



Annual Review

2018



Always learning, always improving the way we work

Namibian Uranium Institute

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Foreword



The Namibian Uranium Institute (NUI) plays a leading role in carrying out the stewardship mission of the Namibian Uranium Association (NUA). The main purpose of NUI is to act as a communication and training hub for the uranium industry in Namibia. As in previous years, NUI in 2018 promoted learning and capacity building in specialized skills in the fields of radiation safety, occupational health, and environmental management, and identified leading best practices.

The institute is guided by respected independent scientists

who serve on NUA's Scientific Committee, and has close ties with the Namibian University of Science and Technology.

Home to the Namibian uranium activities, the Erongo Region is characterized by its aridity, vast desert landscapes, scenic beauty, high biodiversity and endemism and heritage resources. It is often called an economic powerhouse, and mining plays a major part in this. Walvis Bay and Swakopmund are amongst Namibia's five largest towns, but at the same time, large parts of the Erongo Region, especially along the coast, are under active conservation in the form of national parks and the Namib Sand Sea World Heritage Site. Exploration and mining in national parks and on the doorstep of a World Heritage Site obviously comes with special responsibilities.

The utilization of Namibia's mineral endowment is vital for the growth of the Namibian economy, and the country must therefore reconcile development objectives and mineral exploitation with environmental protection for its long-term socio-economic growth and stability. Since the uranium exploration and mining activities are concentrated in one area, often referred to as the Namibian Uranium Province, the cumulative impact must be addressed rather than looking at projects in isolation. Clearly, an integrated approach is required so that development of one resource will not jeopardize the potential of another. Such an integrated approach is facilitated and promoted by NUI.

Environmental monitoring and programmes are carried out by all Namibian uranium exploration and mining operators to assure that their footprint is as small as possible. Stringent water-saving measures, air quality monitoring, biodiversity monitoring, mitigation measures for adverse impacts, and environmental training of staff are only a few examples. NUI facilitates the coordination of the environmental monitoring and programmes, and provides an opportunity for uranium exploration and mining companies to learn from each other.

monitoring, mitigation measures for adverse impacts, and environmental training of staff are only a few examples. NUI facilitates the coordination of the environmental monitoring and programmes, and provides an opportunity for uranium exploration and mining companies to learn from each other. Working together ensures that projects are technically appropriate, environmentally sound, and socially responsible, while environmental, economic and social aspects are integrated from exploration through mine construction and operation to mine closure.

Issues pertaining to Sustainable Development are addressed by NUI's Sustainable Development Committee and its Working Groups. Recognition has been given to the UN 2030 Agenda for Sustainable Development with its 17 Global Goals and the African Union's Consolidated Position on these goals and the contribution that the uranium mining sector can make towards achieving them. In addition, NUI actively supports the Namibian Government's Harambee Prosperity Plan as a tool to make sustainable development a lasting reality in Namibia.

NUI suffered a big loss in 2018 when its Founding Director and Honorary Member of the NUA Board, Dr Wotan Swiegers, passed away. Dr Swiegers made immense contributions in establishing the institute and uniting the industry under the uranium stewardship umbrella. He left behind a lasting legacy and will be remembered for that. May his soul rest in eternal peace.

In closing I would like to thank all stakeholders for their support and guidance in 2018, and in particular acknowledge the NUI Committee and Working Group members and NUI staff members for their hard work and dedication.

From humble beginnings, the NUI has grown to be internationally recognized, and this was made possible through the active participation and cooperation of all role players in the Namibian uranium sector.



Dr Gabi Schneider

Executive Director

Namibian Uranium Institute



1 The History of the Namibian Uranium Institute

The so-called Uranium Rush some 10 years ago resulted in the establishment of the Namibian Uranium Institute (NUI). Initially, a Uranium Stewardship Committee (USC) was formed in 2008 under the auspices of the Namibian Chamber of Mines, in order to promote the Namibian uranium brand and to identify and propagate appropriate best practices within the Namibian uranium industry. Subsequently, in 2009, the Chamber of Mines' Uranium Institute (UI) was launched with a focus on improving environmental management, radiation safety and health care.

In 2013, the Chamber of Mines identified the pressing need to review the situation following the Fukushima tsunami, in order to establish a sustainable management and service delivery entity that can effectively address the key issues faced by the Namibian uranium industry. As a result, the Namibian Uranium Association (NUA) was established, and the UI became the NUI operating under the auspices of the NUA.

From the beginning, exploration and mining companies involved in the Namibian uranium sector have fully recognised that managing environmental issues, radiation, health and safety, and waste is of paramount importance in order to protect staff, the general public and the receiving environment. Responsible management of uranium mining and processing applies to all stages from planning, exploration, development and construction to operations, sale, transport, export, and finally decommissioning. This can best be achieved in a coordinated way with interaction of all players involved, and the NUI has become the vehicle of choice to accomplish this.

