



# ANNUAL REPORT 2016 - 2017





This 2016 - 2017 Annual Report is presented to the Minister of 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 National Nuclear Regulator (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.



73

48



# CONTENTS

## SECTION 1: GENERAL INFORMATION

VISION, MISSION AND CORPORATE VALUES	6
Strategic goals and priorities	6
Legislative and other mandates	7
Employees reporting to the Chief Executive Officer (CEO)	9
Chairperson's overview	10
CEO's review	12

## SECTION 2: CORPORATE GOVERNANCE

Board of directors (Board)	16
Composition of the Board	16
Committees of the Board	20
Risk management	22
Internal audit and Audit and Risk Management Committee (ARMCOM)	23
Fraud and corruption	24
Social responsibility	24

## SECTION 3: PERFORMANCE OVERVIEW

Programmes, goals and objectives	26
Standards, Authorisations, Reviews and Assessments (SARA) Division	26
Compliance Assurance and Enforcement (CAE) Division	26
Communications and stakeholder relations	26
Financial management and administration	27
Corporate support services	27
Internal audit	27
Legal compliance and risk management	28
Strategy, governance and organisational performance	28
Legal counsel	28
Project management office	28
Performance information 2016/2017	29
Challenges encountered by the National Nuclear Regulator (NNR) during 2016/2017	36
Linking performance with budgets	36
Summary of financial information	38



## SECTION 4: HR MANAGEMENT

Overview	42
Human Resources (HR) priorities for the period under review and their impact	42
Workforce planning framework and key strategies to attract and recruit a skilled and capable workforce	42
Policy development	42
HR oversight statistics	43

## SECTION 5: REGULATION OF NUCLEAR ACTIONS

SARA	48
CAE	48
Authorisations active	48
Regulation of nuclear power plants – Koeberg Nuclear Power Station (KNPS)	53

*section 5 continued...*

Regulation of nuclear facilities and activities on the South African Nuclear Energy Corporation (Necsa) Pelindaba site	59
Regulation of the National Radioactive Waste Disposal Facility - Vaalputs	65
Naturally Occurring Radioactive Material (NORM)	68
Special projects	73
International co-operation	74
Stakeholder relations and public outreach	75

## SECTION 6

Audited annual financial statements	78
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## SECTION 7

Acronyms and glossary	122
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# SECTION 1

## GENERAL INFORMATION





## 1.1 Vision, mission and corporate values

### Vision

To be an independent leading nuclear regulatory authority.

### Mission

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

### Corporate values

In carrying out its mandate, the NNR adheres to the values of;

- Excellence
- Integrity
- Openness and transparency
- Professionalism
- Teamwork
- Value our people

These values serve as guiding principles on how the NNR reaches regulatory decisions, how it performs administrative tasks and how its employees interact with their fellow employees and other stakeholders.

### Professionalism

- We demonstrate professionalism by being objective, principled, ethical and respecting different opinions.

### Integrity

- We aim to be non-biased, fair, objective, consistent, honest, reliable and principled in our attitudes and attributes.

### Value our people

- We show impartiality and recognition by appreciating and valuing input and showing empathy to employees.

### Excellence

- We deliver work of outstanding quality, efficiently, effectively, innovatively and in a focused manner.

### Teamwork

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

### Openness and Transparency

- Sharing relevant information with internal and external stakeholders and creating a platform for receiving feedback.

## 1.2 Strategic goals and priorities

The following Strategic Goals and Priorities were adopted for 2016/17:

- To provide efficient and effective nuclear regulatory services
- To improve awareness of the NNR and strengthen stakeholder relations

- To create a high performance culture
- To ensure the financial viability and sustainability of the organisation
- To develop and maintain sound organisational infrastructure
- To enhance good governance
- To ensure effective human capital management

### 1.3 Legislative and other mandates

The NNR was established in terms of section 3 of the National Nuclear Regulator Act, (Act No. 47 of 1999) (the Act) to:

- Provide for the protection of persons, property and the environment against nuclear damage through the establishment of Safety Standards and Regulatory Practices (SSRP)
- Exercise regulatory control related to safety over:
  - The siting, design, construction, operation, manufacture of component parts, and the decontamination, decommissioning and closure of nuclear installations)
  - Vessels propelled by nuclear power or having radioactive material on board which are capable of causing nuclear damage, through the granting of nuclear authorisations
- Exercise regulatory control over other actions to which the Act applies, through the granting of nuclear authorisations
- Provide assurance of compliance with the conditions of nuclear authorisations through the implementation of a system of compliance inspections
- Fulfil national obligations in respect of international legal instruments concerning nuclear safety
- Ensure that provisions for nuclear emergency planning are in place

The NNR is listed as a national public entity in Schedule 3 Part A of the Public Finance Management Act, (Act No. 1 of 1999) (PFMA). The Board is the accounting authority in terms of the PFMA.

In terms of section 8 (1) and (2), the NNR is governed and controlled in accordance with the Act, by the Board to ensure that the objects of the Act are carried out and to exercise general control over the performance of the NNR's functions.

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

#### Legislative framework

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

#### 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:

- 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, focusing 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
- b. 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 relating to the management of radioactive waste are assessed, and compliance of NNR authorisation holders is monitored.

#### **1.4 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

#### **1.5 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.

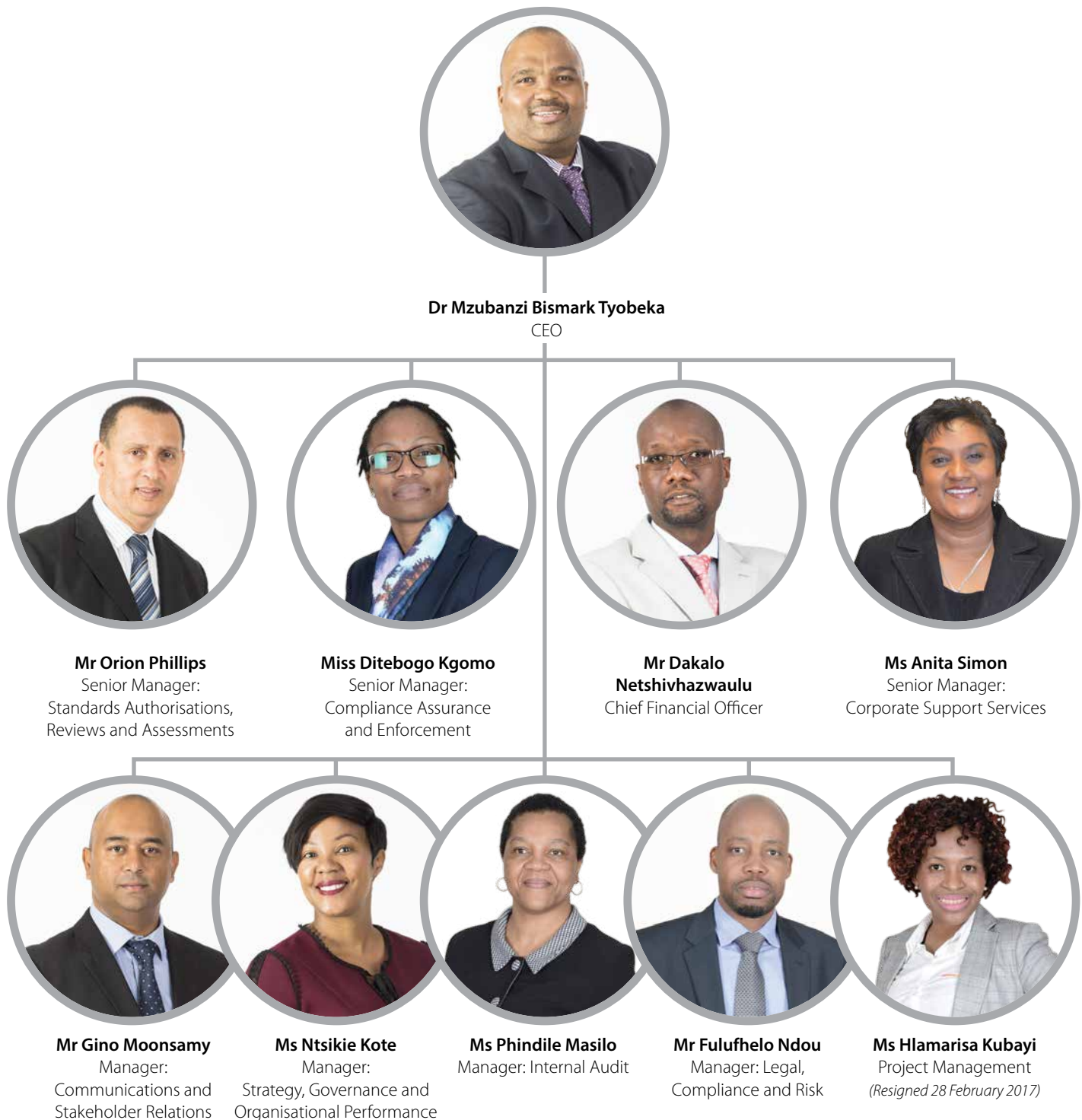
The Board is accountable for the overall formulation, monitoring and review of the NNR's corporate strategy and related affairs, while delegating to management the responsibility for business performance and achievement of the NNR's objectives.



## 1.6 Board Charter

The Board charter regulates the Board in accordance with the principles of good corporate governance. The charter sets out the specific duties and responsibilities to be discharged by the Board as a unitary working group. The charter ensures that all Board members, acting on behalf of the NNR, are aware of the legislation and regulations affecting their conduct, and to ensure that the principles of good corporate governance are applied in all their dealings with respect to and on behalf of the NNR. As recommended by the King Code, the charter prescribes the Board's accountability and fiduciary duties in line with standards of best practices within the NNR's unique environment.

### Employees reporting to the CEO



# Chairperson's Overview



The role of the NNR is to provide for the protection of persons, property and the environment against nuclear damage through the establishment of safety standards and regulatory frameworks suited for the South African industry.

This Annual 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, and the financial aspects in accordance with Section 55 of the Public Finance Management Act (Act no. 1 of 1999).

I am pleased to report that all regulated facilities and actions were inspected and found to be generally compliant with NNR requirements, as stipulated in the conditions of license or authorisation. There were no nuclear accidents or incidents reported in South Africa during 2016/17.

The Board was successful in meeting and fulfilling its fiduciary duties during the period under review. The Board is of the opinion that the effectiveness and overall strength of the governance and controls framework within the NNR is adequate. The NNR's corporate governance framework is comprised of the NNR's enabling legislation, the Act, the PFMA, policies, strategies and managerial procedures and practices. The NNR Board Charter prescribes the Board's accountability and fiduciary duties in line with standards of best practices within the NNR's unique environment.

Our corporate governance framework determines how the NNR exercises its authority and the way in which it will deliver outcomes, initiatives and programmes. The NNR has in place a number of corporate governance practices to ensure clear lines of accountability and well-defined, effective management of the regulator's performance. These practices are overseen and supported by the following Board Committees.

- ARMCOM
- Technical Committee (TC)
- Transformation and Development Committee (TDC)

As the competent authority in nuclear safety, the NNR is required to fulfil South Africa's obligations with respect to international instruments concerning the International Atomic Energy Agency's Regulations for the Safe Transport of Radioactive Material and to coordinate and implement South Africa's Contracting Party obligations to the IAEA Convention on Nuclear Safety and the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management. For the period under review the NNR successfully compiled and submitted South Africa's 7<sup>th</sup> CNS report to the IAEA. The 7<sup>th</sup> report presented an update on South Africa's continued efforts to achieve the objectives of the Convention on Nuclear Safety

The NNR undertook significant international engagements and worked closely with organizations such as the International Atomic Energy Agency (IAEA) and the International Commission on Radiation Protection (ICRP). It is pleasing to note that NNR employees are frequently requested to participate in or lead international activities in nuclear safety regulation.

For the period under review, the NNR in conjunction with DoE and DoH, successfully hosted a 11 day IAEA Integrated Regulatory Review Service (IRRS) Mission to South Africa. The purpose of the mission was to assess the regulatory framework for nuclear and radiation safety in South Africa. The 27-member IRRS team comprised of experts from Argentina, Australia, Belgium, Brazil, Canada, Cuba, Finland, France, Germany, Hungary, India, Spain, Pakistan, the Republic of Korea, Romania, Sweden, Switzerland, the United Kingdom and the United States of America as well as four IAEA officials..

During the period under review, the entity collected R162 million in Authorisation Fees which was 10% more than the previous financial year. The State Grant collection was R41 million, including R24 million Cash Flow provided for processing of Eskom's Nuclear Installation Site License application lodged in March 2016. This amount will be recovered from NNR's budget in 2018/19 financial year through reduction of the baseline allocation for the year.

While it is an honour and privilege to serve as Chairperson of the NNR during this dynamic period, I don't lead the regulator single-handedly. The NNR relies on the leadership and judgement of all its non-executive Directors, and the organization is quite fortunate to have very committed and conscientious board members who frequently go beyond the call of duty in exercising their oversight role.

Additionally, and on behalf of the new and outgoing Board members, I would like to thank the staff and management for their dedication, professionalism, and commitment in striving to achieve our shared vision for the future and the immediate goals of the past year.

In conclusion, I would like to thank the Minister of Energy for her support, and I wish to acknowledge the valuable contributions made by the previous, Chairperson Dr Tracy Cohen, and the outgoing Board members. Their service greatly assisted the governance of the NNR during the past few years.



**Dr Thapelo Motshudi**

Chairperson: Board

# Chief Executive's Review



I am pleased to present to you the 2016-2017 NNR Annual Report.

I was appointed as CEO of the NNR in 2013, making this my third Annual Report for the NNR. As I reflect upon this past year I see the improvements that have been made by the NNR in our efforts to protect people and the environment from nuclear damage. This was confirmed by the satisfactory achievement of safety and security in the oversight of the nuclear industry in South Africa.

The following represents some of the highlights for the year under review, the details of which are contained in the body of this report.

## *Summary of key highlights*

- The NNR achieved a performance rating of 90.2 % against the set target of 85%.
- Developmental work for the Integrated Management System was completed and will be implemented in the new financial year
- The NNR launched the First Centre of Excellence for Nuclear Safety and Security (CNSS) in South Africa on 16 September 2016 at the University of Pretoria, Hatfield campus.
- With international best practice in mind, South Africa successfully hosted its First 1st Integrated Regulatory Review Service (IRRS) Mission to review the regulatory system covering both technical and policy, including the status of development of the regulatory infrastructure against IAEA safety standards and international best practices.
- We continued to review the NISL applications for the Thyspunt and Duynefontyn sites.
- The establishment of the South African National Dose Register and the implementation of the ("live" system) using the IAEA- Regulatory Authority Information System (RAIS) have been considerable milestones for us during the reporting period.

- Effective communication and stakeholder engagement features highly in our daily activities. The NNR launched its First Nuclear Regulatory Information Conference which was coined a huge success by all stakeholders. The conference attracted participants from local and international organisations and served as a valuable platform for sharing experiences, discussing ideas and exchanging information.
- The NNR continued to support multilateral nuclear safety co-operation through participation in Regulatory Cooperation Forum (RCF), Multi Multinational Design Evaluation Programme (MDEP) and Forum for Nuclear Regulatory Bodies in Africa (FNRBA).
- The NNR hosted regional nuclear safety and security training workshops in conjunction with the IAEA and European Commission.

*Challenges experienced during the reporting period*

In a rapidly changing environment, where the demands on the NNR are higher than before, we must strengthen the logistical and financial framework that keeps the NNR operating at peak efficiency and effectiveness. An important focus in 2016 continued to be to sustain, expand and improve our important work, in particular through efforts to maintain and improve the quality, relevance and timeliness of our regulatory services.

I am proud of the efforts and commitment made by NNR employees in 2016. I would like to thank the outgoing chairperson, Dr Tracy Cohen and the Board for their guidance and valuable support over the past year. I would also like to acknowledge my appreciation to the new Board chairperson, Dr Thapelo Motshudi and the new Board members for their support and oversight during the year under review.



**Dr Mzubanzi Bismark Tyobeka**

CEO





# SECTION 2

## CORPORATE GOVERNANCE



## **2.1 Introduction**

The Board reviewed the systems and processes of the NNR timeously, and can assure stakeholders that the NNR was managed and operated in compliance with the principles incorporated in the Code of Corporate Practices and Conduct, as set out in the King III Report and the precepts of the Public Finance Management Act (PFMA), as appropriate.

## **2.2 Parliamentary Portfolio Committee on Energy**

The 2015-2016 Annual Report was submitted to the Parliamentary Portfolio Committee on Energy.

## **2.3 Board**

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

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

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

## **2.4 Composition of the Board**

The Board comprised nine Non-Executive directors who were independently appointed by the Minister of Energy, an Executive Director (CEO) and representatives from the Department of Energy and the Department of Environmental Affairs. Board members, including the CEO, hold office for a maximum of three years, but are eligible for re-appointment.

## Board of Directors



**Dr Thapelo Motshudi**  
Chairperson



**Dr Pamela Z Dube**  
Deputy Chairperson and  
Chairperson of the  
Transformation and  
Development Committee



**Dr Mzubanzi Bismark  
Tyobeka**  
Director and Chief Executive



**Mr Jeffrey Leaver**  
Non-Executive Director and  
Chairperson of the Technical  
Committee



**Mr Protas Phili**  
Non-Executive Director and  
Chairperson of the Audit and  
Risk Management Committee



**Ms Vanessa Devinagie  
Bendeman**  
Non-Executive Director



**Ms Bridgette Mokoetle**  
Non-Executive Director



**Ms Elsie Monale**  
Non-Executive Director



**Mr Kabelo Kakoma**  
Non-Executive Director



**Dr Bethuel Sehlapelo**  
Non-Executive Director



**Mr Abraham Le Roux**  
Non-Executive Director



**Mr Mochubela Seekoe**  
Non-Executive Director

*The following Board members served until November 2016:*

*Dr Tracy Cohen, Mr Tshepo Mofokeng, Ms Lillian Sedumoeng, Mr Nikisi Wilson Lesufi, Mr Mark Gordon, Mr Katse Maphoto, Mr Moegamat Ishaam Abader, Mr Sibusiso Mimi.*



**Table 1: NNR Board members (Old Board 2012-2016)**

Title	Full Name	Designation	Date Appointed
Dr	Tracy Cohen	Independent Non-Executive Director	1 Dec2012
Mr	Tshepo Mofokeng	Independent Non-Executive Director	1 Dec2012
Mr	Kabelo Samuel Kakoma	Independent Non-Executive Director	1 Dec2012
Mr	Jeffrey Leaver	Independent Non-Executive Director	1 Dec2012
Ms	Lillian Sedumoeng	Independent Non-Executive Director (alternate)	30 Jan2015
Mr	Nikisi Wilson Lesufi	Independent Non-Executive Director	1 Dec2012
Dr	Thapelo Motshudi	Independent Non-Executive Director	1 Dec 2012
Mr	Mark Gordon	Independent Non-Executive Director (alternate)	6 Dec2013
Mr	Katse Maphoto	Independent Non-Executive Director	1 Dec2012
Mr	Moegamat Ishaam Abader	Independent Non-Executive Director	1 Dec2012
Mr	Sibusiso Mimi	Independent Non-Executive Director	1 Dec 2012
Dr	Mzubanzi B Tyobeka	Executive Director	1 Oct 2013

**Table 2: New Board members appointed (2016-2019)**

Name	Designation	Date Appointed
Dr Thapelo Motshudi*	Independent Non-Executive Director	7 Dec 2016
Mr Kabelo S Kakoma*	Independent Non-Executive Director	7 Dec 2016
Mr Jeffrey Leaver*	Independent Non-Executive Director	7 Dec 2016
Dr Mzubanzi B Tyobeka*	Executive Director	1 Oct 2016
Dr Pamela Dube**	Independent Non-Executive Director	7 Dec 2016
Ms Devinagie Bendeman**	Independent Non-Executive Director	7 Dec 2016
Mr Protas Phili**	Independent Non-Executive Director	7 Dec 2016
Ms Bridgette M Mokoetle**	Independent Non-Executive Director	7 Dec 2016
Ambassador Mochubela J Seekoe**	Independent Non-Executive Director	7 Dec 2016
Mr Abraham P Le Roux**	Independent Non-Executive Director	7 Dec 2016
Ms Elsie Monale**	Independent Non-Executive Director	7 Dec 2016
Dr Bethuel Sehlapelo*	Independent Non-Executive Director	7 Dec 2016

\* Reappointment

\*\* New Appointment



## 2.5 Board Meetings and Strategic Workshop

**Table 3: Meetings held during the reporting period**

Names	28 Apr2016 Board Meeting	New Build Workshop 21 Jun2016	New Build Workshop 22 Jun2016	28 Jul2016 Board Meeting	16 Sept 2016 CNSS Launch	5-7 Oct 2016 NNR 1 <sup>st</sup> RIC	27 Oct2016 Board Meeting	17 Jan.2017 NNR Board In-duction	27 Jan.2017 Board Meeting
Dr T Cohen Chairperson of the Board	P	A	A	P	A	A	P	N/A	N/A
Mr T Mofokeng Deputy Chairperson of the Board	A	A	A	P	P	P	A	N/A	N/A
Mr J Leaver*	P	P	P	A	A	A	P	P	P
Dr T Motshudi*	P	P	A	P	P	A	P	P	P
Mr M Lesufi	P	P	P	P	P	P	A	N/A	N/A
Mr I Abader	A	P	A	P	P	P	P	N/A	N/A
Mr K Maphoto	A	P	P	P	P	P	P	N/A	N/A
Dr M.B Tyobeka*	P	P	A	P	P	P	A	A	P
Mr S Mimi	P	P	P	A	P	P	P	N/A	N/A
Dr B Sehlapelo *	A	A	P	A	A	A	A	A	P
Mr KS Kakoma*	P	P	P	P	P	P	P	P	P
Ms L Sedumoeng	A	A	A	A	A	A	P	N/A	N/A
Mr M Gordon	A	A	A	A	A	A	A	N/A	N/A
Dr P Dube**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	P	P
Ms D Bendeman **	N/A	N/A	N/A	N/A	N/A	N/A	N/A	P	P
Mr P Phili**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	P	P
Ms B Mokoetle **	N/A	N/A	N/A	N/A	N/A	N/A	N/A	P	P
Amb MJ Seekoe **	N/A	N/A	N/A	N/A	N/A	N/A	N/A	A	P
Mr AP Le Roux**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	P	P
Ms E Monale**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	P	A

*P: Member present at the meeting*

*A: Member not present but tendered an apology*

*N/A: Not applicable refers to a member not yet appointed to the Board/Board Committee or a member who resigned from such*

*\* Reappointment*

*\*\* New Appointment*

## 2.6 Committees of the Board

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

- ARMCOM
- Technical Committee (TC)
- Transformation and Development Committee (TDC)

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

### 2.6.1 ARMCOM

The ARMCOM comprised four Non-Executive Directors. 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
- The effectiveness of the organisation's system of internal control

The members of the ARMCOM were:

- Mr T Mofokeng (Chairperson)
- Mr N Lesufi
- Mr J Leaver
- Mr KS Kakoma

Messrs T Mofokeng and N Lesufi served until November 2016

Messrs J Leaver, KS Kakoma, P Phili, Ms D Bendeman and Ms B Mokoetle served from Dec 2016–Mar 2017.

**Table 4: ARMCOM Meetings convened**

Names	20 May 2016	22 Jul 2016	17 Oct 2016	18 Jan 2017
Mr T Mofokeng	P	A	P	N/A
Mr N Lesufi	P	P	P	N/A
Mr J Leaver *	P	A	P	P
Ms KS Kakoma *	P	P	P	P
Mr P Phili **	N/A	N/A	N/A	P
Ms B Mokoetle **	N/A	N/A	N/A	P
Ms D Bendeman **	N/A	N/A	N/A	P

*P: Member present at the meeting*

*A: Member not present but tendered an apology*

*N/A: Not applicable refers to a member not yet appointed to the Board/Board Committee or a member who resigned from such*

*\* Reappointment*

*\*\* New Appointment*

## 2.6.2 TC

The TC comprised three Non-executive Directors and one independent technical advisor. The role of the Committee was to, inter alia:

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

The members of the Technical Committee were:

- Dr T Motshudi (Chairperson)
- Mr J Leaver
- Dr B Sehlapelo (Independent technical advisor)
- Mr. K Maphoto

Dr T Motshudi and Mr K Maphoto served until November 2016

Dr B Sehlapelo, Mr J Leaver, Ms E Monale and Ms B Mokoetle served from December 2016 until March 2017

**Table 5: Technical committee meetings convened**

Names	Dates of the meetings April 2016 - March 2017			
	25 May 2016	21 Jul 2016	19 Oct 2016	19 Jan 2017
Dr T Motshudi - Chairperson	P	P	P	N/A
Mr J Leaver*	P	A	P	P
Dr B Sehlapelo*	P	P	P	P
Mr K Maphoto	P	P	A	N/A
Ms E Monale**	N/A	N/A	N/A	P
Ms B Mokoetle**	N/A	N/A	N/A	P

*P: Member present at the meeting*

*A: Member not present but tendered an apology*

*N/A: Not applicable refers to a member not yet appointed to the Board/Board Committee or a member who resigned from such*

*\* Reappointment*

*\*\* New Appointment*

## 2.6.3 TDC

TDC comprised five non-executive directors. The TDC was responsible for determining HR strategies and policies, and recommended these to the Board for approval. These included human resource policies and conditions of service; employment equity reports; performance management systems and other organisational development initiatives.

