role of the Committee is to, *inter alia*:

- Review the policies and practices on the authorisation of nuclear facilities, licensing processes and compliance assurance, and enforcement procedures; and
- Advise the Board on all technical-related matters pertaining to the discharge of the Regulator's mandate.

The Members of the Committee for the reporting period were:

- Dr B. Sehlapelo
- Mr K. Maphoto
- Ms B. Mokoetle
- Mr A. Le Roux
- Dr M. Makgae (Technical advisor)
- Mr P. Fitzsimons (Technical advisor)
- Mr B. Petlane
- Mr K. Maphoto
- Ms V. Bendeman
- Ms D. Peta

Table 9: Technical Committee meetings held (April 2020-March 2021)

Date of the meeting April 2019 - March 2020						
Names	15 April 2020	14 July 2020	14 October 2020	15 December 2020 Thyspunt Public Hearing	20 January 2021	18 February 2021 TC Workshop
Dr B. Sehlapelo	P	P	N/A	N/A	N/A	N/A
Mr K. Maphoto	A	P	P	P	A	P
Ms B. Mokoetle	P	P	N/A	N/A	N/A	N/A
Mr A. Le Roux	P	P	N/A	N/A	N/A	N/A
Dr M. Makgae	P	A	N/A	N/A	N/A	N/A
Mr P. Fitzsimons	A	A	N/A	N/A	N/A	N/A
Mr B. Petlane	N/A	N/A	P	P	P	P
Ms V. Bendeman	N/A	N/A	A	A	P	P
Ms D. Peta	N/A	N/A	P	P	P	P

P Member present at the meeting.

A Member not present but tendered an apology.

N/A Not applicable refers to member not yet appointed to the Board/Board Committee or member resigned from the Board/Board Committee.

4.3.3. Transformation and Development Committee (TDC)

This committee was comprised of four non-executive directors during the period under review.

The TDC is responsible for determining human resources strategies and policies, and recommends these to the Board for approval. These include: Human resources development and conditions of service; employment equity reports; performance management systems; and any other organisational development initiatives.

The members of the TDC for the reporting period were:

- Prof. P. Dube (Chairperson)
- Mr A. Le Roux
- Mr K.S. Kakoma
- Mr K. Maphoto
- Dr Z. Qunta
- Mr D. Mamphitha
- Ms L. Dlamini
- Ms D. Peta

Table 10: TDC meetings held (April 2020-March 2021)

Date of the meeting April 2020 - March 2021						
Names	16 April 2020	16 July 2020	23 July 2020	15 October 2020	21 January 2021	11 February 2021 TDC Workshop
Prof. P. Dube (Chairperson)	P	P	P	N/A	N/A	N/A
Mr A. Le Roux	P	P	P	N/A	N/A	N/A
Mr K.S. Kakoma	P	P	P	N/A	N/A	N/A
Mr K. Maphoto	A	P	P	N/A	N/A	N/A
Dr Z. Qunta	N/A	N/A	N/A	P	P	P
Mr D. Mamphitha	N/A	N/A	N/A	P	P	P
Ms D. Peta	N/A	N/A	N/A	P	P	P
Ms L. Dlamini	N/A	N/A	N/A	P	P	P

P Member present at the meeting.

A Member not present but tendered an apology.

N/A Not applicable refers to member not yet appointed to the Board/Board Committee or member resigned from the Board/Board Committee.

Remuneration of Directors and Committee Members

The remuneration of Board Members is determined by the Minister of Mineral Resources and Energy with the concurrence of the Minister of Finance and is reviewed annually. Board and Committee Members are remunerated for attending meetings and other Board activities such as workshops. The details of the remuneration for the year ended March 2021 are stated in Note 30 to the Annual Financial Statements on page 113.

5. Risk Management

5.1. Nature of risk management

Risk management is an essential part of effective corporate governance and is management's responsibility. Management is accountable to the Board for designing, implementing and monitoring the process of risk management, and integrating it into the day-to-day activities of the organisation, as well as providing assurance that it has done so. The approach to risk management includes monitoring and appropriately responding to potential and actual risks emanating from strategic, operational and project level. The NNR had an approved and implemented risk management policy, strategy, and risk management implementation plan for the year under review. This ensured that the risks that may threaten the achievement of its strategic objectives were adequately and effectively managed at acceptable levels.

The effectiveness of the risk management within the NNR is assessed using the National Treasury Financial Management Capability Maturity Model (FMCMM). The risk maturity level remains at level five out of six. This indicated that risk management added value and it improved the overall performances of the organisation.

5.2. Risk management strategies to identify and manage risk

The annual strategic risk assessment was conducted to identify risks that could potentially impair the NNR's ability to achieve set objectives and to identify opportunities that risks present which could be channelled back to the organisational strategy.

The Risk Management Unit also conducted structured operational risk assessments covering all divisions. It also co-ordinated and facilitated continual risk management activities which included reporting risk incidents, and monitoring the implementation of action plans to mitigate identified residual risks through quarterly Risk Champions and Risk Steering Committee meetings.

The identified risks were continuously monitored throughout the financial year to minimise the risk exposure and its impact on achievement of the NNR strategic objectives, while improving performance and exploitation of identified opportunities.

5.3. Progress made in addressing identified risks

The Risk Steering Committee continued to meet on a quarterly basis to discuss the risks facing the organisation. This committee reviewed the risk management policy, strategy, and risk implementation plan on a regular basis to identify areas of improvement.

The Risk Champions forum also met on a quarterly basis to monitor and to ensure that actions aimed at addressing the identified risks were implemented during the period under review.

The implementation of risk management action plans was monitored on a regular basis through the utilisation of a risk register and risk monitoring tool. Progress update status was reported to the Risk Steering Committee on a quarterly basis, which considered the progress and reported it to the Executive Committee, ARMCOM and the Board. Identification of new/emerging risks was a standing agenda item at the Risk Steering Committee.

6. Internal Control Unit

The role of ARMCOM was to assist the Board to ensure that the NNR implemented an effective policy and plan for risk management that would enhance the organisation's ability to achieve its strategic objectives and to ensure that disclosure regarding risk was comprehensive, timely and relevant.

ARMCOM assisted the Board by reviewing the following:

- The effectiveness of the internal control systems.
- The effectiveness of the internal audit function.
- The effectiveness of the risk management system.
- The adequacy, reliability and accuracy of financial information; and
- Accounting and auditing concerns identified as a result of internal and external audits.

7. Internal Audit and Audit Committees

In accordance with the definition of internal auditing and the authority to establish and maintain an internal audit function as contained in the PFMA and its Treasury Regulations, the NNR's Internal Audit department provided independent, objective, assurance and consulting services, designed to add value and improve the NNR's operations. These services were aimed at helping the NNR accomplish its objectives, by bringing a systematic, disciplined approach to evaluate and improve the effectiveness of risk management, control, and governance processes. This was also done in accordance with the authority to establish and maintain an internal audit function.

To ensure independence, the Chief Audit Executive reports functionally to ARMCOM and administratively to the CEO.

The responsibilities of the Internal Audit department included the following:

- Evaluating the organisation's governance processes.
- Performing an objective assessment of the effectiveness of risk management and the internal control framework; and
- Systematically analysing and evaluating business processes and associated controls.

7.1. The scope of Internal Audit function

The scope of the internal audit department included:

- Developing and implementing rolling three-year and annual internal audit plans based on the NNR's Strategic Plan and related strategic risks, including other risk areas identified by internal audit and management.
- Reviewing the reliability and integrity of financial and operational information and the means used to identify, measure, classify and report such information.
- Reviewing the systems established by management to ensure compliance with those policies, plans, procedures, laws and regulations, which could have a significant impact on operations and reports, and determining whether the NNR is in compliance.
- Reviewing the means of safeguarding assets and, when appropriate, verifying the existence of assets.
- Appraising the economy and efficiency with which resources are employed.
- Reviewing operations or programmes to ascertain whether results are consistent with established objectives and goals, and whether the operations or programmes are being carried out as planned; and
- Providing a written assessment regarding the effectiveness of the system of internal and financial controls in the organisation and submitting a report to ARMCOM to enable it to formulate its comment for the financial statement.

7.2. The activities of Internal Audit function

The activities of the internal audit function are included in its internal audit charter and methodology, three-year strategic and annual internal audit plans, and also covers co-ordination with the external auditors, the reports of significant investigations and the responses of management to specific recommendations.

The annual allocation of internal audit resources to audit activities was established on the basis of an approved annual internal audit plan. ARMCOM remained responsible for approving the rolling three-year and annual internal audit plans.

7.3. Summary of audit assignments completed

For the 2020/2021 financial year, 12 internal audits were conducted in the following areas: Finance; Corporate Support Services; Information Technology; Organisational Performance; Nuclear Power Plants (NPP) programme and Naturally Occurring Radiation Material (NORM). The results of the audits were discussed with management, economic recommendations to address identified weaknesses were provided and management provided action plans and implementation dates to address identified weaknesses.

The internal audit department continued to implement actions to address issues raised in the Quality Assessment Review (QAR) report. The status of implementation was reported to ARMCOM, quarterly.

8. Compliance with Laws and Regulations

The compliance activities of the internal audit function, including its internal audit charter and methodology, three-year strategic and annual internal audit plans, co-ordination with the external auditors, the reports of significant investigations and the responses of management to specific recommendations, include the following:

- Reviewing operations or programmes to ascertain whether results are consistent with established objectives and goals, and whether the operations or programmes are being carried out as planned; and,
- Providing a written assessment regarding the effectiveness of the system of internal and financial controls in the organisation, and submitting a report to ARMCOM to enable it to formulate its comment for the financial statement.

The annual allocation of internal audit resources to audit activities is established on the basis of an approved annual internal audit plan. ARMCOM remained responsible for approving the plan and ensuring compliance.

9. Fraud and Corruption

The NNR has developed and implemented a fraud and corruption prevention policy, a whistle blowing policy, a fraud and corruption prevention plan as well as a fraud and corruption response plan which address how fraud is managed and reported. For the year under review, these documents were reviewed and approved by the Board.

The fraud and prevention awareness workshops were conducted for the entire organisation through separate divisional meetings which involved the participation of all employees. This helps the organisation to prevent fraud and corruption activities and create awareness among employees.

The annual fraud risk assessment was conducted internally with senior managers participating in identification and reviewing of possible fraud and corruption risks. The identified fraud risks were rated according to the risk management matrix of the NNR and the risk owners were requested to provide mitigation plans to address the control deficiencies.
A consolidated fraud register was developed and approved by the Board. Monitoring and tracking of the implementation of action plans were conducted on a regular basis to manage identified fraud and corruption risks to an acceptable level within the organisation.

No incidents of whistle blowing were reported for the year under review.

10. Minimising Conflict of Interest

All NNR employees were required to complete and submit a declaration of financial disclosure when they commenced employment with the NNR. These declarations need to be updated as necessary. The executive and non-executive Directors are required to also complete annual financial disclosures which are submitted to the Department of Mineral Resources and Energy. Any person attending meetings such as Board, Board Committee and procurement related meetings must declare and disclose any conflict of interest at the commencement of such meetings.

All gifts received must be declared and recorded in the gift register. Only promotional gifts or gifts of negligible value were permitted. All NNR employees were also expected to sign a Declaration of Secrecy pertaining to the disclosure and dissemination of classified information of the NNR and its stakeholders. This obligation remains binding on employees even after they have left the services of the NNR.

11. Code of Conduct

The NNR has a code of conduct and ethics framework which is aligned to the code of conduct for the public service. The framework sets out the ethical standards and behaviours which must be adhered to. The framework covers *inter alia* the relationships between employees and other stakeholders, conflicts of interests, and information security. Breaches of conduct are handled in terms of the disciplinary processes. Serious misconduct especially pertaining to the unauthorised disclosure of classified information may result in criminal charges being laid against the offender.

12. Health, Safety and Environmental Issues

The NNR has a fully functioning health and safety committee and has all legal appointments in place as specified in the Occupational Health and Safety Act. The NNR conducted quarterly workplace inspections and external health and safety and environmental assessments and audits. No incidents or injuries on duty were reported in the year of reporting.

During the 2020/2021 FY the NNR developed and implemented a COVID-19 plan and directives. The plan was developed after consultation with all internal stakeholders and is implemented under the guidance of a compliance team comprising of the Compliance Manager, Ms A. Simon, and site compliance officers. To minimise exposure and infections employees were required to either work completely or partly from home depending on the level of lockdown as specified in Disaster Management Regulations.

The NNR complied with all COVID reporting requirements including reports to the National Institute of Occupational Health. In the 2020/2021 FY, 15 employees of the NNR tested positive for COVID-19. There were no deaths or serious illness experienced and all employees have fully recovered. There were no cases of inter-office transmission.

13. Social Responsibility

Recruitment was implemented in terms of the NNR's transformation targets. The NNR was compliant with the provisions of the PFMA and remained committed to the principles of social transformation and black economic empowerment.

14. Audit Committee Report

We are pleased to present our report for the financial year ended 31 March 2021.

Audit Committee Responsibility

The Audit Committee reports that it has complied with its responsibilities arising from the Public Finance Management Act and Treasury Regulation 3.1.13. The Audit Committee also reports that it has adopted appropriate formal terms of reference as its audit committee charter, has regulated its affairs in compliance with this charter and has discharged all its responsibilities as contained therein, except that we have not reviewed changes in accounting policies and practices.

The Effectiveness of Internal Control

Our review of the findings of the Internal Audit work, which was based on the risk assessments conducted in the public entity revealed certain weaknesses, which were then raised with the public entity.

The following internal audit work was completed during the year under review:

- Twelve internal audits were completed and recommendations made.

There were no areas of concern.

In-year management and monthly/quarterly report

The NNR has submitted monthly and quarterly reports to the Executive Authority.

Evaluation of financial statements

We have reviewed the Annual Financial Statements prepared by the NNR.

Auditor's Report

We have reviewed the NNR's implementation plan for audit issues raised in the prior year and we are satisfied that the matters have been adequately resolved.

The Audit Committee concurs and accepts the conclusions of the external auditor on the Annual Financial Statements and is of the opinion that the audited Annual Financial Statements be accepted and read together with the report of the auditor.

Mr Protas Phili
Chairman of Audit and Risk Management Committee
National Nuclear Regulator
26 August 2021

15. B-BBEE Compliance Performance Information

The Broad-Based Black Economic Empowerment Act, 2013 as amended (the B-BBEE Act), read together with the B-BBEE Regulations, requires that all spheres of government, public entities and organs of state as well as companies listed on the Johannesburg Stock Exchange (JSE) report to the B-BBEE Commission annually on their compliance with broad-based black economic empowerment.

The National Nuclear Regulator (NNR) supports the broad impetus of B-BBEE to structure and transform the economy to enable meaningful participation of the majority of its citizens, and to further create capacity within the broader economic landscape at all levels. The NNR's B-BBEE compliance was measured by means of a scorecard, which is based on various elements. The following were the different elements used to measure the NNR's B-BBEE compliance:

- **Ownership** – this measures the percentage of black ownership shareholding in the business. This is regarded as a priority element and failure to comply with the minimum target (40% of net value) will result in the level as obtained being discounted.

- **Management control** – which measures the directorship, executive management, other executive management, senior management, middle management, junior management and disabled staff in the business.
- **Skills development** – which measures the amount of money spent on training of black employees and black people. This element is regarded as a priority, and failure to comply with the minimum target of 40% will result in the level as obtained being discounted.
- **Enterprise and supplier development** – this measures spending on helping other black-owned enterprises grow, both suppliers to you and non-suppliers. This is regarded as a priority element and failure to comply with the minimum target of 40% in all categories will result in the level as obtained being discounted.
- **Socio-economic development** – this element measures spending on assisting charitable organisations.

The NNR conducted a B-BBEE assessment based on the audited Annual Financial Statements for the period ended 31 March 2020, to determine its level of compliance. The below table depicts the results obtained from the assessment:

B-BBEE Element	Weighting Points	Achieved Score
Ownership	25	0
Management Control	20	17.42
Skills Development	30	8.42
New Enterprise and Supplier Development	52	30.00
Socio-economic Development	5	0
Overall Score	**129**	**55.84**

The NNR achieved an overall assessment score of 55.84 points, and was classified as a compliant entity under the B-BBEE Act. The entity is now a certified Level 8 BEE contributor valid until 30 March 2022. This is a significant improvement from the previous non-compliant status, and the 40 points obtained in the previous financial year (2019/20).

Following from the outcome of the assessment, management has particularly noted the following:

- A marginal performance is noted on Socio-economic Development, where the entity obtained a zero scoring. This score is mainly attributed to the insufficient information or evidence obtained from social beneficiaries. The entity will continue to strive to improve the welfare of our communities. In the succeeding financial year, the NNR will focus on socio-economic initiatives aimed at benefiting all South African citizens through meaningful ways.
- The NNR has successful learning programmes that include internships and trainee programmes. In the next financial year, management will seek to address this outcome by implementing appropriate interventions, and to improve the participation of black unemployed people in training.
- A significant improvement is noted in the New Enterprise and Supplier Development element. The scoring of 30 points out of 52 is consistent with the interventions that the NNR management implemented to improve procurement on designated groups. The NNR is fully committed in improving the participation of women in procurement spending. For the next financial year, the entity has increased its target percentage procurement spend on designated groups from 50 to 70 percent, and will endeavour to maintain this target over a longer term.

D

HUMAN RESOURCE MANAGEMENT

PART D: HUMAN RESOURCE MANAGEMENT

1. Introduction

The HRM function includes the following key areas:

- Recruitment and Selection
- Remuneration and Rewards
- Succession Planning
- Performance Management
- Training and Development
- Employee Relations and
- Employee Wellness.

The focus for 2020-2021 was to ensure that all HR services continued to be delivered in accordance with key processes and despite the restrictions imposed by the pandemic. The HR department achieved all its performance targets despite some delays caused by the lockdown restrictions.

The NNR continued to implement its approved resource plan for the year and was able to fill most positions. We did experience some difficulty in sourcing skilled and experienced engineers. We are therefore focussing on growing our own talent through our internship and training programmes. All employees appointed to positions must meet required levels of competence.

Employee performance management framework

The NNR has an integrated performance management system which includes strategic performance, operational performance and individual performance. Final individual performance is a weighted factor of all three components.

The performance management cycle consists of contracting, review, assessment, moderation and reward.

Employee wellness programmes

During the review period, which was an unprecedented period of destabilisation due to the COVID-19 pandemic, the NNR provided additional programmes to assist management and employees to manage the impact of the pandemic. The NNR continued to implement mental wellbeing programmes that assisted employees to manage the mental and emotional challenges that have been brought about by the pandemic. Employees that were directly affected by COVID-19 were referred to the Employee Assistance programme for further assistance.

Policy development

All policies were developed and reviewed in accordance with the Integrated Management System and were monitored and reported on a quarterly basis.

All key performance areas as set out in the approved operational plan were achieved. This is impressive considering the impact of the lockdown.

Alternate arrangements for provision of online training were implemented and the online library was finalised which allowed employees to continue to access reading and research material despite not having access to the office.

The NNR implemented a successful work from home plan which allowed the NNR to achieve outstanding performance for the year despite the difficulties experienced.

Challenges

Recruitment of positions was delayed in the first two quarters of the financial year due to NNR restrictions on in-person meetings but a catch-up plan allowed us to reach our targets in this respect.

Management of employees working from home presented some challenges throughout the year. COVID-19 also presented a number of other challenges pertaining to absences due to illness or isolation/quarantine.

Future HR plans/goals

The NNR will continue to implement key processes and ensure compliance with all applicable legislation. Employee wellness will continue to be a focus area. Recruitment will continue in accordance with the approved long term resource plans. Post-pandemic, the NNR will be implementing a remote work framework which will allow employees to continue working from home where possible.

2. Human Resource Oversight Statistics

2.1. Personnel-related expenditure

Personnel cost by programme

Table 11: Personnel cost by programme/activity/objective

Programme/ activity/ objective	Total Expenditure (R'000)	Personnel Expenditure (R'000)	Personnel Exp. as a % of Total Exp. (R'000)	No. of Employees	Average Personnel Cost per Employee (R'000)
Administration	117 993	59 358	23.15%	57	1 041
Nuclear Power Plants	45 572	28 774	11.22%	48	599
Nuclear Technology & NORM	42 110	40 893	15.95%	42	974
Regulatory Improvement and Technical Services	50 770	44 474	17.34%	28	1 588
Total	**256 445**	**173 499**	**67.66%**	**175**	991

Personnel cost by salary band

Table 12: Employee cost by salary band

Category	Personnel Expenditure R'000	% of Employee to Total Personnel Cost	No. of Employees	Average Personnel Cost per Employee R'000
Top management (JE Level 1)	2 892	1.67%	1	2 892
Senior management (JE Level 3)	20 039	11.55%	10	2 004
Professionally qualified (JE Level 4, 5, 6 & 7)	136 267	78.54%	117	1 165
Skilled (JE Level 8 & 9)	10 039	5.79%	24	418
Semi-skilled (JE Level 10)	2 708	1.56%	10	271
Interns & Learners	1 554	0.90%	13	120
Total	**173 499**	**100.00%**	**175**	**6 869**

Performance rewards

Table 13: Performance rewards

Category	Performance Rewards R'000	Personnel Expenditure R'000	Average Performance Rewards Percentage
Top management (JE 1)	550	2 892	19,03%
Senior management (JE 3)	2 401	20 039	11,98%
Professionally qualified (JE 4, 5, 6 & 7)	16 414	136 267	12,05%
Skilled (JE 8 & 9)	1 843	10 039	18,36%
Semi-skilled (JE 10)	151	2 708	5,58%
Interns & Learners	-	1 554	0,00%
Total	**21 359**	**173 499**	**12,31%**

Training costs

Table 14: Training costs

Objective	Personnel Expenditure R'000	Training Expenditure R'000	Training Exp. as a % of Personnel Cost	No. of Employees Trained	Average Training Cost per Employee R'000
Training and Development	173 499	1 590	0.92%	73	22
Bursaries	173 499	357	0.21%	10	36
Bursaries (External - CNSS)	173 499	374	0.22%	4	94
Total	**173 499**	**2 321**	1.34%	**87**	**27**

Employment and vacancies

Table 15: Employment and vacancies

Programme/ activity/objective	2020/2021 No. of Employees	2020/2021 Approved Posts	2020/2021 Vacancies	% of Vacancies
Permanent employees	**157**	**166**	9	5%
Fixed Term Contracts	5	5	0	0%
Temporary employees	2	2	0	0%
Interns and Trainees	15	15	0	0%

Table 16: Employment and vacancies by management level

Programme/activity/objective	2020/2021 No. of Employees	2020/2021 Approved Posts	2020/2021 Vacancies	% of Vacancies
Top Management	1	1	0	0%
Senior Management	10	10	0	0%
Professional qualified	117	125	8	6%
Skilled	23	24	1	4%
Semi-skilled	6	6	0	0%
Unskilled	0	0	0	0%
TOTAL	**157**	**166**	**9**	**5%**

Explanations: All executive and senior management positions were filled and this level remains very stable at the NNR. Most vacancies were filled within a three-month period. The NNR focusses on internal advancement and the majority of positions were filled internally. The NNR did experience some difficulty in filling the positions of Senior Analyst: Civil Engineering and after not being able to source a suitable candidate either internally or externally, it was decided to source a candidate at an entry level so that the person could be trained and developed.

Employment changes

Table 17: Employment changes

Salary Band	Employment at Beginning of Period	Appointments	Terminations	Employment at End of the Period
Top Management	1	0	0	1
Senior Management	10	0	0	10
Professional qualified	120	4	7	117
Skilled	23	2	2	23
Semi-skilled	6	0	0	6
Unskilled	0	0	0	0
Total	**160**	6	9	**157**

Reasons for staff leaving

Table 18: Reasons for staff leaving

Reason	Number	% of Total No. of Staff Leaving
Death	1	11%
Resignation	6	67%
Dismissal	1	11%
Retirement	1	11%
Ill health	0	0
Other	0	0
Total	**9**	100%

Explanations: Most employees resigned as they had received opportunities for advancement in their careers outside the organisation. All vacant posts are advertised and filled as soon as possible. The vacancies create opportunities for career progression for internal staff and trainees.

Labour relations: Misconduct and disciplinary action

Table 19: Labour relations: Misconduct and disciplinary action

Nature of disciplinary Action	Number
Verbal warning	1
Written warning	1
Final written warning	0
Dismissal	1

Equity target and employment equity status

Table 20: Equity target and employment equity status

Levels	Male								Foreign Nationals	
	African		Coloured		Indian		White		Male	
	Current	Target	Current	Target	Current	Target	Current	Target	Current	Target
Top Management	1	1	0	0	0	0	0	0	0	0
Senior Management	3	3	3	3	1	1	0	0	0	0
Professional qualified	46	50	7	7	3	3	6	6	2	2
Skilled	4	4	0	0	0	0	0	0	0	0
Semi-skilled	4	4	0	0	0	0	0	0	0	0
Unskilled	0	0	0	0	0	0	0	0	0	0
TOTAL	58	62	10	10	4	4	6	6	2	2

Explanations: The EE information above was as per the reports submitted to the Department of Labour for the period 1 October 2019 to 30 September 2020. The numerical goals could not be achieved due to a revision of the resource plan and the poor financial outlook forecast for the country. The NNR will therefore be revising the numerical goals and targets for the next three years. Despite this the NNR achieved its transformation goals in terms of race and gender.