The members of the TDC were:

- Mr N Lesufi (Chairperson)
- Mr I Abader
- Mr J Leaver
- Mr M Mimi
- Mr K Maphoto
- Amb MJ Seekoe
- Mr AP Le Roux
- Ms E Monale

- Mr KS Kakoma
- Dr P Dube

Messrs N Lesufi, I Abader, M Mimi, K Maphoto and Mr Leaver served until November 2016

Mr AP Le Roux, Mr KS Kakoma , Amb MJ Seekoe, Ms Monale and Dr P Dube served from December 2016 to March 2017.

**Table 6: TDC Committee meetings convened**

Names	Dates of the meetings Apr 2016 - Mar 2017		
	14 Jul 2016	18 Oct 2016	18 Jan 2017
Mr N Lesufi (Chairperson)	P	P	N/A
Mr I Abader	P	A	N/A
Mr J Leaver*	A	P	N/A
Mr S Mimi	P	P	N/A
Mr K Maphoto	A	A	N/A
Amb MJ Seekoe **	N/A	N/A	P
Mr AP Le Roux **	N/A	N/A	P
Ms E Monale **	N/A	N/A	P
Mr KS Kakoma *	N/A	N/A	P
Dr P Dube**	N/A	N/A	P

*P: Member present at the meeting*

*A: Member not present but tendered an apology*

*N/A: Not applicable refers to a member not yet appointed to the Board/Board Committee or a member who resigned from such*

*\* Reappointment*

*\*\* New Appointment*

Messrs N Lesufi, I Abader, J Leaver, S Mimi, K Maphoto served until November 2016

Amb MJ Seekoe, Mr AP Le Roux and Ms E Monale served from December 2016 to March 2017.

## 2.6.4 Remuneration of Directors and Committee Members

The remuneration of Board members is determined by the Minister of Energy, with the concurrence of the Minister of Finance, and is reviewed annually. Board and Committee members are remunerated for attending meetings excluding representatives from government departments. The details of the remuneration for the year ended 31 March 2017 are stated in Note 28 to the Annual Financial Statements on page 116.

## 2.7 Risk management

### 2.7.1 Nature of Risk Management

The NNR recognises that the total process of risk management, which includes a related system of internal control, is the responsibility of the Board. 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, and providing assurance that it has done so. To implement the above, the NNR developed and implemented a Risk-Management manual, which includes the Risk Management Policy, Strategy and Implementation Plan.

Risk Maturity Assessment was conducted for the financial year under review and it revealed that the NNR has improved in embedding a risk management culture into their day-to-day activities. Furthermore, risk awareness training was rolled out for all employees in the NNR, and risk champions were trained to enable them to discharge their duties effectively, and to assist their respective departments in managing risks.

## 2.7.2 Risk management strategies to identify and manage risks

The Risk Steering Committee met quarterly to discuss the current and potential risks facing the organisation. It periodically reviewed the Risk Management Policy, Risk Implementation Plan, Manual and Strategy and recommended them for approval by the CEO and ARMCOM. The Risk Champions' Forum met quarterly to monitor and ensure that actions to address the identified risks were implemented during the period under review. Risk owners were identified and requested to provide action plans to address identified risks.

## 2.7.3 Progress made in addressing identified risks

The risk champions monitored the implementation of actions to address the identified risks on a quarterly basis. The following activities were carried out for all departments in conjunction with risk champions to monitor the risk profile of individual departments:

- Continuous engagement with both the risk and control owners to assess progress on the implementation of action plans.
- Continuous engagement with the control owners to review the strength of the current controls.
- Continuous engagement with risk owners to ensure that the risk profiles were updated on a regular basis.
- Implementation of action plans were tracked on a regular basis through the utilisation of a risk register excel spreadsheet.

Quarterly progress was reported to the Risk Steering Committee, which considered the progress and reported this to the executive, ARMCOM and the Board. Identification of new/emerging risks was a standing agenda item at the Risk Steering Committee and other meetings. Identified risks were assessed and included in the relevant risk registers for monitoring purposes.

## 2.8 Internal Audit and ARMCOM

The NNR's Internal Audit is an independent, objective, assurance and consulting function, designed to add value and improve NNR's operations. It assists the NNR in accomplishing its objectives by bringing a systematic, disciplined approach to evaluate and improve the effectiveness of risk management, control and governance processes. This is in compliance with the Institute of Internal Audit Standards and the requirements of the PFMA.

The Internal Audit Manager reports administratively to the CEO and functionally to ARMCOM. The responsibilities of the Internal Audit function included the following:

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

### 2.8.1 The Scope of Internal Audit function included:

- i. Reviewing the risk management processes and practices
- ii. Reviewing the reliability and integrity of financial and operational information and the means used to identify, measure, classify and report such information
- iii. 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
- iv. Reviewing the means of safeguarding assets and, as appropriate, verifying the existence of assets
- v. Appraising the economy and efficiency with which resources are employed
- vi. 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
- vii. 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 internal audit plan. ARMCOM remained responsible for approving the plan.



## **2.8.2 Summary of audit work done**

For the 2016/17 financial year, 13 internal audits were conducted in the following areas: Finance, Corporate Support Services (Leave Management and Information Technology), Legislative Compliance, Corporate Governance (self-assessment), Audit of Performance Information and Technical departments.

ARMCOM assisted the Board by reviewing the following areas:

- Finance Function and the Chief Financial Officer (CFO)
- Internal Audit
- Communications and Stakeholder Relations
- Strategy, Governance and Organisational Performance
- Risk Management
- External Audit
- Compliance with Laws and Regulations
- Ethics

## **2.9 Fraud and corruption**

The Fraud and Corruption Prevention process was implemented and monitored in accordance with the approved Risk Implementation plan which detailed the activities that were undertaken for the financial year under review. Fraud Risk assessment was conducted by an external service provider which included interviewing senior managers and employees to identify possible fraud and corruption. The identified fraud risks were rated according to the strategy of the NNR and for all risks that fell outside the risk appetite, the risk owners were requested to provide actions to address the risks. Every action plan was allocated a start and due date to monitor progress throughout the financial year and the risk register was developed.

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 fraud or potential fraud cases were reported during the period under review.

## **2.10 Social responsibility**

The NNR implemented the following social responsibility programmes during the period under review:

- Women in Nuclear (WIN-NNR) programme
- National Science Week awareness
- Nelson Mandela month community upliftment
- 16 Days of Activism

# SECTION 3

## PERFORMANCE OVERVIEW



The NNR's performance continued on an upward path and achieved an overall performance rating of 90.2% for the period under review.

## **3.1 Programmes, goals and objectives**

### **3.1.1 SARA Division**

#### **Programme purpose**

The SARA division provides strategic leadership and management of regulatory processes in the following areas:

- Authorisation for; Nuclear Vessel Licences (NVL), Nuclear Installations (NIL), Certificate of Registrations (COR) and Certificates of Exemption (COE). The programme produces standards related to the core themes such as risk analysis applied to scientific, engineering and technological issues.
- Reviews and assessments were conducted with regard to design safety, environmental and radiation protection, operational safety, emergency preparedness and nuclear security
- Managing special projects such as the application of outcomes from the Fukushima project, radiation protection regulation and nuclear New Build
- Research and development is conducted on emerging issues regarding nuclear and radiation safety

#### **Strategic outcome-orientated goal aligned to the programme**

- To provide efficient and effective nuclear regulatory services

#### **Strategic objectives**

- Effective regulation of nuclear and radiation facilities and activities
- Ensure the NNR is positioned to respond to initiatives relating to nuclear expansion
- Provide assurance of the effectiveness of emergency preparedness
- Foster development of regulatory and technical services

### **3.1.2 CAE Division**

#### **Programme purpose**

The CAE division provides strategic leadership and management of the compliance and enforcement activities, processes and programmes for all the regulated nuclear facilities and activities. The CAE division ensures the establishment of effective and efficient delivery systems related to the compliance assurance and enforcement activities in nuclear safety and security. This includes conducting compliance assurance inspections, audits, investigations, surveillances, environmental monitoring and sampling.

#### **Strategic outcome-orientated goal aligned to the programme**

- To provide efficient and effective nuclear regulatory services


#### **Strategic Objective**

- Provide assurance of compliance with regulatory requirements through a system of compliance assurance inspections, audits and exercises and take appropriate enforcement actions

### **3.1.3 Communications and stakeholder relations**

#### **Programme purpose**

The communication and stakeholder relations office provides strategic stakeholder advisory services and leads in corporate communication initiatives for the NNR. The office works with technical experts to develop plain language communication products



and information design for various target audiences. It co-ordinates and manages responses to enquiries from parliament, media, public and other key stakeholders. This office focuses on the NNR's commitment to develop and maintain trust and confidence in the nuclear safety regulatory regime by working openly and transparently with stakeholders to achieve this goal, and also manages international liaison and the co-ordination of regulatory co-operation agreements with national and international counterparts.

#### **Strategic outcome-orientated goal aligned to the programme**

- Improve awareness of the NNR and strengthen stakeholder relations

#### **Strategic objective**

- Improve public communications and face-to-face stakeholder engagement
- Strengthen national and international co-operation

### **3.1.4 Financial management**

#### **Programme purpose**

This programme provides strategic financial leadership for the purposes of managing and directing the finances of the NNR. The management function includes financial planning, financial reporting, safeguarding of assets and enforcing adherence to applicable legislation, effective supply chain processes and efficient usage of public funds. The programme also includes an oversight role in implementing financial systems that support robust systems of internal control.

#### **Strategic outcome-orientated goal aligned to the programme**

- Ensure the financial viability and sustainability of the organisation

#### **Strategic objectives**

- Ensure that the NNR remains a financially viable entity, i.e. adequate revenue to meet strategic objectives
- Ensure sound and compliant financial management within the NNR

### **3.1.5. Corporate support services**

#### **Programme purpose:**

This programme provides strategic leadership and direction in the areas of Human Capital Management, Facilities Management, Information and Communication Technology (ICT) as well as Occupational Health and Safety (The primary focus of the programme is ensuring efficient processes and resources in support of the organisation's strategic objectives).

#### **Strategic outcome-orientated goals aligned to the programme**

- Develop and maintain sound organisational infrastructure
- High performance culture
- Ensure effective Human Capital Management

#### **Strategic objectives**

- Develop and maintain an adequate and stable organisational infrastructure
- Define and establish an integrated management system and programme
- Implement an integrated talent management system

### **3.1.6 Internal audit**

#### **Programme purpose:**

Internal audit provides assurance to the NNR's stakeholders that the NNR operates in a responsible manner by performing, among others, the functions described in section 2.9.



### **Strategic outcome-orientated goal aligned to the programme**

- Enhance good governance

### **Strategic objective**

- Improve and maintain an effective system of internal controls

### **3.1.7 Legal, compliance and risk management**

#### **Programme purpose:**

The purpose of this function is to provide the NNR with comprehensive legal advice, support on all legal matters and ensuring compliance to applicable prescripts and legislation.

This programme is also responsible for risk management, which is a systematic and formalised process instituted by the NNR to identify, assess, manage and monitor risks.

### **Strategic outcome-orientated goal aligned to the programme**

- Enhance good governance

### **Strategic objective**

- To improve and maintain an effective system of risk management

### **3.1.8. Strategy, governance and organisational performance**

#### **Programme Purpose**

The purpose of this function is two-fold. Firstly, to assure the effective and efficient functioning of the Board, its Committees and all other internal governance structures. This is done by assisting the Board to discharge its roles and responsibilities by providing guidance on good corporate governance principles and practices. This is also implemented through consistent and responsive administrative and effective logistical support.

The programme also ensures the formulation, development and planning of the organisation's strategy by the Board and the Executive, with a view to enabling the execution of its mandate in line with the Act. This is done by utilising a strategic plan aligned to the national planning framework for state owned enterprises. The function also monitors and evaluates organisational performance at both operational and strategic levels, providing performance-enhancing solutions that address performance gaps to aid in the attainment of performance targets and intended outcomes. These solutions include the implementation of appropriate quality-management systems and operational excellence tools.

### **Strategic outcome-orientated goal aligned to the programme**

- High performance culture

### **Strategic objective**

- Implementation of the strategic management programme

### **3.1.9 Project management office**

#### **Programme purpose**

The purpose of this function is to provide the NNR with consistent standardised project management methodology. The Project Management Office strives to introduce best practice principles and standardise project management tools and techniques to assist the NNR in achieving its strategic objectives through delivery of projects.

### **Strategic outcome-orientated goal aligned to the programme**

- High Performance Culture

### **Strategic objective**

- Maintain an organisational performance management system and implement monitoring systems



### 3.2 Performance Information 2016/17 (performance tables can be found on the next page.

Table 7: Performance Information

Strategic Objective	Measure	Performance Indicator	Actual Achievement 2015/16	Planned Target 2016/17	Actual Achievement 2016/17	Comment on variance	Comment on variance for over achievement in 2016/17
1. Effective regulation of nuclear and radiation facilities and activities	RM1a: Reviews and assessments	RM1a: reviews and assessments undertaken	97.50%	100%	100%		
	RM1b: Regulatory framework	RM1b: Regulatory framework	85%	100%	80.5%	Targets were not met due to delays in completion of some regulatory documents.	
	RM1c: Safety and security culture index	RM1c: Develop Safety and security culture index	New KPI for 2016/17	100%	100.0%		
	RM1d: IRRS Mission	RM1d: Prepare and conduct IRRS Mission	100%	100%	100.0%		
	RM1e: Independent verification	RM1e: Operationalise the laboratory	100%	100%	100.0%		
2. Ensure the NNR positioned to initiatives relating to nuclear expansion	RM2: New build strategy	RM2: Develop strategy for new build	New KPI for 2016/17	Approved strategy	100.0%		

Strategic Objective	Measure	Performance Indicator	Actual Achievement 2015/16	Planned Target 2016/17	Actual Achievement 2016/17	Comment on variance	Comment on variance for over achievement in 2016/17
3. Provide assurance of effectiveness of emergency preparedness	RM3a: Emergency preparedness	RM3a: Regulatory response during an emergency (RERC) and emergency procedures	73.60%	100%	100.0%		
	RM3b: Emergency preparedness review (EPREV) action plan	RM3b: implement EPREV action plan	New KPI for 2016/17	100%	73.0%	The RERC project experienced delays with online monitoring.	
	RM4a: CNSS Establishment	RM4a: Develop the CNSS	New KPI for 2016/17	100%	100.0%		
4. Foster development of regulatory and technical services	RM4b: Regulatory and technical services	RM4b: Conduct feasibility study for approval of technical service providers (dosimetry, calibration, labs, instrumentation and RPO)	New KPI for 2016/17	100%	100.0%		

Strategic Objective	Measure	Performance Indicator	Actual Achievement 2015/16	Planned Target 2016/17	Actual Achievement 2016/17	Comment on variance	Comment on variance for over achievement in 2016/17
5. Provide assurance of compliance with regulatory requirements through a system of compliance assurance inspections, audits and exercises and take appropriate enforcement actions	RM5: Compliance assurance activities	RM5: Number of activities conducted	Inspections	Inspections	100.0%		
			420/420	342/342			
			100%				
			NPP: 72	NPP: 56	100.0%		
			Nuclear Security (NucSec): 21	Nuc. Sec: 16	100.0%		
			NTWP 146	NTWP 144	100.0%		
			NORM: 181	NORM: 126	100.0%		
			Audits: 24	Audits: 22	100.0%		
			100%				
			NPP: 2	NPP: 2	100.0%		
6. Improve public communications and face to face stakeholder engagement	RM6: Stakeholder interactions	RM6: Implement the activity schedule	NTWP: 6	NTWP: 6	100.0%		
			NORM: 16	NORM: 14	100.0%		
			Exercises: NucSec	NUFCOR Security Exercise	100%		
			Emergency Preparedness	1 Koeberg Emergency Exercise	100%		
			Enforcement actions: 11 directives	Enforcement actions: 100% when necessary	100%		
			100%	100%	100.0%		

Strategic Objective	Measure	Performance Indicator	Actual Achievement 2015/16	Planned Target 2016/17	Actual Achievement 2016/17	Comment on variance	Comment on variance for over achievement in 2016/17
7. Strengthen national and international cooperation	RM7: Bilateral and international obligations	RM7: Implement the activity schedule	100%	100%	100.0%		
8. Ensure that the NNR remains a financially viable entity i.e. adequate revenue to meet NNR strategic objectives.	FM1: Financial Management	FM1: Regulatory activities are adequately funded	89%	Adequacy of funding	100.0%		It should be noted that the late gazetting of the authorisation of fees contributed to a financial surplus. Due to this, the Regulator could not use these funds during the better part of the year.
9. Ensure sound and compliant financial management within the NNR	FM2: External audit outcomes	FM2: Unqualified report	Unqualified report 100%	Unqualified report	100%		

Strategic Objective	Measure	Performance Indicator	Actual Achievement 2015/16	Planned Target 2016/17	Actual Achievement 2016/17	Comment on variance	Comment on variance for over achievement in 2016/17
10. Maintain organisational performance management system and implement monitoring systems	PM1: Project management	PM1: Deliver capital projects as per specifications	72.50%	100%	79%	Delays were experienced for RERC as per the explanation in RM3b. Regarding the Cape Town project, the rezoning application has become a critical deliverable. The geotechnical investigation is still incomplete and needs to be included on the final council approval. Therefore, the City of Cape Town drawings approvals application cannot be considered though ready for submission, until the rezoning application is approved.	
11. Implementation of the strategic management programme	PM2: Strategy management	PM2: % of agreed deliverables as per plan	100%	100%	100.0%		
12. Define and establish internal integrated quality management system, programme	PM3: Management systems	PM3: % of agreed deliverables as per plan	30%	100%	100.0%		



Strategic Objective	Measure	Performance Indicator	Actual Achievement 2015/16	Planned Target 2016/17	Actual Achievement 2016/17	Comment on variance	Comment on variance for over achievement in 2016/17
13. Develop and maintain sound organizational infrastructure	PM4: Adequacy of office space	PM4: implement the organisational facilities plan	100%	100%	100.0%		
14. Improve and maintain and effective system of internal controls	PM5a: Internal audit programme	PM5a: Effective implementation of action plan to address audit issues	New KPI for 2016/17		68.0%	This performance is as a result of unresolved audit findings in specific areas of the organisation for 2016/17.	
	PM5a: Internal audit programme	PM5a: Effective implementation of the internal audit plan	85%	100%	100.0%		
15. Improve and maintain and effective system of risk management	PM6: Risk management programme	PM6: Effective execution of the risk management of risks	100%	100%	100.0%		

Strategic Objective	Measure	Performance Indicator	Actual Achievement 2015/16	Planned Target 2016/17	Actual Achievement 2016/17	Comment on variance	Comment on variance for over achievement in 2016/17
16. Implement an integrated talent management system	LM1a: Talent Management	LM1a: Implementation of the talent management system	100%	100%	0.0%	This process required much more in-depth training than initially anticipated. It was therefore set aside for the year due to delays experienced in completing the competency profiles.	
	LM1b: Dual career path	LM1b: Implement the dual career path programme	New KPI for 2016/17	100%	100.0%		
	LM1c: Promotions	LM1c: Implement promotions programme	New KPI for 2016/17	100%	100.0%		
	LM1d: ICT	LM1d: Implement electronic information management policy	New KPI for 2016/17	100%	48.0%	During the roll out of the project the ICT/Business continuity plan Committee requested that a review of the product be conducted before any further work was done. The review was completed in February 2017 and the project allowed to resume, however it was too late to catch up on the outstanding deliverables. A revised implementation plan was submitted and approved for 2017/18.	
Total Annual Score					90.2%		

### 3.3 Challenges encountered by the NNR during 2016/2017

#### **Delayed appointment of the Board**

The Board of Director's term of office ended in December 2015, from which point the term was extended by shorter periods and continued for over a year until the new Board was appointed on the 7th of December 2016. The delay posed a challenge on long term planning and had a negative impact on corporate governance.

#### **Late approval of authorisation fees**

Delays in the approval of Authorisation fees impacted negatively on the financial planning for the period under review. The fees were approved on the last month of the financial year which forced the NNR to reprioritise planned activities resulting in the non delivery of some important activities such as employee training, public communication campaigns, bilateral cooperation engagements etc.

#### **Delays in finalisation of amendment to the Act**

The NNR has embarked in a process for updating the Act over the past three financial periods. This process is very important in ensuring alignment of our regulatory regime to the international standards incorporating recent developments in the nuclear industry globally such as Japan's Fukushima Daiichi nuclear accident. The review of NNR regulations in line with the revised Act is crucial for ensuring regulatory effectiveness in line with international trends and best practices.

#### **Harmonisation of the regulation of radioactive sources**

This process is ongoing with slow progress made during the period under review. The slow progress and uncertainty impacts negatively on the planning process for the Medium-Term Expenditure Framework (MTEF).

### 3.4 Linking performance with budgets

The table below indicates the resource allocations and the utilisation for all the key objectives, respectively

Table 8 : 2016-2017 performance with budgets

Programme	Code	Description	2016/2017		Variance Under (Over)	2015/2016		Variance Under (Over)
			Budget	Actual		Budget	Actual	
			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	Peronnel	41,967	39,845	2,122	37,883	36,417.12	1,466
		Good & Services	39,209	9,391	29,818	5,998	5,755.06	243
<b>Total</b>			<b>81,176</b>	<b>49,236</b>	<b>31,940</b>	<b>43,882</b>	<b>42,172.17</b>	<b>1,709</b>
To ensure effective implementation of nuclear security measures by authorisation holders	175 & 139	Peronnel	1,944	1,829	115	3,031	3,057.98	(27)
		Good & Services	720	624	96	795	637.05	158
<b>Total</b>			<b>2,664</b>	<b>2,453</b>	<b>211</b>	<b>3,826</b>	<b>3,695.03</b>	<b>131</b>
To establish an independent verification capability for the NNR	136 & 140	Peronnel	16,407	14,672	1,735	15,675	14,822.57	853
		Good & Services	5,537	4,512	1,026	3,734	5,728.35	(1,995)
<b>Total</b>			<b>21,944</b>	<b>19,184</b>	<b>2,760</b>	<b>19,409</b>	<b>20,550.92</b>	<b>(1,142)</b>
To provide assurance of safety performance of authorisation holders through inspections, audits, investigation and taking enforcement action for identified non -compliance	171 , 172. 173 and 174	Peronnel	26,706	24,034	2,672	26,332	24,291.18	2,041
		Good & Services	2,779	2,249	530	3,313	3,175.83	137
<b>Total</b>			<b>29,485</b>	<b>26,283</b>	<b>3,202</b>	<b>29,645</b>	<b>27,467.01</b>	<b>2,178</b>
Good governance	124, 125, 126, 127 and 128	Peronnel	12,435	11,327	1,108	13,035	12,067.36	967
		Good & Services	5,239	3,734	1,505	7,526	8,056.40	(530)
<b>Total</b>			<b>17,675</b>	<b>15,061</b>	<b>2,613</b>	<b>20,561</b>	<b>20,123.76</b>	<b>437</b>
Financial viability and sustainability	156 and 158	Peronnel	8,332	22,549	(14,217)	8,663	11,698.14	(3,035)
		Good & Services	24,522	26,599	(2,078)	11,959	29,387.33	(17,428)
<b>Total</b>			<b>32,853</b>	<b>49,148</b>	<b>(16,294)</b>	<b>20,622</b>	<b>41,085.46</b>	<b>(20,463)</b>
High performance culture, effective human capital management	141, 142 , 144 , 145, 155	Peronnel	6,244	5,136	1,108	5,506	5,910.04	(404)
		Good & Services	10,139	6,523	3,616	8,636	6,353.49	2,283
<b>Total</b>			<b>16,383</b>	<b>11,660</b>	<b>4,723</b>	<b>14,142</b>	<b>12,263.53</b>	<b>1,879</b>
Sound organisational infrastructure	143	Peronnel	2,391	2,569	(179)	2,285	2,283.77	1
		Good & Services	13,162	8,611	4,551	9,027	9,000.18	27
<b>Total</b>			<b>15,553</b>	<b>11,181</b>	<b>4,372</b>	<b>11,312</b>	<b>11,283.95</b>	<b>28</b>
Stakeholder relations and corporate image	129	Peronnel	2,385	2,370	15	2,277	2,319.14	(42)
		Good & Services	2,836	2,795	41	3,699	3,803.91	(105)
<b>Total</b>			<b>5,221</b>	<b>5,164</b>	<b>56</b>	<b>5,975</b>	<b>6,123.05</b>	<b>(148)</b>

**Table 9 : Revenue**

Sources of revenue	2016/2017			2015/2016		
	Budget	Actual	Variance over (Under)	Budget	Actual	Variance over (Under)
	R' 000	R' 000	R' 000	R' 000	R' 000	R' 000
Authorisation fees	156,676	161,755	(5,079)	143,739	147,443	(3,704)
State grant	40,936	40,936	-	21,487	21,487	-
Other income	25,342	21,808	3,534	4,148	12,430	(8,282)
Total	222,954	224,499	(1,545)	169,374	181,360	(11,986)

### 3.5 Summary of financial information

#### 3.5.1 Revenue Collection

The NNR is mainly funded from Authorisation Fees and State Grants (conditional and unconditional) in the form of transfers. As shown in Table 9, the NNR collected R162 million in Authorisation Fees which is 10% more than the previous financial year. This is less than the 12% approved for the year due to the reduction in regulated activities on the Necsa site. The appropriated funds transferred from the fiscus for the year was R41 million, growing by 91% from R 21 million received in the previous financial year. This amount included ring fenced funding of R24 million which was provided to secure cash flow for processing Eskom's Nuclear Installation License (NISL) application.

Other income increased by 75% from the previous financial year to R 22 million. This increase was mainly attributed to Application Fees recovered from ESKOM's NISL invoice for work done during the year under review.

**Table 10 : Programme Expenditure for support services, Standards, authorisations, reviews and assessment, Compliance assurance and enforcements**

Programme	Code	Description	2016/2017			2015/2016		
			Budget	Actual	Variance Under (/Over)	Budget	Actual	Variance Under (/Over)
Administration	124-129; 141-145; 156-158	Personnel	31,786	43,951	(12,164)	31,766	34,278	(2,512)
		Goods & services	55,647	48,236	7,412	39,157	56,050	(16,893)
	<b>Total</b>		<b>87,434</b>	<b>92,187</b>	<b>(4,752)</b>	<b>70,923</b>	<b>90,328</b>	<b>(19,405)</b>
Standards authorisations and review assessments	135-140, 155	Personnel	60,317	56,346	3,972	55,400	53,108	2,291
		Goods & services	45,466	14,554	30,913	12,065	10,435	1,630
	<b>Total</b>		<b>105,784</b>	<b>70,900</b>	<b>34,884</b>	<b>67,465</b>	<b>63,543</b>	<b>3,922</b>
Compliance assurance and enforcement	171-174	Personnel	26,706	24,034	2,672	27,521	25,480	2,041
		Goods & services	2,778	2,249	530	3,465	3,328	137
	<b>Total</b>		<b>29,484</b>	<b>26,283</b>	<b>3,202</b>	<b>30,986</b>	<b>28,808</b>	<b>2,178</b>

#### 3.5.2 Support services

This programme expenditure on compensation of employees for the year under review was R44 million which is 7% more than the previous financial year excluding provision of R9,7 million for bonuses. The 7% increase is attributed to annual cost of living adjustment negotiated and implemented during the year under review. The NNR entered into a three years agreement with the recognised labour union effective from 2015/16 financial year and therefore this was the 2nd year of implementation.



The division's financial performance on goods and services was R48 million which represent 13% under-expenditure attributed to savings on building maintenance, IT consultancy, Software and operational provision for Centre for Nuclear Safety and Security that was not utilised as planned due to delays in contracting with University of Pretoria as the host partner.

### 3.5.3 SARA

The division saved R4 million on compensation of employees which is 7% under-expenditure compared to the R60 million budgeted amount for the year. The under-expenditure is attributed to vacancies for positions created for NISL project and filled towards the end of the financial year.

The programme under-spent by 68% on goods and services due to activities that were not done as planned on Eskom's Koeberg Nuclear Power Station's Steam Generator replacement project. The Regulator review and assess license modification application for this process and oversee manufacturing of the components at the manufacture's plants. Delays in manufacturing therefore automatically have an impact on the regulatory programme.

### 3.5.4 CAE

This division achieved 90% expenditure on compensation of employees' budget amounting to R27 million thereby saving 10%. The saving is attributed to high vacancy rate experienced during the year as a number of employee were recruited by National Radioactive Waste Disposal Institute (NRWDI) during the year. The vacancies were subsequently filled towards the end of the year. In the same vain the division saved 19% on goods and services mainly on training and conferences as the remaining staff could not fulfil their planned annual programmes as they were short staffed.

**Table 11: The Capital investment, maintenance and asset management plan.**

Sources of revenue	2016/2017			2015/2016		
	Budget	Actual	Variance over (Under)	Budget	Actual	Variance over (Under)
	R' 000	R' 000	R' 000	R' 000	R' 000	R' 000
Regulatory emergency control centre	6,447	2,165	4,282	12,100	5,653	6,447
Cape Town office accomodation	11,497	708	10,789	11,700	203	11,497
<b>Total</b>	<b>17,944</b>	<b>2,873</b>	<b>15,071</b>	<b>23,800</b>	<b>5,856</b>	<b>17,944</b>

#### **The capital investment, maintenance and assets management plan.**

The Cape Town office accommodation project is continuing as planned. Installation of radiation detectors for regulatory emergency control center has been completed at identified sites and process of testing is ongoing.



# SECTION 4

## HUMAN RESOURCES MANAGEMENT



## **4.1 Overview**

During the period under review, the HR department continued to focus on refining and implementing elements of integrated talent management and on the development of HR documents in support of the NNR's Management System.

## **4.2 HR priorities and their impact for the period under review**

The management of competence within the NNR was the key focus, and competence profiles detailing the required qualifications, knowledge, skills and attributes were developed for all positions within the NNR. These profiles will be used to determine training and development gaps, career progression and the evaluation of jobs.

## **4.3 Workforce planning framework and key strategies to attract and recruit a skilled and capable workforce**

The NNR continued to support the ongoing development of employees to meet the future needs of the Regulator through bursaries and scholarships which are funded by international partners. The NNR's internship programme continued to grow during the reporting period. The NNR continued to leverage its relationships with other regulators and international funders to provide for the ongoing professional development of employees.

### **Challenges faced by the public entity**

The recruitment of experienced engineers continued to pose an industry-wide problem, however, the NNR has 12 engineering bursars who are expected to graduate from the end of 2017. These bursars have service obligations to the NNR on completion of their studies.

## **4.4 Employee performance management framework**

The employee performance management framework remained fully integrated and linked to the NNR's strategic objectives, thus ensuring synergy between organisational and individual performance.

## **4.5 Employee wellness programmes**

During the review period, the NNR continued to implement programmes focused on the physical and mental well-being of employees.

## **4.6 Policy development**

In line with the integrated management system of the NNR, several policies and processes were reviewed and updated i.e. HR Management Policy Career Progression Process, Training and Development Process, Individual Performance Management Process, Remuneration Framework and Process, Employment Equity Process, Employee Wellness Framework, Disciplinary Process and Grievance Process.

## 4.7 HR oversight statistics

**Table 12: Employee cost by salary band**

Level	Personnel Expenditure	% of Employee Expense to total Personnel Cost	No. of Employees	Average Personnel Cost per Employee
Top management (F)	2 688	2%	1	2 688
Senior management (E)	1 903	2%	1	1 903
Professional qualified (D)	98 550	78%	89	1 107
Skilled (C)	19 814	16%	43	461
Semi-skilled (B)	931	1%	4	233
Interns	1 776	1%	17	104
<b>TOTAL</b>	<b>125 662</b>	<b>100</b>	<b>155</b>	<b>811</b>

**Table 13: Performance rewards**

Category	Performance Rewards	Employee Expenditure	% of Performance Rewards to total Employee Cost
Top management	146	125 662	0%
Senior management	-	125 662	0%
Professional qualified	4 679	125 662	4%
Skilled	9 37	125 662	1%
Semi-skilled	35	125 662	0%
Interns	-	125 662	0%
<b>TOTAL</b>	<b>5 798</b>	<b>125 662</b>	<b>5%</b>

**Table 14: Employment and Vacancies**

Category	2015/16 No. of Employees	2016/17 No. of Employees	2016/17 Vacancies	% Vacancies of total Planned Employees for 2016/17
Top management (F)	0	1	0	0%
Senior management (E)	3	2	0	0%
Professional qualified (D)	85	83	10	6%
Skilled (C)	37	36	4	2.5%
Semi-skilled (B)	4	4	0	0
Interns	16	12	10	6%
<b>TOTAL</b>	<b>145</b>	<b>138</b>	<b>24</b>	<b>14.5%</b>



**Table 15: Employment changes**

Salary Band	Employment at beginning of period	Appointments	Terminations	Employment at the end of the period
Top management (F)	0	0	0	1
Senior management (E)	3	0	0	2
Professional qualified (D)	85	4	6	83
Skilled (C)	37	6	7	36
Semi-skilled (B)	4	0	0	4
Interns	16	2	6	12
<b>Total</b>	<b>145</b>	<b>12</b>	<b>19</b>	<b>138</b>

**Table 16: Reasons for employees leaving**

Reason	Number	% of total no. of employees leaving
Death	0	0
Resignation	14	10%
Dismissal	0	0
Retirement	0	0
Ill health	0	0
Expiry of contract	5	3%
Other	0	0
<b>Total</b>	<b>19</b>	<b>13%</b>

**Table 17: Employee Relations: Misconduct and Disciplinary Action**

Nature of Disciplinary Action	Number
Verbal warning	0
Written warning	0
Final written warning	0
Dismissal	0

**Table 18: Equity Targets and Current Employment Equity Statistics (as per the EE report filed in October 2016)**

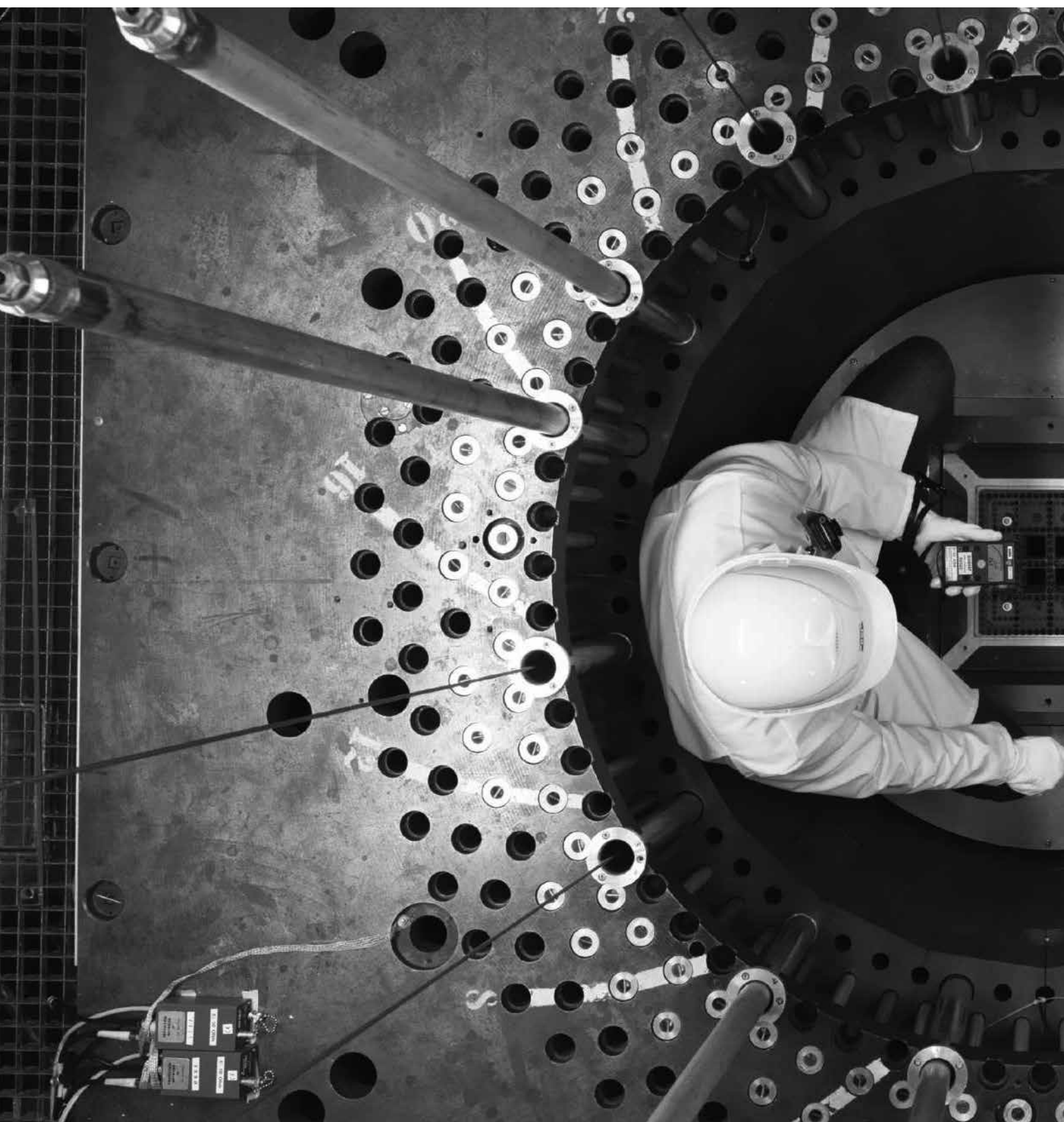
Levels	Male							
	African		Coloured		Indian		White	
	Current	Target	Current	Target	Current	Target	Current	Target
Top management	0	0	0	0	0	0	0	0
Senior management	1	1	1	1	0	0	0	0
Professional qualified	30	31	9	6	4	4	11	10
Skilled	8	10	0	0	0	0	0	0
Semi-skilled	8	1	0	0	0	0	0	0
<b>TOTAL</b>	<b>47</b>	<b>43</b>	<b>10</b>	<b>7</b>	<b>4</b>	<b>4</b>	<b>11</b>	<b>10</b>

**Table 19: Equity Targets and Current Employment Equity Statistics (as per the EE report filed in October 2016)**

Levels	Female							
	African		Coloured		Indian		White	
	Current	Target	Current	Target	Current	Target	Current	Target
Top management	0	0	0	0	0	0	0	0
Senior management	1	1	0	0	0	0	0	0
Professional qualified	19	21	0	1	2	2	3	2
Skilled	18	18	1	1	0	0	6	5
Semi-Skilled	9	3	0	0	0	0	1	0
<b>TOTAL</b>	<b>47</b>	<b>43</b>	<b>1</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>10</b>	<b>7</b>

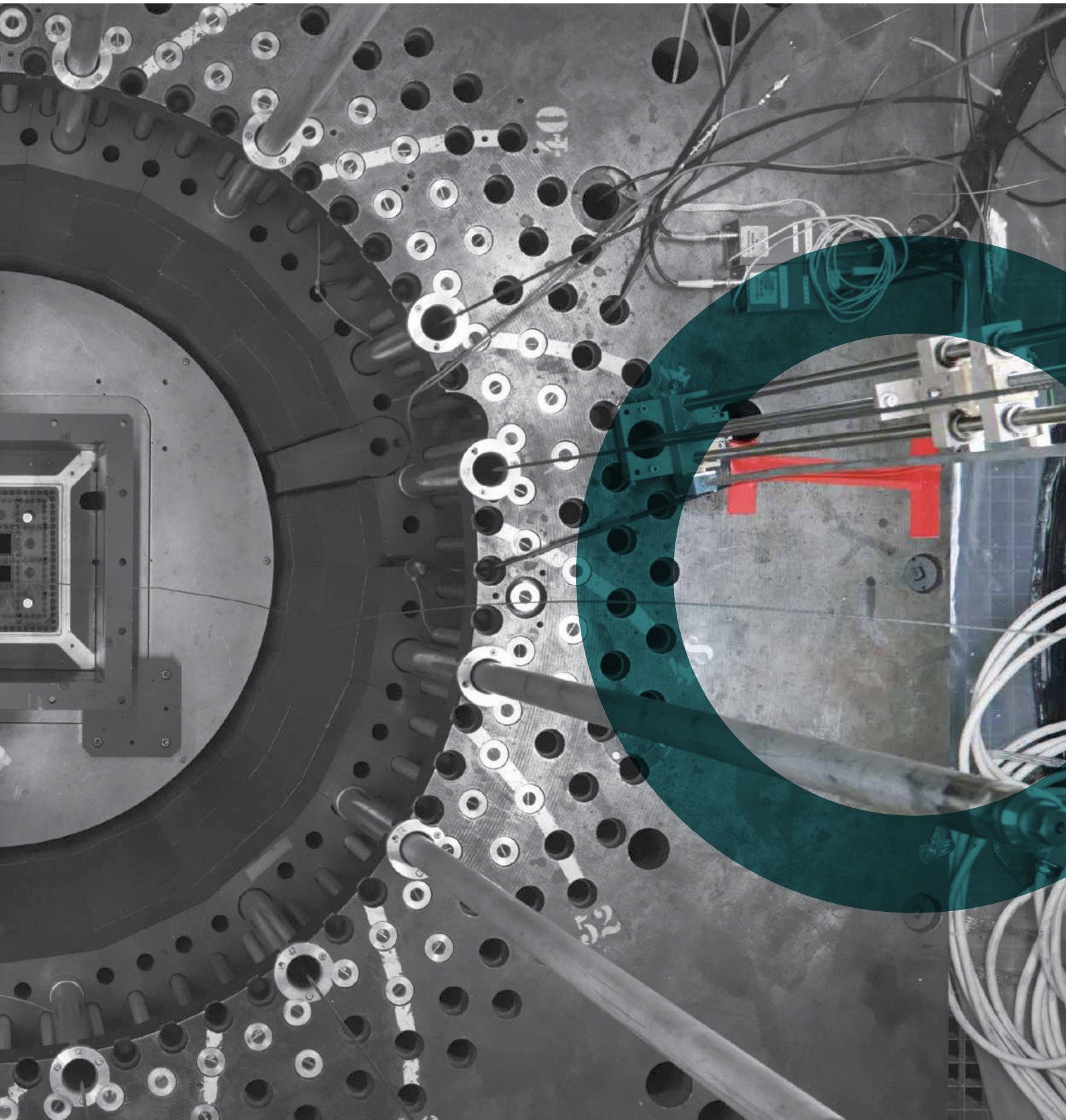
**Table 20: Staff with Disabilities**

Levels	Staff with Disabilities			
	Male		Female	
	Current	Target	Current	Target
Top management	0	0	0	0
Senior management	0	0	0	0
Professional qualified	1	1	0	0
Skilled	0	0	1	1
Semi-skilled	0	0	0	0
<b>TOTAL</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>



# SECTION 5

## REGULATION OF NUCLEAR ACTIONS





Nuclear safety regulation by the NNR is performed by two technical divisions, namely, SARA and CAE.

## 5.1 SARA division

The SARA division is primarily responsible for:

- Development of nuclear safety standards related to the core areas, such as radiation, nuclear waste and transport safety
- Development of nuclear security regulatory framework
- Granting authorisations for nuclear installations, nuclear vessels, mining and minerals processing facilities/activities, and certificates of exemption
- Conducting safety assessments for all actions, projects, and regulated activities through reviews and evaluations
- Managing special nuclear-related projects of a regulatory nature

## 5.2 CAE division

The CAE Division is primarily responsible for:

- The management of all CAE activities, processes and programmes for regulated nuclear technologies and actions at the NNR
- Ensuring the establishment of effective and efficient systems related to CAE activities., These include conducting compliance assurance inspections, audits, investigations, surveillances, environmental monitoring and sampling activities

## 5.3 List of Authorisations active for the period under review

Authorisation No.	Var	Nuclear facilities	Date Issued	B#
NIL-01	18	Koeberg Nuclear Power Station	08-Oct-13	-
NIL-02	3	SAFARI - 1 Research Reactor	21-May-12	NIL02B0296
NIL-03	1	P2700 Complex	04-May-12	NIL03B0041
NIL-04	0	Thabana Complex comprising the following facilities - <ul style="list-style-type: none"> <li>• Thabana Pipe Store</li> <li>• Thabana Radioactive Waste Storage facility</li> <li>• Thabana Containerised Radioactive Waste Storage facility</li> <li>• CaF2 Ponds</li> </ul>	30-Oct-09	NIL04B0001
NIL-05	1	HEU Vault – K0090	04-May-12	NIL05B0004
NIL-06	0	A-8 Decontamination Facility	11-May-10	NIL06B0001
NIL-07	0	Building A-West Drum Store	09-Feb-09	NIL07B0001
NIL-08	1	ELPROD in Building P-2500	04-May-12	NIL08B0039
NIL-09	1	UMET in Building P2600	28-Oct-11	NIL09B0004
NIL-10	0	Conversion Plant Complex	05-Aug-10	NIL10B0001
NIL-11	1	Area 14 waste management Complex	18-Apr-11	NIL11B0009
NIL-12	0	Quarantine Storage Facility	08-Oct-09	NIL12B0001
NIL-13	0	V-YB Pelindaba East Bus Shed Complex	30-Oct-09	NIL13B0001
NIL-14	0	Pelindaba East Evaporation Ponds Complex	30-Oct-09	NIL14B0001
NIL-15	0	Oil Purification Facility	30-Oct-09	NIL15B0001
NIL-16	0	Area 21 Storage Facility	11-May-10	NIL16B0001
NIL-17	0	BEVA K3 Storage Complex	02-Nov-09	NIL17B0001
NIL-18	0	Area 16 Complex	11-May-10	NIL18B0001

Authorisation No.	Var	Nuclear facilities	Date Issued	B#
NIL-19	1	Area 40 Complex	01-Nov-11	NIL19B0012
NIL-20	0	Area 27 De-Heeling Facility	11-May-10	NIL20B0001
NIL-21	0	J-Building	24-Nov-09	NIL21B0001
NIL-22	0	D-Building	05-Aug-10	NIL22B0001
NIL-23	0	C-Building	12-May-10	NIL23B0001
NIL-24	0	Building P-2900	24-Nov-09	NIL24B0001
NIL-25	0	Building XB	11-May-10	NIL25B0001
NIL-26	0	BEVA Evaporation Ponds	11-Jan-10	NIL26B0001
NIL-27	0	Building P-2800	11-May-10	NIL27B0001
NIL-28	1	Vaalputs National Radioactive Waste Disposal Facility	18-Apr-11	NIL28B0010
NIL-29	1	Area 26	03-Jul-13	NIL29B0027
NIL-30	0	E-Building	05-Aug-10	NIL30B0001
NIL-31	0	Dorbyl Camp	25-Oct-10	NIL31B0001
NIL-32	0	X-Building	25-Oct-10	NIL32B0001
NIL-33	0	Building P-1500	25-Oct-10	NIL32B0001
NIL-34	0	YM Vacuum Workshop	05-Aug-10	NIL34B0001
NIL-35	0	V-H Building Laboratories	25-Oct-10	NIL35B0001
NIL-36	0	P-1900 Laboratories	05-Aug-10	NIL36B0001
NIL-37	0	P-1600 Laboratories	16-Sep-10	NIL37B0001
NIL-38	0	Fuel Development Laboratories Complex	16-Sep-10	NIL38B0001
NIL-39	0	NTP Radiochemicals Complex	06-Aug-10	NIL39B0001
NIL-40	0	Pelindaba Analytical Laboratories (PAL) in Building BEVA-E1	05-Aug-10	NIL40B0001
NIL-41	1	Liquid Effluent Treatment Facility Complex	24-Feb-11	NIL41B0006
NIL-42	0	B-1 Building Basement	20-Jan-12	NIL42B0001

**Table 21: List of NNR Authorisations**

	COR Number	Name of COR Holder	Type of COR Issued
1	COR-2	Anglogold Ashanti Limited: Vaal River Operations	Mining and Mineral Processing
2	COR-3	Anglogold Ashanti Limited - West Wits Operations	Mining and Mineral Processing
3	COR-5	ARMgold/Harmony Freegold Joint Venture Company (Pty) Ltd (Tshepong, Matjhabeng & Bambani Operations)	Mining and Mineral Processing
4	COR-6	ARMgold/Harmony Freegold Joint Venture Company (Pty) Ltd (Joel operation)	Mining and Mineral Processing
5	COR-7	African Rainbow Minerals Gold Limited (Welkom Operations)	Mining and Mineral Processing
6	COR-10	Avgold Limited - Target Division	Mining and Mineral Processing
7	COR-11	Gravelotte Mines Limited	Mining and Mineral Processing
8	COR-13	MTC Demolition	Scrap Processor
9	COR-16	Nuclear Fuels Corporation of SA (Pty) Limited	Mining and Mineral Processing
10	COR-18	South Deep Join Venture	Mining and Mineral Processing
11	COR-20	Foskor Limited (Phalaborwa)	Mining and Mineral Processing
12	COR-22	Fer-Min-Ore (Pty) Limited (Zirtille Milling)	Mining and Mineral Processing