Levels	Female								Foreign Nationals	
	African		Coloured		Indian		White		Female	
	Current	Target	Current	Target	Current	Target	Current	Target	Current	Target
Top Management	0	0	0	0	0	0	0	0	0	0
Senior Management	2	2	0	0	1	1	0	0	0	0
Professional qualified	48	47	0	0	1	1	4	4	2	2
Skilled	14	14	1	1	0	0	4	3	0	0
Semi-skilled	4	4	0	0	0	0	0	0	0	0
Unskilled	0	0	0	0	0	0	0	0	0	0
TOTAL	68	67	1	1	2	2	8	7	2	2

Levels	Disabled Staff			
	Male		Female	
	Current	Target	Current	Target
Top Management	0	0	0	0
Senior Management	0	0	0	0
Professional qualified	2	2	3	3
Skilled	0	0	0	0
Semi-skilled	0	0	0	0
Unskilled	0	0	0	0
TOTAL	2	2	3	3

E

REGULATION OF NUCLEAR ACTIONS

PART E: REGULATION OF NUCLEAR ACTIONS

List of Authorisations

Authorisation No.	Var.	Nuclear facilities	Date issued	B #
NIL-01	19	Koeberg Nuclear Power Station	7 March 2019	NA
NIL-02	3	SAFARI – 1 Research Reactor	21 May 2012	NIL02B0296
NIL-03	1	P2700 Complex	4 May 2012	NIL03B0041
NIL-04	0	Thabana Complex comprising the following facilities: • Thabana PipeStore • Thabana Radioactive Waste Storage facility • Thabana Containerised Radioactive Waste Storage facility CaF2 Ponds	30 October 2009	NIL04B0001
NIL-05	1	HEU Vault – K0090	4 May 2012	NIL05B0004
NIL-06	0	A-8 Decontamination Facility	11 May 2010	NIL06B0001
NIL-07	0	Building A-West Drum Store	9 February 2009	NIL07B0001
NIL-08	1	ELPROD in Building P-2500	4 May 2012	NIL08B0039
NIL-09	1	UMET in Building P2600	28 October 2011	NIL09B0004
NIL-10	0	Conversion Plant Complex	5 August 2010	NIL10B0001
NIL-11	1	Area 14 Waste Management Complex	18 April 2011	NIL11B0009
NIL-12	0	Quarantine Storage Facility	8 October 2009	NIL12B0001
NIL-13	0	V-YB Pelindaba East Bus Shed Complex	30 October 2009	NIL13B0001
NIL-14	0	Pelindaba East Evaporation Ponds Complex	30 October 2009	NIL14B0001
NIL-15	0	Oil Purification Facility	30 October 2009	NIL15B0001
NIL-16	0	Area 21 Storage Facility	11 May 2010	NIL16B0001
NIL-17	0	BEVA K3 Storage Complex	2 November 2009	NIL17B0001
NIL-18	0	Area 16 Complex	11 May 2010	NIL18B0001
NIL-19	1	Area 40 Complex	1 November 2011	NIL19B0012
NIL-20	0	Area 27 De-Heeling Facility	11 May 2010	NIL20B0001
NIL-21	0	J-Building	24 November 2009	NIL21B0001
NIL-22	0	D-Building	5 August 2010	NIL22B0001
NIL-23	0	C-Building	12 May 2010	NIL23B0001
NIL-24	0	Building P-2900	24 November 2009	NIL24B0001
NIL-25	0	Building XB	11 May 2010	NIL25B0001
NIL-26	0	BEVA Evaporation Ponds	11 January 2010	NIL26B0001
NIL-27	0	Building P-2800	11 May 2010	NIL27B0001
NIL-28	1	Vaalputs National Radioactive Waste Disposal Facility	18 April 2011	NIL28B0010

Authorisation No.	Var.	Nuclear facilities	Date issued	B #
NIL-29	1	Area 26	3 July 2013	NIL29B0027
NIL-30	0	E-Building	5 August 2010	NIL30B0001
NIL-31	0	Dorbyl Camp	25 October 2010	NIL31B0001
NIL-32	0	X-Building	25 October 2010	NIL32B0001
NIL-33	0	Building P-1500	25 October 2010	NIL32B0001
NIL-34	0	YM Vacuum Workshop	5 August 2010	NIL34B0001
NIL-35	0	V-H Building Laboratories	25 October 2010	NIL35B0001
NIL-36	0	P-1900 Laboratories	5 August 2010	NIL36B0001
NIL-37	0	P-1600 Laboratories	16 September 2010	NIL37B0001
NIL-38	0	Fuel Development Laboratories Complex	16 September 2010	NIL38B0001
NIL-39	0	NTP Radiochemicals Complex	06 August 2010	NIL39B0001
NIL-40	0	Pelindaba Analytical Laboratories (PAL) in Building BEVA-E1	05 August 2010	NIL40B0001
NIL-41	1	Liquid Effluent Treatment Facility Complex	24 February 2011	NIL41B0006
NIL-42	0	B-1 Building Basement	20 January 2012	NIL42B0001

List of CORS

	COR Number	Name of COR Holder	Category	Type of COR Issued
1	COR-2	Anglogold Ashanti Limited (Vaal River Operations)	Category 4	Mining and Mineral Processing
2	COR-3	Anglogold Ashanti Limited (West Wits Operations)	Category 5	Mining and Mineral Processing
3	COR-5	ARMgold/Harmony Freegold Joint Venture Company (Pty) Ltd (Tshepong, Matjhabeng & Bambani Operations)	Category 5	Mining and Mineral Processing
4	COR-6	ARMgold/Harmony Freegold Joint Venture Company (Pty) Ltd (Joel operation)	Category 4	Mining and Mineral Processing
5	COR-7	African Rainbow Minerals Gold Limited (Welkom Operations)	Category 4	Mining and Mineral Processing
6	COR-10	Avgold Limited - Target Division	Category 4	Mining and Mineral Processing
7	COR-11	Gravelotte Mines Limited	Category 4	Mining and Mineral Processing
8	COR-13	MTC Demolition	Category 2	Scrap Processor
9	COR-16	Nuclear Fuels Corporation of South Africa (Pty) Limited	Category 3	Mining and Mineral Processing
10	COR-18	South Deep Joint Venture	Category 5	Mining and Mineral Processing

	COR Number	Name of COR Holder	Category	Type of COR Issued
11	COR-20	Foskor Limited (Phalaborwa)	Category 4	Mining and Mineral Processing
12	COR-23	Steenkampskraal Monazite Mine (Pty) Limited	Category 2	Mining and Mineral Processing
13	COR-25	Eggerding SA (Pty) Limited	Category 2	Mining and Mineral Processing
14	COR-26	Richards Bay Iron and Titanium (Pty) Limited	Category 4	Mining and Mineral Processing
15	COR-27	Foskor Limited (Richards Bay)	Category 3	Fertiliser manufacturer
16	COR-28	Randfontein Estates Limited-(Kusasaletheu)	Category 4	Mining and Mineral Processing
17	COR-30	Mine Waste Solutions (Pty) Limited	Category 4	Mining and Mineral Processing
18	COR-33	Rampete Metal Processors (Pty) Ltd	Category 2	Scrap Processor
19	COR-37	Harmony Gold Mining Company Limited (Free State Operations)	Category 5	Mining and Mineral Processing
20	COR-38	Omnia Phosphates (Pty) Ltd	Category 2	Fertiliser manufacturer
21	COR-40	ARMgold/Harmony Freegold Joint Venture Company (Pty) Ltd (St Helena Operations)	Category 4	Mining and Mineral Processing
22	COR-43	Tronox KZN Sands	Category 4	Mining and Mineral Processing
23	COR-50	Rappa Resources (Pty) Limited	Category 1	Mining and Mineral Processing
24	COR-53	East Rand Proprietary Mines Limited	Category 4	Mining and Mineral Processing
25	COR-57	Crown Gold Recoveries Pty) Limited	Category 4	Mining and Mineral Processing
26	COR-58	Harmony Gold Mining Company Limited - Randfontein Operations	Category 4	Mining and Mineral Processing
27	COR-59	Industrial Zone Limited	Category 4	Mining and Mineral Processing
28	COR-61	Sedex Minerals (Pty) Ltd	Category 1	Mining and Mineral Processing
29	COR-64	Potchefstroom Plastiek Herwinning BK	Category 1	Scrap Processor
30	COR-66	Mintek	Category 1	Small user
31	COR-69	Sibanye Gold Limited (Driefontein Operations)	Category 4	Mining and Mineral Processing
32	COR-70	Sibanye Gold Limited (Kloof Operation)	Category 5	Mining and Mineral Processing

	COR Number	Name of COR Holder	Category	Type of COR Issued
33	COR-71	Sibanye Gold Limited (Beatrix Operation)	Category 5	Mining and Mineral Processing
34	COR-77	Anglo American Research Laboratories (Pty) Limited	Category 1	Small user
35	COR-86	Glenover Phosphate Limited (Mining Site) Operation)	Category 2	Mining and Mineral Processing
36	COR-87	Rand Refinery Limited	Category 1	Mining and Mineral Processing
37	COR-92	The Forensic Science Laboratory, SA Police	Category 1	Small user
38	COR-100	South African Airforce (SAAF), Department of Defence (DoD), RSA	Category 3	Mining and Mineral Processing
39	COR-101	The Reclamation Group (Pty) Ltd (Richards Bay)	Category 2	Scrap Processor
40	COR-104	South African Ports Operations-Dry Bulk Terminal Richards Bay A division of Transnet Limited	Category 4	
41	COR-106	Mineral Sands Resources Pty Ltd	Category 4	Mining and Mineral Processing
42	COR-107	Vesuvius South Africa (Pty) Ltd	Category 2	Mining and Mineral Processing
43	COR-111	Bosveld Phosphate (Pty) Ltd	Category 2	Fertiliser manufacturer
44	COR-112	Scaw Metals Group	Category 2	Scrap Processor
45	COR-116	Tswelopele Beneficiation Operations	Category 4	Mining and Mineral Processing
46	COR-118	GoldPlats Recovery Ltd	Category 1	Mining and Mineral Processing
47	COR-131	East Rand Beneficiation (Pty) Ltd	Category 1	Mining and Mineral Processing
48	COR-137	Manos Engineering (Pty) Ltd	Category 1	Scrap Processor
49	COR-138	Bright Refining (Pty) Ltd	Category 1	Mining and Mineral Processing
50	COR-140	China African Precious Metals (PTY) Ltd	Category 4	Mining and Mineral Processing
51	COR-141	Palabora Copper (Pty) Ltd	Category 4	Mining and Mineral Processing
52	COR-142	Pan African Resources - Evander Gold Mining	Category 4	Mining and Mineral Processing
53	COR-143	Zirco Roode Heuwel	Category 1	Mining and Mineral Processing
54	COR-144	Scamont Engineering (Pty) Ltd	Category 1	Scrap Processor
55	COR-148	Saldanha Dry Bulk Terminal Cc	Category 2	Service provider
56	COR-149	Cronimet RSA (Pty) Ltd	Category 2	Scrap Processor

	COR Number	Name of COR Holder	Category	Type of COR Issued
57	COR-150	Minrite (Pty) Ltd	Category 2	Mining and Mineral Processing
58	COR-151	Covalent Water Company (Pty) Ltd	Category 4	Mining and Mineral Processing
59	COR-152	SGS South Africa (Pty) Ltd (Cooke operations)	Category 1	Small user
60	COR-153	Resource Reference Materials (Pty) Ltd	Category 1	Small user
61	COR-156	South African Nuclear Energy Corporation (Necsa); calibration pads	Category 1	Small user
62	COR-159	North West Reclaiming	Category 2	Scrap Processor
63	COR-160	Shiva Uranium One	Category 2	Mining and Mineral Processing
64	COR-164	Sulzer Pumps (SA) Limited	Category 1	Service provider
65	COR-165	Uramin Mago Lukisa	Category 1	Mining and Mineral Processing
66	COR-178	Durban Container Terminal - Business Unit of SA Port Operations	Category 1	Mining and Mineral Processing
67	COR-180	SA Port Operations - Container Terminal Cape Town	Category 1	Mining and Mineral Processing
68	COR-181	Transnet Limited (SA Port Operations -Multipurpose Terminal, Saldanha Bay)	Category 1	Mining and Mineral Processing
69	COR-182	Buffelsfontein Gold Mine Limited	Category 3	Mining and Mineral Processing
70	COR-186	AfriSam (Pty) Limited	Category 1	Mining and Mineral Processing
71	COR-190	Sibanye Gold - Ezulwini	Category 4	Mining and Mineral Processing
72	COR-195	Houlgon Uranium & Power (Pty) Ltd	Category 1	Mining and Mineral Processing
73	COR-197	Gold Reef City Theme Park	Category 1	Mining and Mineral Processing
74	COR-199	Uramin Mago Lukisa	Category 1	Mining and Mineral Processing
75	COR-201	A&S Mining Supplies	Category 1	Service provider
76	COR-203	Cemo Pumps (Pty) Ltd	Category 1	Service provider
77	COR-215	Margaret Water Company	Category 4	Mining and Mineral Processing
78	COR-216	Paddy's Pad 1183 (Pty) Ltd	Category 1	Mining and Mineral Processing
79	COR-217	Cango Caves Oudtshoorn Municipality	Category 1	Mining and Mineral Processing

	COR Number	Name of COR Holder	Category	Type of COR Issued
80	COR-218	Grindrod Terminals (Pty) Limited	Category 2	Mining and Mineral Processing
81	COR-219	Sibanye Gold Eastern Operations (Pty) Ltd.	Category 4	Mining and Mineral Processing
82	COR-225	New Kleinfontein Goldmine (Pty) Limited	Category 4	Mining and Mineral Processing
83	COR-226	Rand Uranium (Pty) Limited	Category 5	Mining and Mineral Processing
84	COR-228	Ergo Mining (Pty) Limited	Category 4	Mining and Mineral Processing
85	COR-230	ALS Chemex South Africa (Pty) Limited	Category 1	Small user
86	COR-236	Reclaim Invest 101 (Pty) Limited	Category 2	Scrap Processor
87	COR-238	Tronox (Namakwa Sands Operations)	Category 4	Mining and Mineral Processing
88	COR-242	Enviro Mzingazi Gypsum (Pty) Limited	Category 1	Mining and Mineral Processing
89	COR-246	NTP Logistics (Pty) Limited	Category 2	Mining and Mineral Processing
90	COR-248	Foskor Zirconia (Pty) Limited	Category 2	Mining and Mineral Processing
91	COR-252	Harmony Gold Mining Company Limited (South Operations)	Category 4	Mining and Mineral Processing
92	COR-253	Avgold Limited (North Operations)	Category 4	Mining and Mineral Processing
93	COR-257	Samco Investments (Pty) Limited	Category 2	Scrap Processor
94	COR-258	SA Metal and Machinery Co (Pty) Limited	Category 2	Scrap Processor
95	COR-260	African Mineral Standards (a division of Set Point Industrial Technology (Pty) Ltd)	Category 1	Small user
96	COR-261	North West University	Category 1	Mining and Mineral Processing
97	COR-263	Aklin Carbide (Pty) Ltd	Category 1	Service provider
98	COR-264	Umhlathuze Imports and Exports	Category 2	Scrap Processor
99	COR-266	Tau Lekoa Gold Mining Company (Pty) Ltd	Category 4	Mining and Mineral Processing
100	COR-265	Nicolor (Pty) Ltd	Category 1	Mining and Mineral Processing
101	COR-268	Far East Gold Special Purposes Vehicle (Pty) Ltd	Category 2	Mining and Mineral Processing
102	COR-270	Newshelf 1186 (Pty) Ltd	Category 2	Service provider
103	COR-271	Trans-Med Shipping	Category 2	

	COR Number	Name of COR Holder	Category	Type of COR Issued
104	COR-269	Taurus Africa Scrap Metal	Category 2	Mining and Mineral Processing
105	COR-272	Sasol Gas Ltd	Category 1	Small User
106	COR-273	È&A Belt Sales CC	Category 2	Scrap Processor
107	COR-274	Freight Facilitators (Pty) Ltd	Category 2	service provider
108	COR-275	Vosloo and Lloyd Investments (Pty) Ltd T/A Scrapcore Secunda	Category 2	Scrap Processor
109	COR-276	Aquatro Investments CC	Category 2	Scrap Processor
110	COR-277	Donnlee Pump Tech (Pty) Ltd	Category 1	Refurbisher
111	COR-279	Harmony Moab Khotsong Operations (Pty) Ltd	Category 5	Mining and Mineral Processing
112	COR-281	DRD Gold Far West Gold Recoveries (Pty) Ltd	Category 4	Mining and Mineral Processing
113	COR-282	Kopanang Gold Mining Company (Pty) Ltd	Category 5	Mining and Mineral Processing
114	COR-283	Access World (South Africa) Pty Ltd	Category 1	Service provider
115	COR-284	Ncamiso Trading (Pty) Ltd	Category 1	Mining and Mineral Processing
116	COR-285	C. Steinweg Bridge (Pty) Ltd	Category 1	Service provider
117	COR-286	LightDeepEarth (Pty) Ltd	Category 1	Mining and Mineral Processing
118	COR-288	Lemowe (Pty) Ltd	Category 1	Service provider
119	COR-289	Bomamba Trading (Pty) Ltd	Category 2	Scrap Processor
120	COR-291	Nanoretech Processing (Pty) Ltd	Category 3	Mining and Mineral Processing
121	COR-292	Enviro Waste Management (Pty) Ltd	Category 2	Service provider

	COE Number	Name of COE Holder
1	COE-2	Oranje Mynbou Verwoer - Kynoch Gypsum
2	COE-3	Kynoch Modderfontein
3	COE-4	Oranje Mynbou Verwoer - Stilfontein Waste Rock
4	COE-6	Neethling Plastics
5	COE-10	Dino Properties
6	COE-12	The Maretsel Property Trust
7	COE-17	Scientific Services CC
8	COE-18	Paterson & Cooke (Pty) Ltd
9	COE-19	University of Pretoria (Chemical Engineering Department of the)
10	COE-20	Denel SOC Ltd (T/A Denel Aviation)
11	COE-21	Huntrex 196 (Pty) Ltd T/A Ceracast
12	COE-23	Jenco Mining (Pty) Ltd
13	COE-24	Little Creek Trading 368 Cc
14	COE-29	Aerospace Systems (Pty) Ltd
15	COE-30	South African Roll Company Pty Ltd
16	COE-33	Chromatech Services (Pty) Ltd
17	COE-35	Geolabs Global (Pty) Ltd
18	COE-40	Tulimax (Pty) Ltd

Koeberg Nuclear
Power Station (KNPS)

1. Regulation of Nuclear Power Plants – Koeberg Nuclear Power Station (KNPS)

The KNPS is located 35km north of Cape Town on the west coast of South Africa and is the only nuclear power station on the African continent. KNPS is owned and operated by South Africa's national electricity supplier, Eskom. In terms of the NNR Act, Nuclear Installation Licences contain conditions deemed necessary to ensure the protection of persons, property and the environment against nuclear damage.

KNPS is operated in terms of the Nuclear Installation Licence, NIL-01 Variation 19 and associated 29 conditions, including specific licensing requirements and controls pertaining to:

Conditions of NIL-01 VARIATION 19			
1	General	16	Ageing Management and Long Term Operation
2	Nuclear Installation Description	17	Decommissioning
3	Demarcation of Site	18	Physical Security
4	Scope of Actions That May Be Undertaken	19	Dealing with Site
5	Radiological Protection	20	Authorised and Qualified Persons
6	Environmental Protection and Effluent Management	21	Quality and Safety Management
7	Radioactive Waste Management	22	Documents and Records
8	Emergency Planning and Preparedness	23	Organisational Changes
9	Medical Surveillance and Health Register	24	Safety Committees
10	Transport	25	Financial Security
11	Safety Assessment	26	Inspection Programme
12	Modification to Design of Plant	27	Events on Site
13	Design and Manufacturing of Components	28	Public Safety Information Forum
14	Limits and Conditions on Operations	29	Display of Installation License
15	Maintenance and In-Service Inspection		

In terms of section 26(2) of the NNR Act, Eskom as the nuclear licence holder implements an inspection programme to ensure compliance with the conditions of the Nuclear Installation Licence. The NNR implements an independent system of compliance inspections to provide assurance of compliance with the conditions of the nuclear licence in terms of section 5(d) of the NNR Act.

1.1. Occupational exposure to radiation

The NNR prescribes that occupational exposure of any worker must be controlled to ensure that the limits shown in the table below are not exceeded.

1.1.1. General regulatory dose limits

Table 21: General regulatory dose limits

GENERAL REGULATORY DOSE LIMITS	
Workforce	**Regulatory Criteria (RD-0022)**
Maximum individual worker dose	A (maximum) effective dose of 50mSv in any single year
Average individual worker dose	20mSv per annum averaged over five consecutive years

The worker doses at KNPS during the reporting period were within regulatory limits as depicted in Figures 1 and 2 below. Radiation exposure of workers at KNPS remained subject to control by the Operational Radiation Protection Programme. This programme ensured that control within the annual individual dose limit was achieved. In addition, the programme also served to ensure that all doses are kept As Low As Reasonably Achievable (ALARA).

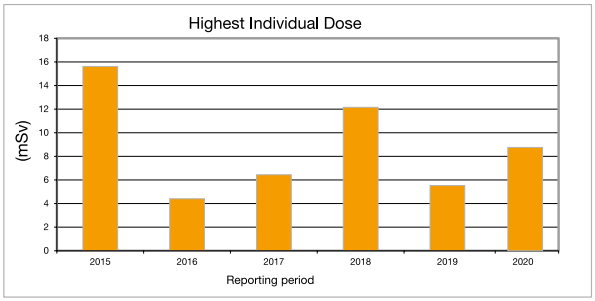


Figure 1: Highest individual occupational exposure (2015 – 2020)

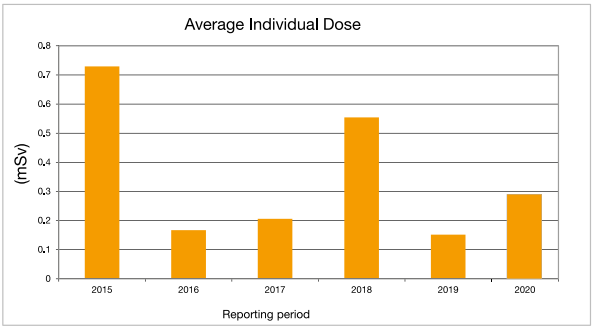


Figure 2: Average individual dose at KNPS (2015 – 2020)

The average individual dose between 2015 – 2020 was below 20mSv per annum, attesting to the ALARA programme being implemented by the operator. Further, no individual exceeded the average individual dose averaged over five consecutive years as prescribed by the SSRP.

1.1.2. Projected public exposure to radiation

In accordance with the conditions of the licence and the SSRP, the public doses resulting from effluent discharges from KNPS must comply with the dose constraint of 250μSv/a and the system of Annual Authorised Discharge Quantities (AADQs) applicable to the site. KNPS complied with the AADQs and the projected public doses resulting from the effluent releases (both liquid and gaseous) for the 2020 calendar year were well within the dose constraint. There were no unauthorised effluent discharges and no safety concerns regarding the safety of the public living around the site during the period under review.

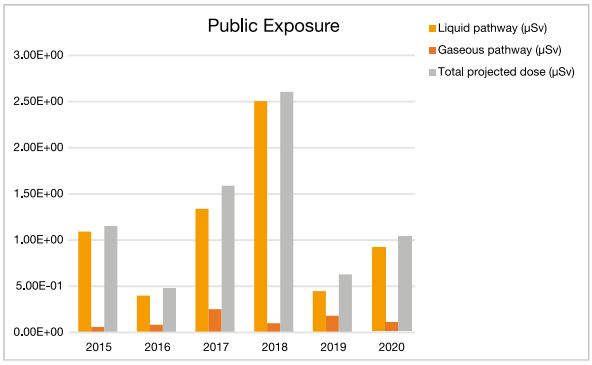


Figure 3: Projected public dose from effluent discharges (2015 – 2020)

The public doses resulting from effluent discharges between 2015 and 2020 were below 250μSv/a and complied with the dose constraints prescribed by the SSRP regulations.

1.2. Nuclear safety

The Authorisation Holder's commitment to safety of the plant and operations has been confirmed by the inspections that have been carried out. Where it has been observed that areas of weakness have occurred, these have been addressed by thorough investigations and the implementation of appropriate corrective actions.

During the year under review, the NNR focussed its safety assessment activities primarily on the areas summarised under the headings that follow.

1.2.1. Steam Generator Replacement (SGR)

Figure 4: Replacement steam generators being loaded for shipment to South Africa

During the year under review, the manufacturing of three of the six Replacement Steam Generators (RSGs) was completed at Shanghai Electric Nuclear Power

Equipment (SENPEC) in China and shipped to Koeberg Nuclear Power Station.

They are presently being stored in an interim storage facility at the Koeberg Nuclear Power Station site. These RSGs were initially planned for installation on Unit 1 in 2021. The installation of the RSGs has, however, been delayed due to setbacks with the submission of the installation safety case and associated safety and operational documentation to the NNR as well as the delay with the construction of the Original Steam Generator Interim Storage Facility (OSGISF). Eskom's plan is now to install them in Unit 2 during Outage 225 that is scheduled to take place in January 2022.

Manufacturing of the other three RSGs is continuing in compliance with the NNR quality, safety management and manufacturing requirements, RD-0034 and PP-0012, at the main manufacturing facility in China, SENPEC. The NNR is monitoring the manufacturing processes as well as the close-out of non-conformances to specifications in accordance with the agreed process.

An incident, where the lower assembly (PIF79) of RSG 79 (initially earmarked for Unit 1) slipped off its rollers, is being investigated. An engineering analysis study, to determine potential damage to the assembly, is being performed at the Framatome design office to potentially support a 'fit for purpose', or not, position. The justification to demonstrate 'fit for purpose' of the lower assembly has been independently reviewed by Eskom experts, MPR, and Tractebel. The submission was recently submitted to the NNR for acceptance.

The review of the RSGs' System Design by the NNR, which included the Safety Studies, has been completed subject to the resolution of outstanding NNR comments. The studies, including System Design 07092-A and associated modifications to the plant, or so called "Daughter Designs", have been submitted prior to the installation safety case in order to ensure a common understanding of safety criteria and analysis methods.

In addition, a preliminary Installation Safety Case has been submitted, to be followed by a final Installation Safety Case.

Interfacing between the NNR and Eskom on the project took place through routine monthly SGR licensing meetings where outstanding issues were discussed and tracked.

1.2.2. Spent fuel dry storage

The used nuclear fuel is currently stored in the spent fuel pools as well as dry storage casks located in the Cask Storage Building (CSB) at KNPS. The storage space in both spent fuel pools is almost fully utilised. Eskom has adopted a strategy to load spent fuel in dry storage casks that will be stored in the CSB and a Transient Interim Storage Facility (TISF) on the Koeberg site, subject to NNR licensing. Eskom had obtained a positive record of decision from the Department of Environmental Affairs in 2017 for the construction of the TISF.

Eskom procured 14 HI-STAR 100 metal casks from Holtec, a company based in the United States. Manufacturing of the casks has been completed and delivered to KNPS in accordance with NNR requirements stipulated in RD-0034 and PP-0012. The NNR approved, in addition to the four CASTOR X28 casks, the loading and storage in the CSB of four of these new casks with spent nuclear fuel from both units at KNPS.

These four casks are currently being stored in the CSB. The CSB was modified to house the additional casks. Eskom has revised the Temporary Licence Change Request (TLCR) and associated safety case for the loading, transport and longer term storage on site of both the HI-STAR-100 and CASTOR X28 casks in the CSB. The NNR is processing the review of the revised TLCR.

1.2.3. Application for the Transient Interim Storage Facility (TISF)

On 5 May 2020, Eskom applied for the siting, construction, operation and decommissioning of the Transient Interim Storage Facility (TISF) on the Koeberg site. The OSGISF is part of the TISF and is earmarked to store the six Original Steam Generators temporarily after they have been removed from the plant as part of the SGR project. The NNR granted permission for Eskom to commence with site establishment and early site activities in line with guidance provided in PP-0009. An NNR inspection found that Eskom had subsequently performed activities beyond what were authorised by the NNR. The NNR issued a stop work order of all OSGISF site activities and performed an investigation to determine the extent of the non-compliance. The outcome of the investigation was communicated to Eskom. The NNR is reviewing

the adequacy of corrective actions proposed and/or implemented by Eskom to address the causes that led to the violation of the NNR authorisation.

The NNR conducted an iterative review of the application and its supporting documents. The review process included Requests for Additional Information (RAIs) and supplemental RAIs. Feedback to the applicant was provided through various letters and meetings. After the review of the detailed design of the facility, the safety report, and construction drawings, the NNR identified several verification items. These related to: Site characteristics, bounding design parameters, inspections, tests, analyses, and acceptance criteria.

The Board subsequently approved the recommendation by the NNR Executive for issuing the NIL for construction of the OSGISF with relevant conditions, and subject to items identified during the review process to be verified by the NNR during the construction phase.

Construction of the OSGISF is a pre-requisite for approval of the installation of the new Replacement Steam Generators.

1.3. Long Term Operation (LTO)

The Koeberg safety analysis report assumes a design life of 40 years, which limits current operations to July 2024. Eskom has established a plant-life extension programme in preparation for the planned LTO. The LTO programme for KNPS included IAEA technical support and peer review prior to July 2024.

In January 2021, Eskom formally applied to extend the operating life of the plant beyond the period currently justified in the licensing basis. The Minister has recently published the Regulation on Long Term Operations for nuclear installations. Eskom has been required to revise the application in line with the recently promulgated regulations. The applicant will be directed to publish the application for public notice and comment once the application is accepted by the NNR for further processing. The NNR has developed a LTO Resource Plan in preparation for the review of the submission of the safety case for continued safe operation of the plant beyond the current licensing term. In addition, an associated project plan details the NNR's preparation activities for the review of the safety case that must be submitted by July 2022.

1.4. RPVH Replacement Project

The Unit 2 Reactor Pressure Vessel Head (RPVH) and Control Rod Drive Mechanisms (CRDMs) are due for replacement in Outage 225 starting in January 2022. The project was progressing as planned and at the time of reporting was in the manufacturing phase.

The RPVH is being manufactured in accordance with NNR requirements stipulated in RD-0034, PP-0012 and ASME III, Version 2007 code. The NNR continued the review of manufacturing-related documents during the reporting period ensuring that the requirements are met during the manufacturing phase.

The NNR planned to review end of manufacturing reports for the RPVH and CRDMs in France in 2020. The visit to Europe was postponed due to the COVID-19 pandemic and associated travel restrictions, and a number of hold points have been released. Alternative methods to inspect the various end-of-manufacturing records are being pursued. Eskom has submitted a number of end-of-manufacturing reports that are currently being reviewed by the NNR.

The NNR has compiled a manufacturing report to document the manufacturing oversight activities undertaken by the NNR on the Koeberg Unit 2 RPVH and CRDMs replacement project. The report provides a basis for the NNR's position on future oversight activities related to regulatory control of this project.

1.5. Competency and sufficiency of the operator workforce to work safely

Based on monitoring of events on the plant, the overall staffing and competency levels required for acceptable performance in work related to nuclear safety at KNPS were found to be satisfactory during the period under review.

1.6. Transport safety

The NNR issued another two Nuclear Vessel Licences for the transport of new fuel to KNPS. There were no concerns related to the safety of transport of radioactive material during the period under review.

1.7. Radioactive waste safety

Eskom performed drop tests on the 210L metal drums which were observed by the NNR. The drop tests indicated that 201L drums with trash can be safely transported. The drop test with Steam Generator

Blowdown resins were not conclusive. Eskom has to demonstrate that the resins will be contained in the drum in case of a transport accident. The drop test results for Non-compactable Waste (NCW) in 210L drums did not meet the test criteria. Eskom has to propose alternative packaging for transport of NCW.

Transport of 210L metal drums containing trash continued and concrete drums containing NCW restarted during the reporting period with a total of 294 drums being delivered to Vaalputs during the 2020 calendar year (See Figure 5).

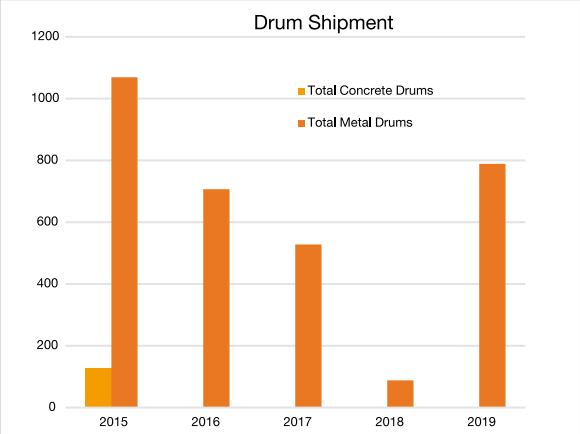


Figure 5: Inventory of solid radioactive waste produced and drummed for calendar years 2015– 2020

1.8. Environmental protection

There were no safety concerns identified regarding the environment around KNPS during the period under review.

1.9. Nuclear emergency planning and preparedness

The last Regulatory Nuclear Emergency Exercise at KNPS was conducted in October 2020. The simulated scope of the exercise was limited to the Koeberg Emergency Control Centre and the Alternative Emergency Control Centre due to COVID-19 restrictions. Non-compliances and general comments from that exercise were followed up and the NNR continues to monitor corrective actions from KNPS.

In the 2019/2020 financial year the NNR continued to perform emergency preparedness inspections at KNPS evaluating the adequacy of the plan, ensuring that implementation procedures are updated and current, that public education and information is conducted as well as reviewing licensees' compliance with the Full Volume Siren Test in all populated areas within the 16km radius of KNPS in order to inform the public of any emergency at KNPS. This was done to identify areas of improvement in the existing emergency preparedness.

1.10. Physical security

Both the NNR and the National Key Points' Security functionaries have responsibilities regarding physical security at KNPS. As part of its Compliance Assurance Programme, the NNR conducted regular compliance activities at KNPS to verify conformance to licensing requirements on nuclear security. Security-related incidents, and the NNR and SAPS National Key Points' security functionaries thereto, are monitoring Eskom's responses. Where necessary, enforcement actions are called for and implemented.

The NNR conducted two planned inspections during the reporting period.

1.11. Safety of sealed radioactive sources

The safety of sealed radioactive sources on the KNPS site was found to be in compliance with regulatory requirements. There were no concerns regarding the safety of the sealed radioactive sources during the review period.

1.12. Nuclear incidents/accidents reported

There were no nuclear incidents or accidents, as defined in the NNR Act, reported during the period under review. The NNR was satisfied with the processes implemented at KNPS relating to events/occurrences.

1.13. Regulatory compliance inspections and audits

In order to verify the degree of compliance with the conditions of authorisation, the NNR undertook independent inspections and audits. The NNR conducted 34 inspections at the KNPS as part of its compliance assurance activities in the year under review.

1.14. Regulatory warnings and directives to stop work

The NNR issued a directive to stop work related to site establishment and early site activities on the OSGISF site as part of its enforcement process. An NNR inspection found that Eskom had performed activities beyond what were authorised by the NNR. The NNR performed an investigation to determine the extent of the non-compliance. The outcomes of the investigation were communicated to Eskom. The NNR is reviewing the adequacy of corrective actions proposed and/or implemented by Eskom to address the causes that led to the violation of the NNR authorisation.

The NNR issued a directive to Eskom relating to manufacturing activities of the RSGs at SENPEC. The NNR directed Eskom to:

- Requalify a certain welding procedure qualification record (PQR) used during the manufacturing of the RSGs; and
- Address safety culture concerns within the Eskom SGR project team as well as its contractor.

The NNR has accepted the plan to requalify the PQR and is satisfied with the corrective actions implemented to address the safety culture concerns.

1.15. Appeals to the CEO

No appeals were lodged with the CEO during the review period.

South African Nuclear
Energy Corporation (Necsa)
Pelindaba Site

2. Regulation of Nuclear Facilities and Activities on the South African Nuclear Energy Corporation (Necsa) Pelindaba Site

Established as a public company in terms of the Nuclear Energy Act (Act No. 46 of 1999), the South African Nuclear Energy Corporation (Necsa), with its headquarters at the Pelindaba site, is wholly-owned by the state. The Pelindaba site, comprising 658ha of land and 54ha of buildings and other improvements, is situated in the magisterial district of Madibeng in the North West Province, approximately 25km west of Pretoria, and 55km north-west of Johannesburg. Necsa employs approximately 1 400 people in diverse technical areas such as physics, engineering, chemistry, radiopharmaceuticals and electronics.

Necsa undertakes and promotes research and development (R&D) in the fields of nuclear energy, radiation science and technology, medical-isotope manufacturing, nuclear liabilities management, radioactive waste management, and decommissioning.
In terms of Section 26(2) of the NNR Act, Necsa as the nuclear authorisation holder implements an inspection programme to ensure compliance with the conditions of the Nuclear Installation Licences. The NNR implements an independent system of compliance inspections to provide assurance of compliance with the conditions of the nuclear authorisations in terms of section 5(d) of the NNR Act.

Figure 6: View of the Pelindaba site

The nuclear facilities on the Necsa Pelindaba site are diverse and include:

- The SAFARI-1 Research Reactor;
- Various fuel cycle facilities involved in the manufacture of nuclear fuel for the SAFARI-1 Research Reactor;
- Analytical laboratories;
- A liquid effluent treatment facility;
- A variety of radioactive waste treatment and storage facilities; and,
- An array of facilities in various stages of decommissioning.

These facilities are authorised in terms of Nuclear Installation Licences NIL-02 through NIL-27 and NIL-29 through NIL-42 as well as COR-156. In accordance with the conditions of the authorisation, Necsa is required to ensure that arrangements, acceptable to the NNR, are established and implemented with respect to the following aspects:

Plant/facility description and configuration

- Scope of activities that may be undertaken
- Demarcation of Site Boundary, Site Plans, Designs and Specifications
- Physical security
- Transport of radioactive material
- Restrictions on dealing with the site
- Radiological protection
- Medical surveillance and health register
- Radioactive waste management
- records management and reporting
- Management and reporting of events (including incidents or accidents) on the site
- Emergency planning and preparedness
- Environmental protection
- Effluent management
- Environmental monitoring
- Appointment of duly authorised and suitably qualified and experienced persons
- Safety committees
- Safety documentation
- Quality and safety management
- Modification to design of existing plant or facility
- Construction and commissioning of plant or process
- Limits and conditions of operation
- Examination, inspection, maintenance and testing

- Decommissioning
- Management of organisational change
- Financial security for nuclear liability
- Public safety information forum
- Self-inspection Programme to ensure compliance with conditions of authorisation
- Display of the licence

2.1. Occupational exposure to radiation

The NNR prescribes that occupational exposure of any worker should be controlled to ensure that the limits shown in the table below are not exceeded.

Table 22: General regulatory dose limits

GENERAL REGULATORY DOSE LIMITS	
Maximum individual worker dose	A (maximum) effective dose of 50mSv in any single year
Average individual worker dose	An (average) effective of 20mSv per annum averaged over five consecutive years

Radiation exposure of workers at the Pelindaba site was subject to control through the individual facility-specific Operational Radiation Protection Programme and the corporate-wide Process Based Licensing (SHEQ-INS) system. In addition, Necsa has committed to implementing an ALARA goal of 4mSv/a. Reporting of worker doses was undertaken on a quarterly basis and included an evaluation of the doses over a rolling 12-month period. NNR review of the occupational exposure records for workers on the Pelindaba site over the reporting period (see Figure 1 and Figure 2) confirmed compliance to the regulatory requirements.

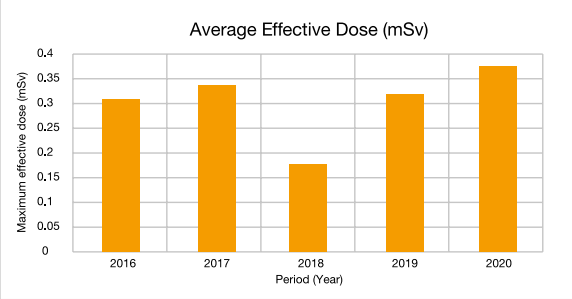


Figure 7: The average effective dose Pelindaba site (2016-2020)

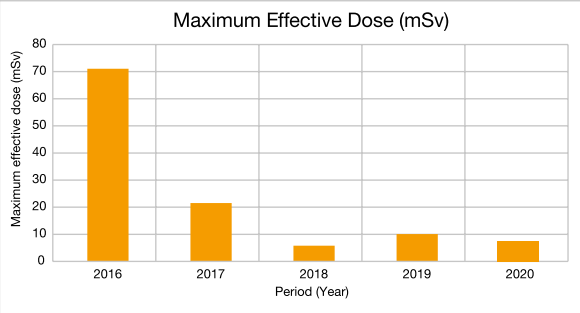


Figure 8: Maximum individual dose Pelindaba site (2016-2020)

The average effective dose and the maximum individual doses incurred by Necsa workers during the past five years are shown in Figure 7 and Figure 8 respectively. The reason for the high maximum effective dose in 2016 was due to an individual who accrued 70.05mSv while performing work outside of the country.

2.2. Projected public exposure

The conditions of authorisation and the SSRP Regulations require that public doses resulting from effluent discharges from the Necsa Pelindaba site must comply with the dose constraint of 250µSv per annum and the system of Annual Allowable Discharge Quantities (AADQs) applicable to the site. The system of AADQs limits the total quantity of individual radionuclides that may be released as effluent via the liquid and airborne pathways in a given period.

Necsa submitted quarterly reports on the effluent releases and projected public doses from said releases to the NNR. Further, the projection of public doses was presented to the public at the quarterly Public Safety Information Forum (PSIF) meetings.

For the reporting period, Necsa demonstrated compliance with the AADQs and prescribed public dose limit. The projected public doses, resulting from the liquid and gaseous effluent releases during the past five years, is as shown in Figure 9.

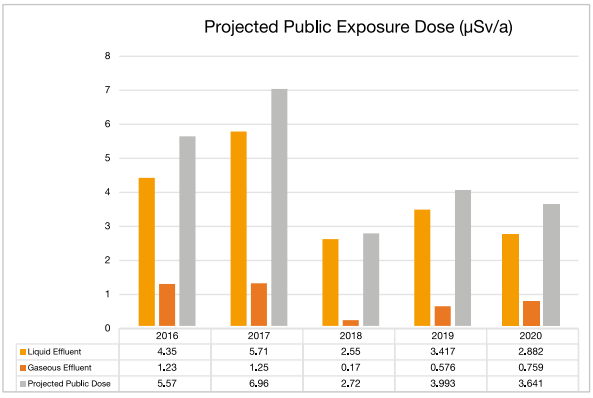


Figure 9: Projected public exposure from liquid and gaseous pathways for Necsa Pelindaba site (2016-2020)

2.3. Nuclear safety

2.3.1. Necsa response to COVID-19 pandemic

Following the declaration of the COVID-19 pandemic as a national disaster on 23 March 2020, the Necsa executive management convened and established a COVID-19 Disaster Management Action Plan. The initial draft of the Necsa COVID-19 Disaster Management Action Plan was presented and discussed at a special meeting of the Necsa Joint Planning Committee (JPC). The JPC is a committee constituted to effectively plan and co-ordinate all activities concerning the safeguarding of a National Key Point, Strategic Installation or Place declared to be of importance. The NNR is represented on the Necsa JPC.

On 23 March 2020 Necsa submitted notification of its intent to scale down operations on the Necsa site due to the declared national disaster relating to COVID-19. The notification included Necsa assurance that the management of safety and security remained a priority and that Necsa had:

(a) Identified critical activities that must be maintained in order to assure that the safety barriers of the site and its facilities is upheld.
(b) Identified the critical resources needed for maintenance of operations.
(c) Developed resource plans and backup resources where required.

On 26 March 2020 Necsa submitted a second notification, that all Necsa facilities with the exception of identified essential services would be shut down as from midnight on 26 March 2020 and would remain so until 16 April 2020, or as otherwise directed by National Government. The notification reaffirmed that Necsa developed action plans to be implemented in order to ensure the safe and secure operations of the facilities in compliance with the NNR license conditions as well as the Occupational Health and Safety Act (Act No. 185 of 1993). The essential services that would continue to operate were confirmed as being:

[1] Production of Health Products
    (a) NTP Radiochemicals Complex
    (b) SAFARI-1 Research Reactor
[2] Production of Essential Goods
    [1] Pelchem Hydrofluoric Acid Plant
[3] Necsa Security Services
[4] Support functions for facilities that would remain operational
    [1] Emergency services and planning
    [2] Radiation protection officers

Necsa also confirmed that other support functions would be maintained as a standby function, in an effort to minimise the number of staff on site.

2.3.2. Safety culture

Following on the regulatory concerns at the NTP Radiochemicals Facility, Necsa committed to hosting an independent review of their organisational safety culture. The IAEA was requested, by Necsa, to conduct an Independent Safety Culture Assessment (ISCA) review. The purpose of an IAEA ISCA review is to provide independent advice and assistance to Member States in enhancing the safety culture of a nuclear facility. The aim of this review is to further develop and strengthen the organisation's culture so that nuclear safety is the priority of all its members. The reviews give the requesting organisation the opportunity to better understand and fully address root causes of safety culture issues once they have been identified. The IAEA ISCA review at the Necsa Pelindaba site was conducted from 06–17 August 2018.

Following the ISCA Review, Necsa was required to develop an action plan to address the recommendations and suggestions in the report. The NNR continues to monitor the Necsa progress in addressing the ISCA report recommendations. In this regard it must be recognised that culture change is a slow and gradual process that will need evaluation over several years.

2.3.3. Review of the current conditions of authorisation

The conditions of authorisation included in Part A of the Nuclear Installation Licences issued for the nuclear facilities on the Necsa Pelindaba site and the Vaalputs National Radioactive Waste Disposal Facility were originally formulated in 2005. A review of the conditions of authorisation was conducted in 2009, as part of the NNR Self-Assessment Project. Resulting from this, updates to the conditions were implemented in the Nuclear Installation Licences issued in the period February 2009 to November 2011.

In the subsequent years, valuable insights were gathered during the self-assessment process in preparation for the 2016 IAEA IRRS mission to South Africa. Further, lessons and insights were learnt from:

(a) The findings contained in the 2016 IAEA IRRS mission to South Africa.
(b) The reporting requirements under both the Convention for Nuclear Safety and the Joint Convention on the Safety of Spent Fuel Management and the Safety of Radioactive Waste Management (Joint Convention).
(c) Participation of NNR staff in various IAEA IRRS missions including the missions to Australia, Belgium, Canada, Finland, Japan and the Netherlands.
(d) Participation of NNR staff in the Artemis mission to Poland and the Joint IRRS/ Artemis mission to Spain; and
(e) The development and updates to various IAEA Safety Standards since 2010, in particular the:
    (i) GSR PART 1, Governmental, Legal and Regulatory Framework for Safety
    (ii) GSR PART 2, Leadership and Management for Safety
    (iii) GSR PART 3, Radiation Protection and Safety of Radiation Sources
    (iv) GSR PART 4, Safety Assessment for Facilities and Activities
    (v) GSR PART 6, Decommissioning of Facilities
    (vi) SSR-1, Site Evaluation for Nuclear Facilities
    (vii) SSR-3, Safety of Research Reactors
    (viii) SSR-4, Safety of Nuclear Fuel Cycle Facilities.

Based on the above plus the lessons learnt from regulation of the Necsa facilities and Vaalputs, the current conditions of authorisation were reviewed and proposed changes were identified. During the reporting period, Necsa was consulted on the proposed amendments and an online workshop was held, between the NNR and Necsa, to provide clarification on the proposed amendments.

The amendments to the respective Nuclear Installation Licences will be undertaken in a phased manner. The following 12 Nuclear Installation Licenses will be amended as part of phase one, which will commence in the next reporting period:

(i) NIL-10 (Conversion Plant Complex)
(ii) NIL-17 (BEVA K3 Storage Complex)
(iii) NIL-21 (J Building)
(iv) NIL-22 (D Building)
(v) NIL-23 (C Building)
(vi) NIL-24 (Building P-2900)
(vii) NIL-25 (Building XB)
(viii) NIL-29 (Area 26)
(ix) NIL-30 (E Building)
(x) NIL-31 (Dorbyl Camp)
(xi) NIL-32 (X Building)
(xii) NIL-38 Fuel Development Laboratories Complex

2.3.4. Process Based Licence Documents

Process Based Licensing (PBL) is the process where the authorisation holder has the prime responsibility for technical details relating to nuclear safety and more emphasis is placed on the licence holder to ensure that appropriate processes are in place to comply with the regulatory requirements. Application of PBL at Necsa-run facilities commenced in the 2002/03 financial year and the system comprises of more than 200 Necsa designed documents, dealing with the full spectrum of process areas. These processes include:

(a) Identification of applicable fundamental nuclear and radiological safety standards.
(b) Identification of the basis for authorisation, change control in respect of modification, processes to update and maintain safety case and relevant operational programmes.
(c) Identification of nuclear and radiological safety requirements necessary to underpin the safety case and processes needed to maintain these in line with the safety case; and
(d) Monitoring and enforcement of compliance with the requirements identified in (c) above.

During the reporting period, the NNR reviewed and commented on the following Process Based Licensing submissions:

(i) Necsa Security Policy
(ii) Necsa Requirements for Quality Policies
(iii) Necsa Requirements for SHEQ Objectives

2.3.5. SAFARI-1 Research Reactor

SAFARI-1 Research Reactor is owned and operated by the South African Nuclear Energy Corporation (NECSA) at their facility at the Pelindaba site and has been in operation since 1965. It is utilised mainly for the commercial production of medical and industrial isotopes, activation analyses, material modification (such as the neutron transmutation doping of silicon for the semi-conductor industry) and numerous support services such as neutron radiography and neutron diffraction, which are of both industrial and academic interest.

2.3.5.1. Ageing Management at SAFARI-1

Noting that the SAFARI-1 Research Reactor was initially commissioned in 1965 and that the expected operational life extends until 2030, the NNR had previously required that Necsa develop and implement an ageing management strategy.

The Ageing Management Programme for SAFARI-1 is consistent with the guidance provided in the IAEA safety guide SSG-10. The overall programme entails in excess of 100 modifications including:

(i) Modifications to the facility relating to replacement or refurbishment of structures systems and components of the reactor that is important to safety of the facility and sustainability of the reactor up to 2030.

(ii) Review and update of the facility design basis, safety documentation and management systems.

The safety documentation related to the following ageing management activities were reviewed in the reporting period:

(i) Assessment on Reactor biological shield,

(ii) Reactor Vessel Assessment,

(iii) Commissioning and installation report for upgrade of the SAFARI-1 Area Monitoring System, and

(iv) Replacement of the Charcoal Absorber system which forms part of the SAFARI-1 ventilation systems.

The NNR review concluded that Necsa has satisfactorily addressed the NNR comments pertaining to the upgrade of the SAFARI-1 Area Monitoring System and the Charcoal Absorber System. With regard to biological shield, the NNR was generally satisfied with the Necsa responses but requested additional clarity of issues related to some of the supporting documents.

2.3.5.2. SAFARI-1 Alternate Fuel Plate Supplier

SAFARI-1 currently makes use of Low Enriched Uranium (LEU) Fuel Assemblies and Control Rod Assemblies assembled at the ELPROD Facility on the Necsa site, using fuel plates that are procured from France. In order to enhance security of fuel supply, Necsa had previously initiated a process to qualify an additional/alternate supplier of fuel plates.

During the reporting period the NNR received and reviewed Necsa responses on the previous NNR comments. The NNR review concluded that Necsa had satisfactorily addressed all the NNR's previous comments.

2.3.5.3. SAFARI-1 emergency procedure

During the reporting period, Necsa submitted a revision of the SAFARI-1 Emergency Procedure for NNR review and acceptance. The NNR review concluded that Necsa had not satisfactorily addressed the previous NNR comments. Necsa was required to address the NNR comments and re-submit the document.

2.3.5.4. SAFARI-1 In-Service Inspection Results for 2020

The in-service inspection is performed to confirm the continued safe operation of safety systems structures and components. Following review of the Summary Report for SAFARI-1 In-Service Inspection Results for 2020 submitted by Necsa, the NNR accepted the inspection results and noted that the inspection of the interior core support structure was deferred to the October 2021 inspection.

2.3.5.5. SAFARI-1 Research Reactor Safety Culture Enhancement Plan

Aligned with the broader safety culture initiative, the NNR reviewed the SAFARI-1 Safety Culture Enhancement Plan. The NNR reviewed the Plan and communicated the review comments for Necsa to address.

2.3.6. Review of SAFARI-1 Operating Technical Specifications (OTS)

An OTS is a specification document to be used by the operators of a facility, which contains the operating limits within which the facility is expected to safely operate. The operational limits in an OTS must link the contents of the Safety Assessment Report of the facility with its

operation. During the reporting period the NNR reviewed and approved the revised SAFARI-1 Operating Technical Specification for implementation after Necsa has satisfactorily addressed the NNR comments.

2.4. Transport safety

2.4.1. On-site transfer of LEU used fuel from SAFARI-1 to the Thabana Complex

The used fuel from the SAFARI-1 Research Reactor is initially stored in the reactor pool for at least two years, to facilitate cooling of the used fuel. The used fuel is then cropped before transfer to the Thabana Pipe Store, an authorised dry storage facility on the Pelindaba site. The used fuel is transported to the Thabana Pipe Store in an approved transport cask (ZA/NNR/1010/B(U) F–96) specifically designed for this purpose. During the reporting period, the NNR granted approval for the transfer of 100 used LEU fuel elements to be conducted during the period 08 February 2021 to 11 March 2021 (see Figure 10).

Figure 10: Storage of Used Fuel in Thabana Pipe Storage Facility using the approved Cask

2.4.2. Import of fissile material to OR Tambo and Pelindaba

During the reporting period, the NNR granted approval for the transport packages of imported fissile material, comprising fuel plates and irradiation target plates, from Cerca in France to Necsa Pelindaba site via OR Tambo International Airport.

The fuel plates are assembled on the Pelindaba site into fuel elements used in the SAFARI-1 Research Reactor. The target plates are initially irradiated in the SAFARI-1 Research Reactor and later processed at the NTP Radiochemicals Complex for the production of radioisotopes including Molybdenum-99 and Iodine-131.

The approved import actions and subsequent transport to the Necsa Pelindaba site were safely undertaken in four shipments during February 2021 and March 2021. Whilst all import actions were undertaken safely, the NNR noted a lack of attention to detail on the part of Necsa relating to dates and quantities of material being imported. Necsa was required to register a nuclear occurrence for these lapses and the NNR will monitor the corrective actions that will be implemented by Necsa in this regard.

2.4.3. Validation and revalidation of transport packages and transport containers

In accordance with the provisions of Section 7 of the National Nuclear Regulator Act, the NNR acts as the Competent Authority in South Africa in compliance with the International Atomic Energy Agency's Regulations for the Safe Transport of Radioactive Material. In line with this mandate, during the period under review, the NNR reviewed and re-certified the package design approvals for the following transport containers used by Necsa, as having met the regulatory requirements for Type B(U) packages, as described in the International Atomic Energy Agency Safety Standards Series No. SSR-6, Regulations for the Safe Transport of Radioactive Material, 2012 Edition Vienna, 2012.

Certificate of Package Design Approval	Transport Container	Authorised for	Effective Date	Expiry Date
ZA/NNR/3243/IF-96 Rev 01	Russian TK-C16 Transport Package	Transport of LEU fuel plates and target plates from Russia, to South Africa via OR Tambo International Airport, to the Necsa Pelindaba site.	05 Mar 2021	19 Nov 2023
ZA/NNR 1003/B(M) – 96 Rev 04	1003 Cobalt Flask	Transport of Co-60 in solid form within South Africa by land, sea or inland waterways.	01 Mar 2021	01 Mar 2026
ZA/NN-R/1010/B(U) F–96 Rev 00	SAFARI-1 Spent Fuel Transfer Cask	On-site routine transfer of SAFARI-1 spent fuel assemblies that have decayed to a decay heat of 15 W or less.	15 Dec 2020	14 Dec 2025
ZA/NNR 1009/(B(U)-96 (Rev 04)	Erica	Transport of I-131 radiopharmaceutical in solid (powder) form within South Africa and internationally includ-ing Argentina, Canada, the United Kingdom and the United States of America using all modes of transport.	13 Oct 2020	12 Oct 2025
ZA/NNR 1006/B(U)-96 (Rev 05)	1006 Cobalt Flask	Transport of Co-60 and Cs-137 in solid form within South Africa and internationally including Argentina, Canada and the United Kingdom. Modes of transport limited to land, sea or inland waterways. Transport by air prohibited.	02 July 2020	01 July 2025

Further the NNR reviewed and provided comments on the safety assessment for the following transport container/package design proposed to be used by Necsa:

Transport Package/ Container	Intended Purpose
(i) NTP C5 Concrete Waste Package	The waste package is intended to be used for the interim storage, transport and disposal of solid compressible radioactive waste generated in the NTP Radiochemicals Complex.

2.4.4. Handling instruction for transport packages

Handling instructions prescribe information necessary to safely handle, load, unload, ship and maintain the transport packages during transport activities. During the reporting period the NNR reviewed and approved revised handling instructions for the following transport packages:

Certificate of Package Design Approval	Transport Container	Authorised For	Effective Date	Expiry Date
ZA/NNR 1004/B(U)-96 (Rev 04)	RIA Trans-port Con-tainer	Transport Ir-192 and Se-75 sealed sources within South Africa and internationally including Argentina, Canada, the United Kingdom and the United States of America using all modes of transport.	01 June 2019	31 May 2024
ZA/NNR 1008/B(U)-96 (Rev 03)	Jane Trans-port Con-tainer	Transport ^{99}Mo, ^{131}I and ^{32}P in solid and liquid form in number of countries through-out Europe and North America, as well as Australia, United Kingdom, Brazil and Japan using all modes of transport.	02 Jan 2018	02 Jan 2023

Certificate of Package Design Approval	Transport Container	Authorised For	Effective Date	Expiry Date
ZA/NN R/1005/ B(U)-96 (Rev 03)	Be-atrice Trans-port Con-tainer	Transport ^{99}Mo, ^{131}I and ^{192}Ir in solid and liquid form in number of countries through-out Europe and North America, as well as Australia, United Kingdom, Brazil and Japan using all modes of transport.	02 Jan 2018	02 Jan 2023

2.5. Radioactive waste safety

2.5.1. Thabana Complex

2.5.1.1. Proposed expansion of the Thabana Pipe Store

The Thabana Pipe Store, within the Thabana Complex, authorised under Nuclear Installation Licence NIL-04, is utilised for the interim storage of used fuel from the SAFARI-1 Research Reactor (see Figure 11 and Figure 12). Necsa proposes to increase the current storage capacity for used fuel elements and cater for the long-term storage of uranium residue waste from the NTP Radiochemicals Complex.

Figure 11: Thabana Pipe Storage Facility

2.5.1.2. Public information document

Necsa was required to prepare a public information document (PID), to be used to provide members of the public with information regarding the application for authorisation to expand the current capacity of the Thabana Pipe Store.

The NNR has received and reviewed the required PID. The NNR review thereof identified comments for Necsa to address prior to NNR acceptance of the document. The public consultation process will commence after NNR agreement on the PID.

2.5.1.3. Revised operating technical specification (OTS) for Thabana Pipe Store

The OTS documents specifies the safety limiting condition for operation that must be adhered to during the lifetime of the facility. During the reporting period, the NNR reviewed the revised OTS for Thabana Pipe Store and identified comment for Necsa to address.

2.5.2. PELSTORE

PELSTORE is a large centralised store on the Necsa Pelindaba site, licensed to receive and store drums containing dry radioactive waste, from various radioactive waste generating facilities on the Pelindaba site (see Figure 12). The PELSTORE Waste Acceptance Requirement (WAR) for solid radioactive waste does not allow for drums to contain any free-standing liquid. Necsa discovered during the hot commissioning of the drum press at the Volume Reduction Facility (VRF) that some of the waste drums do in fact contain liquid and the hot commissioning of the VRF was subsequently halted. Necsa consequently initiated the projects to identify drums that possibly contain liquids, to repack these drums and then send only the dry drums to the VRF for conditioning.