	COR Number	Name of COR Holder	Type of COR Issued
13	COR-23	Steenkampskraal Monazite Mine (Pty) Limited	Mining and Mineral Processing
14	COR-25	Eggerding SA (Pty) Limited	Mining and Mineral Processing
15	COR-26	Richards Bay Iron and Titanium (Pty) Limited	Mining and Mineral Processing
16	COR-27	Foskor Limited (Richards Bay)	Fertiliser manufacturer
17	COR-28	Randfontein Estates Limited-(Kusasaletheu)	Mining and Mineral Processing
18	COR-30	Mine Waste Solutions (Pty) Limited	Mining and Mineral Processing
19	COR-31	Ya-Rona Scrap Metals	Scrap Processor
20	COR-32	CJN Scrap	Scrap Processor
21	COR-33	Rampete Metal Processors (Pty) Ltd	Scrap Processor
22	COR-34	DMC Energy (Pty) Limited	Mining and Mineral Processing
23	COR-37	Harmony Gold Mining Company Limited (Free State Operations)	Mining and Mineral Processing
24	COR-38	Omnia Phosphates (Pty) Ltd	Fertiliser manufacturer
25	COR-40	ARMgold/Harmony Freegold Joint Venture Company (Pty) Ltd (St Helena Operations)	Mining and Mineral Processing
26	COR-41	Blyvooruitzicht Gold Mining Company Limited	Mining and Mineral Processing
27	COR-43	Tronox KZN Sands	Mining and Mineral Processing
28	COR-47	Grootvlei Properties Mines Ltd	Mining and Mineral Processing
29	COR-48	DRDGOLD Limited	Mining and Mineral Processing
30	COR-50	Rappa Resources (Pty) Limited	Mining and Mineral Processing
31	COR-51	Consolidated Modderfontein (Pty) Limited	Mining and Mineral Processing
32	COR-52	Nigel Gold Mining Company Limited	Mining and Mineral Processing
33	COR-53	East Rand Proprietary Mines Limited	Mining and Mineral Processing
34	COR-57	Crown Gold Recoveries (Pty) Limited	Mining and Mineral Processing
35	COR-58	Harmony Gold Mining Company Limited - Randfontein Operations	Mining and Mineral Processing
36	COR-59	Industrial Zone Limited	Mining and Mineral Processing
37	COR-61	Sedex Minerals (Pty) Ltd	Mining and Mineral Processing
38	COR-64	Potchefstroom Plastiek Herwinning BK	Scrap Processor
39	COR-66	Mintek	Small user
40	COR-69	Sibanye Gold Limited (Driefontein Operations)	Mining and Mineral Processing
41	COR-70	Sibanye Gold Limited (Kloof Operation)	Mining and Mineral Processing
42	COR-71	Sibanye Gold Limited (Beatrix Operation)	Mining and Mineral Processing
43	COR-77	Anglo American Research Laboratories (Pty) Limited	Small user
44	COR-74	Durban Roodepoort Deep Mine	Mining and Mineral Processing
45	COR-79	Durban Roodepoort Deep Limited	Mining and Mineral Processing
46	COR-80	Mogale Gold (Pty) Ltd	Mining and Mineral Processing
47	COR-81	Metrec (Pty) Limited	Mining and Mineral Processing
48	COR-84	The Big Bin CC	Scrap Processor
49	COR-86	Glenover Phosphate Limited (Mining Site) Operation	Mining and Mineral Processing
50	COR-87	Rand Refinery Limited	Mining and Mineral Processing
51	COR-92	The Forensic Science Laboratory, SA Police	Small user
52	COR-95	Microzone Trading 69 CC	Scrap Processor
53	COR-97	Geratech Zirconium Beneficiation (Ltd)	Mining and Mineral Processing

	COR Number	Name of COR Holder	Type of COR Issued
54	COR-98	B G Scrap Metals (Pty) Ltd	Scrap Processor
55	COR-100	South African Airforce (SAAF),Department of Defence (DoD), RSA	Mining and Mineral Processing
56	COR-101	The Reclamation Group (Pty) Ltd (Richards Bay)	Scrap Processor
57	COR-103	Linbeck Metal Trading (Pty) Ltd	Scrap Processor
58	COR-104	South African Port Operations (Dry Bulk Terminal - Richards Bay a Division of Transnet Limited)	Mining and Mineral Processing
59	COR-105	Tantilite Resources (Pty) Ltd	Mining and Mineral Processing
60	COR-106	Mineral Sands Resources Pty Ltd	Mining and Mineral Processing
61	COR-107	Vesuvius South Africa (Pty) Ltd	Mining and Mineral Processing
62	COR-109	SM Mining Construction Pty Ltd	Mining and Mineral Processing
63	COR-110	Geotron Systems (Pty) Ltd	Small User
64	COR-111	Bosveld Phosphate (Pty) Ltd	Fertiliser Manufacturer
65	COR-112	Scaw Metals Group	Scrap Processor
66	COR-114	Interwaste Pty Ltd	Scrap Processor
67	COR-115	Witswatersrand Consolidated Gold Resources Limited	Mining and Mineral Processing
68	COR-116	Business Venture Investment 1692 Proprietary Limited	Mining and Mineral Processing
69	COR-117	Vic Ramos CC	Scrap Processor
70	COR-118	GoldPlats Recovery Ltd	Mining and Mineral Processing
71	COR-131	East Rand Beneficiation (Pty) Ltd	Mining and Mineral Processing
72	COR-135	Tioxide SA (Pty) Ltd	Mining and Mineral Processing
73	COR-136	Thukela Refractories Isithebe (Pty) Ltd	Mining and Mineral Processing
74	COR-137	Manos Engineering (Pty) Ltd	Scrap Processor
75	COR-138	Bright Refining (Pty) Ltd	Mining and Mineral Processing
76	COR-139	The New Reclamation Group (Westonaria Operations)	Scrap Processor
77	COR-140	China African Precious Metals (Pty) Ltd	Mining and Mineral Processing
78	COR-141	Palabora Copper (Pty) Ltd	Mining and Mineral Processing
79	COR-142	Pan African Resources - Evander Gold Mining	Mining and Mineral Processing
80	COR-143	Zirco Roode Heuwel	Mining and Mineral Processing
81	COR-144	Scamont Engineering (Pty) Ltd	Scrap Processor
82	COR-145	Re-Process Technology CC	Mining and Mineral Processing
83	COR-148	Saldanha Dry Bulk Terminal CC	Service Provider
84	COR-149	Cronimet RSA (Pty) Ltd	Scrap Processor
85	COR-150	Minrite (Pty) Ltd	Mining and Mineral Processing
86	COR-151	Covalent Water Company (Pty) Ltd	Mining and Mineral Processing
87	COR-152	SGS South Africa (Pty) Ltd (Cooke operations)	Small User
88	COR-153	Resource Reference Materials (Pty) Ltd	Small User
89	COR-159	North West Reclaiming	Scrap Processor
90	COR-160	Shiva Uranium One	Mining and Mineral Processing
91	COR-164	Sulzer Pumps (SA) Limited	Service Provider
92	COR-165	Lukisa JV Company (Pty) Ltd	Mining and Mineral Processing
93	COR-167	Western Uranium (Pty) Ltd	Mining and Mineral Processing
94	COR-178	Durban Container Terminal - Business Unit of SA Port Operations	Mining and Mineral Processing

	COR Number	Name of COR Holder	Type of COR Issued
95	COR-180	SA Port Operations - Container Terminal Cape Town	Mining and Mineral Processing
96	COR-181	Transnet Limited (SA Port Operations - Multipurpose Terminal, Saldanha Bay)	Mining and Mineral Processing
97	COR-182	Buffelsfontein Gold Mine Limited	Mining and Mineral Processing
98	COR-183	Tasman Pacific Minerals (Pty) Limited	Mining and Mineral Processing
99	COR-184	HVH Gold (Pty) Limited	Mining and Mineral Processing
100	COR-186	AfriSam (Pty) Limited	Mining and Mineral Processing
101	COR-190	Ezulwini Mining Company Ltd	Mining and Mineral Processing
102	COR-194	Exxaro Resources	Mining and Mineral Processing
103	COR-195	Houlgon Uranium & Power (Pty) Ltd	Mining and Mineral Processing
104	COR-197	Gold Reef City Theme Park	Mining and Mineral Processing
105	COR-198	Set Point Industrial Technologies (Pty) Ltd (Isando)	Small User
106	COR-199	Lukisa JV Company (Pty) Ltd	Mining and Mineral Processing
107	COR-200	Lukisa JV Company (Pty) Ltd	Mining and Mineral Processing
108	COR-201	A&S Mining Supplies	Service Provider
109	COR-203	Cemo Pumps (Pty) Ltd	Service Provider
110	COR-204	Holgoun Energy (Pty) Ltd	Mining and Mineral Processing
111	COR-210	Tasman Pacific Minerals (Pty) Limited	Mining and Mineral Processing
112	COR-215	Margaret Water Company	Mining and Mineral Processing
113	COR-216	Paddy's Pad 1183 (Pty) Ltd	Mining and Mineral Processing
114	COR-217	Cango Caves Oudtshoorn Municipality	Mining and Mineral Processing
115	COR-218	Grindrod Terminals (Pty) Limited	Mining and Mineral Processing
116	COR-219	Sibanye Gold Eastern Operations (Pty) Ltd	Mining and Mineral Processing
117	COR-220	African Empowered Aggregates CC	Mining and Mineral Processing
118	COR-221	Tasman Pacific Minerals (Pty) Limited	Mining and Mineral Processing
119	COR-225	New Kleinfontein Goldmine (Pty) Limited	Mining and Mineral Processing
120	COR-226	Rand Uranium (Pty) Limited	Mining and Mineral Processing
121	COR-227	WG Wearne Limited	Mining and Mineral Processing
122	COR-228	Ergo Mining (Pty) Limited	Mining and Mineral Processing
123	COR-229	The New Reclamation Group (Pty) Limited	Scrap Processor
124	COR-230	ALS Chemex South Africa (Pty) Limited	Small user
125	COR-232	Central Rand Gold South Africa (Pty) Limited (West)	Mining and Mineral Processing
126	COR-233	Central Rand Gold South Africa (Pty) Limited (East)	Mining and Mineral Processing
127	COR-236	Reclaim Invest 101 (Pty) Limited	Scrap Processor
128	COR-238	Tronox Mineral Sands (Pty) Ltd - Namakwa Sands Operations	Mining and Mineral Processing
129	COR-240	Tantus Trading 180 (Pty) Ltd	Mining and Mineral Processing
130	COR-242	Enviro Mzingazi Gypsum (Pty) Limited	Mining and Mineral Processing
131	COR-245	Namakwa Uranium (Pty) Limited	Mining and Mineral Processing
132	COR-246	NTP Logistics (Pty) Limited	Mining and Mineral Processing
133	COR-248	Foskor Zirconia (Pty) Limited	Mining and Mineral Processing
134	COR-249	Pro Mass Transport (Pty) Ltd	Mining and Mineral Processing
135	COR-250	JCI Gold Limited	Mining and Mineral Processing
136	COR-252	Harmony Gold Mining Company Limited (South Operations)	Mining and Mineral Processing

	COR Number	Name of COR Holder	Type of COR Issued
137	COR-253	Avgold Limited (North Operations)	Mining and Mineral Processing
138	COR-255	Genalysis Laboratory Services (SA) (Pty) Limited	Small User
139	COR-256	Chifley Trading CC	Service Provider
140	COR-257	Samco Investments (Pty) Limited	Scrap Processor
141	COR-258	SA Metal and Machinery Co (Pty) Limited	Scrap Processor
142	COR-260	African Mineral Standards (a division of Set Point Industrial Technology (Pty) Ltd)	Small User
143	COR-261	North West University	Mining and Mineral Processing
144	COR-262	UIS Analytical Services (Pty) Ltd	Small User
145	COR-263	Aklin Carbide (Pty) Ltd	Service Provider
146	COR-264	Umhlathuze Imports & Exports	Service Provider
147	COR-265	Tau Lekoa Gold Mine (Pty) Ltd	Mining and Mineral Processing
148	COR-266	Nicolor (Pty) Ltd	Mining and Mineral Processing
149	COR-267	SGS South Africa (Pty) Ltd - (Randburg Operations)	Small User
150	COR-268	Far East Gold Special Purposes Vehicle (Pty) Ltd	Mining and Mineral Processing
151	COR-269	Newshelf 1186 (Pty) Ltd	Mining and Mineral Processing
152	COR-270	Trans-Med Shipping	Service Provider
153	COR -156	Necsa Calibration Pads	Small User

Table 17: List of NNR Authorisations

## 5.4 Regulation of nuclear power plants – KNPS

KNPS is currently the only nuclear power station in South Africa and on the African continent. It is located on the West Coast of South Africa and is 35 km north of Cape Town. Koeberg is owned and operated by South Africa's national electricity supplier Eskom. The two nuclear reactors at the power station form the entirety of the South African Nuclear Power Generation Programme. 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. The current Koeberg Nuclear Installation Licence, NIL-01 variation 18, contains 19 conditions, including specific licensing requirements and controls pertaining to;

- Plant description and configuration
- Scope of Activities that may be undertaken
- Maintenance and in-service inspection
- Effluent Management
- Environmental Monitoring
- Transport
- Quality Management
- Decommissioning
- Records Management and Reporting
- Medical Surveillance
- Public Safety Information Forums (PSIF)
- Inspection Programme to ensure compliance with Conditions of Authorisation
- Safety Assessment

- Controls and Limitations on Operation
- Operational Radiation Protection
- Waste Management
- Emergency Planning and Preparedness
- Physical Security
- Acceptance and Approval
- Organisational Change
- Plant modifications
- Radioactive Waste Management

In terms of section 26(2) of the 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 Act.

#### 5.4.1 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.

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. 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).

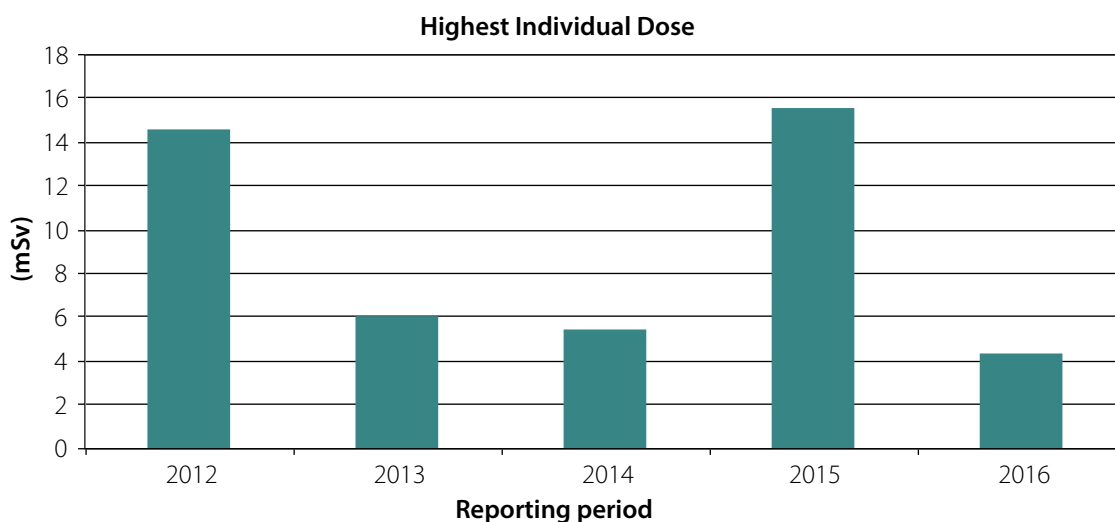


Figure 1: Highest Individual Occupational Exposure (2012-2016)

High doses in 2016 were attributed to Outages 122. The highest individual dose was 4.405 mSv for 2016 and was below the maximum effective dose of 50mSv as prescribed by the Regulation No 388 of 28 April 2006 on SSRPs (SSRP Regulations).

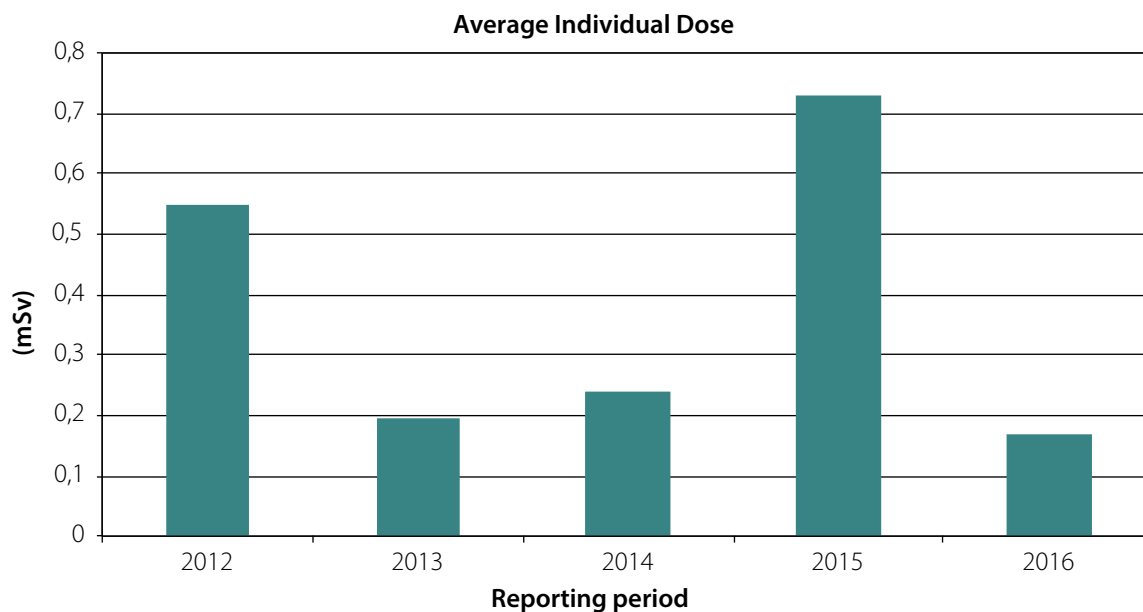


Figure 2: Average individual dose at KNPS (2012-2016)

The average individual dose between for 2012-2016 was below 20mSv per annum, averaged over five consecutive years as prescribed by the SSRP Regulations

#### 5.4.2 Projected public exposure to radiation

In accordance with the conditions of the licence and the SSRP, the public doses resulting from effluent discharges from the KNPS must comply with the dose constraint of 250  $\mu$ Sv/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) were well within the dose constraint for the 2016 calendar year. There were no safety concerns regarding the safety of the public living around KNPS during the period under review.

#### 5.4.3 Dose from effluent discharges during 2016

The projected public dose from effluent discharges for 2012-2016 are as shown in Fig. 3 below.



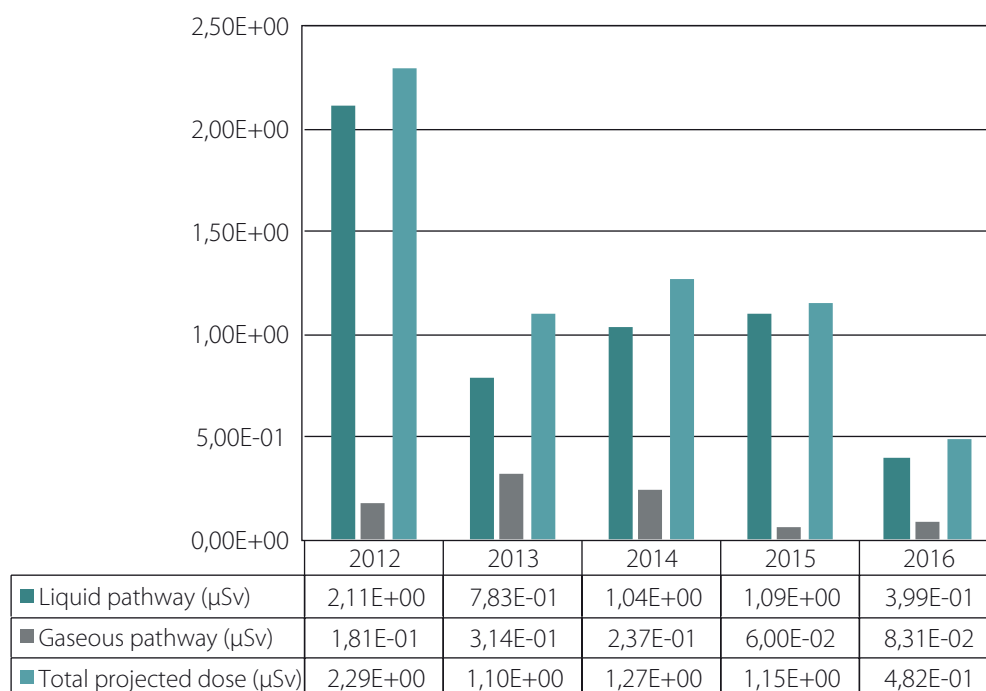


Figure 3: Projected public dose from effluent discharges (2012-2016)

The public doses resulting from effluent discharges between 2012 and 2016 are below 250 μSv/a and comply with the dose constraints prescribed by the SSRP Regulations.

#### 5.4.4. Nuclear safety

The authorisation holder's commitment to safety of the plant and operations have been confirmed by the inspections carried out. Where it has been observed that areas of weakness have occurred, these have been addressed by thorough investigation and the implementation of appropriate corrective actions. During the period under review, the NNR focused its safety assessment activities primarily on the areas summarised below:

##### i. Fukushima accident follow-up

Following the Fukushima Daiichi accident, Eskom performed a safety reassessment in response to a directive by the NNR. The Fourth Revision of the EE-SRA Status Update Report will be sent to the NNR by end of 2017. Eskom has subsequently implemented improvement actions that have been identified as part of the safety reassessment. These actions include short, medium and long term actions. Most of the short term actions have been completed, including the procurement of portable equipment with five diesel generators being successfully tested at the supplier. Also, seven new overhead lighting units were delivered to the site.

##### ii. Steam Generator Replacement (SGR)

During the year under review, the manufacturing of Replacement Steam Generators (RSGs) was progressed at various facilities, with most of the components being delivered to Shanghai Electric Nuclear Power Equipment (SENPEC) in China for their final assembly. The NNR appointed the services of an Authorised Inspection Agency (AIA) to monitor the manufacturing compliance with NNR requirements at the SENPEC site. Interfacing between the NNR and Eskom on the SGR project took place through special monthly SGR licensing meetings where outstanding issues were discussed and tracked.

##### iii. Refuelling water storage tank (PTR) replacement

The spent fuel water storage (PTR) tank is designed to ensure the initial simultaneous water supply to the engineered containment spray and safety injection systems after a loss of coolant accident for about 30 minutes.. The integrity and reliability of the PTR tank

is therefore of high importance to nuclear safety. The PTR tank located next to the fuel building was initially not protected against environmental conditions and is affected by atmospheric stress corrosion cracking. The aforesaid tank is now fully enclosed. The NNR reviewed and accepted the safety case justifying continued safe operation of the facility on condition that, amongst others, the tanks on both operating units are replaced during the 23<sup>rd</sup> refuelling outages. Eskom initiated a project to replace the PTR tanks on both units. During the year under review, the NNR continued its oversight of the replacement of the PTR tanks with manufacturing of the tanks progressing on site.

#### **iv. Strategy for long-term operation (LTO) project**

The current design life of KNPS comes to an end in 2025. Internationally, it has been recognised that there are significant economic benefits to extending the operational life span of nuclear power plants. Eskom has embarked on a programme to improve KNPS's current suite of ageing management programmes and to review and update the plants time limited ageing analyses.

The LTO Programme includes IAEA Safety Assessment of Long term Operation (SALTO) missions. In 2015 Eskom completed a pre-SALTO mission with the IAEA. The NNR also invited an IAEA expert mission to review the NNR safety standards long-term operation. Eskom indicated that they will seek NNR approval for the update of the licensing basis to operate KNPS safely beyond 40 years.

#### **v. Spent fuel dry storage**

The used fuel is currently stored in the spent fuel pools as well as four dry storage casks located in the Cask Storage Building (CSB). The spent fuel pool safety case requires that the used fuel assemblies have a minimum usage or burnup before being stored in the pool. Since KNPS has implemented a flexible reactor fuel management strategy, used fuel assemblies that do not comply with the minimum usage or burnup criteria must be stored in a checkerboard arrangement in the spent fuel pools. This resulted in a significant reduction in the available space to store used fuel assemblies.

Eskom has adopted a strategy to procure more casks as well as to establish an onsite Transient Interim Storage Facility. The NNR remained involved with evaluating the manufacturing of the casks and other contingency arrangements.

Phase 1 of the Spent Fuel Storage project entails the procurement of fourteen (14) HI-STAR 100 metal casks from Holtec. The manufacturing of casks is in progress. The NNR involvement includes the review of manufacturing documents as well as the implementation of NNR hold and witness points as deemed necessary. The CSB will also require modification to house the additional casks. Safety studies on suitability of CSB for cask storage are still to be submitted to the NNR. Eskom has recently submitted the safety justification for the use of the HI-STAR 100 metal casks. The HI-STAR 100 metal casks have been certified for use by the United States Nuclear Regulatory Commission (USNRC) and are being used extensively internationally, albeit in a vertical arrangement. Eskom plans to store the casks horizontally in the CSB.

As a contingency for the use of the metal casks, Eskom is pursuing the use of spent fuel inserts as an interim arrangement. The use of spent fuel inserts in the used fuel assemblies will lower the minimum usage or burnup criteria for used fuel to be stored in the spent fuel pools. This will eliminate the need to store these used fuel assemblies in a checkerboard arrangement, freeing up space for more fuel to be stored in the pools. The use of these inserts will require NNR approval.

#### **vi. Refuelling Outage 222**

Outage 222 on KNPS Unit 2 lasted for 36 days and was completed successfully

#### **5.4.5 Competency and sufficiency of the operator workforce to work safely**

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.