During the reporting period, the NNR reviewed the following Necsa submissions:

(a) A request for resumption of hot commissioning project.
(b) Authorisation change request to established an X-ray facility, waste segregation and repacking of drum facility and supporting documents.

Following the review, the NNR identified and submitted comments to Necsa. Necsa is anticipated to respond to the comments in the next reporting period.

Figure 12: Section of the PELSTORE at the Pelindaba site

2.5.3. Uranium Residue Project in the NTP Radiochemical Complex

As part of the radioactive waste management improvements and rationalisation project within the NTP Radiochemical Complex (Hot Cell Complex), Necsa/NTP had previously requested approval for modification and utilisation of Cell 2, Cell 6A and Cell 6B in the facility. Necsa/NTP proposed to use Cell 6A and Cell 6B for the conditioning of the uranium residue and Cell 2 as an interim store for the storage of the uranium residue from Mo-99 and I-131 radiopharmaceutical manufacturing processes.

During the reporting period, the NNR received a request from Necsa/NTP to approve resumption of the hot commissioning activities associated with the Uranium Residue Project in Cell 2, Cell 3, Cell 6A and Cell 6B.

Necsa/NTP was required to submit the following updated documents, prior to NNR consideration to grant approval:

(a) Operating Technical Specification,
(b) In-Service and Maintenance Plan,
(c) Revised Hot Commission Plan,
(d) List of Suitably Qualified and Experience Persons.

Following the NNR review of the requested documents, approval was granted.

2.5.4 Approval to increase the cell 3 OTS limit for 2ℓ u-residue canisters at NTP Radiochemical Complex

During the reporting period the NNR received a Necsa/NTP request to increase the uranium residue storage capability of Cell 3 from 448 2L canisters to 498 2L canisters. The NNR reviewed the submission and granted approval.

2.5.5. Revised waste handling procedure for Bay 0 in the P2700 complex

The UCHEM facility within the P2700 Complex is authorised to store and evaporate various liquid waste solutions containing ^{235}U generated by the recovery processes.

During the reporting period, Necsa submitted a request for authorisation to use 160 litre containers as intermediate storage of the waste solution before transfer into the storage tanks in Bay 0 of the plant and a revised procedure that aims to improve safety during the handling, storage and evaporation of liquids containing enriched uranium at the facility. Following review of the revised Safety assessment for the facility the NNR accepted the safety assessment but required Necsa to submit the revised waste management and radiation programmes for the facility.

2.6. Decommissioning

2.6.1. Area 40 decommissioning

Area 40 was originally used for chemical cleaning of large process components from Area 14 and later as decontamination facility, mostly for the now defunct Z (Uranium Enrichment) Plant. The plant was shut down in the late 90's after the last of the large process equipment from Area 14 was cleaned during the Phase 2 decommissioning of Z Plant.

The NNR had previously approved Phase 2 decommissioning and all process equipment and surface contamination was removed from the facility. During the reporting period, the NNR reviewed and accepted the close out for the decommissioning activities undertaken. Further, Necsa submitted a hazard assessment and future care and maintenance plan for Area 40. Following NNR review of the submissions, the NNR identified comments and required Necsa to address the same.

2.6.2. Decommissioning strategies

Section 5.1.1 of Regulation on Safety Standards and Regulatory requires the authorised facilities to compile and submit the conceptual decommissioning strategy to the competent authority for approval. The conceptual decommissioning strategy includes a description of the decommissioning options, overall timescales for the decommissioning of the facility and the end-state after completion of all decommissioning activities.

During this reporting period, the NNR reviewed the decommissioning strategies for the following facilities on the Necsa Pelindaba site and provided comments to Necsa:

(a) Safari-1 Research Reactor,
(b) Decommissioning Strategy for Building P-2700,
(c) Decommissioning Strategy and Plan for Quarantine Storage Facility,
(d) Building XB, and
(e) NTP.

2.7. Environmental protection

As part of their environmental management programme, Necsa collects samples from various media in the environment around the Pelindaba site. The sampling locations were based on the surrounding land use. The sample media include:

(a) Air filter monitoring on the Pelindaba site.
(b) Water and fish samples from the Crocodile River and Hartbeespoort Dam.
(c) Plant material in the surrounding area; and,
(d) Milk from surrounding farms.

Samples are analysed and results are submitted to the NNR on a quarterly and annual basis. The analyses showed that there were no nuclear safety or radiological concerns regarding the environment around the Pelindaba site in the review period.

2.8. Regulatory independent verification of radiological environmental analysis

The NNR conducted an independent verification of radiological environmental analysis by collecting samples in and around the Necsa Pelindaba site. Analysis of the samples revealed no safety concerns with regard to the environment around the Necsa Pelindaba site.

2.9. Technical basis for Necsa emergency planning zones

Emergency planning ensures that adequate measures are in place to prevent deterministic effects and mitigate stochastic effects in the event of a nuclear emergency. The technical basis behind an emergency plan involves a safety assessment of the nuclear installations on the site in order to determine the following:

- The level of threat associated with the facilities on site.
- A reference accident from among a range of events that could plausibly occur.
- Protective actions.
- The radii at which deterministic and stochastic risks are above the acceptance criteria. Thereby, defining the emergency zones.

During the reporting period, the NNR reviewed the Necsa technical basis for emergency planning zones. The NNR has identified comments for Necsa to address.

2.10. Competency and sufficiency of Necsa's Pelindaba workforce to work safely

In addition to the requirements in the SSRP Regulations, the conditions of licence require that Necsa must establish and implement arrangements to ensure that suitably qualified and experienced persons perform any duties that may affect the safety of operations on the site, or any duties assigned by or under the conditions of the licence. Such arrangements must make provision for the appointment, as appropriate, of authorised persons to control and supervise operations that may affect plant or facility safety.

The current severely strained financial position of Necsa has the potential to negatively impact nuclear and radiation safety as well as nuclear security at the authorised nuclear facilities on the Necsa Pelindaba site. Consequently, in February 2020, the NNR required Necsa to provide written affirmation regarding its continued ability to:

(a) Service the conditions of authorisation, in particular the management of safety and fostering of a strong nuclear safety and nuclear security culture including:
    (i) Maintaining sufficient numbers of suitably qualified and experienced staff to maintain the facility specific safety case and safe operations.
    (ii) Ability to service creditors, in particular suppliers of Structures, Systems and Components (SSCs) and services important to nuclear and radiological safety and nuclear security.
    (iii) Ability to undertake all required plant modification, maintenance, aging management and refurbishments required in the interest of conventional

safety as well as nuclear and radiation safety and nuclear security; and

(iv) Effective review of events at authorised facilities and undertaking prompt and appropriate corrective and preventative measures.

(b) Effectively maintain all provisions required for conventional, chemical, nuclear and radiological emergency preparedness and response as well as nuclear security; and

(c) Satisfy requirements related to funding and safe management of decommissioning, decontamination, radioactive waste management and used (spent) fuel management.

The NNR continues to monitor the Necsa actions in this regard.

2.11. Physical security

The NNR inspects Necsa's security measures as part of the Compliance Assurance Programme and tracks the improvements required as part of said programme. During the review period, the NNR conducted three (3) security inspections at the Necsa Pelindaba site. Necsa was required to register separate nuclear occurrences for each of the findings from the NNR inspections. The NNR continues to monitor the corrective actions against these findings.

2.12. Safety of sealed radioactive sources

The NNR conducts inspections on radioactive sources at the Necsa Pelindaba site and receives six-monthly reports on radioactive sources that are used, stored on site or transported to and from the site. There were no safety concerns regarding sealed radioactive sources at Pelindaba site during the review period.

2.13. Nuclear incidents/accidents reported

There were no nuclear incidents or accidents reported during the period under review.

2.14. Regulatory compliance inspections

The NNR conducted 41 planned compliance inspections at Necsa's Pelindaba site during the reporting period. Overall, the inspections confirmed satisfactory compliance with NNR requirements and regulations. Nevertheless, non-compliances and/or areas for improvement were identified. Necsa was required to register separate nuclear occurrences for each of the findings from the NNR inspections. The NNR continues to monitor progress against these as part of the annual Compliance Assurance Programme and event reporting system.

2.15. Regulatory investigations

There were no investigations conducted during the reporting period.

2.16. Regulatory warnings or directives to stop work

There were no directives issued to Necsa facilities during the reporting period. However, operations at the NTP Radiochemicals Complex were intermittently stopped. This is discussed further below.

2.17. NTP Radiochemicals Complex

During the reporting period, both production lines at the NTP Radiochemicals Complex facility were in operation. The monthly reporting demonstrated compliance to the NNR conditions of approval. However, the facility registered six (6) nuclear occurrences, including one (NIL39-OCC-0275) related to violation of a safety instruction from the Nuclear Facility Manager (NFM). As a consequence of occurrence NIL39-OCC-0275, the NTP Management temporarily stopped operation of the facility in July 2020. Following implementation of corrective actions, operations in the facility were recommenced.

The NNR continues to monitor the implementation of the corrective actions resulting from the reported occurrences.

2.17.1. Molybdenum production using the dissolution production lines and Iodine (I-131) production

During the reporting period operational readiness runs where performed successfully according to the latest approved revisions of the standard operating procedures with dissolution of irradiated target plates in Cell 19 and Cell 20 and subsequent processing in the purification and evaporation cells, quantified and dispensed in Cell 14/16 and finally dispatched through Cell 15.

Following the reporting of nuclear occurrence NIL39-OCC-0244 on 07 March 2020 all Mo production using the Cell 19 production line was suspended pending a Necsa investigation into the event, regarding exceedance of the Cell 19 OTS limits for cell pressure.

During the reporting period the NNR reviewed the Necsa/NTP submissions and required Necsa/NTP to confirm the availability of sufficient SQEPs to ensure the safe operation of the facility. This was in light of the unavailability of some staff members due to the COVID-19 pandemic. Following Necsa satisfactorily providing objective evidence of sufficient SQEP personnel at the facility, approval was granted to resume operational readiness runs, with dissolution of irradiated target plates in Cell 19, subsequent processing in Cell 18 and Cell 17 and product dispensing and dispatch in Cell 16 and Cell 15.

On 29 September 2020 during a daily routine maintenance inspection of the cells in the facility, it was identified that the Cell 21 top alpha windows were cracked. Production activities in the cell were immediately suspended by the NFM. The extent of the crack was evaluated and it was confirmed that there was no radiological hazard as a consequence of the event. The cell window was successfully replaced in October 2020. Following replacement of the window iodine production resumed on 23 October 2020.

2.17.2. Contamination in dispatch Cell 15

During the reporting period Necsa/NTP continued to experience contamination issues in Cell 15. The contamination events were investigated and investigation reports were submitted to the NNR for review. Following the NNR review of the implementation of all the required immediate corrective and preventative actions, resumption of dispatching activities in Cell 15 was permitted. The NNR continues to monitor the corrective and preventative actions implemented to reduce the contamination issues in Cell 15.

2.18. Appeals to the CEO or the Board

There were no appeals concerning the Pelindaba site during the period under review.

Vaalputs
National Radioactive
Waste Disposal Facility

3. Regulation of the Vaalputs National Radioactive Waste Disposal Facility

The Vaalputs National Radioactive Waste Disposal Facility (herein after abbreviated as Vaalputs) is located in the district of Kamiesberg in the Northern Cape Province. The farm, Vaalputs, covers an area of approximately 10 000 ha. In 1977, the South African Government mandated a specialist study group to look at waste management alternatives for the intended commercial nuclear programme. In 1978, the study group recommended that the state proceed with a programme to locate a suitable site for the disposal of radioactive waste in South Africa. From 1979 to 1982, a comprehensive site selection programme was undertaken in accordance with criteria that were regarded as internationally acceptable. The Vaalputs site was selected as the preferred option from three candidate sites and was subsequently acquired in 1983.

Figure 13: Truck arriving at Vaalputs National radioactive Waste Disposal Facility

Detailed site suitability studies commenced in 1983. A preliminary safety report was compiled and submitted to the regulatory authority in 1984 and an intermediate safety report was submitted to the regulatory authority in October 1986, according to which Vaalputs was granted a nuclear authorisation to operate. The first revision of the Vaalputs waste acceptance criteria was approved early in 1986 and the first waste shipments from Koeberg were received in November of the same year. Vaalputs is currently authorised for the receipt and shallow land disposal of solid low level radioactive waste (LLW), originating from Koeberg and the Necsa.

The disposal concept for the LLW is shallow land disposal consisting of near surface trenches located in the region above the groundwater table. Trenches are excavated in the surficial cover in the waste disposal area, which is up to 30m thick in places and generally consists of an overlying layer of topsoil (sand), approximately 0.5 m thick, a layer of indigenous calcrete 1 to 2m thick and 10 to 25m thick clay material that extends down to the underlying granite formations. The sand, calcrete and clayey material excavated from the trenches are kept separate in the stockpiling area and is later used to backfill and cap the trenches.

Figure 14: Metal drums being emplaced in disposal trench

Figure 15: New disposal trench

The waste disposal site comprises the following:

- A securely fenced-in area of 900 m x 1 120 m.
- A 700 m x 500 m area for the disposal trenches.
- An exclusion area or buffer zone, between the trench area and the fence.
- A meteorological monitoring station; and
- Covered carports and storage areas for waste-handling machinery and equipment.

The Vaalputs buildings include the administrative, operational and maintenance areas. The administrative area consists of a reception/display area, offices, a canteen, a conference room, controlled and uncontrolled area change rooms, toilet facilities and a records room. The operational area consists of a laundry, a sample counting room, a waste reception area, a

decontamination area, a shielded storage area and a liquid waste solidification area. The maintenance area consists of a mechanical workshop/vehicle service area; store facilities for components, spares, equipment and flammable liquids; a store facility for site maintenance equipment; and utility sections comprising a standby generator, a compressed air facility, a ventilation facility, fire extinguishing pumps, an electrical sub-station and a liquid effluent containment area.

3.1. Occupational exposure to radiation

The NNR prescribes that occupational exposure of any worker should be controlled to ensure that the limits shown in the table below are not exceeded.

Table 23: General regulatory dose limits: Vaalputs site

GENERAL REGULATORY DOSE LIMITS	
Maximum individual worker dose	A (maximum) effective dose of 50mSv in any single year
Average individual worker dose	An (average) effective of 20mSv per annum averaged over five consecutive years

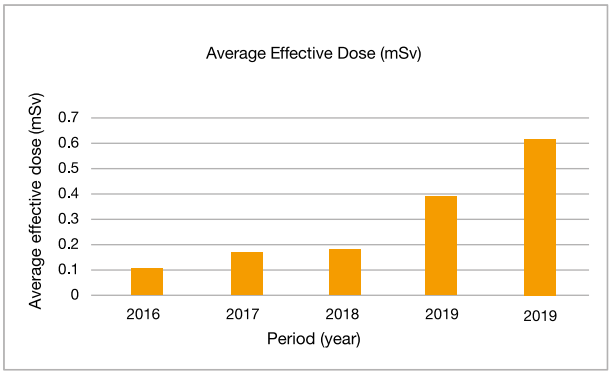


Figure 16: Average Effective Dose at Vaalputs site (2016-2020)

The worker doses at Vaalputs Radioactive Waste Disposal Facility over the past five years were within regulatory limits (see Figure 16). Radiation exposure of workers at Vaalputs remained subject to control through the Operational Radiation Protection Programme. This programme is applied to ensure that control within the annual individual dose limit is achieved. In addition, the programme also served to ensure that all doses are kept ALARA. The maximum effective doses accrued for individual workers during the past five years were below 1mSv (see Figure 17).

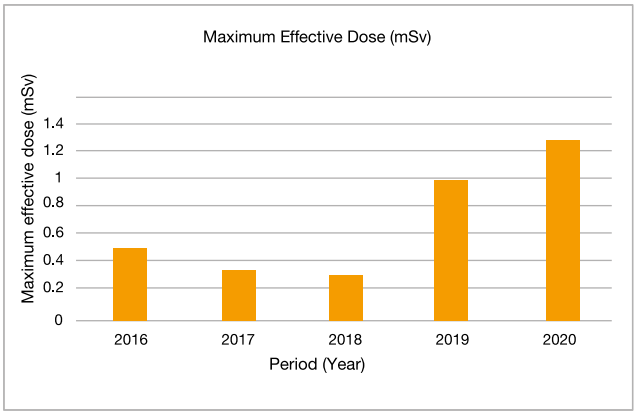


Figure 17: Maximum Effective Dose at the Vaalputs site (2016-2020)

3.2. Projected public exposure to radiation

There were no safety concerns regarding public exposure to radiation in the reporting period. In accordance with the conditions of authorisation and the SSRP Regulations, the public doses resulting from effluent discharges from Vaalputs Radioactive Waste Disposal Facility must comply with the dose constraint of 0.25mSv. The environmental surveillance programme for Vaalputs Radioactive Waste Disposal Facility has shown no measurable radiological impact on the community living around Vaalputs.

3.3. Nuclear safety

3.3.1. Safety documentation

During the review period, the NNR reviewed and commented on the following Vaalputs safety case documentation.

3.3.1.1. Revised waste acceptance criteria

The Waste Acceptance Criteria is derived from the Vaalputs Safety Case and prescribes requirements for, amongst others:

- Approved containers used for packaging radioactive waste during transport and disposal.
- Type and form of waste that may be packaged in approved containers.
- Prohibited waste, i.e., waste that will not be accepted for disposal (e.g., asbestos).
- Data packs containing all relevant information regarding the waste package.
- Quality control measures.
- Radiological safety control measures.
- Health, safety and environmental requirements; and
- Verification requirements (prior to shipment and on delivery).

During the reporting period, the NNR reviewed the Necsa responses on the previous NNR comments and approved Revision 10 of the Vaalputs Waste Acceptance Criteria.

3.3.1.2. In-Service Inspection (ISI) and maintenance programmes

In-service inspection (ISI) and maintenance programmes provide the systematic framework for these examinations. An effective ISI and maintenance programme ensures both that the safety of the plant is not adversely affected after the commencement of operation and that the levels of reliability and availability of all plant SSCs remain in accordance with the assumptions and intent of the design.

During the reporting period, the NNR reviewed Necsa's response to the NNR's previous comments. Necsa satisfactorily addressed the NNR comments, thus, the NNR granted approval to Vaalputs to implement the latest revision of the ISI and maintenance programme.

3.4. Public safety information forum

Pursuant to Regulation No. R968 gazetted in September 2008, read with the provisions of Section 26(4) of the NNR Act, a holder of a Nuclear Installation Licence must establish a Public Safety Information Forum (PSIF) in order to inform the persons living in the relevant municipal area in respect of which an emergency plan has been established in terms of Section 38(1) of the NNR Act on nuclear safety and radiation safety matters related to the relevant nuclear installation.

According to Regulation No. R968 that governs the Public Safety Information Forum, the PSIF shall have a Chairperson and a Deputy Chairperson who shall hold office for a period of two years. The Chairperson and Deputy Chairperson are appointed by the Board of Directors of the National Nuclear Regulator from persons living in the relevant municipal area three months prior to the end of the expiring term.

During the reporting period, the term of the Chairperson and Deputy Chairperson have expired and the NNR is currently facilitating the appointment of new officers. Due to the declaration of the COVID-19 national disaster and the consequent announcement of a national lockdown, there were no PSIF meetings during the reporting period.

3.5. Transport safety

There were no concerns related to the safety of transport of radioactive material during the period under review.

3.6. Radioactive waste safety

The receiving and disposal of radioactive waste at Vaalputs was in conformance with the conditions of authorisation and the Vaalputs Waste Acceptance Criteria (WAC). During the reporting period Vaalputs received a total of seven (7) radioactive waste shipments from Koeberg Nuclear Power Station comprising:

- Three (3) shipments consisting of 256 metal drum waste packages, and
- Four (4) shipments consisting of 19 concrete waste packages.
- There were no shipments from Necsa.

3.7. Environmental protection

There were no concerns regarding the safety of the environment at Vaalputs during the period under review.

3.8. Nuclear emergency planning and preparedness

There were no safety concerns regarding the emergency planning and preparedness at Vaalputs Radioactive Waste Disposal Facility during the period under review.

3.9. Competency and sufficiency of Necsa's Vaalputs workforce to work safely

In addition to the requirements in the SSRP Regulations, the conditions of authorisation require that Necsa establish and implement arrangements to ensure that suitably qualified and experienced persons perform any duties, which may affect the safety of operations on the site, or any duties assigned by or under the conditions of authorisation. Such arrangements must make provision for the appointment, as appropriate, of authorised persons to control and supervise operations, which may affect plant or facility safety. The NNR was satisfied that Necsa complied with the above requirement, in respect of the Vaalputs National Radioactive Waste Disposal facility, during the review period.

3.10. Physical security

During the review period, the NNR conducted one (1) security inspection at Vaalputs. There were no safety concerns regarding the physical security at Vaalputs Radioactive Waste Disposal Facility during the period under review.

3.11. Safety of sealed radioactive sources

The NNR conducts inspections on radioactive sources at the Vaalputs site and receives six-monthly reports on radioactive sources that are used, stored on site or transported to and from the site. There were no safety concerns regarding sealed radioactive sources at Vaalputs Radioactive Waste Disposal Facility during the review period.

3.12. Nuclear incident/accidents reported

There were no nuclear incidents or accidents reported during the period under review.

3.13. Regulatory compliance inspections

During the review period, the NNR conducted two (2) routine inspections at Vaalputs. These inspections provided assurance that there was generally satisfactory compliance with regulations and conditions of authorisation. Nevertheless, some non-compliance issues were raised during these inspections, and the NNR continues to monitor the corrective actions against these.

3.14. Regulatory warnings or directives to stop work

There were no directives issued to stop work at Vaalputs Radioactive Waste Disposal Facility during the period under review.

3.15. Appeals to the CEO or the Board

There were no appeals concerning Vaalputs during the review period.

3.16. Application for the existing Vaalputs Nuclear Installation Licence (NIL-28) to be issued in the name of the National Radioactive Waste Disposal Institute (NRWDI)

During the previous reporting period, the NNR held meetings with the management of National Radioactive Waste Disposal Institute (NRWDI) to discuss the NNR comments on NRWDI's submission requesting the existing Vaalputs Nuclear Installation Licence (NIL-28) be issued in the name of NRWDI.

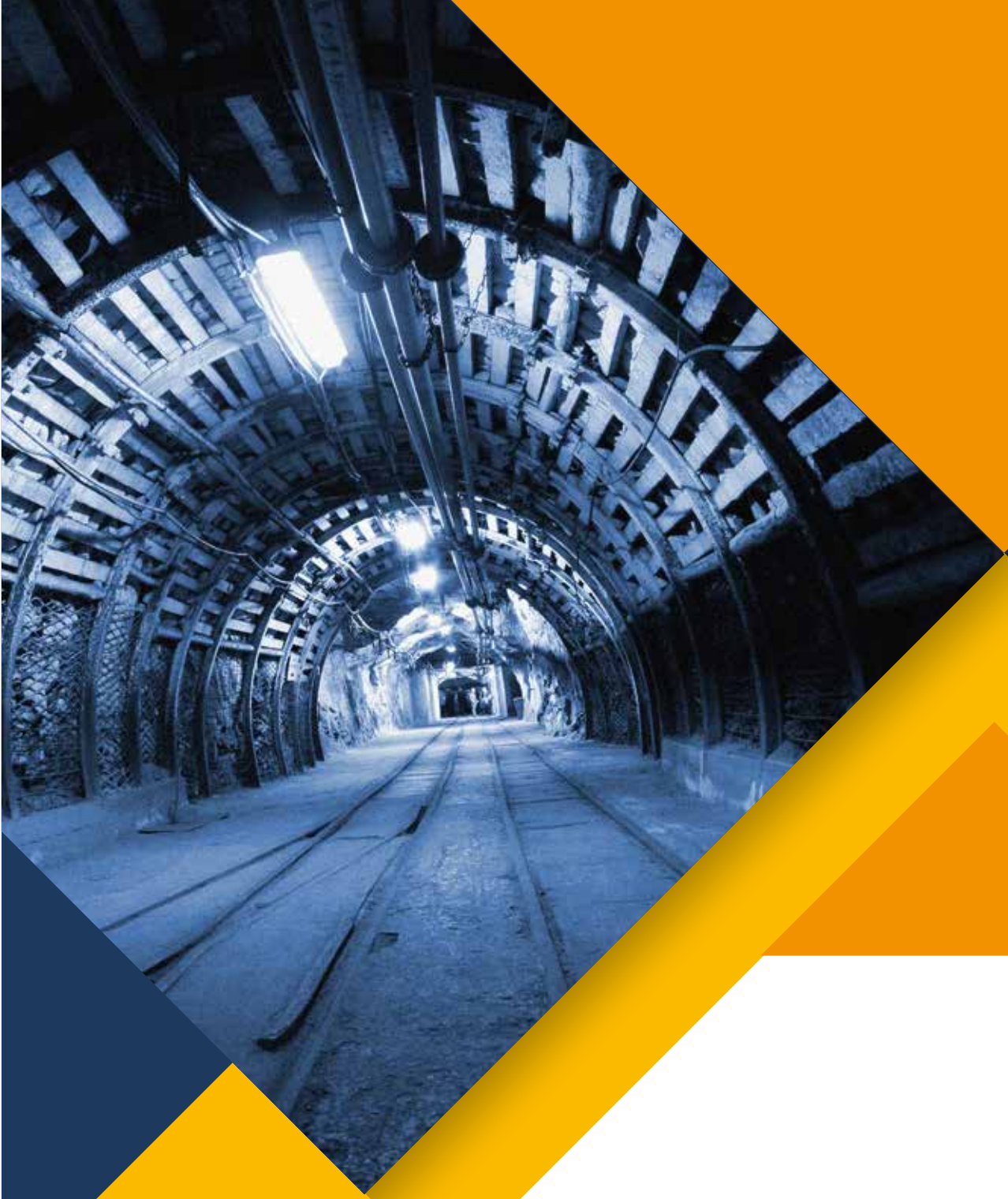
NRWDI was required to furnish the following information in support of the application to reissue the licence that was previously issued to Necsa regarding management and operation of the Vaalputs National Radioactive Waste Disposal Facility:

- An appropriate safety case that has been reviewed and accepted by the applicant, as an intelligent customer.
- Details of the organisational structure showing roles and responsibilities for the safe operation of a nuclear facility and the maintaining and updating of the facility safety case documentation. The required detail must include the following:
    - o An evaluation of the technical resources required;
    - o Demonstration that the said resources are available under the applicant's organisational control; and
    - o Confirmation of the technical resources that are to be outsourced.
- Detail of the management system employed by the applicant. The said management system must:
    - o Provide for an overriding priority to nuclear and radiation safety; and
    - o Detail the various processes and arrangements for compliance with the conditions of authorisation, requirements of the NNR Act and associated regulations.

The NRWDI application for the issue of Vaalputs Nuclear Installation Licence in the name of NRWDI was received in February 2019. The application was supported by a licensing strategy and a schedule of submissions to be made to the NNR. During the reporting period the NNR completed the review of the NRWDI safety case documentation submitted in support of their licence application. These included:

- Operating technical specifications
- Decommissioning and after care strategy
- Control over radioactive effluents
- Off-site transport of radioactive material
- Quality manual and supporting documents
- Waste Acceptance Criteria
- Radiological Control and surveillance programme
- Investigation and close out of safety health environmental and quality-related events
- Terms of Reference for Safety Committees
- Emergency Plan
- Medical surveillance provisions
- Maintenance and in-service inspection programmes
- Safety Assessment Report

Further, NRWDI submitted a Public Information Document to be used during the period of public consultation. The period of pubic consultation, during which the public were requested to provide written comments related to health and safety and the environment connected with the NRWDI application, commenced on 01 March 2021 and ended 30 days later on 30 March 2021. A total of 11 sets of comments were received at the end of the consultation period. These will be evaluated in the next reporting period.



Naturally Occurring Radioactive Material (NORM)

4. Regulation of NORM

Radionuclides are present in all minerals and raw materials of natural origin, the most important of which, for the purposes of radiation protection, are those in the U238 and Th232 decay series and K40. These materials are commonly referred to as NORM. In some materials, the levels of NORM are significantly higher, to the extent that regulatory control may be required for radiation protection purposes.