#### **5.4.6 Transport safety**

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

#### 5.4.7 Radioactive waste safety

707 steel drums were sent to Vaalputs during the 2016 calendar year.(See Fig 4). The NNR required Eskom to submit a safety assessment for the transport and disposal of waste packages in accordance with the revised Vaalputs Waste Acceptance Criteria.

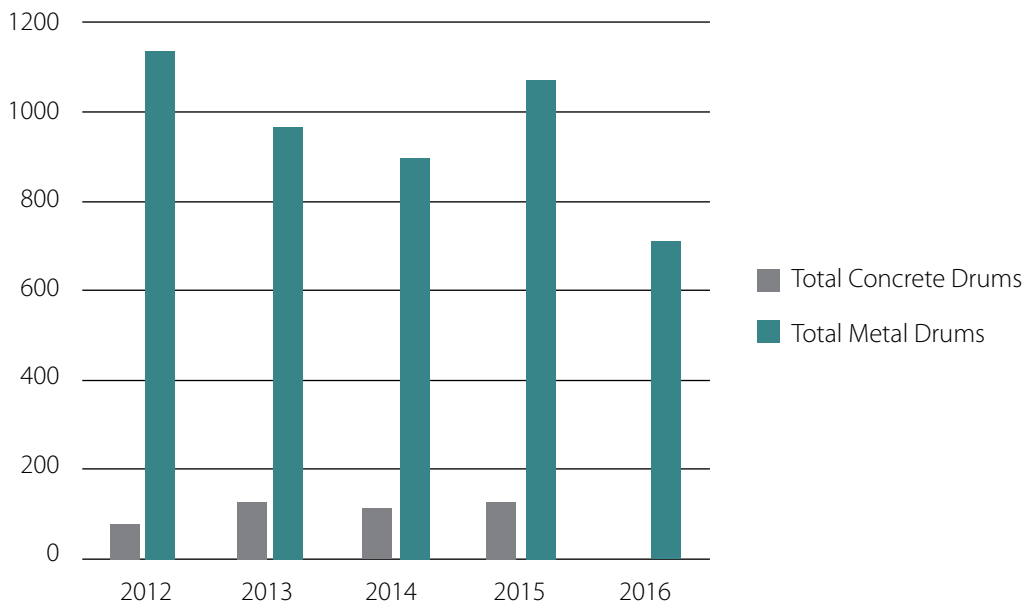


Figure 4: Inventory of solid radioactive waste produced and drummed for calendar years 2012-2016.

#### 5.4.8 Environmental protection

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

#### 5.4.9 Nuclear emergency planning and preparedness

The regulatory nuclear emergency exercise was conducted at KNPS on 9 November 2016.

The exercise identified 29 issues for correction or improvement by Eskom and the City of Cape Town.

At the time of reporting six issues were closed and 23 are outstanding. The NNR will continue to track and monitor the implementation of the corrective actions. The emergency exercise report concluded that the issues identified do not compromise the viability of the emergency plan.

#### 5.4.10 Physical security

There were no concerns regarding physical security at KNPS during the period under review. Both the NNR and the national key points' security functionaries monitor the physical security requirements at KNPS. As part of its Compliance Assurance Programme, the NNR conducted regular inspections at KNPS to verify conformance to licensing requirements pertaining to physical security. The inspections conducted indicated compliance with the regulatory requirements.

#### 5.4.11 Safety of sealed radioactive sources

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

#### 5.4.12 Nuclear incidents/accidents reported

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

#### 5.4.13 Regulatory compliance inspections

In order to verify the degree of compliance with the conditions of authorisation, the NNR undertakes independent inspections and audits. The NNR conducted 59 inspections and two audits at the KNPS as part of its compliance assurance activities in the year under review.

#### 5.4.14 Regulatory warnings and directives to stop work

Two directives were issued to Koeberg Nuclear Power Station in 2016. These related to:

- An inspection of the Fire Protection Programme revealed non-compliances that infringed on the Safety Analysis Report.
- An inspection of refuelling activities revealed non-compliance with quality and safety management requirements for informing all organisations of any revisions of procedures, specifications, instructions or drawings without delay.

#### 5.4.15 Appeals to the CEO

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

### 5.5 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 NEA, 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 1400 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 Act, Necsa 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 Act.

The nuclear facilities on the 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
- 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. In accordance with the conditions of the licence, Necsa is required to ensure that arrangements, acceptable to the NNR, are established and implemented with respect to the following aspects:

- Plant description and configuration
- Scope of Activities that may be undertaken
- Maintenance and in-service inspection
- Effluent Management
- Environmental Monitoring

- Transport
- Quality Management
- Decommissioning
- Records Management and Reporting
- Medical Surveillance
- PSIF
- Inspection Programme to ensure compliance with Conditions of Authorisation
- Safety Assessment
- Controls and Limitations on Operation
- Operational Radiation Protection
- Waste Management
- Emergency Planning and Preparedness
- Physical Security
- Acceptance and Approval
- Organisational Change
- Plant modifications
- Radioactive Waste Management
- Financial Liability for Nuclear Damage

GENERAL REGULATORY DOSE LIMITS PRESCRIBED BY THE NNR		
Workforce		Regulatory criteria
Maximum individual worker dose	Average individual worker dose	A (maximum) effective dose of 50mSv in any single year 20mSv per annum averages over 5 consecutive years. Controlled by application of the ALARA principle. The ALARA target for the annual dose is 4mSv

### 5.5.1 Occupational exposure to radiation

The worker doses at the Pelindaba site over the period under review were within regulatory limits. Radiation exposure of workers at the Pelindaba site is subject to control by the Operational Radiation Protection Programme. This programme ensures that control within the annual individual dose limit is achieved. In addition, the programme also serves to ensure that all doses are kept in line with ALARA targets.

The occupational exposure on the Pelindaba site was within the NNR regulatory requirements except for an individual who accrued 70.05mSv while performing work outside the country.

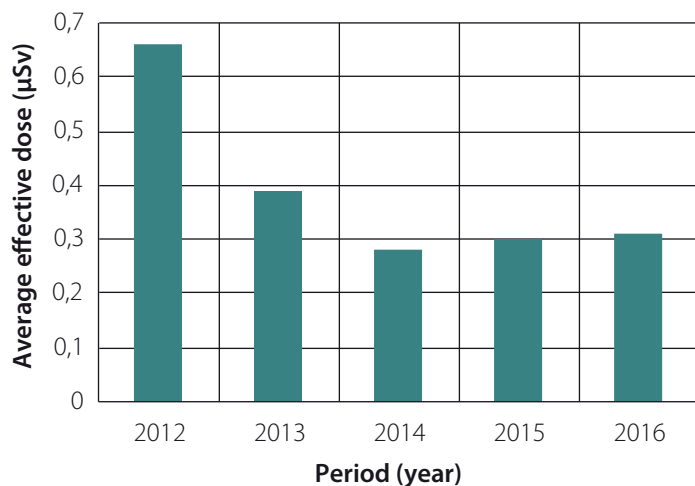


Figure 5: The average effective dose Pelindaba site (2012-2016)

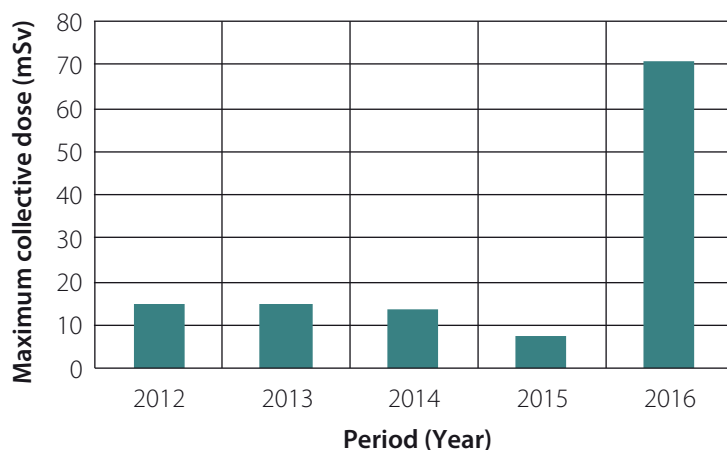


Figure 6: Maximum individual dose Pelindaba site 2012-2016

Average effective dose and maximum collective doses are shown in Fig 5 and 6. The reason for the high dose in 2016 is due to an individual who accrued 70.05 mSv while performing work outside of the country.

### 5.5.2 Projected public exposure

Conditions of licence and the SSRP Regulations, require that public doses resulting from effluent discharges from the Pelindaba site must comply with the dose constraint of 250 µSv per annum and the system of AADQs applicable to the site. Necsa demonstrated compliance with the AADQs. The projected public doses, resulting from the liquid and gaseous effluent releases during the past five years is as shown in Fig 7.



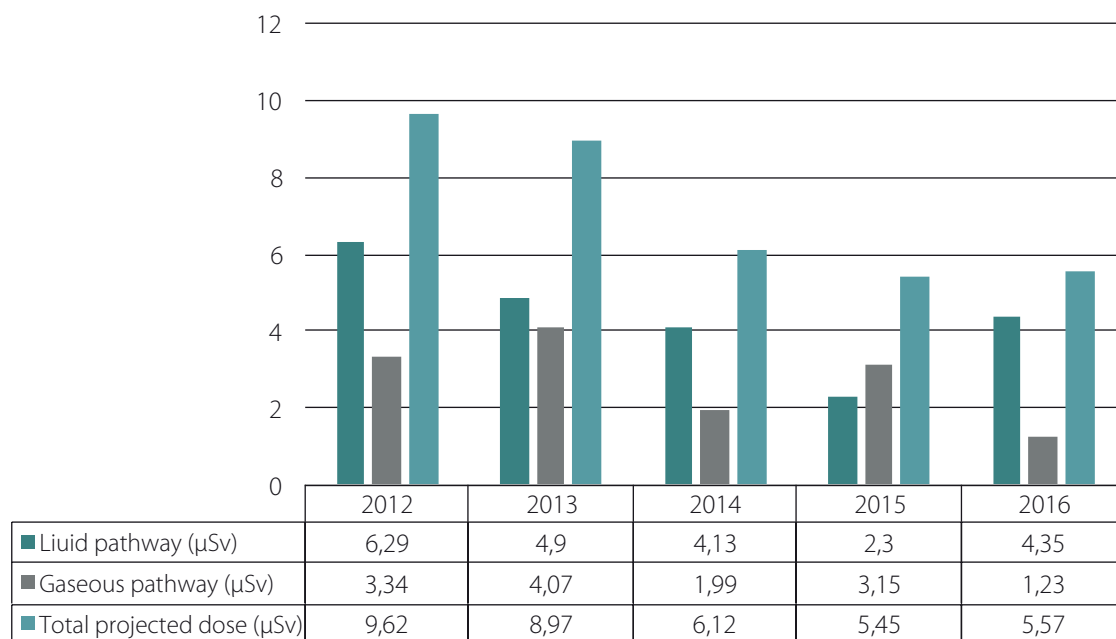


Figure 7: Projected public exposure of liquid and gaseous pathways for Necsa Pelindaba site 2012-2016

### 5.5.3 Nuclear safety

#### i. SAFARI-1 ageing management

Noting that the SAFARI-1 Research Reactor was commissioned in 1965, and that the expected operational life extends until 2030, the NNR required that Necsa develop and implement an ageing management strategy. The ageing management strategy proposed by Necsa entailed multiple projects that will span a few years. During the review period, the NNR reviewed Necsa submissions related to:

- Ageing Management Strategy for the SAFARI-1 Research Reactor
- Ageing Management Plan for the SAFARI-1 Research Reactor
- Master Management Plan for Ageing Management at the SAFARI-1 Research Reactor
- SAFARI-1 Gamma Safety Channel System Upgrade
- SAFARI-1 Neutron Control Channel Refurbishment
- SAFARI-1 Area Monitoring System Upgrade
- SAFARI-1 Gamma Flux Monitoring System Replacement
- SAFARI-1 Automatic Flux Controller Replacement

#### ii. SAFARI-1 modifications identified as part of the Fukushima reassessment

The initial safety reassessment of SAFARI-1 research reactor in light of Fukushima Daiichi nuclear accident identified a number of improvement actions and recommendations relating to plant modifications, severe accident management procedures, and suitability and compatibility of emergency response equipment. Necsa was required to undertake more detailed reassessment of these issues and to submit the results to the NNR.

The NNR reviewed and commented on Necsa submissions related to a number of SAFARI-1 safety systems.

#### iii. Facility specific Safety Analysis Reports (SAR)

The SAR serves to evaluate the performance of the systems of the facility and to demonstrate its safety, including risks to the workers and the public. The NNR reviewed and responded to Necsa on the SARs, related to the following nuclear facilities on the Pelindaba site:

- Capping of Calcium Fluoride Ponds 3 and 4 on Thabana
- Receiving and storing uranium containing effluent in Building A8
- The Volume Reduction Facility in Pelstore
- Proposed cylinder store in Area 16
- Operation of Cell 20 in the NTP Radiochemicals Complex (Building P-1701)
- Refurbishment of Cell 19 in the NTP Radiochemicals Complex (Building P-1701)
- Restoration of Cell 11 in the NTP Radiochemicals Complex (Building P-1701)
- Uranium residue project (Cell 2) in the NTP Radiochemicals Complex Building P-1701)

#### **iv. Review of Operating Technical Specifications (OTS)**

The OTS of a nuclear facility set the limits for the facility and outlines the operating envelope for the facility to safely operate within the design limits. The operational limits in an OTS must link the contents of the SAR of the facility with its operation.

The NNR reviewed and commented on the OTS for the following facilities on the Necsa Pelindaba site, during the reporting period:

- P2700 complex (UCHEM)
- AZF Building
- Wet and dry decontamination facilities in Building A
- Building P-2500 (ELPROD)
- Pelstore
- Proposed cylinder store in Area 16

#### **5.5.4 Transport safety**

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

Transport action undertaken by Necsa during the review period included:

- Transportation of low and intermediate level radioactive waste from the Necsa Pelstore on the Pelindaba site to Vaalputs National Waste Disposal Facility
- Transportation of calibration sources between the Necsa Pelindaba site and the Vaalputs National Radioactive Waste Disposal Facility
- Transportation of radioactive sources from external waste generators to the Pelindaba site for storage
- Transportation to safeguard samples from Pelindaba to the IAEA headquarters in Vienna, Austria
- Transportation of irradiated nuclear fuel from SAFARI-1 Research Reactor to the Thabana Pipe Store
- Import and transport to the Pelindaba site of SAFARI-1 fuel plates and uranium target plates for Molybdenum-99 production

##### *Approval of Transport Package Handling Instructions*

During the period under review the NNR reviewed and approved the following transport package handling instructions:

- Beatrice transport package certified as ZA/NNR 1005/B(U)
- Erika transport package certified as ZA/NNR 1009/B(U)

##### *Review of Package Design Approvals*

During the review period, the NNR reviewed and approved the package design for 210 litre metal waste packages originating from the Volume Reduction facility in Pelstore on the Necsa Pelindaba site. In addition, the NNR engaged with Necsa on the package design for the C5 NTP Concrete Waste Package.

### 5.5.5 Radioactive waste safety

There were no safety concerns regarding radioactive waste management on the Pelindaba site during the period under review.

#### *Modification to Cells 1 and 2 in the NTP Radiochemical Complex*

As part of radioactive waste management improvement and rationalisation project within the NTP Radiochemical Complex (Hot Cell Complex), Necsa had previously requested approval for modification of the utilisation of Cell 1 and 2 in the facility. Necsa proposed to use:

- Cell 1 as an interim store for the storage of uranium residue from the Mo-99 and I-131 radiopharmaceutical manufacture processes
- Cell 2 as an interim decay store for low density radioactive wastes and spent resin columns originating from the radiopharmaceutical manufacture processes in the facility

During the reporting period, the NNR monitored the implementation of the modification of Cells 1 and 2 in the NTP Radiochemical Complex. The modifications related to Cell 2 were completed and the NNR granted approval for hot commissioning of the Cell.

#### *Volume reduction plant in Pelstore*

During the reporting period, the NNR monitored the installation and cold commissioning activities of the volume reduction plant in the Pelstore, which is the centralised drum storage facility on the Pelindaba site.

### 5.5.6 Environmental protection

Samples were collected from various media in the environment around the Pelindaba site. The sampling locations were based on the surrounding land use. Samples were analysed and results were submitted to the NNR on a quarterly and annual basis. The sample media included:

- Air filter monitoring on the Pelindaba site
- Milk from surrounding farms
- Plant material in the surrounding area
- Water and fish samples from the Crocodile River and Hartbeespoort Dam

The analyses showed that there were no nuclear safety concerns regarding the environment around the Pelindaba site in the review period.

### 5.5.7 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. During the review period, there were no discrepancies identified in this process.

### 5.5.8 Nuclear emergency planning and preparedness

Following the regulatory emergency exercise of 9 September 2015, the NNR continued to monitor the progress of corrective actions.

The exercise identified 46 issues for correction or improvement by Necsa and the Madibeng Local Municipality. At the time of reporting 31 issues were closed and 15 remained open. The NNR will continue to track and monitor the implementation of the open corrective actions. The emergency exercise report concluded that the issues identified do not compromise the viability of the emergency plan.

### **5.5.9 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 NNR was satisfied that Necsa complied with the above requirements during the period under review.

### **5.5.10 Physical security**

There were no concerns regarding physical security of the Necsa Pelindaba site during the period under review.

### **5.5.11 Safety of sealed radioactive sources**

There were no safety concerns regarding sealed radioactive sources at Pelindaba site during the review period.

### **5.5.12 Nuclear incidents/accidents reported**

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

### **5.5.13 Regulatory compliance inspections**

NNR conducted 144 planned and 5 unplanned compliance inspections at Necsa's Pelindaba site during the 2016/17 financial year. Overall these inspections revealed satisfactory compliance with NNR regulations.

- Audits  
All three planned audits were conducted during the period under review. Some minor non-compliances were raised and satisfactorily addressed.
- Regulatory investigations  
There were no investigations conducted during the review period.

### **5.5.14 Nuclear events**

There were no nuclear events of concern reported during the review period.

### **5.5.15 Regulatory warnings or directives to stop work**

- A directive was issued to P2700 Complex (NIL-03) following a security inspection which revealed deficiencies
- A directive was issued to the LEMS facility (NIL-41) related to a lack of progress in addressing previous audit findings. Necsa has submitted corrective action plans to address both directives.

### **5.5.16 Appeals to the CEO or the Board**

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

## **5.6 Regulation of the Vaalputs National Radioactive Waste Disposal Facility**

The Vaalputs National Radioactive Waste Disposal Facility is located in the district of Kamiesberg in the Northern Cape Province. The farm, Vaalputs, covers an area of approximately 10 000 ha. The disposal site is situated in the western half and is 99.54 ha (900 m x 1 106 m) in extent, including a 200 m exclusion zone along the perimeter, in which waste disposal is not permitted. Vaalputs is currently authorised (Nuclear Installation Licence NIL-28) for the receipt and shallow land disposal of solid low level waste originating from the KNPS and Necsa.

The operational phase commenced in November 1986, and under the current nuclear programme is estimated to extend for 50 years up to 2036, which is also the estimated end of the operational period for the KNPS.

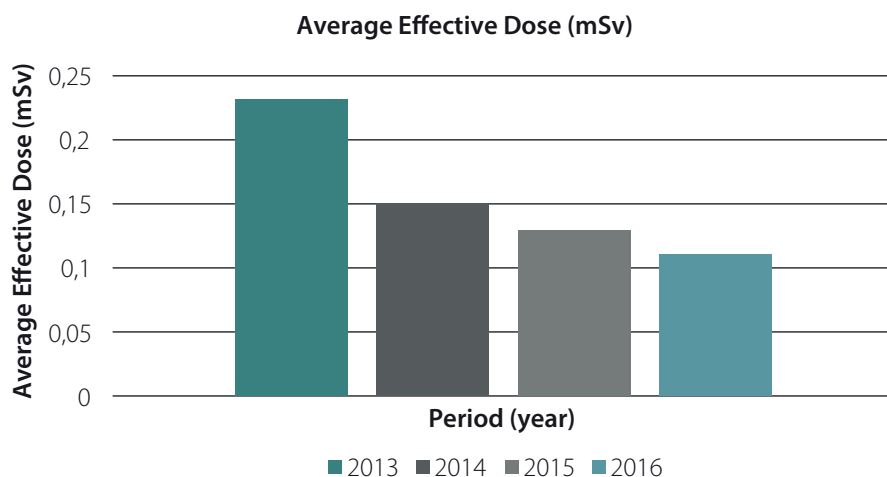


Figure 8: Average Effective Dose at Vaalputs site (2012-2016)

### 5.6.1 Occupational exposure to radiation

The worker doses at Vaalputs over the period under review were within regulatory limits (Fig 8). Radiation exposure of workers at Vaalputs 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 were in line with ALARA targets.

The maximum effective dose accrued for an individual during the 2016 calendar year is set out in Fig 9.

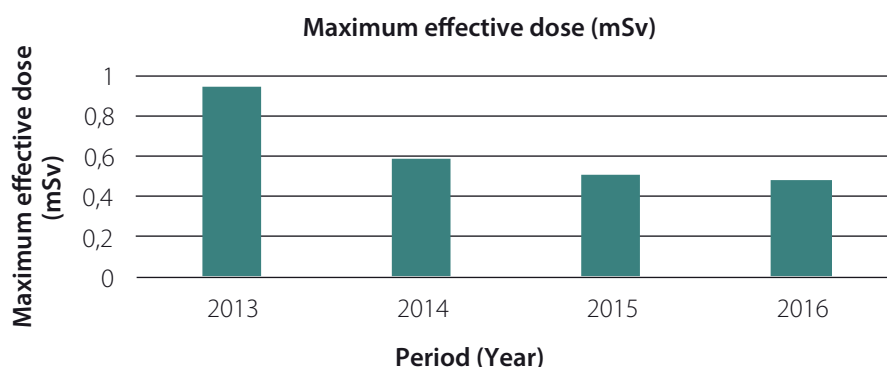


Figure 9: Maximum Effective Dose at the Vaalputs site (2012-2016)

### 5.6.2 Projected public exposure to radiation

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

### 5.6.3 Nuclear safety

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

- Vaalputs radiological environmental surveillance programme
- Vaalputs meteorological programme
- Vaalputs in-service Inspection and maintenance process

#### 5.6.4 Competency and sufficiency of Necsa's Vaalputs workforce to work safely

In addition to the requirements in the SSRP Regulations, the conditions of licence 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 licence. 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 during the review period.

#### 5.6.5 Transport safety

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

#### 5.6.6 Radioactive waste safety

The NNR performed pre-shipment inspections on the radioactive waste packages transported from KNPS to Vaalputs during 2016. The receiving and disposal of radioactive waste at Vaalputs was in conformance with the conditions of authorisation. NNR required Eskom to submit a safety assessment for the transport and disposal of waste packages in accordance with the revised Vaalputs Waste Acceptance Criteria (WAC).

The table below summarises the total nuclide inventory due to KNPS waste as received and decayed up to December 2016.

**Table 22: Total Activity as on 31 December 2016**

Trench	Number of waste packages	Total activity as on 31 December 2016	
		Receive	Decayed
A01	11 740	1.92E+05	3.13E+04
A02	840	4.07E+02	4.42E+01
A03	1 639	8.53E+02	3.98E+02
A04	1 079	6.99E+02	3.08E+02
A05	1680	2.22E+03	1.38E+03
A06	1829	1.93E+03	1.48E+03
A07	1276	1.08E+03	9.79E+02
B01	3 177	1.02E+05	2.08E+04
B02	400	1.89E+04	1.20E+04
B03	391	1.45E+04	1.14E+04
B04	23	7.15E+03	5.81E+03
<b>TOTAL</b>	<b>24074</b>	<b>3.42E+05</b>	<b>8.56E+04</b>

#### 5.6.7 Environmental protection

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

#### 5.6.8 Nuclear emergency planning and preparedness

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

#### 5.6.9 Physical security

There were no safety concerns regarding the physical security at Vaalputs during the period under review.

#### 5.6.10 Safety of sealed radioactive sources

There were no irregularities regarding sealed radioactive sources at Vaalputs during the period under review.



#### 5.6.11 Nuclear incident/accidents reported

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

#### 5.6.12 Regulatory compliance inspections

During the review period, 3 inspections and 1 audit were conducted. All inspections showed acceptable compliance with conditions of authorisation and regulations.

#### 5.6.13 Regulatory warnings or directives to stop work

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

#### 5.6.14 Appeals to the CEO or the Board

There were no appeals concerning Vaalputs during the review period.

### 5.7 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 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 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 certificate of registration (COR) or certificate of exemption (COE). The nuclear authorisation (i.e. COR or COE) is issued with certain conditions of authorisation which all holders are required to comply with. 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, clean-up of radiologically contaminated sites)

#### 5.7.1 Occupational exposure to radiation

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

- An (average) effective dose of 20 mSv per year averaged over five consecutive years
- A (maximum) effective dose of 50 mSv in any single year

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 holder 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.

### 5.7.2 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 NNR noted a slight improvement attributable to the compliance assurance measures enforced by the NNR in relation to the observed worker doses (see Fig 10 and 11).

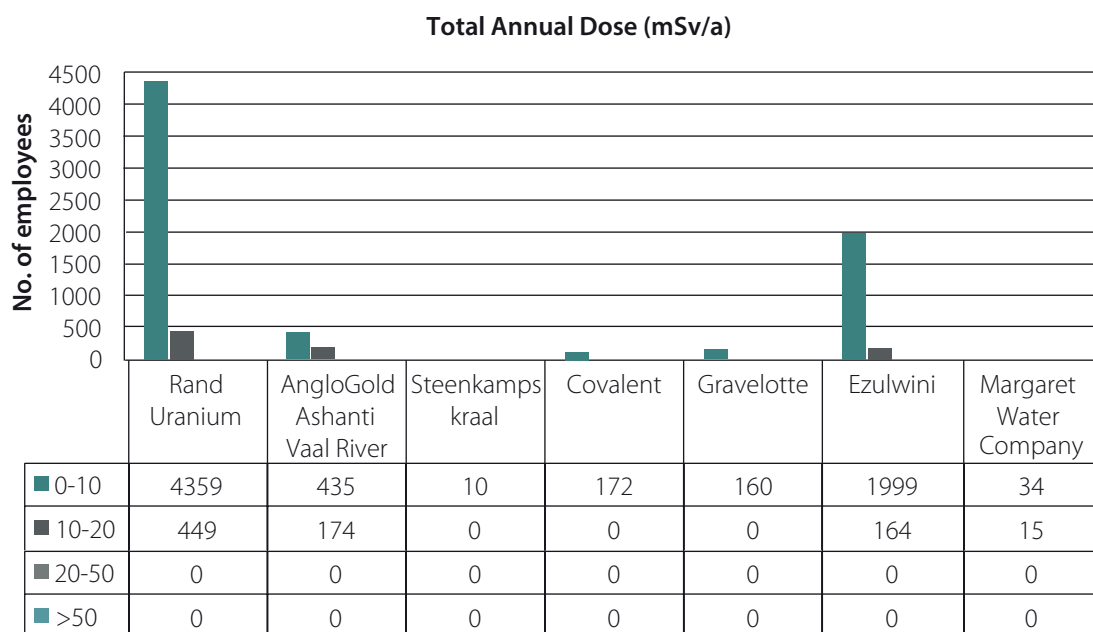


Figure 10: Total Annual effective dose for SCMs

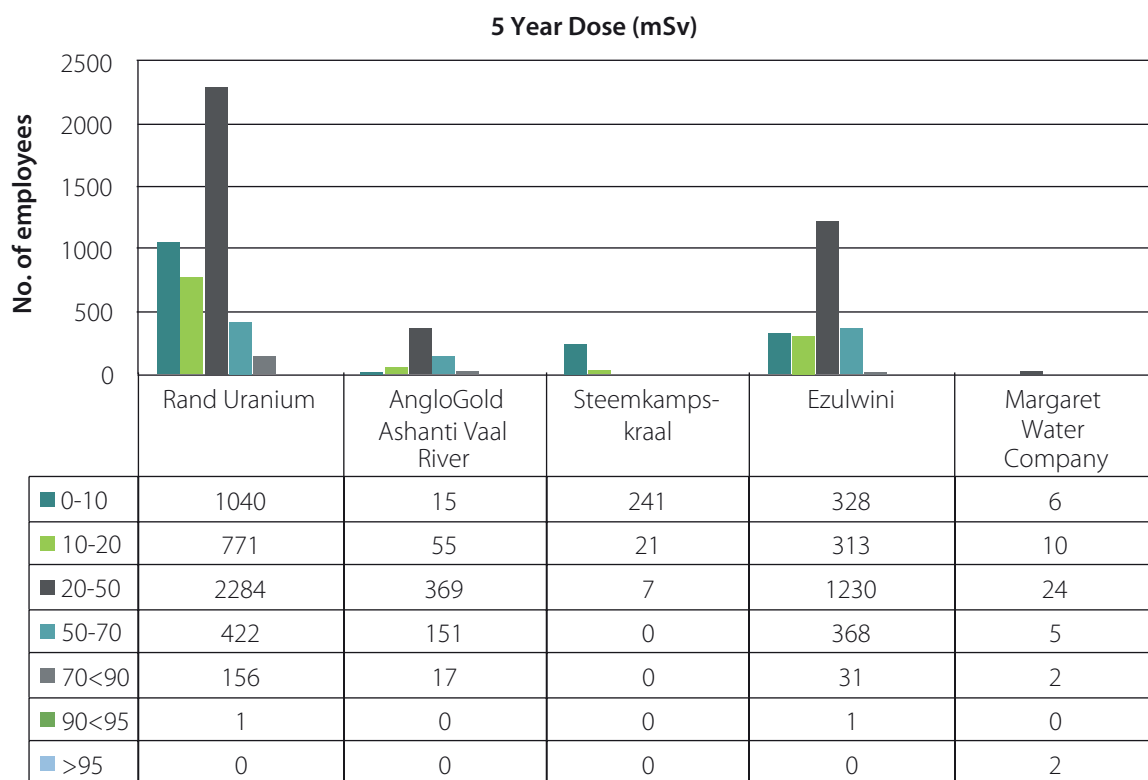


Figure 11: Five-year accumulative dose for SCMs

### 5.7.3 Non- SCMs

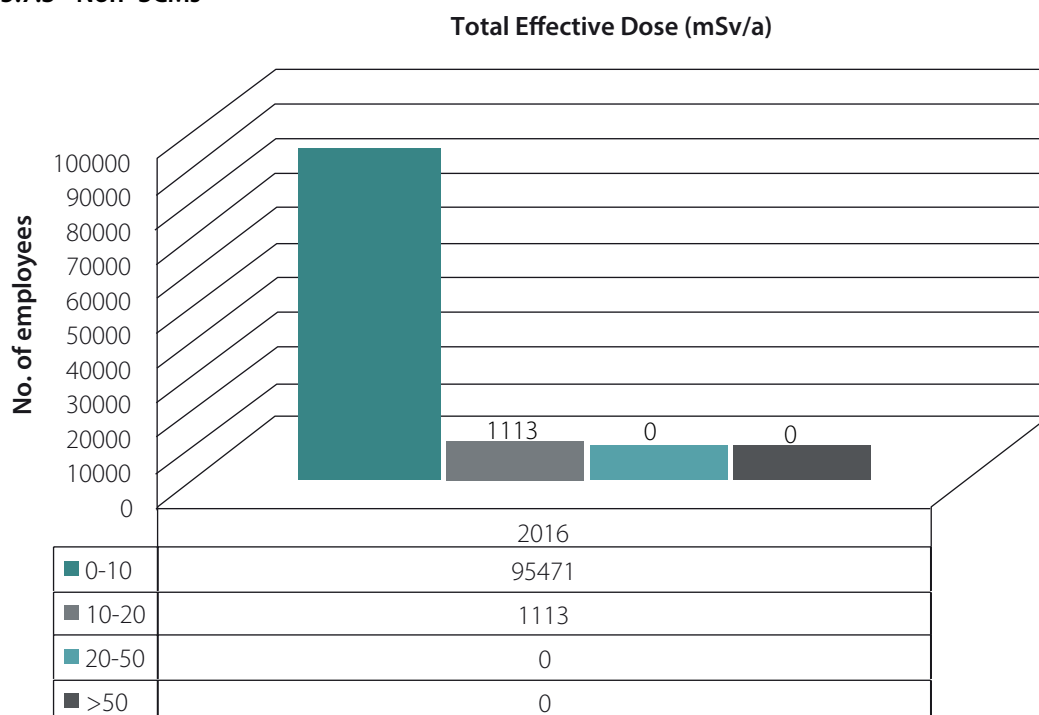


Figure 12: Annual effective dose for Non-SCMs

## 5.8 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 0.25mSv per annum and a dose limit of 1mSv<sup>a</sup> from all authorised actions. The NNR further required the holders on a five year frequency to submit the Public 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 1mSv.

## 5.9 Transport safety

There were no 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 materials 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. The NNR responded to all incidents reported.

## 5.10 Radioactive waste safety

There were no 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 routine and annual waste management reports submitted to the NNR, demonstrated compliance with the NNR requirements. The summary of waste is presented below.

**Table 19: Total waste reported from all holders of operations**

Type of waste	Quantities	Units	No. of consignments
Restricted Scrap	5.45E+05	tons	5452
Unrestricted Scrap	1.20E+06	tons	3188
Gaseous Releases	9.74E+10	m3	0
Liquid Waste	1.30E+06	m3	353
Semi-solids (tons)	1.96E+07	tons	0
Solids	2.23E+08	tons	27665
Other Waste	9.13E+06	tons	2857

## 5.11 Safety of sealed radioactive sources

There were no sealed radioactive sources regulated by the NNR at holders of certificates of registration. The safety and regulation of radioactive sealed sources falls outside the scope of nuclear facilities and within the jurisdiction of the Directorate Radiation Control of the DoH.

## 5.12 Nuclear incidents/accidents/occurrences reported

There were 23 occurrences reported to the NNR since the beginning of April 2016 to the end of March 2017. The majority of these occurrences related to accidental/unauthorised release of potentially radioactive material (water and slime material) into the environment.

6 of the occurrences were closed by the holder and verified by NNR during the reporting period. The NNR will continue to monitor and follow-up on these occurrences during compliance assurance inspections to ensure closure.

### 5.13 Regulatory compliance

In order to verify the degree of compliance with the conditions of nuclear authorisation, the NNR undertakes independent inspections, investigations, environmental verification and audits at authorised facilities.

#### Inspections:

- a. A total of 127 inspections were conducted during the reporting period. These inspections were conducted to verify the degree of compliance with the various programmes and procedures implemented by the holders.

Holders were required to investigate the reasons for, and implement corrective actions related to all non-compliances identified. The corrective actions were confirmed during follow-up inspections.

#### Audits:

- b. A total of 14 audits were conducted at various mining facilities, to ascertain the degree to which these mines were implementing quality management systems. In facilities where non-compliances were identified, it was noted that there were inadequate management systems. The mining facilities were required to submit and implement action plans addressing corrective and preventive actions.

#### Investigations:

- c. The NNR conducted 7 regulatory investigations mostly at unauthorised facilities regarding the potential handling of contaminated or radioactive material. Based on the observations made during the investigations, it was concluded that no regulatory controls were required.

#### Environmental Verification Samples:

- d. There were 366 environmental samples taken around the holders of authorisation verification.

### 5.14 Regulatory warnings and directives issued

Regulatory warnings and directives were issued to the following authorisation holders;

- a. A directive was issued on 16 April 2016 to Gravelotte Mines Limited (COR-11) to cease operations as a result of non-compliance to conditions of authorisation.

#### Outcome:

The holder responded to the directive by submitting a corrective action plan. The NNR conducted a follow-up inspection on 22 April 2016 and thereafter set aside the directive on 28 April 2016.

- b. On 27 May 2016, a directive was issued to Trans-Med Shipping (Pty) Ltd (COR-270) for a non-compliance with section 20 of the Act.

#### Outcome

Trans-Med Shipping (Pty)Ltd complied with the directive and implemented corrective actions which were noted by the NNR.

- c. On 30 May 2016, a directive was issued to the Bridge Shipping Company (Pty) Ltd regarding non-compliance to section 20 of the Act.

#### Outcome:

Bridge Shipping Company (Pty) Ltd complied with the directive by confirming that relevant material will be handled safely and as directed by the NNR.

- d. On 19 July 2016, during an inspection, the NNR inspector issued a verbal directive to African Mineral Standards (COR-260) to remove radioactive material from an unauthorised site.

## Outcome

The holder addressed the directive on 20 July 2016 by applying to the NNR to include the new site into their authorised scope of operations and surrendered the authorisation granted in relation to the previous site. The NNR conducted a confirmatory survey on 8 August 2016 at the latter site to confirm that there was no radioactive material left on-site. Only then was the authorisation for the new site granted.

- 
- e. A directive was issued on 7 October 2016 to PMTG (Pty) Ltd to cease operations of unauthorised waste rock processing.

## Outcome

PMTG (Pty) Ltd submitted an application for an Assessment Certificate of Exemption. The submission was reviewed and not approved.

## 5.15 Appeals to the CEO

There was 1 appeal lodged by PMTG (Pty) during the reporting period. The appeal was considered and dismissed due to the operator failing to meet all the requirements for an application of Certificate of Exemption.

## 5.16 Special projects

### 5.16.1 IRRS Mission

At the request of the government of South Africa, an IAEA international team of senior safety experts met representatives of the DoE, DoH, and two Regulatory Bodies (NNR and Directorate Radiation Control in the DoH) from 5 to 15 December 2016, to conduct an Integrated Regulatory Review Service (IRRS) mission.

The purpose of the IRRS mission was to review the South African radiation and nuclear safety regulatory framework and activities against the relevant IAEA safety standards and to exchange information and experience in the areas covered by the Mission. The agreed scope of the IRRS mission included all facilities and activities regulated by the Regulatory Bodies.

In preparation for the IRRS Mission the Regulatory Bodies conducted a self-assessment, and the results thereof were provided to the IAEA IRRS Team prior to the Mission, as part of the Advance Reference Material package.

The review was conducted through meetings, interviews and discussions, visits to facilities, and direct observations of the national legal, governmental and regulatory framework for nuclear and radiation safety. At its conclusion, the Government and Regulatory Bodies representatives and the IAEA held a joint press conference and issued a press release on the last day of the mission.

The IRRS report included specific findings that the Government and Regulatory Bodies must address before the conduct of an IRRS Follow-Up Mission, which is usually conducted four years after the IRRS Mission. Action Plans were compiled and implemented by the organisations involved to address the findings.

### 5.16.2 National Dose Register (NDR)

The National Dose Register (NDR) production ("live" system) using the IAEA-developed Regulatory Authority Information System (RAIS) was rolled out, and the NNR continued to coordinate the processes and arrangements whereby occupational exposure records are uploaded to the system. A fifth IAEA NDR Expert Mission was conducted to benchmark and review the effectiveness of the NDR and related processes, which involved the NDR Steering Committee and NNR employees. Further improvements to the NDR were managed through the implementation of the NDR project plan. Training was also conducted for dosimetry service providers and nuclear authorisation holders on the upload of occupational exposure records to the NDR. In order to ensure compliance with upload requirements and obtain the participation of more authorization holders in the NDR project, the NNR proposed that a phased approach be implemented, whereby groupings of trained holders are required to simultaneously upload all the necessary exposure records



### 5.16.3 Upgrade of the RERC

The installation of the two remaining capabilities for the upgrade of the RERC was slow due to challenges experienced with the Plant Data Transfer from nuclear installations to the NNR and with the online radiation detection network.

### 5.16.4 Establishment of the NNR verification laboratory

The ARC Laboratory went operational July 2015. Sample analyses have been phased in systematically with the NNR currently performing more than 50% of the samples required by the Verification Plan. The increase in the number of samples analysed in the laboratory resulted in less samples being sent to Necsa for analyses. The establishment of the NMISA laboratory has been completed as well with gamma spectroscopy analysis are being performed in the laboratory.

The NNR has also resolved to apply for accreditation for the laboratory from the South African National Accreditation System (SANAS). The laboratory has developed a set of procedures that have been tested, verified and validated in preparation for accreditation..

### 5.16.5 Regulatory framework project

The NNR sets Safety Standards in the form of regulations. Regulations are mandatory and set down specific requirements to be upheld by the authorisation holder or an applicant for a nuclear authorisation. During the reporting period, the NNR continued with the process of revising its regulations.

The NNR sets Safety Standards in the form of regulations. Regulations are mandatory and set down specific requirements to be upheld by the authorisation holder or an applicant for a nuclear authorisation. The NNR is in the process of revising its regulations.

The suite of regulations comprises the General Nuclear Safety Regulations integrating all thematic areas in a coherent and harmonised set of requirements that will be complemented by a series of specific safety regulations. The General Nuclear Safety Regulations will address all radiation exposure situations (existing, planned and emergency), and will apply to all actions, whereas the Specific Safety Regulations apply to specific facilities and/or actions.

## 5.17 International co-operation

During the year under review, the NNR fulfilled all its national obligations and maintained active participation in the IAEA Safety Standards Committees, as well as several International Regulatory Fora and collaboration activities under the IAEA Global Nuclear Safety and Security Networks (GNSSN). The NNR continued to participate in the Multinational Design Evaluation Programme (MDEP) and attended the Steering Technical Committee meetings.

### 5.17.1 Regional co-operation

South Africa is a member of the AFRA which was established by the heads of state of African countries that are members of the IAEA. South Africa, and the NNR in particular, continued to play an increasingly bigger role in the strengthening of nuclear and radiation safety regulatory infrastructure throughout the African region. The NNR continued to coordinate three of the 10 technical working groups of the FNRBA and participated in the 1<sup>st</sup> coordination meeting which was attended by IAEA technical officers and donor organisations. For the working groups being coordinated by the NNR, model regulations for the FNRBA countries and survey reports to identify priority areas have been progressed. NNR employees through the FNRBA Working Groups also supported the implementation of related IAEA regional projects.

### 5.17.2 IAEA technical cooperation national projects

As part of international benchmarking and maintaining global standards, the NNR and the Directorate Radiation Control in the DoH conducted a self-assessment under the framework of IAEA regional projects. The assessment revealed issues that will contribute significantly to the effectiveness of the regulator and as such, should be given high priority. The NNR initiated a project entitled SAF9005: Strengthening Regulatory Infrastructure (2014-2017), the objective of which is to implement the identified activities, ensure compliance with IAEA standards and international best practices, and to contribute to the development and strengthening of regulatory infrastructure and human capacity. The IAEA primarily assisted in HR development interventions such as fellowships, scientific visits, expert mission and national training courses. As an extension of the above project (SAF9005),

with particular emphasis on including additional activities that focus on radioactive sources in connection with the Directorate for Radiation Control, the project SAF9006: Strengthening the Regulatory Infrastructure (2016-2017) was established with the objective to effectively implement regulatory functions. This project was successfully completed and involved the implementation of fellowships programmes and national training courses on selected topics.

## **5.18 Stakeholder relations**

The NNR continued to regard dialogue with the public as an important element for increasing awareness of its role in providing for the protection of persons and property against nuclear damage. The NNR's public outreach efforts during the review period were primarily focused on local communities affected by NNR activities. The NNR conducted presentations to learners at schools and to residents in the local affected communities. For communities living near nuclear installations, the NNR utilised the PSIFs to increase awareness and understanding of its regulatory processes. The NNR also convened an information-sharing meeting with representatives from civil society, non-governmental organisations (NGOs) and affected parties.

### **5.18.1 Engagement with civil society NGOs in Gauteng**

In the spirit of openness and transparency, the NNR convened stakeholder information sharing meetings to encourage bi-directional information sharing with Civil Society NGOs in Gauteng. In attendance were representatives from Earthlife Africa, Pelindaba Working Group and representatives from Organised labour and NNR employees.

### **5.18.2 PSIF**

In accordance with the Act, the holder of a Nuclear Installation Licence must establish a PSIF to inform people living in the relevant municipal area in respect of which an emergency plan has been established.

In accordance with the provisions of Government Notice No. 299, dated 12 March 2004, and Section 26(4) of the NNR Act, PSIFs have been established by:

- Eskom for the KNPS
- Necsa for Pelindaba and Vaalputs, respectively.

In terms of Section 4 of the updated Regulations No. 968 dated 12 September 2008, on the establishment of the PSIF, the Board of the NNR is responsible for appointing chairpersons and deputy chairpersons for the respective PSIFs. During the period under review, NNR officials attended PSIF meetings and made presentations related to emergency planning and preparedness. The PSIF Chairpersons and Deputy Chairpersons were duly appointed by the NNR's Board during the period under review.

### **5.18.3 Schools outreach**

NNR public awareness communication was concentrated on previously disadvantaged learners from local mining communities located in close proximity to NNR authorisation holders.

### **5.18.4 First National Nuclear Regulatory Information Conference**

The NNR Inaugural National Nuclear Regulatory Information Conference was launched at the CSIR, International Convention Centre, in Lynnwood Pretoria, South Africa, on 5-7 October 2016. This was the first occasion that a conference of this nature was convened by the NNR. Participants included Board members, chief executive officers, senior officials, experts and representatives from a wide range of technical and scientific disciplines and specialist organisations that contribute to nuclear safety and security; representatives of intergovernmental and non-governmental organisations; regulatory bodies and other national competent authorities; commercial companies, academia, media and other entities engaged in activities relevant to nuclear safety and security.

The conference attracted 180 registered participants from local and international organisations of which many were represented at executive and senior level. This high level of participation is a reflection of the importance of the conference and the value placed on it by interested parties from the nuclear sector both nationally and internationally. It also implied recognition of the fact that there were regional and global interests in nuclear safety and security matters which could be greatly enhanced through collective actions and cooperation.





# **SECTION 6**

## **AUDITED ANNUAL FINANCIAL STATEMENTS**



# Report of the auditor-general to Parliament on 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 88 to 119, which comprise statement of financial position as at 31 March 2017, and the statement of financial performance, statement of changes in net assets, cash flow statement and statement of comparison of budget with 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 2017, and its financial performance and cash flows for the year then ended in accordance with South African Standards of Generally Recognised Accounting Practice (GRAP) and the requirements of the Public Finance Management Act of South Africa (Act No. 1 of 1999) (PFMA).

### Basis for opinion

3. I conducted my audit in accordance with the International Standards on Auditing (ISAs). My responsibilities under those standards are further described in the auditor-general's responsibilities for the audit of the financial statements section of my report.
4. I am independent of the entity in accordance with the International Ethics Standards Board for Accountants' Code of ethics for professional accountants (IESBA code) together with the 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.

### Responsibilities of the accounting authority for the financial statements

5. The board of directors, which constitutes the accounting authority is responsible for the preparation and fair presentation of the financial statements in accordance with 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.
6. In preparing the financial statements, the accounting authority is responsible for assessing the NNR'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 accounting authority either intends to liquidate the 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

7. 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 ISAs will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.
8. A further description of my responsibilities for the audit of the financial statements is included in the annexure to the auditor's report.



## Report on the audit of the annual performance report

### Introduction and scope

9. In accordance with the Public Audit Act of South Africa, 2004 (Act No. 25 of 2004) (PAA) and the general notice issued in terms thereof I have a responsibility to report material findings on the reported performance information against predetermined objectives for selected programmes presented in the annual performance report. I performed procedures to identify findings but not to gather evidence to express assurance.
10. My procedures address the reported performance information, which must be based on the approved performance planning documents of the entity. I have not evaluated the completeness and appropriateness of the performance indicators included in the planning documents. My procedures also did not extend to any disclosures or assertions relating to 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.
11. 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 programmes presented in the annual performance report of the entity for the year ended 31 March 2017:

Programmes	Pages in the annual performance report
Programme 2: Standards, Authorisations, Reviews and Assessments (SARA)	26-26
Programme 3: Compliance Assurance and Enforcement (CAE)	26-26

12. 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.
13. I did not identify any material findings on the usefulness and reliability of the reported performance information for the following programmes:
  - Standards, Authorisations, Reviews and Assessments (SARA)
  - Compliance Assurance and Enforcement (CAE)

### Other matters

14. Although I identified no material findings on the usefulness and reliability of the reported performance information for the selected programmes, I draw attention to the following matters:

#### 15. Achievement of planned targets

Refer to the annual performance report on pages 29 to 35 for information on the achievement of planned targets for the year and explanations provided for the under achievement of targets.

#### 16. Adjustment of material misstatements

I identified material misstatements in the annual performance report submitted for auditing. These material misstatements were on the reported performance information of SARA. 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 audit of compliance with legislation

### Introduction and scope

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



18. We did not identify any instances of material non-compliance with selected specific requirements of applicable legislation, as set out in the general notice issued in terms of the PAA.

### Other information

19. The NNR's accounting authority is responsible for the other information. The other information does not include the financial statements, the auditor's report thereon and those selected programmes presented in the annual performance report that have been specifically reported on in the auditor's report.
20. 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 thereon.
21. 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 programmes presented in the annual performance report, or my knowledge obtained in the audit, or otherwise appears to be materially misstated. If, based on the work I have performed on the other information obtained prior to the date of this auditor's report, I conclude that there is a material misstatement of this other information, I am required to report that fact. I have nothing to report in this regard.

### Internal control deficiencies

22. I considered internal controls 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 thereon. There are no significant internal control deficiencies that were identified.

*Auditor General*

Pretoria

31 July 2017



**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 ISAs, 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 programmes and on the 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 the 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 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 related to events or conditions that may cast significant doubt on the NNR's ability 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 the opinion on the financial statements. My conclusions are based on the information available to me at the date of the auditor's report. However, future events or conditions may cause an entity to cease to continue as a going concern.
  - evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

### 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 confirm to the accounting authority that I have complied with relevant ethical requirements regarding independence, and communicate all relationships and other matters that may reasonably be thought to have a bearing on my independence and here applicable, related safeguards.