In terms of the NNR Act, the NNR is responsible for exercising regulatory control over facilities and activities handling NORM. Facilities and activities which handle NORM require authorisation in terms of the NNR Act. In terms of section 22 (1) of the Act, such facilities and activities are authorised by means of a nuclear authorisation in a form of a certificate of registration (COR) or certificate of exemption (COE).

The nuclear authorisation (i.e. COR or COE) is issued with certain conditions of authorisation with which all holders are required to comply. A system of compliance assurance exercises (inspections, audits and investigation actions) are conducted upon these various holders to assure compliance with the conditions of authorisation and the SSRP Regulations.

The NNR currently grants nuclear authorisations for the following categories of NORM

- Mining and mineral processing facilities
- Scrap smelters
- Fertiliser manufacturers
- Scrap processors
- Small users
- Service providers

The activities at these facilities include actions such as:

- Mining and processing of gold, copper, uranium, heavy minerals and phosphate rock.
- Recycling of scrap material (i.e. ferrous and non-ferrous metal, plastic, stainless steel, etc.) that is contaminated by NORM.
- Small users (i.e. laboratories) conducting tests of small quantities of NORM samples for verification of proposed and existing actions, including samples from prospecting activities.
- Service providers (i.e. storage warehouse), supplying clean-up services of radiologically contaminated sites.

4.1. Processing of new applications received

Facilities and activities where NORM forms part of the production operations require authorisation in terms of section 22 (1) of the NNR Act. These facilities and activities are authorised by means of a nuclear authorisation in the form of a certificate of registration (COR) or certificate of exemption (COE) depending on various factors such as the radiological risk and complexities of the operation in compliance with the SSRP Regulations.

During the reporting period only one COR was issued to LightDeep Earth (Pty) Ltd, and two (2) requests for land clearance letters were issued to Ansec 171 (Pty) Ltd and Living Africa One (Pty) Ltd for infrastructure development.

4.2. Review of the current conditions of authorisation

The conditions of authorisation included in Part A of the certificates of registration (CORs) issued for different categories of CORs were reviewed and updated during the reporting period. The review and update were triggered by various factors such as operational feedback in regulating these facilities and activities, the lessons learnt by the Regulator on engagements with other regulatory counterparts globally, and participation of the Regulator in technical meetings for expert missions by the IAEA. The implementation of the reviewed and updated conditions of authorisation is planned for implementation in the next financial year.

4.3. Occupational exposure to radiation

The primary radiation exposure pathway to workers in the underground mining environment is via the inhalation of radon progeny. The regulatory limits that are applicable for all workers classified as occupationally exposed to radiation are:

GENERAL REGULATORY DOSE LIMITS	
Workforce	Regulatory Criteria (SSRP R388)
Maximum individual worker dose	A (maximum) effective dose of 50 mSv in any single year.
Average individual worker dose	20 mSv per annum averaged over five consecutive years.

Figure 18: General regulatory dose limits

Based on these limits, the NNR requires the authorisation holders to demonstrate that the average effective dose of 20 mSv per year, averaged over five consecutive years, is not exceeded. This requires the authorisation holders to have proper dose records of all occupational exposed workers for a rolling five years as determined by the SSRP Regulations.

The NNR continued to focus much of its regulatory efforts on those mines where the potential exists for workers to be exposed to radiation levels in excess of the annual dose limit. During the period under review, no workers exceeded the annual dose limit (see Figure 18). The other areas with no potential of exceeding the regulatory annual dose limit (i.e. the so-called Non-Special Case Mines) remain well below the annual dose limit of 50 mSv/a (see Figure 21).

4.4. Special Case Mines (SCM)

For a mine to be classified as a special case by the NNR, the potential monthly dose rate should be 1.7 mSv and above, or the projected annual dose of 20 mSv is exceeded. During the period under review, the radiological exposures remained below the annual dose limit of 50 mSv/a and 20 mSv/a average over five consecutive years (2016 to 2020) as illustrated in Figures 19 and 20.

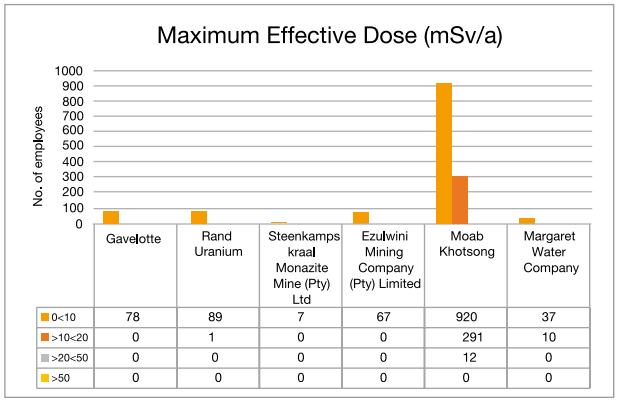


Figure 19: Maximum effective dose for SCMs (2020)

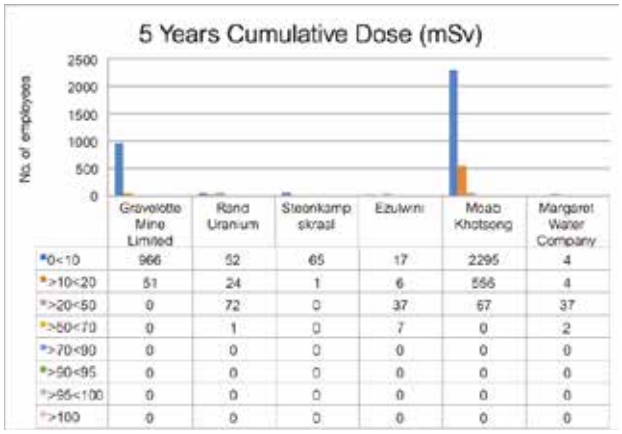


Figure 20: Five consecutive years (2016 – 2020) cumulative dose for SCMs

Non-Special Case Mines (Non-SCMs)

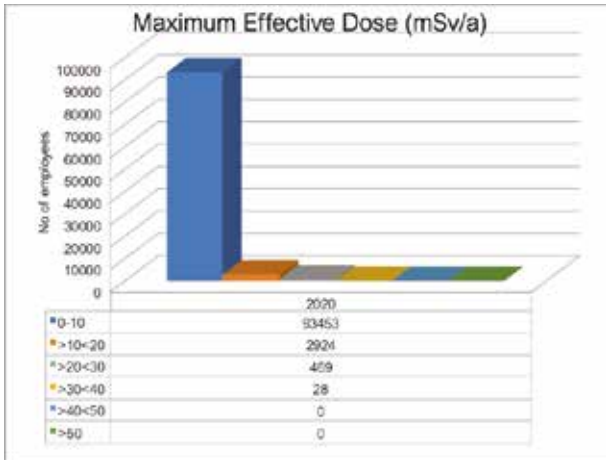


Figure 21: Maximum effective dose for non-SCMs (2020)

4.5. Public exposure to radiation

In accordance with the SSRP, the doses for members of the public must comply with the action specific dose constraint of 0.25 mSv per annum and a dose limit of 1 mSv per annum from all authorised actions. The NNR further required the holders on a five-year frequency to submit the Public Radiological Safety Assessments to ensure that the authorised actions did not pose any undue health risks to members of the public and the environment. These reports were reviewed by the NNR and the projected public exposures from these authorised actions were all within the public dose limit of 1 mSv.

4.6. Transport safety

There were no major events of safety concerns regarding transport of NORM during the period under review. The transportation of NORM and NORM contaminated scrap was carried out in accordance with the requirements of the NNR. Routine transport of surface contaminated objects (SCO-1) scrap material takes place on a daily

basis between authorised facilities. The NNR continued to receive notifications of consignments triggering alarms at gamma drive-through monitors of facilities that are not authorised to handle radioactive materials. For these notifications received, the NNR responds accordingly and/ provides guidance to the facilities.

4.7. Radioactive waste safety

There were no major safety concerns related to radioactive waste during the period under review. Authorisation holders were required to manage their radioactive waste and associated waste products. Accordingly, Section 1.5 of the COR requires that a waste management procedure be submitted to demonstrate compliance with NNR requirements.

The quarterly and annual waste management reports submitted to the NNR demonstrated compliance with the NNR requirements. The summary of waste is presented below.

Table 24: Total waste reported from all holders of operations

Waste Type	Quantities	Units (tons/L/ m^3)	Number of Consign-ments
Scrap Material - Restricted	6,44E+06	tons	88134
Scrap Material - Unrestricted	9,80E+04	tons	4464
Gaseous	2,18E+11	m^3	n/a
Liquid	5,95E+09	l	n/a
Semi-solids	6,13E+07	tons	n/a
Solids	1,07E+09	tons	149656
Other	2,78E+06	tons	2311

4.8. Safety of sealed radioactive sources

The safety and regulation of radioactive sealed sources at NORM facilities falls outside the scope of the NNR Act. However, any sealed source discovered by the NNR during inspections at the NORM regulated facilities or out of regulatory control is handled safely and reported to the Directorate: Radiation Control of the South African Health Products Regulatory Authority (SAHPRA).

4.9. Nuclear incidents/accidents/occurrences reported

There were 13 registered occurrences during the reporting period. The occurrences included pipeline failure incidents resulting in the spillage of the slurry into the environment, non-compliance to approved procedures and physical security system related events. Corrective and preventive measures are being implemented to ensure that the incidents do not recur and/or that the rate thereof is significantly reduced.

Seven (7) occurrences were closed and six (6) are in the process of being closed. The NNR will continue to follow up on these incidents during compliance assurance inspections to ensure that they are closed and to evaluate the effectiveness of corrective and preventive actions that aimed at ensuring that there are no recurrences or they are significantly reduced.

4.10. Regulatory compliance

In order to verify the degree of compliance with the conditions of nuclear authorisation, the NNR undertakes independent inspections (announced and unannounced), investigations, environmental verification and review of compliance reports submitted by authorisation holders.

4.10.1. Inspections

A total of 96 inspections were conducted during the reporting period. These inspections were conducted to verify compliance of the authorised holders with provisions of the NNR Act, regulations articulated in Safety Standards and Regulatory Practices (R388), NNR requirements, various NNR approved programmes and procedures implemented by the holders.

Authorisation holders were required to investigate the root causes of the non-compliances and implementation of corrective and preventive actions. The corrective and preventive actions implemented by the authorisation holders were confirmed during the NNR compliance inspections.

4.10.2. Investigations

The NNR conducted one (1) regulatory investigation during the reporting period.

An investigation was conducted on 02 October 2020 at an unauthorised facility following the rejection of the scrap load by the authorised scrap smelter. The radioactive material has been identified, isolated and securely stored while the investigation is ongoing with regards to the origin of this material.

4.10.3. Environmental verification samples

There were 224 environmental samples taken up and down stream of the authorised facilities and activities

for independent verification purposes. Based on the radio analysis results, the NNR enforces compliance in the interest of protection of persons, properties and the environment, and to inform future environmental sampling programmes.

4.11. Regulatory enforcements issued

A graded approach is followed when applying enforcement actions on the identified non-compliances. During the reporting period the identified non-compliances entailed authorisation holders being required to submit corrective action plans and did not warrant taking of stringent enforcement actions.

4.12. Appeals to the CEO

An appeal was submitted to the Chief Executive Officer (CEO) of the NNR in terms of section 43 of the NNR Act by the authorisation holders regarding the exclusion of authorisation holders of certificates of exemption from paying Authorisation Fees as per section 28 of NNR Act. The appeal is receiving the attention of the CEO of the NNR.

4.13. Developmental work on regulation of existing exposures

In South Africa, the members of the public may be exposed to radiation because the land they live on may be contaminated with radioactive mine residues or exposed due to natural occurrence of elevated levels of natural radionuclides. Furthermore, those who live on contaminated land are at risk of exposure to elevated levels of radon, especially indoors.

The NNR is expanding its scope of regulatory control to include existing exposure conditions such as living on contaminated land and exposure to radon indoors. In pursuance of this objective, the NNR is investigating and developing a suitable regulatory framework for radon inside dwellings and buildings. During the reporting period, a benchmark study of a regulatory framework for indoor radon was conducted and a benchmarking report with recommendations was finalised. The findings of the benchmark exercise will inform some of the regulatory approaches for indoor radon in South Africa.

Naturally Occurring Radioactive Material (NORM)

5. Regulatory Improvement and Technical Services (RITS)

The NNR conducted a virtual regulatory emergency exercise at NUFCOR on 30 July 2020 to test the response of NUFCOR against a simulated scenario. In order to align with COVID-19 safety regulations, the exercise was conducted using Microsoft Teams with a limited number of umpires located in the NNR Regulatory Emergency Response Centre (RERC) and other workstations, while responders were located at the NUFCOR offices. The exercise ground rules were drafted and discussed with NUFCOR prior to the exercise and included provisions for COVID-19 safety regulations for all participants. No off-site emergency response organisations were involved in the exercise. The simulated exercise scenario entailed a truck loaded with drums of uranium oxide concentrate (UOC) that was on its way from the NUFCOR plant to City Deep. The truck collided with a tanker that was transporting petroleum. The truck spilled the cargo on impact and, due to fuel leaking from both vehicles, fire ensued, resulting in the rapid decomposition of the material and airborne release of UOC. The evolution of events as determined by the scenario was verbally read from cue cards, then immediately sent via email to the NUFCOR Emergency Planner. When responding to the cues, NUFCOR was given time to request clarity, and to discuss and document the responses. The documented responses were verbally provided via Microsoft Teams and immediately submitted via email to the NNR. The documented responses were submitted to rerc@nnr.co.za. The overall outcome of the exercise was measured against the specific objectives at a particular response location and the report was documented with deficiencies in the form of non-compliances and observations. Although a number of deficiencies and areas for improvement were identified, it was concluded that the NUFCOR Emergency Plan remains viable for the protection of persons, property and the environment against radiation damage.

In order to ensure the readiness of the RERC and to identify possible areas of improvement, the effectiveness of the RERC arrangements (capabilities and functions) are tested during emergency exercises and drills. The RERC drill was conducted on 19 February 2021 to test the response of the RERC responders to a simulated scenario. All COVID-19 safety measures were considered during the drill and participation was limited to the ICT and EPR departments. The overall objective of the drill was to test the functionality of the tools, systems and equipment in the RERC. This included the functionality of the online radiation monitoring system, plant data transfer system, activation system, display and telephones, recording system, and communication tools in the RERC. The outcome of the drill was documented in terms of compliances, non-compliances and observations. The identified non-compliances and observations were rated (or classified) using the procedure on Regulatory Emergency Exercises Classification System for Non-compliances and Observations (PRC-RERC-23). The overall response was acceptable and demonstrated that the majority of the RERC tools, systems and equipment were available and operated adequately. The EPR department will develop a corrective action plan to address the identified deficiencies.

The NNR continues to address the findings that emanated from the regulatory self-assessment project that took place between 2010 and 2016. During the reporting period, the NNR expanded its suite of regulatory standards through the development and promulgation of Long Term Operation (LTO) regulations, development of regulatory guides, position papers and a technical assessment guide. The documents under development or completed cover topics such as transport of radioactive material for specific activities, recognition of holder personnel, control of technical services, and design of nuclear facilities.

International best practice for record keeping of internal and external national occupational radiation doses requires the utilisation of a central dose registry. In order to centralise occupational exposures in South Africa, the NNR continued to expand and implement improvements to the National Dose Register (NDR). This ensures proper national statistical analysis of dose distributions, dose management and reporting to international organisations such as UNSCEAR. There is increased confidence in the record keeping process as the regulatory body maintains the records. The NDR Steering Committee continues to monitor and has oversight of the initiatives to strengthen the NDR. There has been in an increase in the number of registered Data Providers from all groupings who are utilising the NDR platform. Improvements related to the upload portal and template were implemented. The NNR continues to verify exposure records uploads and

provides troubleshooting support to Data Providers. During the reporting period, the NDR awareness/training sessions have been virtually conducted for Group 2 authorisation holders and NNR inspectors.

The NNR made great progress in closing the recommendations and suggestions contained in the IAEA Integrated Regulatory Review Service (IRRS) Mission Report. For the reporting period, the NNR had implemented close to 83% of the IRRS Actions. Major milestones achieved during the reporting period include the implementation of the Integrated Management System (IMS), reviewing the appropriate guidelines to employ the graded approach to requested facility modifications and changes in the Safety Analysis Report (SAR), development of inspection guidance documents, as well as improved capability to make assessments of radon and its progeny.

The NNR continued to benefit from the IAEA Technical Co-operation National Project SAF9007 to strengthen regulatory infrastructure. Two IAEA Expert Missions were conducted virtually relating to review of NNR Integrated Management System (IMS) and a workshop on Steam Generator Replacement (SGR) inspections and installations. Two home-based assignments were completed for review of position papers and radio analytical procedures for the determination of radionuclides.

The NNR operates an Environmental Surveillance Laboratory to provide an independent verification radio-analysis service. The Laboratory is equipped with state-of-the-art instrumentation for processing environmental samples for the detection and measurement of a wide range of Naturally Occurring Radioactive Materials (NORM) and man-made radionuclides. Measurements are made by using techniques such as gamma spectrometry, alpha spectrometry, and gross alpha/beta counting. The NNR Laboratory is part of the IAEA network for Analytical Laboratories for the Measurement of Environmental Radioactivity (ALMERA), and has continued to participate in the Proficiency Testing Scheme, as part of the Quality Assurance Programme in order to identify areas of improvements. The accreditation process in terms of ISO/IEC 17025 requirements have been initiated, by submitting the initial application to South African National Accreditation System (SANAS) for gamma spectrometry analytical technique and the process is ongoing. The laboratory technicians and scientists are engaged in collaborative studies with various institutions both at national and international levels. The focus of these collaborations is directed at seeking advanced radio-analytical measurements in the acquisition of quality results.

5.1. Centre for Nuclear Safety and Security (CNSS)

Introduction

The mandate of the Centre for Nuclear Safety and Security (CNSS) is to collaboratively develop and enhance nuclear safety and security capabilities, in order to support regulatory decision-making.

The NNR signed a MoA with the University of Pretoria (UP) designating UP as the Host Institution for CNSS. Through the Practical Arrangement signed between the NNR and the IAEA, the CNSS has been designated as the Regional Hub in Nuclear Safety and Security for the African Region.

The CNSS was conceptualised as a technical and scientific support unit founded on the application of best science and engineering principles, and derives its core functions from four (4) strategic pillars:

- Strategic Partnerships: Seeking partnerships and collaborations in order to leverage and grow existing expertise and to ensure financial sustainability.
- Education and Training (E&T): Formulating and implementing effective education and training programmes aimed at creating a pipeline of skills, thus contributing to the increase in the number of nuclear science and engineering professionals with adequate competencies in radiation protection, nuclear safety and security.
- Regulatory Research and Development (RRD): Facilitating the development and execution of regulatory research and development activities; and
- Technical and Scientific Support (TSS): Providing technical and scientific support and/or expert advice or any other service in the fields of nuclear safety and security.

5.2. The Centres' highlights and achievements during FY 2020-21

5.2.1. Regulatory Research and Development (RRD)

The CNSS utilises niche competencies of academic and/or research institutions for its research needs, supplemented by CNSS researchers when initiating, co-ordinating and monitoring nuclear safety-related regulatory research and development. This allows the CNSS to stay abreast with international developments, and to ensure that the regulatory decisions are based on the best scientific and technical information. This includes formulation and development of emerging issues that may have an impact on nuclear safety and security.

5.2.1.1. Research at Partner Institutions

To date, the CNSS has issued three Calls for Proposals (CFPs) resulting in ten research requirements commissioned at various CNSS Partner Institutions. Five students have completed their Master's degree theses in 2020/21 and they have since graduated. In addition, three (3) technical reports were completed and submitted by the Partner Institutions.

Table 25: Research at Partner Institutions

No.	Research Requirements	Institution	Research Topic	Type of Research	Gender
1	Independent verification of the environmental hydrogeological conditions of the Thyspunt nuclear site	WITS	Hydrogeological characterisation and groundwater vulnerability to pollution mapping in the Thyspunt nuclear site, Eastern Cape, South Africa	MSc Thesis	Female
		UKZN (sub-contracted by WITS)	Three-dimensional numerical groundwater flow and advective transport modelling of the Thyspunt area, Eastern Cape, South Africa	MSc Thesis	Male
		WITS	Independent verification of the environmental hydrogeological conditions of the Thyspunt nuclear site	Technical Report	Male
2	Design of national radon mapping study	SUN	Design of a national indoor radon survey for South African homes: A review of existing indoor radon concentration data associated and measurement techniques	MSc Thesis	Male
		SUN (UWC)	Determining the radon emanation coefficient for soil samples	MSc Thesis	Female
3	Multi-physics platform for safety analysis based on US NRC codes	NCSU	CTF PWR core modelling on both channel and sub-channel level as well as coupling with neutronics simulator PARCS	MSc Thesis	Male
		NCUS	Multi-physics platform for safety analysis based on NRC codes	Technical Report	Male
4	Research on nuclear grade concrete	UCT	Fast Neutron Scattering Analysis for the interrogation of materials in bulk	Hons	Female
		UCT	Characterisation by fast neutrons of concrete for nuclear grade	Technical Report	Male

During the reporting period of 2020/21, the following projects in Table 26 were initiated at the CNSS's Partner Institutions. An amount of R2 880 600 has been committed for the projects.

Table 26: Projects initiated during the FY 2020/21

NNR Programme Supported	Project Title	Partner Institution	Student Researchers	Type of Research	Gender
NPP	Investigation of accident tolerant fuel and cladding materials for light water reactor applications	NWU	4	4 MSc	3 males 1 female
RITS ERP/ Laboratory	Baseline assessment of radiological levels of water in the vicinity of gold and coal mines and distribution of radon and associated radionuclides	WITS	3	1 MSc 2 PhD	3 females
NORM	Effective controls of radon gas in underground mines	UWC	6	4 MSc 2 Hons	4 males 2 males

5.2.1.2. Research at CNSS Programme Office

The CNSS has recruited six in-house Research Associates (RA) to work collaboratively with the Partner Institutions and undertake individual research projects within the CNSS Programme Office, based on emerging issues. The following scientific research projects were carried out by the Research Associates:

- The derivation of preliminary reference levels for radioactivity in drinking water surrounding authorised sites
- Assessment of levels of radioactivity and development of radiation protection strategy for the public in the West Rand area, South Africa

Three (3) peer papers were submitted and were presented as oral and/or poster presentations at the International Radiation Protection Association (IRPA) 15 Conference hosted from 18 January–05 February 2020. The titles of the papers presented were:

- Case studies on the regulation and management of radioactivity in drinking water
- Indoor radon measurements and research conducted in South Africa
- The concentration of radon gas and its sources that impacted human health in the West Rand region, South Africa

5.2.2. Strategic Partnerships (SPs)

The Strategic Partnerships creates an enabling environment for other pillars within the unit. Through this pillar, the CNSS establishes strategic partnerships and collaborations with both local and international partners. Under the pillar, the NNR signed a Practical Arrangement with the IAEA. Under the auspices of the Practical Arrangement, the CNSS hosted an IAEA Technical and Scientific Support Organisations (TSO) Self-Assessment workshop on developing and strengthening technical and scientific capacity. The workshop report was concluded during the 2020/21 financial year and has been accepted by the NNR, and an action plan is being developed for implementation.

The CNSS also concluded research funding agreements as follows:

- North West University for research on accident tolerant fuel.
- WITS for research on collection of baseline data of radiological levels of water in the vicinity of gold mines; and
- University of Western Cape for research on effective controls for radon gas in underground mines.

5.2.3. Education and Training (E&T)

In order to develop researchers and specialists in nuclear safety and security, as well as provide technical and scientific support, the CNSS has strived to harmonise the education component with the RRD at Partner Institutions. In order to develop internal capacity, the CNSS placed two Research Associates at various Partner Institutions for their development. One staff member attended IAEA training in Post-graduate Educational Course (PGEC) in Radiation Protection and Safety of Radiation Sources at the Ghana Atomic Agency and another staff member is pursuing post-doctoral training at North West University Mafikeng Campus.

5.2.4. Technical and Scientific Support (TSS)

This pillar involves use of consultancy and/or Partner Institutions where a short-turnaround in delivery of technical and scientific services is paramount to the NNR. Moreover, skills transfer is embodied in the projects commissioned under this pillar. Hence, services of professional experts or consultants who maintain high levels of scientific and technological competence; with long-standing experience; and capable to provide global, consistent technical and science-based solutions with proven approaches to nuclear safety and security; are retained.

The following two (2) TSS projects were initiated in during the FY 2020/21

1) Development of a probabilistic seismic hazard analysis (PSHA) procedure that takes into account anthropogenic (human-induced) seismic events and natural earthquake vents.
2) Radon measurements in select dwellings and buildings in the vicinity of the proposed Nuclear Build Site, Thyspunt.

F

ANNUAL FINANCIAL STATEMENTS

REPORT OF THE AUDITOR-GENERAL TO PARLIAMENT ON THE NATIONAL NUCLEAR REGULATOR

Report on the audit of the financial statements

Opinion

1. I have audited the financial statements of the National Nuclear Regulator (NNR) set out on pages 125 to 163, which comprise the statement of financial position as at 31 March 2021, statement of financial performance, statement of changes in net assets, cash flow statement and statement of comparison of budget and actual amounts for the year then ended, as well as the notes to the financial statements, including a summary of significant accounting policies.

2. In my opinion, the financial statements present fairly, in all material respects, the financial position of the National Nuclear Regulator as at 31 March 2021, and its financial performance and cash flows for the year then ended in accordance with the South African Standards of Generally Recognised Accounting Practice (SA Standards of GRAP) and the requirements of the Public Finance Management Act (PFMA) (Act No.1 of 1999)

Basis for opinion

3. I conducted my audit in accordance with the International Standards on Auditing (ISA). My responsibilities under those standards are further described in the Auditor-General's responsibilities for the audit of the financial statements section of this auditor's report.

4. I am independent of the public entity in accordance with the International Ethics Standards Board for Accountants' *International code of ethics for professional accountants (including International Independence Standards*) (IESBA code) as well as other ethical requirements that are relevant to my audit in South Africa. I have fulfilled my other ethical responsibilities in accordance with these requirements and the IESBA code.

5. I believe that the audit evidence I have obtained is sufficient and appropriate to provide a basis for my opinion.

Emphasis of matter

6. I draw attention to the matter below. My opinion is not modified in respect of this matter.

Impairment for provision

7. As disclosed in note 8 of the financial statements, material losses of R8 715 404 were incurred as a result of impairment of irrecoverable trade debtors.

Responsibilities of the Accounting Authority for the financial statements

8. The Accounting Authority is responsible for the preparation and fair presentation of the financial statements in accordance with the SA Standards of GRAP and the requirements of the PFMA and for such internal control as the Accounting Authority determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

9. In preparing the financial statements, the Accounting Authority is responsible for assessing the public entity's ability to continue as a going concern, disclosing, as applicable, matters relating to going concern and using the going concern basis of accounting unless the appropriate governance structure either intends to liquidate the public entity or to cease operations, or has no realistic alternative but to do so.

Auditor-General's responsibilities for the audit of the financial statements

10. My objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes my opinion. Reasonable assurance is a high level of assurance but is not a guarantee that an audit conducted in accordance with the ISA will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

11. A further description of my responsibilities for the audit of the financial statements is included in the annexure to this auditor report.

Report on the audit of the annual performance report

Introduction and scope

12. In accordance with the Public Audit Act (PAA) 25 of 2004 and the general notice issued in terms thereof, I have a responsibility to report on the usefulness and reliability of the reported performance information against predetermined objectives for selected outcome presented in the annual performance report. I performed procedures to identify material findings but not to gather evidence to express assurance.

13. My procedures address the usefulness and reliability of the reported performance information, which must be based on the public entity's approved performance planning documents. I have not evaluated the completeness and appropriateness of the performance indicators included in the planning documents. My procedures do not examine whether the actions taken by the public entity enabled service delivery. My procedures do not extend to any disclosures or assertions relating to the extent of achievements in the current year or planned performance strategies and information in respect of future periods that may be included as part of the reported performance information. Accordingly, my findings do not extend to these matters.

14. I evaluated the usefulness and reliability of the reported performance information in accordance with the criteria developed from the performance management and reporting framework, as defined in the general notice, for the following selected outcome presented in the public entity's annual performance report for the year ended 31 March 2021:

Goal	Pages in the annual performance report
Outcome 3- To implement regulatory programmes to ensure effective nuclear safety regulation.	25 - 28

15. I performed procedures to determine whether the reported performance information was properly presented and whether performance was consistent with the approved performance planning documents. I performed further procedures to determine whether the indicators and related targets were measurable and relevant, and assessed the reliability of the reported performance information to determine whether it was valid, accurate and complete.

16. I did not identify any material findings on the usefulness and reliability of the reported performance information for outcome 3 - To implement regulatory programmes to ensure effective nuclear safety regulation.

Other matters

17. I draw attention to the matters below.

Achievement of planned targets

18. Refer to the annual performance report on pages 25 to 28 for information on the achievement of planned targets for the year and management's explanations provided for the over achievement of targets.

Adjustment of material misstatements

19. I identified material misstatements in the annual performance report submitted for auditing. These material misstatements were in the reported performance information of outcome 3 - To implement regulatory programmes to ensure effective nuclear safety regulation. As management subsequently corrected the misstatements, I did not raise any material findings on the usefulness and reliability of the reported performance information.

Report on the audit of compliance with legislation

Introduction and scope

20. In accordance with the PAA and the general notice issued in terms thereof, I have a responsibility to report material findings on the public entity's compliance with specific matters in key legislation. I performed procedures to identify findings but not to gather evidence to express assurance.

21. The material findings on compliance with specific matters in key legislation are as follows:

Annual financial statements, performance and annual report

22. The financial statements submitted for auditing were not prepared in accordance with the prescribed financial reporting framework and/or supported by full and proper records, as required by section 55(1)(b) of the PFMA. Material misstatements of the cash flow statement identified by the auditors in the submitted financial statement were corrected, resulting in the financial statements receiving an unqualified audit opinion.

Other information

23. The Accounting Authority is responsible for the other information. The other information comprises the information included in the annual report. The other information does not include the financial statements, the auditor's report and those selected outcomes presented in the annual performance report that have been specifically reported in this auditor's report.

24. My opinion on the financial statements and findings on the reported performance information and compliance with legislation do not cover the other information and I do not express an audit opinion or any form of assurance conclusion on it.

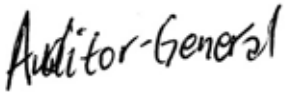
25. In connection with my audit, my responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial statements and the selected outcome presented in the annual performance report, or my knowledge obtained in the audit, or otherwise appears to be materially misstated.

26. I did not receive the other information prior to the date of this auditor's report. When I do receive and read this information, if I conclude that there is a material misstatement therein, I am required to communicate the matter to those charged with governance and request that the other information be corrected. If the other information is not corrected, I may have to retract this auditor's report and re-issue an amended report as appropriate. However, if it is corrected this will not be necessary.

Internal control deficiencies

27. I considered internal control relevant to my audit of the financial statements, reported performance information and compliance with applicable legislation; however, my objective was not to express any form of assurance on it. The matters reported below are limited to the significant internal control deficiencies that resulted in the findings on compliance with legislation included in this report.

28. Management did not prepare accurate supporting schedules to support the information reported on the annual financial statements. There was a material misstatements identified in the financial statements submitted, which was subsequently adjusted for, resulting in material non-compliance with section 55(1) (b) of the PFMA. Management should ensure adequate reviews are performed to have an accurate and complete financial statements.



Pretoria
31 July 2021

AUDITOR-GENERAL
SOUTH AFRICA

Auditing to build public confidence

ANNEXURE – AUDITOR-GENERAL'S RESPONSIBILITY FOR THE AUDIT

1. As part of an audit in accordance with the ISA, I exercise professional judgement and maintain professional scepticism throughout my audit of the financial statements and the procedures performed on reported performance information for selected outcome and on the public entity's compliance with respect to the selected subject matters.

Financial statements

2. In addition to my responsibility for the audit of the financial statements as described in this auditor's report, I also:
   - Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error; design and perform audit procedures responsive to those risks; and obtain audit evidence that is sufficient and appropriate to provide a basis for my opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations or the override of internal control.
   - Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the public entity's internal control.
   - Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by the Board of Directors, which constitutes the Accounting Authority.
   - Conclude on the appropriateness of the board of directors, which constitutes the Accounting Authority's use of the going concern basis of accounting in the preparation of the financial statements. I also conclude, based on the audit evidence obtained, whether a material uncertainty exists relating to events or conditions that may cast significant doubt on the ability of the National Nuclear Regulator to continue as a going concern. If I conclude that a material uncertainty exists, I am required to draw attention in my auditor's report to the related disclosures in the financial statements about the material uncertainty or, if such disclosures are inadequate, to modify my opinion on the financial statements. My conclusions are based on the information available to me at the date of this auditor's report. However, future events or conditions may cause a public entity to cease operating as a going concern; and
   - Evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and determine whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.
   - Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities to express an opinion on the financial statements. I am responsible for the direction, supervision and performance of the audit. I remain solely responsible for my audit opinion.

Communication with those charged with governance

3. I communicate with the accounting authority regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that I identify during my audit.
4. I also provide the accounting authority with a statement that I have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on my independence and, where applicable, actions taken to eliminate threats or safeguards applied.

GENERAL INFORMATION

Country of incorporation and domicile	South Africa
Nature of business and principal activities	To provide protection for persons, property and the environment against nuclear damage, through the establishment of safety standards and regulatory practices.
Directors	Dr. T Motshudi (Chairperson) Dr. P Dube (Deputy Chairperson) Dr. B Tyobeka (CEO) Mr. P Phili Mr. A Le Roux Dr. B Sehlapelo Mr. KS Kakoma Ms. LN Dlamini Mr. D Mamphitha Mr. BP Petlane Dr. NZ Qunta Ms. PD Peta Mr. BP Petlane Ms. E Monale Ms. B Mokoetle Mrs. D Bendeman
Registered office	Eco Glades Office Park Eco Glades 2,Block 6 Witch Hazel Avenue Highveld Ext 75, Eco Park, Centurion 0046
Business address	Eco Glades Office Park Eco Glades 2, Block G 420 Witch Hazel Avenue Eco Park, Centurion, Highveld Ext 75 0046
Postal address	P.O Box 7106 Centurion, Eco Park Highveld Ext 75 Pretoria 0046
Executive Authority	Minister of Mineral Resources and Energy
Bankers	ABSA Bank
Auditors	Auditor-General South Africa (AGSA) Registered Auditors
Secretary	First Corporate Transfer Secretaries (PTY) Ltd

STATEMENT OF DIRECTORS' RESPONSIBILITIES AND APPROVAL

The directors are required by the Public Finance Management Act(PFMA) (Act 1 of 1999), to maintain adequate accounting records and are responsible for the content and integrity of the annual financial statements and related financial information included in this report. It is the responsibility of the members to ensure that the annual financial statements fairly present the state of affairs of the entity as at the end of the financial year and the results of its operations and cash flows for the period then ended. The external auditors are engaged to express an independent opinion on the annual financial statements and was given unrestricted access to all financial records and related data.

The annual financial statements have been prepared in accordance with Standards of Generally Recognised Accounting Practice (GRAP) including any interpretations, guidelines and directives issued by the Accounting Standards Board.

The annual financial statements are based upon appropriate accounting policies consistently applied and supported by reasonable and prudent judgements and estimates.

The directors acknowledge that they are ultimately responsible for the system of internal financial control established by the entity and place considerable importance on maintaining a strong control environment. To enable the directors to meet these responsibilities, the Accounting Authority sets standards for internal control aimed at reducing the risk of error or deficit in a cost- effective manner. The standards include the proper delegation of responsibilities within a clearly defined framework, effective accounting procedures and adequate segregation of duties to ensure an acceptable level of risk. These controls are monitored throughout the entity and all employees are required to maintain the highest ethical standards in ensuring the entity's business is conducted in a manner that in all reasonable circumstances is above reproach. The focus of risk management in the entity is on identifying, assessing, managing and monitoring all known forms of risk across the entity. While operating risk cannot be fully eliminated, the entity endeavours to minimise it by ensuring that appropriate infrastructure, controls, systems and ethical behaviour are applied and managed within predetermined procedures and constraints.

The directors are of the opinion, based on the information and explanations given by management, that the system of internal control provides reasonable assurance that the financial records may be relied on for the preparation of the annual financial statements. However, any system of internal financial control can provide only reasonable, and not absolute, assurance against material misstatement or deficit.

The directors have reviewed the entity's cash flow forecast for the year to 31 March 2022 and, in the light of this review and the current financial position, they are satisfied that the entity has access to adequate resources to continue in operational existence for the foreseeable future.

The entity is wholly dependent on the authorisation fees and government grant for continued funding of operations. The annual financial statements are prepared on the basis that the entity is a going concern and that the parliament has neither the intention nor the need to liquidate or curtail materially the scale of the entity or to invoke section 19 of the NNR Act.

Although the Accounting Authority is primarily responsible for the financial affairs of the entity, they are supported by the entity's internal auditors.

The external auditors are responsible for independently reviewing and reporting on the entity's annual financial statements. The annual financial statements have been examined by the entity's external auditors and their report is presented on page 114.

The annual financial statements set out on pages 125-163, which have been prepared on the going concern basis, were approved by the Accounting Authority on 31 July 2021 and were signed on its behalf by:

Dr T Motshudi

Chairperson of Board

Dr B Tyobeka

Chief Executive Officer

AUDIT AND RISK MANAGEMENT COMMITTEE REPORT

The Audit and Risk Management Committee is pleased to present its report for the financial year ended 31 March 2021.

Membership and Attendance

The membership and attendance of the Audit and Risk Management Committee are as reflected in the Corporate Governance section of the annual report. The committee is required to meet at least four times per annum as per its approved terms of reference.

Audit and Risk Management Committee Responsibility

The Audit and Risk Management Committee reports that it has adopted appropriate formal terms of reference as its charter in line with the requirements of sections 51(1)(a)(ii) of the Public Finance Management Act (PFMA) and Treasury Regulations 27.1. The Audit and Risk Management Committee further reports that it has conducted its affairs in compliance with its charter.

The Quality of In-year Quarterly Reports Submitted in Terms of the PFMA

The Audit and Risk Management Committee reviewed the in-year quarterly reports submitted by management during the period under review and it is satisfied with the quality of these reports.

The Effectiveness of Internal Control

In line with the PFMA and the King Report on Corporate Governance requirements, Internal Audit provides the Audit and Risk Management Committee and management with assurance whether or not the system of internal controls is adequate and effective. This is achieved by means of adopting transparent risk management processes and risk based internal audit plans that are reviewed regularly.

From the various reports of the Internal Audit, the audit report on the annual financial statements and the management letter of the Auditor-General South Africa (AGSA), it was noted that the audit report has insignificant internal control deficiencies reported, refer to paragraph 28 of the Audit Report. Management is continuously putting in place corrective action plans to address weaknesses identified and reported by the Internal Audit. The Audit and Risk Management Committee regularly reviews action plans implemented by management to address the reported weaknesses.

Accordingly, the Audit and Risk Management Committee is satisfied that the system of internal controls over the financial reporting for the period under review was transparent, adequate and effective.

The Review of Risk Management **Processes**

The Audit and Risk Management Committee is responsible for the oversight of the risk management function. Management reports to the Audit and Risk Management Committee on the organization's risk management processes. The Audit and Risk Management Committee reviewed the risk management policy, risk management strategy and enterprise risk management plan. The Audit and Risk Management Committee has monitored the implementation of the risk management plan and is generally satisfied with how the risk management processes are being managed.

Internal Audit

The Audit and Risk Management Committee is satisfied that the internal audit function is operating effectively and that it has addressed the risks pertinent to the entity in its audits.

The Audit and Risk Management Committee has met separately with the Internal Audit to ensure that the function is executed effectively and objectively.

Evaluation of Annual Financial Statements

The Audit and Risk Management Committee has:

- Reviewed and discussed the audited annual financial statements to be included in the annual report with the Auditor-General South Africa (AGSA) and management;
- Reviewed the management letter issued by Auditor-General South Africa and management's response thereto;
- Reviewed changes in accounting policies and practices, where applicable;
- Reviewed the entity's compliance with legal and regulatory provisions; and
- Reviewed significant adjustments resulting from the audit.

Auditor-General South Africa

The Audit and Risk Management Committee has met with the Auditor-General South Africa to ensure that there are no unresolved issues of concern.The Audit and Risk Management Committee recommended the approval of the audited annual financial statements by the Board.

Protas Phili CA(SA)
Chairperson of the Audit and Risk Management Committee
31 July 2021

DIRECTORS' REPORT

The directors have pleasure in submitting their report and the annual financial statements of the NNR for the year ended 31 March 2021.

1. Incorporation

The National Nuclear Regulator is listed as a national public entity in Schedule 3 Part A of the Public Finance Management Act, (Act 1. of 1999, as amended). It was established in terms of Section 3 of the National Nuclear Regulator Act, (Act No 47 of 1999). It is engaged in activities at the highest professional level to provide for the protection of persons, property and the environment against nuclear damage, through the establishment of safety standards and regulatory practices.

2. Review of activities

Main business and operations

The NNR is engaged in activities aimed at protecting persons, property and the environment against nuclear damage in South Africa.

3. Going concern

The annual financial statements have been prepared on the basis of accounting policies applicable to a going concern. This basis presumes that funds will be available to finance future operations and that the realisation of assets and settlement of liabilities, contingent obligations and commitments will occur in the ordinary course of business.

4. Subsequent events

The directors are not aware of any significant matter or circumstances affecting financial statements arising since the end of the financial year.

5. Directors' interest in contracts

All directors have given general declarations of interest in terms of the NNR's Code of Conduct. These declarations indicate the nature of interest a director, spouse, partner or close family member holds in a company, including any directorship in a company classified as a related party to the NNR. No material contracts in which the directors have an interest were entered into in the current financial year.

6. Accounting policies

The annual financial statements are prepared in accordance with the prescribed Standards of Generally Recognised Accounting Practices (GRAP) issued by the Accounting Standards Board as the prescribed framework by National Treasury.

7. Accounting Authority

The directors of the entity during the year and to the date of this report are as follows:

Name	Nationality	Changes
Dr. T Motshudi (Chairperson)	South African	Reappointment effective 01 September 2020
Dr. P Dube (Deputy Chairperson)	South African	Term expired 31 August 2020
Dr. B Tyobeka (CEO)	South African	Reappointment effective 01 September 2020
Mr. P Phili	South African	Reappointment effective 01 September 2020
Mr. A Le Roux	South African	Term expired 31 August 2020
Dr. B Sehlapelo	South African	Term expired 31 August 2020
Mr. KS Kakoma	South African	Term expired 31 August 2020
Ms. LN Dlamini	South African	Appointment effective 01 September 2020
Mr. D Mamphitha	South African	Appointment effective 01 September 2020
Mr. BP Petlane	South African	Appointment effective 01 September 2020
Dr. NZ Qunta	South African	Appointment effective 01 September 2020
Ms. PD Peta (Deputy Chairperson)	South African	Appointment effective 01 September 2020
Mr. BP Petlane	South African	Appointment effective 01 September 2020
Ms. E Monale	South African	Term expired 31 August 2020
Ms. B Mokoetle	South African	Term expired 31 August 2020
Mrs. D Bendeman	South African	Reappointment effective 01 September 2020

8. Secretary

The secretary of the entity is First Corporate Transfer Secretaries (PTY) Ltd of:

Business address	1 Canterbury Crescent Gallo Manor 2052
Postal address	P.O. Box 216 Gallo Manor 2052

9. Corporate governance and Board of Directors meetings

The Accounting Authority has met as scheduled during the financial year, see page 49 for details of the annual report for schedule of meetings. Directors have access to all organisational information and executive management necessary to discharge its roles and responsibilities as mandated.

10. Controlling authority

The entity's controlling authority is Minister of Mineral Resources and Energy.

11. Bankers

ABSA Bank.

12. Auditors

Auditor-General South Africa (AGSA) is the permanent auditors of the National Nuclear Regulator.

Dr T Motshudi

Chairperson of Board

Dr B Tyobeka

Chief Executive Officer

Statement of Financial Position as at 31 March 2021

Figures in Rand	Note(s)	2021	2020
Assets			
Current Assets			
Receivables from exchange transactions	8	32 559 575	39 841 769
Receivables from non-exchange transactions	9	97 832	42 339
Operating lease asset	6	2 440	-
Cash and cash equivalents	10	104 257 590	71 208 635
		136 917 437	**111 092 743**
Non-current Assets			
Property, plant and equipment	4	96 984 644	103 263 937
Intangible assets	5	1 122 286	674 080
		98 106 930	**103 938 017**
Total Assets		**235 024 367**	**215 030 760**
Liabilities			
Current Liabilities			
Other financial liabilities	12	11 045 763	9 746 292
Operating lease liability	6	-	324 616
Payables from exchange transactions	14	11 247 969	8 099 999
Other payables from non-exchange transactions		169 284	169 284
Provisions	13	20 044 024	17 855 438
		42 507 040	**36 195 629**
Non-current Liabilities			
Other financial liabilities	12	2 734 876	14 309 190
Employee benefit obligation	7	8 978 041	9 392 438
Unspent conditional grants and receipts	11	13 710 309	12 947 116
		25 423 226	**36 648 744**
Total Liabilities		**67 930 266**	**72 844 373**
Net Assets		**167 094 101**	**142 186 387**
Accumulated surplus		167 094 101	142 186 389

Statement of Financial Performance

Figures in Rand	Note(s)	2021	2020
Revenue			
Revenue from exchange transactions			
Authorisation fees		212 714 671	196 440 443
Application fees		22 434 524	23 151 784
Interest on overdue debtors		53 898	-
Actuarial gain		414 397	-
Other income	17	941 397	2 306 590
Interest received	22	3 953 869	5 766 265
Total revenue from exchange transactions		**240 512 756**	**227 665 082**
Revenue from non-exchange transactions			
Transfer revenue			
Government grants	16	40 467 000	43 096 000
Deferred income		374 021	110 037
Total revenue from non-exchange transactions		**40 841 021**	**43 206 037**
Total revenue	15	**281 353 777**	**270 871 119**
Expenditure			
Compensation of employees	20	(173 499 018)	(169 628 422)
Depreciation and amortisation		(12 010 336)	(11 599 905)
Finance costs	23	(1 465 449)	(3 029 617)
Lease rentals on operating lease		(3 412 704)	(3 697 796)
Debt Impairment	21	(10 462 318)	(142 110)
Actuarial losses		-	(684 193)
Goods and services	18	(55 596 242)	(65 047 850)
Total expenditure		**(256 446 067)**	**(253 829 893)**
Surplus for the year		**24 907 710**	**17 041 226**

Statement of Changes in Net Assets

Figures in Rand	Accumulated surplus	Total net assets
Balance at 01 April 2019	**125 145 163**	**125 145 163**
Changes in net assets		
Surplus (Deficit) for the year	17 041 226	17 041 226
Total changes	17 041 226	17 041 226
Balance at 01 April 2020	**142 186 391**	**142 186 391**
Changes in net assets		
Surplus/(Deficit) for the year	24 907 710	24 907 710
Total changes	24 907 710	24 907 710
Balance at 31 March 2021	**167 094 101**	**167 094 101**

Cash Flow Statement

Figures in Rand	Note(s)	2021	2020
Cash flows from operating activities			
Receipts			
Authorisation fees		213 328 156	180 712 718
Application fees		17 470 354	22 611 990
Interest on overdue debtors		292	-
Other income		927 940	2 306 590
Interest income		4 005 200	4 883 241
Government grants		40 467 000	43 096 000
		276 198 942	253 610 539
Payments			
Compensation of employees		(171 301 492)	(167 484 849)
Goods & Services		(55 087 390)	(70 876 948)
Finance costs		(1 384 509)	(3 029 617)
		(227 773 391)	(241 391 414)
Net cash flows from operating activities	26	**48 425 551**	**12 219 125**
Cash flows from investing activities			
Purchase of property, plant and equipment	4	(6 744 503)	(3 261 202)
Proceeds from sale of property, plant and equipment	4	19 633	49 112
Purchase of other intangible assets	5	(394 557)	-
Net cash flows from investing activities		**(7 119 427)**	**(3 212 090)**
Cash flows from financing activities			
(Decrease)/Increase on other financial liabilities		(8 257 168)	(9 404 072)
Net cash flows from financing activities		**(8 257 168)**	**(9 404 072)**
Net increase/(decrease) in cash and cash equivalents		**33 048 956**	**(397 037)**
Cash and cash equivalents at the beginning of the year		71 208 634	71 605 671
Cash and cash equivalents at the end of the year	10	**104 257 590**	**71 208 634**

Statement of Comparison of Budget and Actual Amounts

Budget on Accrual Basis

Figures in Rand	Approved budget	Adjustments	Final Budget	Actual amounts on comparable basis	Difference between final budget and actual	Ref.
Statement of Financial Performance						
Revenue						
Revenue from exchange transactions						
Authorisation fees	235 745 000	-	**235 745 000**	212 714 671	**(23 030 329)**	36.1
Application fees	17 200 000	-	**17 200 000**	22 434 524	**5 234 524**	36.2
Interest on overdue debtors	-	-	**-**	53 898	**53 898**	
Actuarial gain	-	-	**-**	414 397	**414 397**	
Other income	2 160 000	-	**2 160 000**	941 397	**(1 218 603)**	36.4
Interest received	5 781 000	-	**5 781 000**	3 953 869	**(1 827 131)**	36.5
Total revenue from exchange transactions	**260 886 000**	**-**	**260 886 000**	**240 512 756**	**(20 373 244)**	
Revenue from nonexchange transactions						
Transfer revenue						
Government grants	45 467 000	(5 000 000)	**40 467 000**	40 467 000	**-**	
Deferred income	-	-	**-**	374 021	**374 021**	
Total revenue from nonexchange transactions	**45 467 000**	**(5 000 000)**	**40 467 000**	**40 841 021**	**374 021**	
Total revenue	**306 353 000**	**(5 000 000)**	**301 353 000**	**281 353 777**	**(19 999 223)**	
Expenditure						
Compensation of employees	(186 508 428)	-	**(186 508 428)**	(173 499 018)	**13 009 410**	36.6
Depreciation and amortisation	(10 536 385)	-	**(10 536 385)**	(12 010 336)	**(1 473 951)**	
Finance costs	(2 580 000)	-	**(2 580 000)**	(1 465 449)	**1 114 551**	36.3
Lease rentals on operating lease	(3 992 443)	-	**(3 992 443)**	(3 412 704)	**579 739**	
Debt impairment	-	-	**-**	(10 462 318)	**(10 462 318)**	36.9
Goods & Services	(86 874 028)	5 000 000	**(81 874 028)**	(55 596 242)	**26 277 786**	36.7
Capital expenditure	(15 861 716)	-	**(15 861 716)**	-	**15 861 716**	36.8
Total expenditure	**(306 353 000)**	**5 000 000**	**(301 353 000)**	**(256 446 067)**	**44 906 933**	
Surplus/(Defict) for the year	**-**	**-**	**-**	**24 907 710**	**24 907 710**	
Actual Amount on Comparable Basis as Presented in the Budget and Actual Comparative Statement	**-**	**-**	**-**	**24 907 710**	**24 907 710**	

Accounting Policies

1. Presentation of Annual Financial Statements

The following are the principal accounting policies of the entity which are, in all material respects, consistent with those of the previous year.

The annual financial statements are prepared under the historical cost basis, except where otherwise specified. The annual financial statements are prepared in accordance with the South African Standards of Generally Recognised Accounting Practice (SA Standards of GRAP) issued by the Accounting Standard Board, and in the manner required by the Public Finance Management Act, Act No.1 of 1999. These annual financial statements are presented in South African Rand. Assets and liabilities or income and expenditure will not be offset, unless it is required or permitted by a standard.

1.1 Significant judgements and sources of estimation uncertainty

In preparing the annual financial statements, management is required to make estimates and assumptions that affect the amounts represented in the annual financial statements and related disclosures. Use of available information and the application of judgement is inherent in the formation of estimates. Actual results in the future could differ from these estimates which may be material to the annual financial statements. Significant judgements include:

Post-employment medical benefits

The costs and liabilities of the postemployment medical care benefits are determined using methods relying on actuarial estimates and assumptions. Advice is taken from the independent actuaries relating to the appropriateness of the assumptions. Changes in the assumptions used may have a significant effect on the statement of financial performance and statement of financial position.

Provision for impairment of receivables

A provision for impairment of trade receivables is established when there is objective evidence that the NNR will not be able to collect all amounts due according to the original terms of receivables. The calculation of the amount to be provided for impairment of receivables requires the use of estimates and judgments, refer to note 21.

Annual evaluation of property, plant and equipment and intangibles

In order to review property, plant and equipment and intangibles for possible impairment, changes in useful life and changes in residual values at the end of each financial year in accordance with notes 4 and 5, reference is made to historical information and intended use of assets.

The preparation of financial statements requires the use of estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenue and expenses during the reporting periods. Although these estimates are based on management's best knowledge of current events and actions that the entity may undertake in the future, actual results may ultimately differ from those estimates.

The presentation of the results of operations, financial position and cash flows in the financial statements of the entity is dependent upon and is sensitive to the accounting policies, assumptions and estimates that are used as a basis for the preparation of these financial statements. Management has made certain judgments in the process of applying the entity's accounting policies

Accounting Policies

1.2 Revenue recognition

Revenue comprises authorisation fees and revenue from special projects, including application fees. Revenue arising from authorisation fees which are published in the Gazette by the Minister on an annual basis is recognised on an accrual basis in accordance with the substance of the relevant arrangement with the holders of authorisation. Revenue from special projects is recognised on an accrual basis in accordance with the terms and conditions agreed upon with the other party.

1.3 Government grants

Government grants are recognised in profit and loss when there is reasonable assurance that they will be received and that the entity will comply with the conditions associated with the grants.

1.4 Property, plant and equipment

Property, plant and equipment is initially measured at cost.The cost of an item of property, plant and equipment is the purchase price and other costs attributable to bring the asset to the location and condition necessary for it to be capable of operating in the manner intended by management. Trade discounts and rebates are deducted in arriving at the cost.

Where an asset is acquired through a non-exchange transaction, its cost is its fair value as at date of acquisition.

Where an item of property, plant and equipment is acquired in exchange for a non-monetary asset or monetary assets, or a combination of monetary and non-monetary assets, the asset acquired is initially measured at fair value (the cost). If the acquired item's fair value was not determinable, it's deemed cost is the carrying amount of the asset(s) given up.

When significant components of an item of property, plant and equipment have different useful lives, they are accounted for as separate items (major components) of property, plant and equipment.

Costs include costs incurred initially to acquire or construct an item of property, plant and equipment and costs incurred subsequently to add to, replace part of, or service it. If a replacement cost is recognised in the carrying amount of an item of property, plant and equipment, the carrying amount of the replaced part is derecognised.

The initial estimate of the costs of dismantling and removing the item and restoring the site on which it is located is also included in the cost of property, plant and equipment, where the entity is obligated to incur such expenditure, and where the obligation arises as a result of acquiring the asset or using it for purposes other than the production of inventories.

Recognition of costs in the carrying amount of an item of property, plant and equipment ceases when the item is in the location and condition necessary for it to be capable of operating in the manner intended by management.

Items such as spare parts, standby equipment and servicing equipment are recognised when they meet the definition of property, plant and equipment.

Major inspection costs which are a condition of continuing use of an item of property, plant and equipment and which meet the recognition criteria above are included as a replacement in the cost of the item of property, plant and equipment. Any remaining inspection costs from the previous inspection are derecognised.

Accounting Policies

Property, plant and equipment is carried at cost less accumulated depreciation and any impairment losses.

Property, plant and equipment are depreciated on the straight-line basis over their expected useful lives to their estimated residual value.

The useful life of items of property, plant and equipment have been assessed as follows:

Item	Depreciation method	Average useful life
Land	Straight line	Not depreciated
Buildings	Straight line	20-25 Years
Furniture and fixtures	Straight line	10-25 Years
Motor vehicles	Straight line	8 Years
Office equipment	Straight line	5-25 Years
IT equipment	Straight line	3-10 Years
Leasehold improvements	Straight line	Over the lease period
Scientific equipment	Straight line	5-20 Years

Each part of an item of property, plant and equipment with a cost that is significant in relation to the total cost of the item is depreciated separately.

The depreciation charge for each period is recognised in surplus or deficit unless it is included in the carrying amount of another asset.

Items of property, plant and equipment are derecognised when the asset is disposed of or when there are no further economic benefits or service potential expected from the use of the asset.

The gain or loss arising from the derecognition of an item of property, plant and equipment is included in surplus or deficit when the item is derecognised. The gain or loss arising from the derecognition of an item of property, plant and equipment is determined as the difference between the net disposal proceeds, if any, and the carrying amount of the item.