## General Information

<b>Country of incorporation and domicile</b>	South Africa
<b>Nature of business and principal activities</b>	To provide protection for persons, property and the environment against nuclear damage, through the establishment of safety standards and regulatory practices.
<b>Directors</b>	Dr. T Motshudi (Chairperson) Dr. P Dube (Deputy Chairperson) Dr T Cohen (Former Chairperson) Mr T Mofokeng (Former Deputy Chairperson) Dr. M Tyobeka (CEO) Mr. J Leaver Mr A Le Roux Ms E Monale Ms B Mokoetle Mrs D Bandeman Mr. P Phili Mr. S Kakoma Mr. AJ Seekoe Mr. Abader Mr. N Lesufi Mr. S Mimi Mr. K Maphoto (Alternative to Ms. E Monale) Ms. L Sedumoeng
<b>Registered office</b>	Eco Glades Office Park Eco Glades 2, Block 6 Witch Hazel Avenue Highveld Ext 75, Eco Park, Centurion 0046
<b>Business address</b>	Eco Glades Office Park Eco Glades 2, Block G 420 Witch Hazel Avenue Eco Park, Centurion, Highveld Ext 75 0046
<b>Postal address</b>	P.O Box 7106 Centurion, Eco Park Highveld Ext 75 Pretoria 0046
<b>Executive Authority</b>	Minister of Energy
<b>Bankers</b>	ABSA Bank
<b>Auditors</b>	Auditor General South Africa (AGSA) Registered Auditors
<b>Secretary</b>	Ms. N Kote

## Statement of Directors' Responsibilities and Approval

The directors are required by the Public Finance Management Act (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 directors 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 were 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 March 31, 2018 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 significantly dependent on the authorisation holders for continued funding of operations. The annual financial statements are prepared on the basis that the entity is a going concern and that 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, it is 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 78.

The annual financial statements set out on pages 88 to 119, which have been prepared on the going concern basis, were approved by the accounting authority on 31 May 2017 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 2017..

### **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 in its charter in line with the requirements of Sections 51(1) (a)(ii) of the Public Finance Management Act ("PFMA") and Treasury Regulation 27.1. It further reports that it has conducted its affairs in compliance with its charter.

### **The quality of in-year management and 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 Controls**

In line with the PFMA and the King III Report on Corporate Governance requirements, Internal Audit provides the Audit and Risk Management Committee and management with assurance that the system of internal controls is adequate and effective. This is achieved by means of the risk management process, as well as the identification of corrective actions and suggested enhancements to the controls and processes.

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, it was noted that there were no matters reported that indicate any material deficiencies in the system of internal controls or any material deviations therefrom.

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.

### **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 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.

The Audit and Risk Management Committee concurs and accepts the report of the Auditor-General South Africa on the audited annual financial statements.

The Audit and Risk Management Committee recommended the approval of the audited annual financial statements by the Board.

**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.

**Protas Phili CA(SA)**

Chairperson of the Audit and Risk Management Committee

31 July 2017



## Directors' Report

The directors have pleasure in submitting their report and the annual financial statements of the NNR for the year ended 31 March 2017.

### 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 South African Standards of the Generally Recognised Accounting Practice (GRAP), including any interpretations of such statements issued by the Accounting Practices Board, and in accordance with the prescribed Standards of Generally Recognised Accounting Practices (GRAP) issued by the Accounting Standards Board and the 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 -07-December 2016
Dr. P Dube (Deputy Chairperson)	South African	New Appointment-effective 07-December 2016
Dr T Cohen (Former Chairperson)	South African	Term ended-Effective-06-December-2016

Name	Nationality	Changes
Mr T Mofokeng (Former Deputy Chairperson)	South African	Term ended-Effective-06-December-2016
Dr. M Tyobeka (CEO)	South African	Reappointment effective -01 October 2016
Mr. J Leaver	South African	Reappointment effective -07-December 2016
Mr A Le Roux	South African	New Appointment-effective 07-December 2016
Ms E Monale	South African	New Appointment-effective 07-December 2016
Ms B Mokoetle	South African	New Appointment-effective 07-December 2016
Mrs D Bandeman	South African	New Appointment-effective 07-December 2016
Mr. P Phili	South African	New Appointment-effective 07-December 2016
Mr. S Kakoma	South African	Reappointment effective -07 December 2016
Mr. AJ Seekoe	South African	New Appointment-effective 07-December 2016
Mr. Abader	South African	Term ended-Effective-06-December-2016
Mr. N Lesufi	South African	Term ended-Effective-06-December-2016
Mr. S Mimi	South African	Term ended-Effective-06-December-2016
Mr. K Maphoto (Alternative to Ms. E Monale)	South African	Term ended-Effective-06-December-2016
Ms. L Sedumoeng	South African	Term ended-Effective-06-December-2016

## 8. Secretary

The secretary of the entity is Ms. N Kote of:

Business address	Eco Glades Office Park Eco Glades 2, Block G Witch Hazel Avenue Highveld Ext 75,Eco Park, Centurion 0046
Postal address	P.o Box 7106 Centurion, Eco Park Highveld Ext 75 Pretoria 0046

## 9. Corporate governance

### Board of directors Meetings

The accounting authority has met as scheduled on four 4 separate occasions during the financial year, see page 18 for details of the annual report for schedule of meetings. Directors have access to all organizational information and executive management necessary to discharge its roles and responsibilities as mandated.

## 10. Executive Authority

The entity's Executive authority is the Minister of Energy

## 11. Bankers

ABSA Bank

## 12. Auditors

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

## Statement of Financial Position as at March 31, 2017

Figures in Rand	Note(s)	2017	2016
<b>Assets</b>			
<b>Current Assets</b>			
Receivables from exchange transactions	7	45,059,649	19,416,564
Receivables from non-exchange transactions	8	760,324	708,029
Cash and cash equivalents	9	59,388,609	59,479,570
		<b>105,208,582</b>	<b>79,604,163</b>
<b>Non-Current Assets</b>			
Property, plant and equipment	3	117,775,818	120,633,953
Intangible assets	4	169,488	547,846
		<b>117,945,306</b>	<b>121,181,799</b>
<b>Total Assets</b>		<b>223,153,888</b>	<b>200,785,962</b>
<b>Liabilities</b>			
<b>Current Liabilities</b>			
Other financial liabilities	11	7,357,093	8,050,624
Operating lease accrual	5	201,456	78,584
Payables from exchange transactions	13	8,025,814	9,940,170
Other payables from non exchange transaction		59,956	-
Provisions	12	17,494,777	16,738,024
		<b>33,139,096</b>	<b>34,807,402</b>
<b>Non-Current Liabilities</b>			
Other financial liabilities	11	41,938,799	49,412,561
Employee benefit obligation	6	9,361,677	10,124,054
Unspent conditional grants and receipts	10	15,408,472	18,265,136
		<b>66,708,948</b>	<b>77,801,751</b>
<b>Total Liabilities</b>		<b>99,848,044</b>	<b>112,609,153</b>
<b>Net Assets</b>		<b>123,305,844</b>	<b>88,176,809</b>
Accumulated surplus		123,305,844	88,176,809

## Statement of Financial Performance

Figures in Rand	Note(s)	2017	2016
<b>Revenue</b>			
Authorisation fees		161,754,990	147,442,573
Application fees		11,148,528	623,992
Actuarial gain		762,377	617,085
Other income		2,110,223	904,815
Deferred Income		2,856,665	5,855,458
Interest received		4,929,853	4,428,596
Government grants	15	40,936,000	21,487,000
<b>Total revenue</b>		<b>224,498,636</b>	<b>181,359,519</b>
<b>Expenditure</b>			
Compensation of employees	19	(124,331,201)	(122,352,982)
Depreciation and amortisation		(10,467,638)	(12,774,012)
Finance costs	22	(5,710,051)	(5,924,373)
Lease rentals on operating lease		(2,117,197)	(1,829,454)
Debt Impairment	20	(2,013,249)	(1,905,016)
Goods and services	17	(44,730,267)	(48,332,787)
<b>Total expenditure</b>		<b>(189,369,603)</b>	<b>(193,118,624)</b>
<b>Surplus (deficit) for the year</b>		<b>35,129,033</b>	<b>(11,759,105)</b>

## Statement of Changes in Net Assets

Figures in Rand	Accumulated surplus	Total net assets
<b>Balance at April 01, 2015</b>	<b>99,935,914</b>	<b>99,935,914</b>
Changes in net assets		
Surplus (Deficit) for the year	(11,759,105)	(11,759,105)
Total changes	(11,759,105)	(11,759,105)
<b>Balance at April 01, 2016</b>	<b>88,176,811</b>	<b>88,176,811</b>
Changes in net assets		
Surplus for the year	35,129,033	35,129,033
Total changes	35,129,033	35,129,033
<b>Balance at March 31, 2017</b>	<b>123,305,844</b>	<b>123,305,844</b>
Note(s)		

## Cash Flow Statement

Figures in Rand	Note(s)	2017	2016
<b>Cash flows from operating activities</b>			
<b>Receipts</b>			
Authorisation fees		145,055,626	131,114,476
Government grants		40,936,000	21,487,000
Interest income		4,790,960	4,428,596
Application fees		1,251,399	623,992
Other Income		1,509,927	850,956
		193,543,912	158,505,020
<b>Payments</b>			
Compensation of employees		(125,662,294)	(119,895,818)
Goods & Services		(46,411,491)	(51,160,165)
Finance costs		(5,710,051)	(5,924,373)
		(177,783,836)	(176,980,356)
<b>Net cash flows from operating activities</b>	24	<b>15,760,076</b>	<b>(18,475,336)</b>
<b>Cash flows from investing activities</b>			
Purchase of property, plant and equipment	3	(7,718,073)	(8,742,946)
Proceeds from sale of property, plant and equipment	3	227,502	42,007
Purchase of other intangible assets	4	(193,173)	-
<b>Net cash flows from investing activities</b>		<b>(7,683,744)</b>	<b>(8,700,939)</b>
<b>Cash flows from financing activities</b>			
(Decrease) / Increase on other financial liabilities		(8,167,293)	(7,354,638)
<b>Net cash flows from financing activities</b>		<b>(8,167,293)</b>	<b>(7,354,638)</b>
<b>Net increase / (decrease) in cash and cash equivalents</b>		<b>(90,961)</b>	<b>(34,530,913)</b>
Cash and cash equivalents at the beginning of the year		59,479,570	94,010,483
<b>Cash and cash equivalents at the end of the year</b>	9	<b>59,388,609</b>	<b>59,479,570</b>



## Statement of Comparison of Budget and Actual Amounts

Budget on Accrual Basis						
	Approved budget	Adjustments	Final Budget	Actual amounts on comparable basis	Difference between final budget and actual	Reference
Figures in Rand						
<b>Statement of Financial Performance</b>						
<b>Revenue</b>						
<b>Revenue from exchange transactions</b>						
Authorisation fees	156,676,000	-	<b>156,676,000</b>	161,754,990	<b>5,078,990</b>	Note 34.1
Application fees	1,055,000	20,965,571	<b>22,020,571</b>	11,148,528	<b>(10,872,043)</b>	Note 34.2
Actuarial gain	-	-	-	762,377	<b>762,377</b>	
Other income	527,000	-	<b>527,000</b>	2,110,223	<b>1,583,223</b>	
Deferred income	-	-	-	2,856,665	<b>2,856,665</b>	Note 34.3
Interest received	2,794,000	-	<b>2,794,000</b>	4,929,853	<b>2,135,853</b>	Note 34.4
<b>Total revenue from exchange transactions</b>	<b>161,052,000</b>	<b>20,965,571</b>	<b>182,017,571</b>	<b>183,562,636</b>	<b>1,545,065</b>	
<b>Revenue from non-exchange transactions</b>						
<b>Transfer revenue</b>						
Government grants	16,636,000	24,300,000	<b>40,936,000</b>	40,936,000	-	
<b>Total revenue</b>	<b>177,688,000</b>	<b>45,265,571</b>	<b>222,953,571</b>	<b>224,498,636</b>	<b>1,545,065</b>	
<b>Expenditure</b>						
Compensation of employees	(116,228,766)	(2,832,000)	<b>(119,060,766)</b>	(124,331,201)		
Depreciation and amortisation	(11,886,580)	1,970,000	<b>(9,916,580)</b>	(10,467,638)	<b>(551,058)</b>	Note 34.5
Finance costs	(4,754,639)	(1,026,361)	<b>(5,781,000)</b>	(5,710,051)	<b>70,949</b>	
Lease rentals on operating lease	(1,454,232)	-	<b>(1,454,232)</b>	(2,117,197)	<b>(662,965)</b>	
Debt impairment	-	-	-	(2,013,249)	<b>(2,013,249)</b>	Note 34.6
Goods & Services	(43,363,783)	(43,377,210)	<b>(86,740,993)</b>	(44,730,267)	<b>42,010,726</b>	Note 34.7
<b>Total expenditure</b>	<b>(177,688,000)</b>	<b>(45,265,571)</b>	<b>(222,953,571)</b>	<b>(189,369,603)</b>	<b>33,583,968</b>	
<b>Surplus before taxation</b>	-	-	-	<b>35,129,033</b>	<b>35,129,033</b>	
<b>Actual Amount on Comparable Basis as Presented in the Budget and Actual Comparative Statement</b>	-	-	-	<b>35,129,033</b>	<b>35,129,033</b>	

## 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 post-employment 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 comprehensive income 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 7.

##### 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 3 and 4, 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

#### 1.2 Revenue recognition

Revenue comprises authorisation fees and revenue from special projects. 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.

### 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, its 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.

Property, plant and equipment is carried at cost less accumulated depreciation and any impairment losses. 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 lives 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 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	3-5 Years
Leasehold improvements	Straight line	Over the lease period
Scientific equipment	Straight line	5-20 Years

The residual value, and the useful life and depreciation method of each asset are reviewed at the end of each reporting date. If the expectations differ from previous estimates, the change is accounted for as a change in accounting estimate.

Reviewing the useful life of an asset on an annual basis does not require the entity to amend the previous estimate unless expectations differ from the previous estimate.

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.

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	1-3 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.

### **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 amortized cost less provision for impairment.

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 recognized 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 straight-line 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.

**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.

**Employee benefits**

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.



### 1.11 Provisions and contingencies

Management judgment is required when recognising and measuring provisions and when measuring contingent liabilities as set out in Notes 11 and 25 respectively. 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 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.

### 1.13 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.

### 1.14 Comparative figures

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

### 1.15 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.

### 1.16 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.

### 1.17 Interest Received

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

### 1.18 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

Figures in Rand	2017	2016
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### 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. Property, plant and equipment

	2017			2016		
	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	112,773,921	(28,588,661)	84,185,260	112,773,921	(23,023,655)	89,750,266
Assets under construction	10,019,043	-	10,019,043	4,805,767	-	4,805,767
Furniture and fixtures	5,138,198	(1,457,066)	3,681,132	5,172,426	(1,225,072)	3,947,354
Motor vehicles	906,438	(183,011)	723,427	836,809	(306,687)	530,122
Office equipment	8,404,385	(6,383,760)	2,020,625	8,913,348	(6,101,568)	2,811,780
IT equipment	14,249,678	(9,613,572)	4,636,106	13,855,218	(9,154,172)	4,701,046
Leasehold improvements	5,343,134	(3,823,800)	1,519,334	5,343,134	(3,443,967)	1,899,167
Laboratory equipment	17,722,468	(6,945,327)	10,777,141	17,450,042	(5,475,341)	11,974,701
<b>Total</b>	<b>174,771,015</b>	<b>(56,995,197)</b>	<b>117,775,818</b>	<b>169,364,415</b>	<b>(48,730,462)</b>	<b>120,633,953</b>

#### Reconciliation of property, plant and equipment - 2017

	Opening balance	Additions	Disposals	Depreciation	Total
Land	213,750	-	-	-	213,750
Buildings	89,750,266	-	-	(5,565,006)	84,185,260
Assets under construction	4,805,767	5,213,276	-	-	10,019,043
Furniture and fixtures	3,947,354	83,975	(64,878)	(285,319)	3,681,132
Motor vehicles	530,122	280,477	(3,747)	(83,425)	723,427
Office equipment	2,811,780	201,251	(217,810)	(774,596)	2,020,625
IT equipment	4,701,046	1,666,668	(86,672)	(1,644,936)	4,636,106
Leasehold improvements	1,899,167	-	-	(379,833)	1,519,334
Laboratory equipment	11,974,701	272,426	-	(1,469,986)	10,777,141
	<b>120,633,953</b>	<b>7,718,073</b>	<b>(373,107)</b>	<b>(10,203,101)</b>	<b>117,775,818</b>

## Notes to the Annual Financial Statements

Figures in Rand	2017		2016		
Reconciliation of property, plant and equipment - 2016					
	Opening balance	Additions	Disposals	Depreciation	Total
Land	213,750	-	-	-	213,750
Buildings	94,803,375	490,428	-	(5,543,537)	89,750,266
Plant and machinery	-	4,805,767	-	-	4,805,767
Furniture and fixtures	4,156,070	69,888	-	(278,604)	3,947,354
Motor vehicles	616,335	-	-	(86,213)	530,122
Office equipment	3,587,431	446,947	-	(1,222,598)	2,811,780
IT equipment	4,841,656	1,891,859	(115,875)	(1,916,594)	4,701,046
Leasehold improvements	3,680,212	-	-	(1,781,045)	1,899,167
Laboratory equipment	12,482,132	1,038,057	-	(1,545,488)	11,974,701
	124,380,961	8,742,946	(115,875)	(12,374,079)	120,633,953

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 & Building located at Erf 3187 in Melkbosch Strand in the Blaauwburg Municipality, Western Cape.

#### 4. Intangible assets

	2017			2016		
	Cost / Valuation	Accumulated amortisation and accumulated impairment	Carrying value	Cost / Valuation	Accumulated amortisation and accumulated impairment	Carrying value
Computer software, other	3,817,494	(3,648,006)	169,488	4,451,060	(3,903,214)	547,846

#### Reconciliation of intangible assets - 2017

	Opening balance	Additions	Disposals	Amortisation	Total
Computer software, other	547,846	193,173	(306,993)	(264,538)	169,488

#### Reconciliation of intangible assets - 2016

	Opening balance	Amortisation	Total
Computer software, other	947,780	(399,934)	547,846

#### 5. Operating lease liability

Current liabilities	201,456	78,584
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## Notes to the Annual Financial Statements

Figures in Rand	2017	2016
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### 6. 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	(9,361,677)	(10,124,054)
Present value of the defined benefit obligation-partly or wholly funded	(62,480,000)	(60,882,000)
Fair value of plan assets	68,795,000	69,910,000
Asset not recognised	(6,315,000)	(9,028,000)
	<b>(9,361,677)</b>	<b>(10,124,054)</b>

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 %

#### Net expense (gain) recognised in the statement of financial performance

Current service cost	90,749	75,813
Interest cost	877,047	870,136
Actuarial (gains) losses	(1,156,636)	(916,549)
Benefits paid	(573,537)	(646,485)
	<b>(762,377)</b>	<b>(617,085)</b>

#### Actual return on plan assets

Expected return on plan assets	6,813,000	6,501,000
Actuarial gain (loss) on plan assets	(4,286,000)	194,000
	<b>2,527,000</b>	<b>6,695,000</b>

#### Calculation of actuarial gains and losses

Actuarial (gains) losses – Obligation	887,000	(6,181,000)
Actuarial (gains) losses – Plan assets	4,286,000	194,000
	<b>5,173,000</b>	<b>(5,987,000)</b>

## Notes to the Annual Financial Statements

Figures in Rand	2017	2016
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### 6.1 Post Retirement Pension Benefit Plan

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

#### Changes in present value of the defined benefit obligations are as follows:

Opening balance	60,882,000	65,020,000
Interest cost	5,872,000	5,339,000
Current service cost	845,000	769,000
Benefits paid	(4,232,000)	(4,065,000)
Actuarial (gain) losses	(887,000)	(6,181,000)
<b>Closing balance</b>	<b>62,480,000</b>	<b>60,882,000</b>

#### Changes in fair value of plan assets are as follows:

Opening balance fair value of plan assets	69,910,000	66,723,000
Expected return on plan assets	6,813,000	6,501,000
Contributions by employer	410,000	387,000
Contributions by participants	180,000	170,000
Benefits paid	(4,232,000)	(4,065,000)
Actuarial gain/(losses)	(4,286,000)	194,000
	<b>68,795,000</b>	<b>69,910,000</b>

#### Key assumptions used

Assumptions used at the reporting date:

Discount rates used	9.80 %	9.90 %
Expected rate of return on assets	10.00 %	10.00 %
General inflation	6.00 %	6.00 %
Salary inflation	7.00 %	7.00 %
Funding level	110%	114.8%

#### Sensitivity Analysis

	One percentage point increase	One percentage point decrease
Effect on defined benefit obligation-Discount rate	(4,512,000)	5,244,000
Percentage change effect on defined benefit obligation-Discount rate	(7)	8
Effect on defined benefit obligation-Salary inflation	141,000	(139,000)
Effect on defined benefit obligation-Post-retirement mortality	PA (90) (1,823,000)	PA (90)-2 1,827,000
Percentage change effect on defined benefit obligation-Post-retirement mortality	(3)	(3)

## Notes to the Annual Financial Statements

Figures in Rand	2017	2016
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### 6.2 Post-retirement medical aid benefit obligation

The NNR has made provision for post-employment medical benefit covering three (3) employees in active employment and seven (7) pensioners. The actuarial valuation was determined by a IAC (Pty) Ltd 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 have 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 2017.

#### Changes in present value of the defined benefits are as follows:

Opening defined benefit obligation	10,124,054	10,741,139
Interest cost	877,047	870,136
Current service cost	90,749	75,813
Benefits paid	(573,537)	(646,485)
Actual (gain) losses recognised in statement of financial performance	(1,156,636)	(916,549)
	<b>9,361,677</b>	<b>10,124,054</b>

#### Actuarial principal assumption used at the reporting date

Discount rate used rate	10 %	9 %
Medical inflation rate	8 %	8 %
General inflation rate	7 %	7 %
Post-retirement interest rate	1 %	1 %
Proportion of continuing membership at retirement	100 %	100 %
Proportion of retiring members who are married	30 %	90 %

## Notes to the Annual Financial Statements

Figures in Rand	2017	2016
Age of spouse	In service members: Husbands 3 years older than wives	In service members: Husbands 3 years older than wives
Mortality of in-service members	Retirement age of members 65 SA SA85-90 (L)	Retirement age of members 65 SA SA85-90 (L)
Mortality of continuation members post retirement	PA (90)-2 Years Years	PA (90)-2 Years Years
Annual rate of withdrawal - from age 55+	4.00 %	4.00 %

### Number of members

Number of members in active employment	3	3
Number of pensioners	7	7
	<b>10</b>	<b>10</b>
Average retirement age	60	60

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 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	One percentage point decrease
Effect on the aggregate of the service cost and interest cost-Mortality	401,000	(394,000)
Effect on defined benefit obligation	9,763,000	8,968,000
Effect on the aggregate of the service cost and interest cost-discount rate	(359,000)	417,000
Defined benefit obligation-discount rate	9,003,000	9,779,000
Percentage change effect on defined benefit obligation-discount rate	11	9

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

	2017	2016	2015	2014	2013
	R	R	R	R	R
Defined benefit obligation	9,361,667	10,124,054	10,741,139	12,204,845	11,265,549
Experience adjustments on plan liabilities	(36,395)	(916,549)	2,033,301	580,145	(213,879)



## Notes to the Annual Financial Statements

Figures in Rand	2017	2016
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### 6.3 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	14,500,690	11,639,745
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### 7. Receivables from exchange transactions

Trade debtors	44,471,005	19,149,681
Staff advance	141,465	32,706
Deposits & Prepayments	308,286	234,177
Other receivables	138,893	-
	<b>45,059,649</b>	<b>19,416,564</b>

During the year the NNR disbursed R 678 000 recoverable from AREVA, the amount is paid for providing funding to external bursary holders who intend pursuing careers in nuclear science and engineering.

#### Trade and other receivables past due but not impaired

Trade and other receivables which are less than a year past due are not considered to be impaired. At March 31, 2017, R 44,471,005 (2016: R 19,149,681) were past due date but not impaired.

The ageing of amounts past due date but not impaired is as follows:

1 month past due	29,860,955	1,299,924
2 months past due	10,610,079	14,754,618
5 months past due	33,510	-
7 months past due	-	2,775,950
9 months past due	3,598,549	285,056
10 months past due	-	34,134
11 months past due	367,912	-

#### Trade and other receivables impaired

As of March 31, 2017, trade and other receivables of R 6,044,436 (2016: R 4,031,187) were impaired and provided for.

The ageing of these receivables is as follows:

Over 12 months	6,044,436	4,031,187
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#### Reconciliation of provision for impairment of trade and other receivables

Opening balance	4,031,277	2,126,261
Provision for impairment	2,013,249	1,905,016
	<b>6,044,526</b>	<b>4,031,277</b>

The creation and release of provision for impaired receivables have been included operating expenses in the surplus or deficit (refer to note 19). 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	2017	2016
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### 8. Receivables from non-exchange transactions

Other receivables from non-exchange revenue	760,324	708,029
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### 9. Cash and cash equivalents

Cash and cash equivalents consist of:

Cash on hand	11,263	5,877
Bank balances	2,509,936	526,050
Short-term deposits	56,867,410	58,947,643
	<b>59,388,609</b>	<b>59,479,570</b>

Included in the cash balance above is R 15.4 million unspent conditional grant relating to establishment of Regulatory Emergency Control Centre and refurbishment of Cape Town office, refer to note 10 for more details.