1.5 Intangible assets

An asset is identifiable if it either:

- is separable, i.e., is capable of being separated or divided from an entity and sold, transferred, licensed, rented or exchanged, either individually or together with a related contract, identifiable assets or liability, regardless of whether the entity intends to do so; or
- arises from binding arrangements (including rights from contracts), regardless of whether those rights are transferable or separable from the entity or from other rights and obligations.

An intangible asset is recognised when:

- it is probable that the expected future economic benefits or service potential that are attributable to the asset will flow to the entity; and
- the cost or fair value of the asset can be measured reliably.

Accounting Policies

The entity assesses the probability of expected future economic benefits or service potential using reasonable and supportable assumptions that represent management's best estimate of the set of economic conditions that will exist over the useful life of the asset.

Where an intangible asset is acquired through a non-exchange transaction, its initial cost at the date of acquisition is measured at its fair value as at that date.

Expenditure on research (or on the research phase of an internal project) is recognised as an expense when it is incurred.

An intangible asset is regarded as having an indefinite useful life when, based on all relevant factors, there is no foreseeable limit to the period over which the asset is expected to generate net cash inflows or service potential. Amortisation is not provided for these intangible assets, but they are tested for impairment annually and whenever there is an indication that the asset may be impaired. For all other intangible assets amortisation is provided on a straight-line basis over their useful life.

The amortisation period and the amortisation method for intangible assets are reviewed at each reporting date.
Reassessing the useful life of an intangible asset with a finite useful life after it was classified as indefinite is an indicator that the asset may be impaired. As a result, the asset is tested for impairment and the remaining carrying amount is amortised over its useful life.

Internally generated brands, mastheads, publishing titles, customer lists and items similar in substance are not recognised as intangible assets.

Internally generated goodwill is not recognised as an intangible asset.

Amortisation is provided to write down the intangible assets, on a straight-line basis, to their residual values as follows:

Item	Useful life
Computer software, other	1-10 years

1.6 Subsequent expenditure

Subsequent expenditure on item of property plant and equipment and intangible assets is capitalized only when it increases the future economic benefits embodied in the specific asset to which it relates. All other expenditure is recognized in the Statement of Financial Performance as an expense when incurred.

Accounting Policies

1.7 Impairment of non-financial assets

Assets are assessed at the end of each reporting period for any indication that they may be impaired. If indication exist, the recoverable amount of the assets is estimated. An impairment loss is recognised for the amount by which the asset's carrying amount exceeds its recoverable amount. The recoverable amount is the higher of an asset's fair value less costs to sell and value in use. The NNR assess at each reporting date whether there is any indication that an impairment loss recognised in prior periods for assets may no longer exist or may have decreased. If any such indication exists, the recoverable amounts of those assets are estimated. The increase in carrying amount of assets attributable to a reversal of an impairment loss does not exceed the carrying amount that would have been determined had no impairment loss been recognised for the assets in prior years. A reversal of an impairment loss of assets carried at cost less accumulated depreciation or amortisation is recognised immediately in the statement of financial performance.

1.8 Financial instruments recognition and initial measurement

All financial instruments are initially recognized at fair value, plus, in the case of financial assets and liabilities not at fair value through surplus or deficit, transaction costs that are directly attributable to the acquisition or issue. Financial instruments are recognized when the entity becomes a party to their contractual arrangements. All regular way transactions are accounted for on settlement date. Regular way purchases or sales are purchases or sales of financial assets that require delivery of assets within the period generally established by regulation or convention in the market place.

Derecognition

Financial assets are derecognised when the contractual rights to receive cash flows have been transferred or have expired or when substantially all the risks and rewards of ownership have passed. All other assets are derecognised on disposal or when no future economic benefits are expected from their use.

Financial liabilities are derecognised when the relevant obligation has either been discharged or cancelled or has expired.

Subsequent measurement

Subsequent to initial recognition, the entity classifies financial assets as 'at fair value through surplus or deficit', 'held-to-maturity investments', 'loans and receivables', or 'available-for-sale'.

Gains and losses

Gains or losses arising from changes in financial assets or financial liabilities carried at amortized cost are recognized in Statement of Financial Performance when the financial asset or financial liability is derecognised or impaired, and through the amortization process.

Financial assets

The NNR classifies its financial assets into one of the categories discussed below, depending on the purpose for which the asset was acquired. The NNR has not classified any of its financial assets as held to maturity, fair value through profit and loss or available for sale.
The accounting policy for each category is as follows:

Loans and receivables

These assets are non-derivative financial assets with fixed or determinable payments that are not quoted in an active market. They arise principally through the provision of services to licensed holders. They are initially recognized at fair value plus transaction costs that are directly attributable to their acquisition or issue, and are subsequently carried at amortised cost less provision for impairment.

Accounting Policies

Impairment provisions are recognised when there is objective evidence (such as significant financial difficulties on the part of the counterpart or default or significant delay in payment) that the NNR will be unable to collect all of the amounts due under the terms receivable. Trade receivables, which are reported net of such provisions, are recorded in a separate allowance account with the loss being recognised within operational expenditure in the Statement of Financial Performance. On confirmation that the trade receivable will not be collectable, the gross carrying value of the asset is written off against the associated provision. The loans and receivables comprise trade and other receivables at reporting date.

Cash and cash equivalents

Cash and cash equivalents comprise cash on hand and other short term highly liquid investments that are readily convertible to a known amount of cash and are subject to an insignificant risk of changes in value. Cash and cash equivalents include cash on hand and deposits held at call.

Financial liabilities

Bank borrowings are initially recognized at fair value net of any transaction costs directly attributable to the issue of the instrument. Such interest bearing liabilities are subsequently measured at amortized cost using the effective interest rate method, which ensures that any interest expense over the period to repayment is at a constant rate on the balance of the liability carried in the statement of financial position. Trade payables are initially recognized at fair value and subsequently carried at amortized cost using the effective interest method.

1.9 Accounting for leases

A lease is classified as a finance lease if it transfers substantially all the risks and rewards incidental to ownership to the lessee. A lease is classified as an operating lease if it does not transfer substantially all the risks and rewards incidental to ownership to the lessee.

Finance leases - lessee

Finance leases are recognized as assets and liabilities in the statement of financial position at amounts equal to the fair value of the leased property or, if lower, the present value of the minimum lease payments. The corresponding liability to the lessor is included in the statement of financial position as a finance lease obligation.

The discount rate used in calculating the present value of the minimum lease payments is the interest rate implicit in the lease. The lease payments are apportioned between the finance charge and reduction of the outstanding liability. The finance charge is allocated to each period during the lease term so as to produce a constant periodic rate on the remaining balance of the liability.

Operating leases-lessee

Operating lease payments are recognised as an expense on a straightline basis over the lease term. The difference between the amounts recognized as an expense and the contractual payments are recognized as an operating lease liability. This liability is not discounted. Any contingent rents are expensed in the period in which they are incurred.

Accounting Policies

1.10 Employee benefits

Post-employment benefits

The NNR provides defined pension benefit and medical plan to certain qualifying employees. The entity's net obligation in respect of defined benefits is calculated by estimating the amount of future benefits earned in return for services rendered. The obligation and assets related to each of the post-retirement benefits are determined through an actuarial valuation. The assumptions determined by management make use of information obtained from the entity's employment agreements with staff and pensioners, market related returns on similar investments, and market related discount rates and other available information. The assumptions concerning the expected return on asset and expected change in liabilities are determined on a uniform basis, considering long-term historical returns and future estimates of returns and medical inflation expectations. In the event that further changes in assumptions are required, the future amounts of post-retirement benefits may be affected materially. The post-retirement medical liability is unfunded.

The overall expected rate of return on asset is determined based on the market prices prevailing at that date, applicable to the period over which the obligation is to be settled.

The NNR provides a defined contribution plans for all other employees. The post-retirement medical liability is unfunded.

Defined contribution plans

The entity's funding of the defined contribution plans is charged to employee expenses in the same year as the related service is provided.

Defined benefit plans

The entity provides defined benefit plans for retirement and post-retirement medical aid benefits to qualifying employees. The entity's net obligation in respect of defined benefits is calculated separately for each plan by estimating the amount of future benefits earned in return for services rendered.

The amount recognised in the statement of financial position represents the present value of the defined benefit obligations, calculated by using the projected unit credit method, as adjusted for unrecognised actuarial gains and losses, unrecognised past service costs, if any, and reduced by the fair value of the related plan assets.

The amount of any gain or loss recognised and reflected as expenses is limited to actuarial losses or gain and past service costs plus the present value of available refunds and reductions in future contributions to the plan. To the extent that there is uncertainty as to the entitlement to the surplus, no asset is recognised. No gain is recognised solely as a result of an actuarial loss or past service cost in the current period and no loss is recognised solely as a result of an actuarial gain or past service cost in the current period. The entity recognises actuarial gains and losses for all its defined plans in the period in which they occur.

Past service costs are recognised immediately to the extent that the benefits are vested, otherwise they are recognised on a straight-line basis over the average period the benefits become vested.

Short-term employee benefits

The cost of all short-term Employee benefits is recognised during the period in which the employee renders the related service. Provision for employee's entitlement to annual leave represents a present obligation which NNR has to pay as a result of employee's services provided to the reporting date. Annual leave is provided for over the period that the leave accrues.

Accounting Policies

1.11 Provisions and contingencies

Management judgment is required when recognising and measuring provisions and when measuring contingent liabilities as set out in Note 28. The probability that an outflow of economic resources will be required to settle the obligation must be assessed and a reliable estimate must be made of the amount of the obligation.

The entity is required to recognise provisions for claims arising from litigation when the occurrence of the claim is probable and the amount of the loss can be reasonably estimated. Liabilities provided for legal matters require judgments regarding projected outcomes and ranges of losses based on historical experience and recommendations of legal counsel.

Litigation is however unpredictable and actual costs incurred could differ materially from those estimated at the reporting date.

1.12 Commitments

Items are classified as commitments when an entity has committed itself to future transactions that will normally result in the outflow of cash. Disclosure are required in respect of unrecognised contractual commitments. Commitments for which disclosures are necessary to achieve a fair presentation should be disclosed in a note to the financial statements.

1.13 Going concern assumption

The financial statements have been prepared on a going concern assumption that the entity will continue in operation for the foreseeable future.

1.14 Related Parties

Parties are considered to be related if one party has the ability to control the other party or to exercise significant influence or joint control over the other party in making financial and operating decisions.

1.15 Comparative figures

Comparative figures are restated in the event of a change in accounting policy or prior period error.

1.16 Irregular, fruitless and wasteful expenditure

Irregular expenditure means expenditure incurred in contravention of, or not in accordance with, a requirement of any applicable legislation, including the PFMA. Fruitless and Wasteful expenditure means expenditure that was made in vain and would have been avoided had reasonable care been exercised. All irregular, and fruitless and wasteful expenditure is charged against income in the period in which it is incurred.

1.17 Foreign currencies

Transactions in foreign currencies are accounted for at the rates of exchange ruling on the date of the transactions. Gains and losses arising from the settlement of such transactions are recognised in the income statement.

1.18 Interest received

Interest is recognised on a time proportionate basis taking into account the principal amount outstanding and the effective interest rate.

1.19 Budget information

GRAP 1, Presentation of Financial Statements, requires entities to provide information on their actual performance against the entity's approved budget. A reconciliation to ensure full compliance with GRAP1 is included as a disclosure note to the financial statements.

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

2. Basis of preparation

The annual financial statements have been prepared in accordance with Standards of Generally Recognised Accounting Practice on a basis consistent with the prior year.

3. New standards and interpretations

3.1 Standards and interpretations effective and adopted in the current year

In the current year, the entity has adopted the following standards and interpretations that are effective for the current financial year and that are relevant to its operations:

Standard/ Interpretation:	Effective date: Years beginning on or after	Expected impact:
IGRAP 20: Accounting for Adjustments to Revenue	01 April 2020	The adoption of this has not had a material impact on the results of the company, but has resulted in more disclosure than would have previously been provided in the financial statements
GRAP 1 (amended): Presentation of Financial Statements	01 April 2020	The adoption of this has not had a material impact on the results of the company, but has resulted in more disclosure than would have previously been provided in the financial statements

4. Property, plant and equipment

	2021			2020	
	Cost / Valuation	Accumulated depreciation and accumulated impairment	Carrying value	Cost / Valuation	Accumulated depreciation and accumulated impairment	Carrying value
Land	213 750	-	213 750	213 750	-	213 750
Buildings	122 381 558	(52 417 017)	69 964 541	122 381 558	(46 382 317)	75 999 241
Buildings improvements (WIP)	2 682 421	-	2 682 421	2 628 923	-	2 628 923
Furniture and fixtures	5 738 709	(2 536 843)	3 201 866	5 440 356	(2 313 414)	3 126 942
Motor vehicles	906 438	(636 230)	270 208	906 438	(522 926)	383 512
Office equipment	6 233 569	(4 951 102)	1 282 467	6 062 119	(4 522 287)	1 539 832
IT equipment	21 540 171	(11 406 419)	10 133 752	18 167 464	(9 882 748)	8 284 716
IT equipment Improvements (WIP)	-	-	-	3 065 359	-	3 065 359
Leasehold improvements	5 343 134	(5 343 134)	-	5 343 134	(4 963 301)	379 833
Laboratory equipment	20 289 304	(11 053 665)	9 235 639	18 019 429	(10 377 600)	7 641 829
Total	**185 329 054**	**(88 344 410)**	**96 984 644**	**182 228 530**	**(78 964 593)**	**103 263 937**

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

4. Property, plant and equipment (continued)

Reconciliation of property, plant and equipment 2021

	Opening balance	Additions	Disposals	Transfers	Depreciation	Total
Land	213 750	-	-	-	-	213 750
Buildings	75 999 241	-	-	-	(6 034 700)	69 964 541
Buildings improvements (WIP)	2 628 923	53 498	-	-	-	2 682 421
Furniture and fixtures	3 126 942	482 800	(73 178)	-	(334 698)	3 201 866
Motor vehicles	383 512	-	-	-	(113 304)	270 208
Office equipment	1 539 832	312 290	-	-	(569 655)	1 282 467
IT equipment	8 284 716	4 088 331	(42 994)	1 151 185	(3 347 486)	10 133 752
IT equipment improvements (WIP)	3 065 359	-	-	(3 065 359)	-	-
Leasehold improvements	379 833	-	-	-	(379 833)	-
Laboratory equipment	7 641 829	2 269 875	-	-	(676 065)	9 235 639
	103 263 937	**7 206 794**	**(116 172)**	**(1 914 174)**	**(11 455 741)**	**96 984 644**

Reconciliation of property, plant and equipment 2020

	Opening balance	Additions	Disposals	Depreciation	Total
Land	213 750	-	-	-	213 750
Buildings	82 034 381	-	-	(6 035 140)	75 999 241
Buildings improvements (WIP)	2 567 803	61 120	-	-	2 628 923
Furniture and fixtures	3 453 206	29 280	(19 367)	(336 177)	3 126 942
Motor vehicles	496 817	-	-	(113 305)	383 512
Office equipment	1 636 687	613 845	-	(710 700)	1 539 832
IT equipment	8 575 005	2 544 537	(26 175)	(2 808 651)	8 284 716
IT equipment improvements (WIP)	3 065 359	-	-	-	3 065 359
Leasehold improvements	759 667	-	-	(379 834)	379 833
Laboratory equipment	8 359 872	12 420	-	(730 463)	7 641 829
	111 162 547	**3 261 202**	**(45 542)**	**(11 114 270)**	**103 263 937**

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

The cumulative expenditure recognised in the carrying value of property, plant and equipment as Work In Progress (WIP) is disclosed per class of asset, in aggregate, as follows:

Figures in Rand	Note(s)	2021	2020
Buildings improvements (WIP)		2 682 421	2 628 923
IT equipment improvements (WIP)		-	3 065 359
		2 682 421	**5 694 282**

Included in the value of property, plant and equipment are the following properties:
The NNR owns an office building located at Erf 3078 in Highveld, Centurion, Gauteng (pledged as a security for ABSA mortgage bond) and land and building located at Erf 3187 in Melkbosch Strand in the Blaauberg Municipality, Western Cape.

Other information

Figures in Rand	Note(s)	2021	2020
Property, plant and equipment fully depreciated and still in use (Carrying amount at the beginning of the year)			
Office equipment		226 917	10 933
IT equipment		30 016	366 667
Laboratory equipment		12 464	40 549
Leasehold improvements		379 833	-
		649 230	**418 149**

Repairs and maintenance

Total expenditure incurred on repairs and maintenance for property, plant and equipment amounted to R2 million for the period under review, compared to R1,7 million for the 2019/2020 financial year.

5. Intangible assets

	2021			2020		
	Cost / Valuation	Accumulated Amortisation and Accumulated Impairment	Carrying Value	Cost / Valuation	Accumulated Amortisation and Accumulated Impairment	Carrying Value
Computer software, other	4 465 124	(3 342 838)	1 122 286	3 552 726	(2 878 646)	674 080

Reconciliation of intangible assets - 2021

	Opening balance	Transfers	Amortisation	Total
Computer software, other	674 080	1 002 798	(554 592)	1 122 286

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

Reconciliation of intangible assets - 2020

	Opening balance	Disposals	Amortisation	Total
Computer software, other	1 160 304	(588)	(485 636)	674 080

Figures in Rand	Note(s)	2021	2020
6. Operating leases			
Current assets		442 865	-
Current liabilities		(440 425)	(324 616)
		2 440	**(324 616)**

7. Employee benefit obligations

The National Nuclear Regulator has retirement employee benefit obligations which consists of:
- Post-retirement pension benefit plan
- Post-retirement medical benefit plan
- Defined pension contribution

The amounts recognised in the statement of financial position are as follows:

Carrying value		
Present value of the defined benefit obligation wholly unfunded	(8 978 041)	(9 392 438)
Present value of the defined benefit obligation partly or wholly funded	(57 223 000)	(51 222 000)
Fair value of plan assets	64 703 000	53 175 000
Asset not recognised	(7 480 000)	(1 953 000)
	(8 978 041)	**(9 392 438)**

The major categories of plan assets as a percentage of total plan assets are as follows:		
South African equities	70,00%	70,00%
Bonds	30,00%	30,00%

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

Figures in Rand	Note(s)	2021	2020
Net expense (gain) recognised in the statement of financial performance			
Current service cost		43 650	15 500
Interest cost		956 842	857 786
Actuarial (gains) losses		(667 632)	438 430
Expected return on plan assets		(747 257)	(627 523)
		(414 397)	**684 193**
Actual return on plan assets			
Expected return on plan assets		5 081 000	5 548 000
Actuarial gain (loss) on plan assets		11 301 000	(9 627 000)
		16 382 000	**(4 079 000)**
Calculation of actuarial gains and losses			
Actuarial (gains) losses – Obligation		(5 272 000)	8 875 000
Actuarial (gains) losses – Plan assets		(11 301 000)	9 627 000
		(16 573 000)	**18 502 000**

7.1 Post-retirement pension benefit plan

The NNR makes contributions torwards post-retirement pension benefits for certain eligible employees.

Changes in present value of the defined benefit obligations are as follows:		
Opening balance	51 222 000	59 990 000
Interest cost	5 550 000	5 006 000
Current service cost	261 000	281 000
Benefits paid	(5 082 000)	(5 180 000)
Actuarial (gain) losses	5 272 000	(8 875 000)
Closing balance	**57 223 000**	**51 222 000**

Changes in fair value of plan assets are as follows:		
Opening balance fair value of plan assets	53 175 000	62 213 000
Expected return on plan assets	5 081 000	5 548 000
Contribution by employer	156 000	151 000
Contributions by participants	72 000	70 000
Benefits paid	(5 082 000)	(5 180 000)
Actuarial gain/(losses)	11 301 000	(9 627 000)
	64 703 000	**53 175 000**

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

Figures in Rand	Note(s)	2021	2020
Key assumptions used			
Assumptions used at the reporting date:			
Discount rates used		8,20%	11,40%
Expected rate of return on assets		8,90%	10,00%
Expected rate of return on reimbursement rights		4,90%	6,00%
Actual return on reimbursement rights		5,90%	7,00%
Funding Level		113,1	103,8
Sensitivity Analysis			
One percentage point increase			
Effect on defined benefit obligation Discount rate		(3 984 000)	(3 195 000)
Percentage change effect on defined benefit obligation Discount rate		(1)	(6)
Effect on defined benefit obligation salary inflation		48 000	78 000
		PA (90)	PA (90)
Effect on defined benefit obligation Post-retirement mortality		(1 983 000)	(1 548 000)
Percentage change effect on defined benefit obligation Post-retirement mortality		(4)	(3)

7.2 Post-retirement medical aid benefit obligation

The NNR has made provision for post-employment medical benefit covering two (2) employees in active employement and seven (7) pensioners. The actuarial valuation was determined by IAC Independent Actuaries & Consultants, an independent actuary registered with Actuary Society of South Africa. Valuation has been performed in accordance with GRAP 25. The NNR makes certain contributions to medical funds in respect of current and retired employees. The NNR has terminated future post-retirement medical aid benefits in respect of employees joining after 31 December 1995.The NNR has an obligation to pay 100% of the membership subscriptions for staff members who had retired from the services of the NNR or then (The Council for Nuclear Safety) on or before 30 July 1990 and also for those staff members retiring from the services of the NNR on or after 01 July 1990, who were in the continuous employment of the NNR before 01 July 1990 to the date of retirement. The NNR introduced a sliding scale for membership subscriptions for staff joining after 01 July 1990. Subsidy reduced step wise from 100% to a minimum of 60% for employees that joined the NNR after 01 July 1990 and 31 December 1995. Eligible employees must be employed by the NNR until retirement age to qualify for the post-retirement medical aid benefit. The most recent actuarial valuation of the benefit was performed as at 31 March 2021.

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

Figures in Rand	Note(s)	2021	2020
7.2 Post-retirement medical aid benefit obligation (continued)			
Changes in present value of the defined benefits are as follows:			
Opening defined benefit obligation		9 392 438	8 708 245
Current service cost		43 650	15 500
Interest cost		956 842	857 786
Benefits paid		(747 257)	(627 523)
Actuarial (gain) losses		(667 632)	438 430
		8 978 041	**9 392 438**
Actuarial principal assumption used at the reporting date			
Discount rate used		13%	11%
Medical inflation rate		10%	8%
General inflation rate		8%	6%
Post-retirement interest rate		3%	2%
Proportion of continuing membership at retirement		100%	100%
Proportion of retiring members who are married		30%	30%
In service members			
Age of spouse (Husbands: three years older than wives)		65	65
Mortality of in-service members		SA SA8590 (L)	SA SA8590 (L)
Mortality of continuation members Post-retirement		PA (90)2 Years	PA (90)2 Years
Annual rate of withdrawal from age 55+		4,00%	4,00%
Number of members			
Number of members in active employment		2	3
Number of pensioners		7	6
		9	**9**
Average retirement age		60	60

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

7.2 Post-retirement medical aid benefit obligation (continued)

The most significant assumptions are those relating to the discount rate and medical inflation. It is the relationship between these assumptions that is important for the purpose of the calculations rather than their absolute values. Assumed healthcare cost trends rates have a significant effect on the amounts recognised in surplus or deficit. A one percentage point change in assumed healthcare cost trends rates would have the following effects:

Sensitivity Analysis

One percentage point increase

Figures in Rand	Note(s)	2021	2020
Effect on the aggregate of the service cost and interest cost		349 679	366 615
Effect on defined benefit obligation		9 327 721	9 759 054
Effect on the aggregate of the service cost and interest cost discount rate		(619 913)	(692 792)
Defined benefit obligation discount rate		8 358 128	8 699 649
Percentage change effect on defined benefit obligation discount rate		1	1

Amounts for the current and previous four years are as follows:

	2021	2020	2019	2018	2017
Defined benefit obligation	8 978 041	9 392 438	8 708 245	10 529 198	9 361 667
Experience adjustments on plan liabilities	253 234	(905 463)	298 570	699 802	(36 395)

7.3 Defined contribution plan

It is the policy of the entity to provide retirement benefits to all its employees. A defined contribution pension fund, which is subject to the rules of the fund and to the Pensions Fund Act exists for this purpose.

The entity is under no obligation to cover any unfunded benefits.

The amount recognised as an expense for defined contribution plans is		19 531 834	18 866 670

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

Figures in Rand	Note(s)	2021	2020
8. Receivables from exchange transactions			
Trade debtors		31 696 073	37 807 706
Staff advance		8 064	73 610
Deposits and prepayments		494 203	968 268
Other receivables		361 235	992 185
		32 559 575	**39 841 769**

During the year the NNR disbursed R129 285 recoverable from Framatome (AREVA). The amount is paid for providing funding to external bursary holders who intend pursuing a career in nuclear science and engineering.

Trade and other receivables past due but not impaired

Trade and other receivables which are less than 12 months past due are not considered to be impaired. At 31 March 2021, R31 833 750 (2020: R38 362 193) were past due but not impaired.
The ageing of amounts past due but not impaired is as follows:

1 month past due	16 302 872	31 803 546
2 months past due	6 043 166	29 785
3 months past due	62 493	6 528 862
6 months past due	9 425 218	-

Trade and other receivables impaired

As of 31 March 2021, trade and other receivables of R19 510 105 (2020: R10 794 701) were impaired and provided for.
The ageing of these debtors are as follows:

Over 12 months	19 510 105	10 794 701

Reconciliation of provision for impairment of trade and other receivables

Opening balance	10 794 701	10 992 895
Provision for impairment	8 715 404	-
Provision for impairment (recoveries)	-	(198 194)
	19 510 105	**10 794 701**

The creation and release of provision for impaired receivables have been included in operating expenses in surplus or deficit (refer to note 21). Amounts charged to the allowance account are generally written off when there is no expectation of recovering the amount. The NNR's policy is to provide for impairment on receivables which are more than a year outstanding.

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

Figures in Rand	Note(s)	2021	2020
9. Receivables from non-exchange transactions			
Other receivables from non-exchange revenue		97 832	42 339

10. Cash and cash equivalents

Cash and cash equivalents consist of:			
Cash on hand		15 012	15 000
Bank balances		1 215 139	1 281 673
Short-term deposits		103 027 439	69 911 962
		104 257 590	**71 208 635**

Included in the cash balance above is R 12,8 million unspent conditional grant relating to establishment of Regulatory Emergency Control Centre and refurbishment of Cape Town office, refer to note 11 for more details.

11. Unspent conditional grants and receipts

Unspent conditional grants and receipts comprises of:

Government grant		13 710 309	12 947 116
Movement during the year			
Balance at the beginning of the year		12 947 116	13 057 153
IAEA Sponsorship Funds		1 137 213	-
Income recognition during the year		(374 020)	(110 037)
		13 710 309	**12 947 116**

The design of the Cape Town office building is complete, and the construction of the building is expected to commence towards the middle of the 2021/22 financial year. The total amount spent to date on this project amounts to R 2,6 million.

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

Figures in Rand	Note(s)	2021	2020
12. Other financial liabilities			
At amortised cost			
Mortgage bond		13 780 639	24 055 482
Terms and conditions			
Non-current liabilities			
At amortised cost		2 734 876	14 309 190
Current liabilities			
At amortised cost		11 045 763	9 746 292

13.Provisions

Reconciliation of provisions 2021

	Opening Balance	Additions	Utilised during the year	Reversed during the year	Total
Annual Leave	7 209 018	6 703 138	(5 005 355)	-	8 906 801
Annual performance bonus	10 646 420	11 137 223	(9 439 700)	(1 206 720)	11 137 223
	17 855 438	**17 840 361**	**(14 445 055)**	**(1 206 720)**	**20 044 024**

Reconciliation of provisions 2020

	Opening Balance	Additions	Utilised during the year	Reversed during the year	Total
Annual Leave	6 734 124	4 917 973	(4 443 079)	-	7 209 018
Performance Bonus	9 106 543	10 646 420	(10 631 446)	1 524 903	10 646 420
	15 840 667	**15 564 393**	**(15 074 525)**	**1 524 903**	**17 855 438**

Provision for annual leave

The leave provision represents management's best estimate of the NNR's liability for leave based on the NNR's approved leave policy. Leave provision represents the amount due to employees for unutilised leave days accrued for services rendered to the NNR as of 31 March 2021.

Performance bonus

Performance bonus represents management's best estimate of bonus potentially payable to qualifying NNR employees who signed the performance agreement with the NNR for financial year ending 31 March 2021. Performance target is set by the Board at the beginning of each financial year, and employees' performance scores are linked to the overall performance of the NNR. Management has reasonably provided for a bonus in accordance with bonus payment of the 2019/20 financial year at an average individual pay-out rate of 7,5% of total cost to company. The payment of bonus is discretionary in terms of the NNR policy and is only due and payable after declaration and approval by the Board.