### 10. Unspent conditional grants and receipts

**Unspent conditional grants and receipts comprises of:**

#### Unspent conditional grants and receipts

Government grant	15,408,472	18,265,136
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#### Movement during the year

Balance at the beginning of the year	18,265,136	24,231,917
Income recognition during the year	(2,856,664)	(5,966,781)
	<b>15,408,472</b>	<b>18,265,136</b>

- The refurbishment of Emergency Control Center has been completed and all the equipment necessary for the operation of the centre has been installed but not yet commissioned. The total amount disbursed to date relating to the project amount to R 11.7 Million.
- The feasibility study for providing adequate office accommodation in Cape Town has been completed and decision has been made to redesign and refurbish the Cape Town office. The total amount disbursed to date relating to the project amount to R 2 million.

## Notes to the Annual Financial Statements

Figures in Rand	2017	2016
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### 11. Other financial liabilities

#### At amortised cost

Re-imbursement agreement	-	1,413,700
Mortgage bond	49,295,892	56,049,485
ABSA mortgage bond over head office building, effective 22 June 2012 over 10 years and final settlement due on 07 June 2022. The loan bears interest at a variable rate of 10.5% per annum. The loan has a remaining period of 63 months as at 31 March 2017. The loan is currently payable at a monthly instalment of R 1 031 445. The loan is secured over head office building with carrying value of R 84 million.		
	<b>49,295,892</b>	<b>57,463,185</b>
<b>Total other financial liabilities</b>	<b>49,295,892</b>	<b>57,463,185</b>

#### Non-current liabilities

At amortised cost	41,938,799	49,412,561
<b>Current liabilities</b>		
At amortised cost	7,357,093	8,050,624

### 12. Provisions

#### Reconciliation of provisions - 2017

	Opening Balance	Additions	Utilised during the year	Reversed during the year	Total
Annual Leave	7,422,968	341,986	-	-	7,764,954
Annual performance bonus	9,315,056	9,729,823	(5,798,201)	(3,516,855)	9,729,823
	<b>16,738,024</b>	<b>10,071,809</b>	<b>(5,798,201)</b>	<b>(3,516,855)</b>	<b>17,494,777</b>

#### Reconciliation of provisions - 2016

	Opening Balance	Additions	Utilised during the year	Reversed during the year	Total
Annual Leave	6,864,215	558,753	-	-	7,422,968
Performance Bonus	7,526,882	9,315,056	(7,522,457)	(4,425)	9,315,056
	<b>14,391,097</b>	<b>9,873,809</b>	<b>(7,522,457)</b>	<b>(4,425)</b>	<b>16,738,024</b>

#### 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 2017. The NNR cannot determine the number of leave days to be utilised or forfeited by its employees during the next financial year with certainty, hence management of the NNR has reasonably estimated the leave provision based on the employee's daily pay-out rate and leave balance which are due to employees as at 31 March 2017.

## Notes to the Annual Financial Statements

Figures in Rand	2017	2016
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### Performance bonus

Performance bonus represents management's best estimate of bonus payable to qualifying NNR employees who signed the performance agreement with the NNR for financial year ending 31 March 2017. Performance target is set by the board at the beginning of each financial year, employees performance score is linked to overall performance of the NNR. Management has reasonably provided for a bonus in accordance with bonus payment of 2015/16 financial year at an average individual score of 4 achieved during prior year.

### 13. Payables from exchange transactions

Trade payables	6,595,350	4,289,258
Payments received in advance	-	4,090,268
Accruals	154,746	330,986
13th Cheque accrual	1,275,718	1,229,658
	<b>8,025,814</b>	<b>9,940,170</b>

### 14. Revenue

Authorisation fees	161,754,990	147,442,573
Application fees	11,148,528	623,992
Actuarial gain	762,377	617,085
Other income	2,110,223	904,815
Deferred Income	2,856,665	5,855,458
Interest received	4,929,853	4,428,596
Government grants	40,936,000	21,487,000
	<b>224,498,636</b>	<b>181,359,519</b>

The amount included in revenue arising from exchanges of goods or services are as follows:

Authorisation fees	161,754,990	147,442,573
Application fees	11,148,528	623,992
Actuarial gain	762,377	617,085
Interest received	4,929,853	4,428,596
	<b>178,595,748</b>	<b>153,112,246</b>

The amount included in revenue arising from non-exchange transactions is as follows:

#### Taxation revenue

#### Transfer revenue

Government grants	40,936,000	21,487,000
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## Notes to the Annual Financial Statements

Figures in Rand	2017	2016
<b>15. Government grants</b>		
Government grant	40,936,000	21,487,000
<b>Unconditional</b>		
Unconditional grants received	40,936,000	21,487,000
<b>Conditional grant</b>		
Balance unspent at beginning of year	18,265,136	24,231,917
Conditions met - amount realised	(2,856,664)	(5,966,781)
	<b>15,408,472</b>	<b>18,265,136</b>
The NNR has an obligation to establish Regulatory Emergency Control Centre and refurbish Cape Town site office (see note 10) for details		
<b>16. Other income</b>		
Other sundry income	2,170,179	904,815

## Notes to the Annual Financial Statements

Figures in Rand	2017	2016
<b>17. Goods and services</b>		
Advertising	674,318	644,204
Property rates & municipal charges	1,660,712	3,266,187
Auditor's fees	1,365,786	1,433,883
Cleaning	682,072	688,393
Consulting and professional fees	8,148,528	6,441,885
Consumables	1,132,305	1,168,359
Insurance	481,972	202,364
Community development and training	328,440	688,206
Conferences and seminars	782,327	824,524
IT expenses	3,173,711	4,232,083
Marketing	116,851	336,094
Magazines, books and periodicals	26,918	26,546
Medical expenses	131,424	115,872
Postage and courier	169,346	191,016
Printing and stationery	976,662	1,005,075
Security	1,712,157	1,426,805
Software expenses	2,080,615	2,383,550
Subscriptions and membership fees	1,240,815	1,813,713
Telephone and fax	1,103,697	1,143,963
Training	984,290	1,766,151
Travel - local	5,206,084	5,396,320
Travel - overseas	2,603,769	7,090,593
Electricity	1,286,325	1,275,156
Repairs & Maintenance	2,601,573	1,284,159
Board fees	577,610	671,265
Bursaries	433,857	371,789
Other expenses	5,048,103	2,444,632
	<b>44,730,267</b>	<b>48,332,787</b>

## Notes to the Annual Financial Statements

Figures in Rand	2017	2016
<b>18. Operating surplus (deficit)</b>		
Operating surplus (deficit) for the year is stated after accounting for the following:		
<b>Operating lease charges</b>		
Premises		
• Contractual amounts	1,753,009	1,465,266
Equipment		
• Contractual amounts	364,188	364,188
	<b>2,117,197</b>	<b>1,829,454</b>
Depreciation on property, plant and equipment	10,467,638	12,774,012
Employee costs	124,331,201	122,352,982
Defined contribution funds	13,969,804	11,639,745
Defined benefit funds	576,859	539,484
Loss on sale of assets	452,599	73,868
<b>19. Employee related costs</b>		
Basic	62,359,147	63,895,740
Performance Bonus	9,729,823	9,315,056
Medical aid	4,788,205	4,663,210
UIF	485,005	468,235
Workmen's compensation fund	111,744	156,029
SDL	1,071,236	1,047,196
PAYE	31,239,378	30,628,287
Pension fund-Defined benefit plan	576,859	539,484
Pension fund-Defined contribution plan	13,969,804	11,639,745
	<b>124,331,201</b>	<b>122,352,982</b>
<b>20. Bad debts</b>		
Contributions to debt impairment provision	2,013,249	1,905,016
<b>21. Investment revenue</b>		
<b>Interest revenue</b>		
Short-term deposits	4,929,853	4,428,596
<b>22. Finance costs</b>		
Non-current borrowings	5,710,051	5,924,373



## Notes to the Annual Financial Statements

Figures in Rand	2017	2016
<b>23. Auditors' fees</b>		
Fees	1,365,786	1,433,883
<b>24. Cash generated from (used in) operations</b>		
Surplus (deficit)	35,129,033	(11,759,105)
<b>Adjustments for:</b>		
Depreciation and amortisation	10,467,638	12,774,012
Movements in operating lease assets and accruals	122,872	(28,273)
Movements in post retirement obligation	(762,377)	(617,085)
Movements in provisions	756,753	2,346,927
(Profit) Loss on assets written off	452,598	73,869
<b>Changes in working capital:</b>		
Receivables from exchange transactions	(25,643,082)	(14,446,250)
Other receivables from non-exchange transactions	(52,295)	(600,984)
Payables from exchange transactions	(1,914,356)	(251,666)
Other payable from non exchange transaction	59,956	-
Unspent conditional grants and receipts	(2,856,664)	(5,966,781)
	<b>15,760,076</b>	<b>(18,475,336)</b>
<b>25. Commitments</b>		
<b>25.1 Capital Commitments</b>		
<b>Approved and contracted for:</b>		
• Property, plant and equipment	7,295,166	-
<b>Total capital commitments</b>		
Already approved and contracted for but not provided for	7,295,166	-

## Notes to the Annual Financial Statements

Figures in Rand	2017	2016
<b>25. Commitments (continued)</b>		
<b>25.2 Operational commitments</b>		
<b>Approved and contracted for:</b>		
• Leases	6,251,469	6,574,904
• Other	51,136,360	18,312,534
	<b>57,387,829</b>	<b>24,887,438</b>
<b>Total operational commitments</b>		
Already approved and contracted for but not provided for:	57,387,829	24,887,438
<b>Total commitments</b>		
<b>Total commitments</b>		
Capital commitments	7,295,166	-
Operational commitments	57,387,829	24,887,438
	<b>64,682,995</b>	<b>24,887,438</b>
This committed expenditure relates to property, plant and equipment and operational expenditure commitments mainly for technical support organisation that will be financed by available retained cash surpluses and existing cash resources.		
<b>Operating leases - as lessee (expense)</b>		
<b>Minimum lease payments due</b>		
- within one year	1,754,891	1,777,401
- in second to fifth year inclusive	4,496,578	4,797,503
	<b>6,251,469</b>	<b>6,574,904</b>
<b>26. Contingencies</b>		
<b>Case number</b>		
54380/2007	Service provider instituted a claim against NNR relating to non-payment of service not completed.	90,000

## Notes to the Annual Financial Statements

Figures in Rand	2017	2016
<b>27. Related parties</b>		
Relationships		
Directors	Refer to note 28 on director's fees	
Executive Authority	Minister of Energy	
Entities ultimately under common control	National Nuclear Energy Corporation of South Africa (NECSA) National Energy Regulator of South Africa (NERSA) South African National Energy Development Institute (SANEDI) National Radioactive-Waste Disposal Institute (NRWDI) The Petroleum, Oil and Gas Corporation of South Africa (PetroSA) Central Energy Group Fund (CEF) (Pty) Ltd	
Post retirement pension for employees	NNR Pension Fund	
Key management personnel	Dr. M Tyobeka (CEO) Mr. D Netshivhazwaulu (CFO) Mr. O Phillips (SARA Senior manager) Ms. A Simon (CSS Senior manager) Ms. D Kgomo (CAE Senior manager)	
<b>Related party balances</b>		
<b>Amounts included in Trade receivable (Trade Payable) regarding related parties</b>		
<b>Heading</b>		
NECSA	(336,530)	(441,660)
NECSA	12,960,733	13,485,175
<b>Related party transactions</b>		
<b>Services rendered to related party</b>		
NECSA	42,922,429	40,777,406
<b>Government transfer</b>		
Department of energy	40,936,000	21,847,000
<b>Services from related party</b>		
NECSA	(951,361)	(2,347,456)
<b>Other</b>		
NNR Pension fund	14,546,663	12,179,229

## Notes to the Annual Financial Statements

Figures in Rand	2017	2016
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**28. Executive and directors' emoluments****Executive****2017**

	Basic salary	Performance bonus	Contributions	Total
Dr. M Tyobeka (CEO)	2,383,886	146,202	97,533	2,627,621
Mr. D Netshivhazwaulu (CFO)	1,615,778	100,146	59,845	1,775,769
Ms. A Simon-(CCS Senior Manager)	1,495,235	92,560	41,730	1,629,525
Ms. D Kgomo (CAE Senior Manager)	1,579,215	99,284	74,028	1,752,527
Mr. O Phillips (SARA Senior Manager)	1,730,163	-	129,845	1,860,008
	<b>8,804,277</b>	<b>438,192</b>	<b>402,981</b>	<b>9,645,450</b>

**2016**

	Basic salary	Performance bonus	Contributions	Total
Dr. M Tyobeka (CEO)	2,257,305	181,220	218,030	2,656,555
Mr. D Netshivhazwaulu (CFO)	1,481,386	194,961	123,702	1,800,049
Ms. A Simon-(CSS Senior Manager)	1,401,533	105,169	79,237	1,585,939
Ms D Kgomo (CAE Senior Manager)	1,430,081	66,359	135,922	1,632,362
Mr. O Phillips (SARA Senior Manager)	1,614,874	213,649	201,590	2,030,113
	<b>8,185,179</b>	<b>761,358</b>	<b>758,481</b>	<b>9,705,018</b>

Performance bonus is provided for during the year of actual performance and paid on the subsequent period if so declared in line with NNR approved remuneration and rewards policy.

**Directors****2017**

	Director' fees	Total
Dr. T Cohen-(Former Chairperson)	32,893	32,893
Mr T Mofokeng-(Former Deputy chairperson)	51,145	51,145
Mr N Lesufi	74,646	74,646
Mr S Mimi	52,360	52,360
Dr. M Tyobeka (CEO)	82,724	82,724
Mr. J Leaver	89,266	89,266
Dr. M T Motshuidi-(Chairperson)	73,705	73,705
Ms B Mokoetle	19,891	19,891
Dr. P Dube (Deputy Chairperson)	19,737	19,737
Mr. P Phili	18,237	18,237
Mr A Le Roux	15,185	15,185
Mr AJ Seekoe	11,692	11,692
Dr B Sehlapelo (Technical advisor-Until 07-December-2016)	36,127	36,127
	<b>577,608</b>	<b>577,608</b>

## Notes to the Annual Financial Statements

Figures in Rand	2017	2016
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### 28. Executive and directors' emoluments (continue)

#### 2016

	Directors' fees	Total
Dr. T Cohen-(Chairperson)	45,784	45,784
Mr. T Mofokeng	92,473	92,473
Mr. J Leaver	149,845	149,845
Mr N Lesufi	111,550	111,550
Mr S Mimi	68,111	68,111
Dr T Motshudi	91,117	91,117
Mr. S Kakoma	71,517	71,517
	<b>630,397</b>	<b>630,397</b>

#### Independent Technical Committee member

	Fees	Total
Dr. B Sehlapelo	40,867	40,867

### 29. 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 and price risk, credit risk and liquidity 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 co-operation 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 pre-approved budget.

#### 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 evaluate 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.

#### Market risk

#### 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

Figures in Rand	2017	2016
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### 29. Risk management (continued)

#### 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	10.50 %	12,377,343	12,377,343	12,377,343	12,377,343	15,471,678

#### Fair value interest rate risk

#### 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)

### 30. 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.

The ability of the entity to continue as a going concern is dependent on a number of factors. The most significant of these is that the authorisation holders continue to promptly settle their accounts. The Director's have reviewed the financial performance of the NNR for the year ending 31 March 2016, and the current financial year ending 31 March 2017 as well as the budget over MTEF period, in light of this review and the current financial position, they are satisfied that the entity has access to resources to continue in operational existence for the foreseeable future.

### 31. Fruitless and wasteful expenditure

The NNR incurred no fruitless and wasteful expenditure during the financial year under review.

### 32. Irregular expenditure

Opening balance	4,683	-
Add: Irregular Expenditure - current year	-	4,683
Less: Amounts condoned	(4,683)	-
	-	<b>4,683</b>

The NNR incurred no irregular expenditure during the year under review.

## Notes to the Annual Financial Statements

Figures in Rand	2017	2016
<b>33. Reconciliation between budget and statement of financial performance</b>		
Reconciliation of budget surplus/deficit with the surplus/deficit in the statement of financial performance:		
Net surplus (deficit) per the statement of financial performance	35,129,033	(11,759,106)
<b>Adjusted for:</b>		
Loss on assets written-off	452,599	73,868
Provision for doubtful debts	2,013,249	1,905,016
Provision for leave pay	341,986	558,752
Actuarial gain/loss	(762,377)	(617,085)
Variance on authorisation fees	(5,078,990)	(3,703,573)
Variance on other income	9,288,820	(28,807)
Variance on investment income	(2,135,853)	(1,780,596)
Variance on compensation	4,928,448	7,087,126
Variance on goods and services	(41,800,359)	6,125,198
Variance on depreciation	551,058	7,433,292
Variance on finance cost	(70,949)	561,373
Variance on capital expenditure	(2,856,665)	(5,855,458)
<b>Net surplus per approved budget</b>	<b>-</b>	<b>-</b>

### 34. Budget differences

#### Material differences between budget and actual amounts

##### 34.1 Authorisation fees

The authorisation fees for year is R5 million more than the budgeted owing to marginal increase on the number of authorisation holders during the year under review.

##### 34.2 Application fees

A negative variance of R 10.9 million on application fees is attributed to delays in some activities on Eskom's Nuclear Installation Site License for Thyspunt site in progress. The project will continue to the next financial year where the bulk of work is expected to be executed.

##### 34.3 Deferred income

Deferred income related to unspent conditional grant received for establishment of Regulator Emergency Control Center and Cape Town office accommodation projects. The total amount disbursed and realised as income during the year is R 2.8 million for the period under review.

##### 34.4 Interest received

Interest income is substantially higher than budgeted due to significant cash balance resulting from a cash injection of R 24 million in respect of Eskom's Nuclear Installation Site License processing by government which will be recovered from the Regulator in 2018/19 financial year.



## Notes to the Annual Financial Statements

Figures in Rand	2017	2016
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### 34.5 Depreciation and amortisation

Depreciation is budgeted for in line with the CAPEX annual acquisition provision and has increased significantly in line with new assets procured for the Radio Activity Analysis Laboratory commissioned in the past financial year.

### 35.6 Debt impairment.

The increase in provision for doubtful debts can be attributed to lack of external debt collection service for the better part of the year under review, a panel of legal service providers was however appointed during the third quarter of the financial year and therefore the situation is significantly improving.

### 35.7 Goods and services

A positive variance 51% on goods and services budget is attributed to delays on Eskom's Nuclear Installation Site License and Koeberg Nuclear Power Station's Steam Generator replacement projects. These two projects' schedules are dependent on the operator's deliverables schedules and therefore the Regulator from time to time revise it's activities to align with the changes thereto

# SECTION 7

## ACRONYMS & GLOSSARY



## ABBREVIATIONS/ACRONYMS

<b>AA</b>	Accounting Authority
<b>ARMCOM</b>	Audit and Risk Management Committee
<b>AADQ</b>	Annual Authorised Discharge Quantity
<b>AFRA</b>	African Regional Cooperative Agreement for Research, Development and Training related to Nuclear Science and Technology
<b>AFS</b>	Annual Financial Statements
<b>ACR</b>	Authorisation Change Request
<b>AGSA</b>	Auditor-General of South Africa
<b>ALARA</b>	As Low As Reasonably Achievable
<b>ARPC</b>	Assistant Radiation Protection Controller
<b>ASDPL</b>	Aerodynamic Separation Process
<b>ASME</b>	American Society of Mechanical Engineers
<b>ASN</b>	French Nuclear Regulatory Authority
<b>CAA</b>	Civil Aviation Authority
<b>CAE</b>	Compliance Assurance and Enforcement
<b>CEO</b>	Chief Executive Officer
<b>CFO</b>	Chief Financial Officer
<b>CNS</b>	Convention on Nuclear Safety
<b>COE</b>	Certificate of Exemption
<b>COM</b>	Chamber of Mines
<b>COR</b>	Certificate of Registration
<b>CPI</b>	Consumer Price Index
<b>CSS</b>	Commission on Safety Standards
<b>DIPR</b>	Dedicated Isotope Production Reactor
<b>DSP</b>	Dosimetry Service Providers
<b>ECC</b>	Emergency Control Centre
<b>EPD</b>	Electronic Personal Dosimeter
<b>DoE</b>	Department of Energy
<b>ENIQ</b>	European Network for Inspection and Qualification
<b>EPSOC</b>	Emergency Planning, Steering and Oversight Committee
<b>FET</b>	Further Education and Training
<b>FNRBA</b>	Forum for Nuclear Regulatory Bodies in Africa
<b>GRAP</b>	Generally Recognised Accounting Practice
<b>HEU</b>	Highly Enriched Uranium
<b>HR</b>	Human Resources
<b>IAEA</b>	International Atomic Energy Agency
<b>ICRP</b>	International Commission on Radiation Protection
<b>ICT</b>	Information Communication Technology
<b>ILT</b>	Initial Licence Training
<b>INES</b>	International Nuclear Event Scale

<b>INPO</b>	Institute of International Nuclear Power Operations
<b>INSAG</b>	International Nuclear Safety Advisory Group
<b>ISI</b>	In-Service Inspection
<b>IT</b>	Information Technology
<b>JCC</b>	Joint Co-ordinating Committee KNPS: Koeberg Nuclear Power Station
<b>KPI</b>	Key Performance Indicator
<b>LETF</b>	Liquid-Effluent Treatment Facility
<b>LEU</b>	Low Enriched Uranium
<b>LG</b>	Licensing Guide
<b>LLW</b>	Low-Level Waste LSA: Low Specific Activity
<b>LTAM</b>	Long-Term Asset Management
<b>MDEP</b>	Multinational Design Evaluation Programme
<b>mSv</b>	Millisievert
<b>MW</b>	Megawatt Electrical
<b>NDR</b>	National Dose Register
<b>Necsa</b>	South African Nuclear Energy Corporation
<b>Nehawu</b>	National Education, Health and Allied Workers' Union
<b>NEPROC</b>	Nuclear Emergency Preparedness Regulatory Oversight Committee
<b>NERS</b>	Network of Regulators of Countries with Small Nuclear Programmes
<b>NGO</b>	Non-Governmental Organisation
<b>NIL</b>	Nuclear Installation Licence
<b>NNR</b>	National Nuclear Regulator
<b>NNRA</b>	National Nuclear Regulator Act
<b>NORM</b>	Naturally Occurring Radioactive Material
<b>NTWP</b>	Nuclear Technology and Waste Projects N
<b>NUSSC</b>	Nuclear Safety Standards Committee
<b>NVL</b>	Nuclear Vessel Licence
<b>OTS</b>	Operating Technical Specification
<b>PFMA</b>	Public Finance Management Act
<b>PLEX</b>	Plant Life Extension
<b>PPC</b>	Parliamentary Portfolio Committee
<b>PSA</b>	Public Safety Assessor
<b>PSM</b>	Power Station Manager
<b>QMS</b>	Quality Management System
<b>RAIS</b>	Regulatory Authority Information System
<b>RASIMS</b>	Radiation Safety Information Management System
<b>RASSC</b>	Radiation Safety Standards Committee
<b>RDD</b>	Radiological Dispensive Device
<b>RED</b>	Radiation Emission Device
<b>RPO</b>	Radiation Protection Officer
<b>RTMC</b>	Road Traffic Management Corporation
<b>RSR</b>	Railway Safety Regulator

<b>SALTO</b>	Safety Assessment of Long-Term Operation
<b>SAMSA</b>	South African Maritime Safety Authority
<b>SAPS</b>	South African Police Service
<b>SARA</b>	Standards, Authorisations, Reviews and Assessments
<b>SARS</b>	South African Revenue Service
<b>SAT</b>	Self-Assessment Tool
<b>SCM</b>	Special Case Mines
<b>SGR</b>	Steam Generator Replacement
<b>SHEQ</b>	Safety, Health, Environment and Quality Management
<b>SHEQD</b>	Safety, Health, Environment and Quality Management Department
<b>SSRP</b>	Safety Standards and Regulatory Practices
<b>SQEP:</b>	Suitably Qualified and Experienced Person TPU: (Thermal Power Uprate)
<b>TRANSSC</b>	Transport Safety Standards Committee
<b>TSO</b>	Technical Support Organisation
<b>UFCOR</b>	Nuclear Fuels Cooperation of South Africa
<b>USNRC</b>	United States Nuclear Regulatory Commission
<b>WAC</b>	Waste Acceptance Criteria
<b>WASSC</b>	Waste Safety Standards Committee
<b>WiNSA</b>	Women in Nuclear South Africa
<b>WiN-NNR</b>	Women in Nuclear National Nuclear Regulator
<b>WCA</b>	Wonderfonteinspruit Catchment Area

## GLOSSARY

**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 off-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 off-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 fission 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.



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