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

Figures in Rand	Note(s)	2021	2020
14. Payables from exchange transactions			
Trade payables		8 977 759	3 823 527
Accruals Trade Creditors		556 650	2 457 577
Accruals Staff Accounts		84 018	121 888
13th Cheque accrual		1 629 542	1 697 007
		11 247 969	**8 099 999**
15. Revenue			
Authorisation fees		212 714 671	196 440 443
Application fees		22 434 524	23 151 784
Interest on overdue debtors		53 898	-
Actuarial gain		414 397	-
Other income		941 397	2 306 590
Interest received		3 953 869	5 766 265
Government grants		40 467 000	43 096 000
Deferred income		374 021	110 037
		281 353 777	**270 871 119**
The amount included in revenue arising from exchanges of goods or services are as follows:			
Authorisation fees		212 714 671	196 440 443
Application fees		22 434 524	23 151 784
Interest on overdue debtors		53 898	-
Actuarial gain		414 397	-
Other income		941 397	2 306 590
Interest received		3 953 869	5 766 265
		240 512 756	**227 665 082**
The amount included in revenue arising from non-exchange transactions is as follows:			
Transfer revenue			
Government grants		40 467 000	43 096 000
Deferred income		374 021	110 037
		40 841 021	**43 206 037**

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

Figures in Rand	Note(s)	2021	2020
16. Government grants			
Government grant		40 467 000	43 096 000
Unconditional			
Government grant		40 467 000	43 096 000
Conditional grant			
Balance unspent at beginning of year		12 947 116	13 057 153
Current-year receipts		1 137 213	-
Conditions met transferred to revenue		(374 020)	(110 037)
		13 710 309	**12 947 116**
17. Other income			
Other sundry income		941 397	2 108 396
Provision for impairment (recoveries)		-	198 194
		941 397	**2 306 590**

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

Figures in Rand	Note(s)	2021	2020
18. Goods and services			
Advertising		842 594	614 352
Property rates & municipal charges		2 050 310	2 294 444
Auditor's fees		2 193 923	1 538 149
Cleaning		811 740	764 434
Consulting and professional fees		18 786 209	17 331 373
Consumables		468 793	402 926
Insurance		614 737	803 056
Community development and training		456 513	998 867
Conferences and seminars		60 796	695 982
IT expenses		7 317 428	3 404 632
Marketing		-	381 287
Magazines, books and periodicals		27 964	121 480
Medical expenses		16 900	136 915
Postage and courier		40 469	84 358
Printing and stationery		1 081 480	1 579 706
Security		1 881 110	1 741 785
Software expenses		4 612 469	4 525 396
Subscriptions and membership fees		891 868	1 401 951
Telephone and fax		1 869 085	1 567 009
Training		1 590 169	1 273 407
Travel local		1 254 773	5 290 776
Travel overseas		(14 861)	5 885 185
Electricity		1 380 559	1 429 287
Repairs & Maintenance		2 029 136	1 778 497
Board fees		912 481	737 797
Bursaries		357 494	499 897
Other expenses		4 062 103	7 764 902
		55 596 242	**65 047 850**

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

Figures in Rand	Note(s)	2021	2020
19. Operating surplus			
Operating surplus for the year is stated after accounting for the following:			
Operating lease charges			
Premises			
• Contractual amounts		2 814 478	2 752 685
Equipment			
• Contractual amounts		598 226	930 153
Other			
• Contractual amounts		-	14 958
		3 412 704	**3 697 796**
Depreciation on property, plant and equipment		12 010 336	11 599 905
Employee costs		173 499 018	169 628 422
Defined contribution funds		19 531 834	18 866 670
Defined benefit funds		215 767	203 574
20. Employee related costs			
Basic		92 559 618	88 160 331
Performance Bonus		9 439 700	10 631 446
Medical aid		5 783 805	5 869 725
UIF		620 239	608 222
Workmen's compensation fund		189 944	163 727
SDL		1 056 969	1 456 584
PAYE		44 138 438	43 668 143
Pension fund Defined benefit plan		215 767	203 574
Pension fund Defined contribution plan		19 494 538	18 866 670
		173 499 018	**169 628 422**
21. Debt impairment			
Contributions to debt impairment provision		8 715 404	-
Bad debts written off		1 746 914	142 110
		10 462 318	**142 110**

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

Figures in Rand	Note(s)	2021	2020
22. Interest received			
Interest revenue			
Short-term deposits		3 953 869	5 766 265
23. Finance costs			
Non-current borrowings		1 465 449	3 029 617
24. Auditors' fees			
Fees		2 193 923	1 538 149
25. Lease rentals on operating leases			
Premises			
• Contractual amounts		2 814 478	2 752 685
Equipment			
• Contractual amounts		598 226	930 153
Lease rentals on operating lease Other			
• Contractual amounts		-	14 958
		3 412 704	**3 697 796**

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

Figures in Rand	Note(s)	2021	2020
26. Cash generated from operations			
Surplus		24 907 710	17 041 226
Adjustments for:			
Depreciation and amortisation		12 010 336	11 599 905
Movements in operating lease assets and accruals		(327 056)	(109 350)
Movements in post-retirement obligation		(414 397)	684 193
Movements in provisions		2 188 586	2 014 773
(Profit) Loss on assets written off		73 178	46 129
Profit on disposal of assets		(13 457)	(49 112)
Changes in working capital:			
Receivables from exchange transactions		7 282 194	(17 201 527)
Other receivables from non-exchange transactions		(55 493)	891 523
Payables from exchange transactions		3 147 970	(2 588 598)
Unspent conditional grants and receipts		(374 020)	(110 037)
		48 425 551	**12 219 125**
27. Commitments			
Capital Commitments			
Already contracted for but not provided for			
Property, plant and equipment		821 826	835 071
Total capital commitments			
Already contracted for but not provided for		821 826	835 071
Operational commitments			
Already contracted for but not provided for			
Leases		3 887 147	3 150 554
Other		17 422 313	26 200 542
		21 309 460	**29 351 096**
Total operational commitments			
Already contracted for but not provided for		21 309 460	29 351 096
Total commitments			
Capital commitments		821 826	835 071
Operational commitments		21 309 460	29 351 096
		22 131 286	**30 186 167**

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

Figures in Rand	Note(s)	2021	2020
27. Commitments (continued)			
This committed expenditure relates to plant and equipment and operational expenditure commitments, mainly for technical support organisations, that will be financed by available retained cash surpluses and existing cash resources.			
Operating leases as lessee (expense)			
Minimum lease payments due			
within one year		1 963 518	3 119 522
in second to fifth year inclusive		1 923 628	31 032
		3 887 146	**3 150 554**

28. Contingencies

28.1 As at the 31st of March 2021, the National Nuclear Regulator had an outstanding CCMA matter that involves a manager who was dismissed in 2020, and referred the matter to the CCMA. Should the NNR lose the case, it is expected that a contingent liability of about R1 million, which is equivalent to the manager's previous annual salary, will be incurred.

28.2 The National Nuclear Regulator expects to retain surplus funds realised in the 2020/2021, upon approval by National Treasury, and in accordance with National Treasury Instruction No. 12 of 2020/2021.

29. Related parties

Directors	Refer to members' report note
Executive Authority	Minister of Mineral Resources and Energy
Entities ultimately under common control	National Nuclear Corporation of South Africa (NECSA)
	National Energy Regulator of South Africa (NERSA)
	South African National Energy Development Institute (SANEDI)
	National RadioactiveWaste Disposal Institute (NRWDI)
	The Petroleum, Oil, Gas Corporation of South Africa (PetroSA)
	Central Energy Group Fund (CEF) (Pty) Ltd
	Council for Mineral Technology (Mintek)
	Council for Geoscience (Geoscience)
	Mine Health and Safety Council (MHSC)
	Petroleum Agency South Africa (PASA)
	African Exploration Mining and Finance Corporation (AEMFC)
	South African Diamond & Precious Metals Regulator (SADPMR)
	State Diamond Trader
Post-retirement pension for employees	NNR Pension Fund
Members of key management	Dr. M Tyobeka (CEO)
	Mr. D Netshivhazwaulu (CFO)
	Ms. A Simon (Executive: CSS)
	Ms. D Kgomo (Executive: NTN)
	Mr. O Phillips (Executive: NPP)
	Ms. L Mpete (Executive: RITS)

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

Figures in Rand	Note(s)	2021	2020
29. Related parties			
Related party transactions			
Amounts included in trade receivable (trade payable) regarding related parties			
NECSA		(166 706)	-
NECSA		73 246	13 199 285
MINTEK		2 827	-
Services rendered to related party			
NECSA		54 947 872	52 648 696
NRWDI		2 692 400	3 741 476
MINTEK		65 132	62 305
Government transfer			
Department of Mineral Resources and Energy		40 467 000	43 096 000
Services from related party			
NECSA		(221 516)	(1 149 903)
Other			
NNR Pension fund		19 710 305	19 087 410

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

30. Executive and Directors' emoluments

Executive

2021

	Basic Salary	Performance Bonus	Contributions	Leave Provision	Total
Dr B Tyobeka (CEO)	2 751 139	137 557	-	140 819	3 029 515
Mr D Netshivhazwaulu (CFO)	1 884 481	141 336	56 948	114 113	2 196 878
Ms A Simon (Executive: CSS)	1 741 740	130 631	-	136 164	2 008 535
Ms D Kgomo (Executive: NTN)	1 868 274	93 414	50 512	23 966	2 036 166
Mr O Phillips (Executive: NPP)	1 984 806	154 884	93 384	127 065	2 360 139
Ms L Mpete (Acting Executive: RITS)	1 774 859	140 120	62 892	104 176	2 082 047
	12 005 299	**797 942**	**263 736**	**646 303**	**13 713 280**

2020

	Basic Salary	Performance Bonus	Contributions	Allowances	Total
Dr B Tyobeka (CEO)	2 719 917	267 621	-	-	2 987 538
Mr D Netshivhazwaulu (CFO)	1 863 094	183 315	50 736	-	2 097 145
Ms A Simon (Executive: CSS)	1 721 973	169 430	-	-	1 891 403
Ms D Kgomo (Executive: NTN)	1 847 071	136 304	47 136	-	2 030 511
Mr O Phillips (Executive: NPP)	1 920 121	200 887	87 160	-	2 208 168
Ms L Mpete (Acting Executive: RITS)	1 534 731	108 448	121 568	231 000	1 995 747
	11 606 907	**1 066 005**	**306 600**	**231 000**	**13 210 512**

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

30. Executive and Directors' emoluments (continued)

Directors

2021

	Directors' Fees	Total
Dr MT Motshudi (Chairperson)	162 130	162 130
Dr P Dube (Deputy Chairperson)	30 745	30 745
Ms B Mokoetle	36 504	36 504
Mr P Phili	145 021	145 021
Mr A Le Roux	39 287	39 287
Dr B Sehlapelo	18 252	18 252
Mr KS Kakoma	44 525	44 525
Ms LN Dlamini	61 182	61 182
Mr DM Mamphita	81 972	81 972
Ms PD Peta (Deputy Chairperson)	102 548	102 548
Mr BP Petlane	96 906	96 906
Dr NZ Qunta	80 496	80 496
	899 568	**899 568**

Independent Technical Committee Advisors	Advisors' Fees	Total
Mr P Fitzsimons	5 238	5 238
Dr ME Makgae	5 238	5 238
	10 476	**10 476**

CNSS Panel Members	Members' Fees	Total
Ms KE Chiloane	16 381	16 381
Mr JC Repussard	19 638	19 638
Dr HM Sithole	13 095	13 095
Mr F van Niekerk	2 409	2 409
	51 523	**51 523**

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

30. Executive and Directors' emoluments (continued)

2020

	Directors' Fees	Total
Dr M T Motshudi (Chairperson)	136 430	136 430
Dr P Dube (Deputy Chairperson)	111 218	111 218
Mr J Leaver	59 754	59 754
Ms B Mokoetle	126 231	126 231
Mr P Phili	180 326	180 326
Mr A Le Roux	124 759	124 759
Dr B Sehlapelo	92 028	92 028
Mr KS Kakoma	121 750	121 750
	952 496	**952 496**

Independent Technical Committee Advisor	Advisors' Fees	Total
Mr P Fitzsimons	33 115	33 115
Dr ME Makgae	35 734	35 734
	68 849	**68 849**

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

31. Risk management

Financial risk management

The entity's activities expose it to a variety of financial risks: fair value interest rate risk, cash flow interest rate risk, price risk and credit risk.The entity's overall risk management program focuses on the unpredictability of liquid cash and seeks to minimise potential adverse effects on the entity's financial performance. Risk management is carried out by executive committee of the NNR under policies approved by the accounting authority. Entity finance division identifies, evaluates and hedges financial risks in close cooperation with the entity's audit and risk management committee. The accounting authority provides written principles for overall risk management, as well as written policies covering specific areas, such as, interest rate risk, credit risk.

Liquidity risk

Prudent liquidity risk management implies maintaining sufficient cash. The NNR's primary source of funding is authorisation fee which are gazetted in terms of section 28 of the National Nuclear Act, 1999,(Act No. 47 of 1999). The NNR maintains liquidity by collecting and paying within 30 days and by limiting capital and operational expenditure within the preapproved budget. **Impairment rate for the year as reported on Note 7 was 9,17% (5,5% 2019/20) against the total Authorisation Fees recognised on the Statement of Financial Performance. Payables for the year was 4,39% (3,19% 2019/20) against the total expenditure. The NNR maintained a positive cash balance of R104 257 591 compared to R71 208 635 of the previous financial year.**

Credit risk

Credit risk consists mainly of cash deposits, cash equivalents, and trade debtors. Trade receivables comprises of license and certificate holders by major reputable mining & scrap metal companies. Management evaluates credit risk relating to each license or certificate holder on an ongoing basis and continuously implement a strict collection terms. There is no independent crediting ratings, risk control assesses the credit quality of customers, taking into account financial position, past experience and other factors before a license or certificate can be granted. **Impairment rate for the year as reported on Note 7 was 9,17% (5,5% 2019/20) against the total Authorisation Fees recognised on the Statement of Financial Performance.**

Interest rate risk

The entity's interest rate risk arises from long-term borrowings. Borrowings issued at variable rates expose the NNR to cash flow interest rate risk.

The entity analyses its interest rate exposure on a dynamic basis. Various scenarios are simulated taking into consideration refinancing, renewal of existing positions, alternative financing. Based on these scenarios, the entity calculates the impact on surplus or deficit of a defined interest rate shift.

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

Cash flow interest rate risk

Financial instrument	Current interest rate	Due in less than a year	Due in one to two years	Due in two to three years	Due in three to four years	Due after five years
Bond over property floating rate	7,00%	11 045 763	2 734 876	-	-	-

Price risk

NNR's exposure to price risk is minimal as NNR determines authorisation fees based on cost recovery principle, time spent and effort required for each of the authorisations holders which are gazetted in terms of section 28 of the National Nuclear Act,1999, (Act No. 47 of 1999)

32. Going concern

The annual financial statements have been prepared on the basis of accounting policies applicable to a going concern. This basis presumes that funds will be available to finance future operations and that the realisation of assets and settlement of liabilities, contingent obligations and commitments will occur in the ordinary course of business.

33. Fruitless and wasteful expenditure

Figures in Rand	Note(s)	2021	2020
Opening balance		21 331	21 331
Add: Fruitless and wasteful expenditure current year		-	-
		21 331	**21 331**

No fruitless and wasteful expenditure was incurred in the current financial year.

34. Irregular expenditure

Opening balance	169 989	600 238
Add: Irregular Expenditure current year	75 123	7 151
Less: Amounts written off	-	(437 400)
	245 112	**169 989**

Details of irregular expenditure – current year -

The balance of R169 989 relates to irregular expenditure incurred in the 2019/2020 financial year. Irregular expenditure incurred in the current financial year is as follows:

34.1 Irregular expenditure to the value of R75 123 incurred for the procurement of financial systems licence renewal through a deviation. The deviation was found not to be in compliance with the National Treasury Supply Chain Management Guide.

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

35. Reconciliation between budget and statement of financial performance

Reconciliation of budget surplus/deficit with the surplus/deficit in the statement of financial performance:

Figures in Rand	Note(s)	2021	2020
Net surplus per the statement of financial performance		24 907 710	17 041 226
Adjusted for:			
Provision for doubtful debts		10 462 318	142 110
Actuarial gain/loss		(414 397)	684 193
Variance on authorisation fees		23 030 329	3 485 297
Variance on other income		(4 443 840)	(7 224 138)
Variance on compensation		(13 009 413)	3 922 520
Variance on goods and services		(26 857 526)	(18 932 274)
Variance on depreciation		1 473 952	2 150 241
Variance on finance cost		(1 114 551)	(892 873)
Variance on capital expenditure		(15 861 713)	(110 037)
Variance on investment income		1 827 131	(266 265)
Net surplus per approved budget		-	-

36. Budget differences

Material differences between budget and actual amounts

36.1 Authorisation fees

Revenue from authorisation fees, for the period under review, amounted to R212,7 million against a budget of R235,7 million. The variance of ten percent can be attributed to the decline in the number of regulated licences, caused by the number of licence surrenders and reclassification of licences from higher to lower categories.

36.2 Application fees

Application fees for the New Installation Site Licence (NISL) accounts for a larger portion of this revenue stream. A total of R22,4 million was realised, compared to a budget of R17 million, for the period under review. The thirty percent variance between projected and actual revenue is attributed to the unpredictable number of applications received on ongoing projects.

36.3 Finance cost

The variance of forty three percent on finance cost can be attributed to the unexpected reductions, by the Reserve Bank, of the repo rate. This resulted in a decrease in borrowing costs, linked to the Centurion office building. Total finance cost for the year amounted to R1,4 million compared to a budget of R2,5 million. The borrowing rate, at the time of reporting was seven percent.

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

36.4 Other Income

This revenue stream is comprised mainly of recoveries from services rendered by the NNR on behalf of partner institutions (IAEA, ENSTTI, etc.). The variance of about fifty six percent, realised in the period under review, can be directly linked to the travelling restrictions, caused by the covid19. These restrictions resulted in lesser travelling between the NNR and the partner institutions, resulting in fewer services rendered. Total revenue for the year amounted to R941 thousand, compared to a budget of R2,1 million.

36.5 Interest received

Interest received amounted to R3,9 million at the end of March 2021. This mainly relates to interest earned from positive bank balances. Although the NNR maintained positive cash balances throughout the period under review, the decision by the Reserve Bank to aggressively reduce the repo rate, in response to the slow economic growth caused by the Covid19 and the subsequent lockdown, contributed largely to the low interest earned, and a variance of 32 percent against the budget.

36.6 Compensation of employees

Expenditure on compensation of employees for the period under review amounted to R173 million, compared to the budgeted amount of R186 million. The variance of seven percent can be attributed to salary adjustments for members of the executive management and employees earning above R1,5 million per annum, not effected. This, as per the Ministerial Directive an as part of the revised collective wage agreement approved by the NNR Board.

36.7 Goods and services

Spending on goods and services for the year under review was significantly impacted by the COVID-19 pandemic and the subsequent lockdown. Total spending for the year amounted to R52 million, which is considerably lower than the annual budget of R81 million. This resulted in a variance of thirty five percent. The non-spending on foreign travel and training, including on other domestic travel and training, contributed to the overall low spending on goods and services.

36.8 Capital expenditure

Total budget for capital expenditure for the period under review amounted to R15,8 million. This budget includes spending on procurement for Office Equipment, IT equipment, including procurement of Scientific and Technical equipments. Total spending on assets for the period under review was R7,1 million. Spending on this budget was significantly impacted by the Covid19 and the lockdown.

36.9 Debt impairment

The NNR provides for impairment of trade receivables when there is objective evidence that the NNR will not be able to collect all amounts due according to the original terms of receivables. The total debt impairment for the period under review amounts to R10,4 million. The NNR does not budget for debt impairments, and calculates this amount using estimates and judgments.

37. B-BBEE performance

Information on compliance with the B-BBEE Act is included in the annual report under the section titled B-BBEE Compliance Performance Information.

Glossary of Terms

Glossary of Terms

Action: The use, possession, production, storage, enrichment, processing, reprocessing, conveying or disposal, or causing to be conveyed of radioactive material. Any action, the performance of which may result in persons accumulating a radiation dose resulting from exposure to ionising radiation. Any other action involving radioactive material.

Assessment: The process and the result of systematically analysing the hazards associated with sources and actions, and associated protection and safety measures aimed at quantifying performance measures for comparison with criteria.

Becquerel (bq): The unit of radioactivity in nuclear transformations (or disintegrations) per second.

Clearance: The removal of radioactive materials or radioactive objects within actions authorised by a nuclear installation licence, nuclear vessel licence, or certificate of registration, from any further control by the Regulator.

Collective dose: An expression of the total radiation dose incurred by a population, defined as the product of the number of individuals exposed to a source and their average radiation dose. The collective dose is expressed in person-sievert (person.sv).

Critical group: A group of members of the public that is reasonably homogeneous with respect to its exposure to a given radiation source and given exposure pathway, and is typical of individuals receiving the highest effective dose or equivalent dose (as applicable) by the given exposure pathway, from the given source.

Decommissioning: Administrative and technical actions taken to allow the removal of all of the regulatory controls from a facility (except for a repository which is closed and not decommissioned).

Defence in-depth: The application of more than a single protective measure for a given radiation or nuclear safety objective, so that the objective is achieved, even if one of the protective measures fails.

Discharge: A planned and controlled release of radioactive nuclides into the environment.

Disposal: The emplacement of radioactive waste in an approved, specified facility without the intention of retrieval. The term "dispose of" has a corresponding meaning.

Disused sealed source: A radioactive source, comprising radioactive material that is permanently sealed in a capsule or closely bonded and in a solid form (excluding reactor fuel elements) that is no longer used and is not intended to be used for the action for which an authorisation had been granted.

Dose: The amount of radiation received, where the use of a more specific term, such as "effective dose" or "equivalent dose" is not necessary for defining the quantity of interest.

Dose constraint: A prospective and source-related restriction on the individual dose arising from the predicted operation of the authorised action, which serves exclusively as a bound on the optimisation of radiation protection and nuclear safety.

Dose limit: The value of the effective dose or equivalent dose to individuals from actions authorised by a nuclear installation licence, nuclear vessel licence or certificate of registration, which must not be exceeded.

Emergency planning: The process of developing and maintaining the capability to take action that will reduce the impact of an emergency on persons, property or the environment. The capability to promptly take action that will effectively reduce the impact of an emergency on persons, property or the environment.

Emergency response: The performance of action to reduce the impact of an emergency on persons, property or the environment.

Environmental monitoring: The measurement of external dose rates, due to sources in the environment, and of radioactive nuclide concentrations in environmental media.

Exposure: The act or condition of being subjected to radiation.

Exposure pathways: A route by which radioactive material can reach or irradiate humans

Inspector: The person appointed as such in terms of Section 41(1) of the NNR Act.

Minister: The Minister of Energy.

Monitoring: The continuous or periodic measurement of radiological and other parameters, or the determination of the status of a system.

Nuclear accident: Any event or succession of events having the same origin and resulting in an unintended/ exposure to radiation or the release of radioactive material, which is capable of giving rise to an effective dose in excess of 1msv to the public on-site within a year, or in excess of 50msv to a worker on-site, essentially received at the time of the event.

Nuclear authorisation: A nuclear installation licence, nuclear vessel licence, certificate of registration or certificate of exemption.

Nuclear damage: Any injury to or the death or any sickness or disease of a person; or other damage, including any damage to or any loss of use of property or damage to the environment, which arises out of, or from, or is attributable to, the ionising radiation associated with a nuclear installation, nuclear vessel or action.

Nuclear incident: Any unintended event that is reasonably capable of giving rise to an effective dose equal to, or in excess of 0.1msv to the public on-site received essentially at the time of the event, or the unintended spread of radioactive contamination or exposure to radiation, which could reasonably give rise to an effective dose in excess of 20msv to a worker on-site, received essentially at the time of the event, or significant failure of safety provisions.

Nuclear installation: A facility, installation, plant or structure, designed or adapted for, or which may involve the conducting of any process, other than the mining and processing of ore within the nuclear fuel cycle involving radioactive material, including, but not limited to:

- A uranium or thorium refinement or conversion facility;
- A uranium enrichment facility; A nuclear fuel fabrication facility;
- A nuclear reactor, including a nuclear session reactor or any other facility intended to create nuclear fusion;
- A spent nuclear fuel reprocessing facility;
- A spent nuclear fuel storage facility;
- An enriched uranium processing and storage facility; and
- A facility specifically designed to handle, treat, condition, temporarily store or permanently dispose of any radioactive material that is intended to be disposed of as waste material; or
- Any facility, installation, plant or structure declared to be a nuclear installation, in terms of section 2(3) of the NNR Act.

Nuclear safety: The achievement of safe operating conditions, the prevention of nuclear accidents or the limiting of nuclear accident consequences resulting in the protection of workers, the public and the environment against the potential harmful effects of ionising radiation or radioactive material. Radiation protection of people from the effects of exposure to ionising radiation, and the means of achieving this.

Radiation protection monitor: A person, technically competent in radiation protection matters relevant to a given type of action, who is designated by the holder of a nuclear authorisation to perform radiation measurements.

Radiation protection officer: A person, technically competent in radiation protection matters relevant for a given type of who is designated by the holder of a nuclear authorisation to oversee the application of relevant requirements.

Radiation protection specialist: A person trained in radiation protection and other areas of specialisation necessary to be able to assess radiological conditions, to limit radiological consequences or to control doses.

Radioactive material: Any substance consisting of or containing any radioactive nuclide whether natural or artificial, including, but not limited to, radioactive waste and spent nuclear fuel.

Radioactive nuclide: Any unstable atomic nucleus, which decays spontaneously with the accompanying emission of ionising radiation.

Radioactive waste: Any material, whatever its physical form, remaining from an action requiring a nuclear installation licence, nuclear vessel licence or certificate of registration and for which no further use is foreseen, and

that contains or is contaminated with radioactive material and does not comply with the requirements for clearance. The quantitative or qualitative criteria specified by the operator and approved by the regulator, for radioactive waste to be accepted by the operator of a repository for disposal, or by the operator of a storage facility for storage.

Risk: (Qualitatively expressed), the probability of a specified health effect occurring in a person or a group of persons, as a result of exposure to radiation or (quantitatively expressed), a multi-attribute quantity expressing hazard, danger or chance of harmful or injurious consequences associated with actual or potential exposure relating to quantities, such as the probability that specific deleterious consequences may arise, as well as the magnitude and character of such consequences.

Safety assessment: An analysis to evaluate the performance of an overall system and its impact, where the performance measure is radiological impact or some other global measure of impact on safety.

Safety case: A collection of arguments and evidence in support of the safety of a facility or action. This normally includes the findings of a safety assessment and a statement of confidence in these findings.

WCA: Wonderfonteinspruit Catchment Area

NATIONAL NUCLEAR REGULATOR

HEAD OFFICE

POSTAL ADDRESS
PO Box 7106
Centurion
0046

PHYSICAL ADDRESS
Eco Glades Office Park
Eco Glades 2Block G
Witch Hazel Avenue
Highveld Ext 75
Eco Park
Centurion

TELEPHONE +27 (12) 674 7100
FACSIMILE +27 (12) 663 5513
E-MAIL enquiry@nnr.co.za

SITE OFFICE

POSTAL ADDRESS
PO Box 46055
Kernkrag
7441

PHYSICAL ADDRESS
12 Raatz Drive
Delphi Arch Building
Tableview
Cape Town
7441

TELEPHONE +27 (21) 553 9500
FACSIMILE +27 (21) 553 1361

ISBN: 978-0-621-49680-2
RP: 251/2021
TITLE OF PUBLICATION:
National Nuclear Regulator
Annual Report 2020/2021

PUBLIC ACCESS TO INFORMATION

INFORMATION OFFICER
DR BISMARK MZUBANZI TYOBEKA
TELEPHONE +27 (12) 674 7187
FACSIMILE +27 (12) 663 5513
E-MAIL bmtyobeka@nnr.co.za

DEPUTY INFORMATION OFFICER
MR GINO MOONSAMY
TELEPHONE +27 (12) 674 7111
FACSIMILE +27 (86) 588 4450
E-MAIL gmoonsamy@nnr.co.za

www.facebook.com/nationalnuclearregulator

www.linkedin.com/company/national-nuclear-regulator