VISION

To be Namibia's leading source of advocacy, training and research on uranium related issues.

MISSION

To support the Namibian uranium exploration, mining and export industry through the continuous development of health, environmental and radiation safety best practices, accessible research, training and social responsibility.

VALUES

- Integrity: dignity, honesty, fairness
- Transparency: information, trust, clarity
- Accountability: responsibility, teamwork, leadership, engagement
- Compliance: both nationally and internationally



2 Committees and Working Groups of the Namibian Uranium Institute

2.1 The Sustainable Development Committee

NUA resolved in 2013 to establish a Sustainable Development (SD) Committee to assist the uranium industry in upholding its reputation as a safe and responsible industry. The committee was also established to assist NUA in promoting best practices with regard to Health, Environment and Radiation Safety and Security and in its oversight responsibilities by reviewing, monitoring, and when appropriate, advising NUA from a uranium industry-wide perspective. At the policy level, the SD Committee reviews and guides NUA policy formation to ensure that it incorporates principles of sustainable development early in the policy formulation process. These principles include public participation, inter-generational equity, sustainable use of natural resources and public access to information. The SD Committee's duties include the assessment and monitoring of all risks associated with health, environment and radiation safety and security matters of the uranium industry; assistance with the development and implementation of internal compliance and control systems and procedures to manage risks; coordination of assessment and monitoring of the effectiveness of controls instituted; and the review and making of recommendations to the NUA in relation to risk management.

Namibian uranium mining companies subscribe to the International Council on Mining and Metals' (ICMM) interpretation of sustainable development for the mining and metals sector, namely that investments should be technically appropriate, environmentally sound, financially profitable and socially responsible. Best practice, i.e. setting standards of operation and practice that maintain international standing and reputation is applied as it is critical for any mining company to gain and maintain its "social license to operate" in the community.

It is essential to integrate environmental, economic and social aspects through all phases of mineral production from exploration to construction, operation and finally mine closure. The SD Committee plays an important role in ensuring such best practise. In order to achieve its goals, the SD Committee has also appointed four working groups, namely the Services Working Group, the Radiation Safety Working Group, the Water and Air Quality Working Group, and the Swakop River Farmer's Working Group.

During the course of the year, the SD Committee participated in workshops dealing with the revision of the Environmental Management Act (Act No 7 of 2007) and the drafting of Regulations for the said Act. It addressed the sustainability of the air quality monitoring project of the Ministry of Mines

The SD Committee and its Working Groups investigate risks and any potential issue which could negatively affect Sustainable Development.

and Energy's Geological Survey including the maintenance of the radon stations; biodiversity offsets; the activities of the Erongo Region Road Safety Forum and road safety in general; the Strategic Environmental Management Plan for the Namibian Uranium Province and associated annual reporting; the update and accessibility of the water quality database; the NUA guidelines and standards; the use of data for research programmes; and support to small scale miners.

Regular feedback on the Rössing Health Study was also received by the SD Committee, and the NUI director serves as the secretary of the External Advisory Committee of this study. The SD Committee furthermore identified and discussed new risks, during 2018 these included the negative effect of marine sulphur eruptions and harmful algal plumes on the Erongo Desalination Plant, and the new road construction outside Swakopmund and associated blasting activities.



Groundwater Monitoring borehole

Members of the Sustainable Development Committee

- Frances Anderson, Chair (Langer Heinrich Uranium)
- Carlene Binnemann (Swakop Uranium)
- Werner Ewald (Bannerman Resources)
- Sandra Müller (Orano Mining Namibia)
- Kaarina Nkandi (Orano Mining Namibia)
- Martinus Prinsloo (Bannerman Resources)
- Rainer Schneeweiss (Rössing Uranium Ltd)
- Dr Gabi Schneider (NUI)
- Dr Herman Strauss (Medixx Namibia)
- Dr Bertram Schleicher (Rössing Uranium Ltd)
- Dr Gunhild von Oertzen (Rössing Uranium Ltd)

2.1.1 Services Working Group

The Services Working Group was established to address power and water supply issues, as well as infrastructure maintenance and developments. Intermediate and long-term power supply security, the sourcing of sufficient quantities of bulk water at viable and cost-effective tariffs, and transport infrastructure are the key issues this Working Group is dealing with. The Services Working Group deliberated in detail about the negative consequences for the mines emanating from the red tides affecting the productivity of the Erongo Desalination Plant; as well as about the maintenance of water infrastructure. Two members of this Working Group represented the mining industry on the Water Advisory Council of the Ministry of Agriculture, Water and Forestry. There is also active participation in the Erongo Water Forum. Members also addressed the issue of heavy bus traffic on the B2 due to shift changes at the two active mines.



Members of the Services Working Group

- Anca Burger, Chair (Rössing Uranium Ltd)
- Frances Anderson (Langer Heinrich Uranium)
- Werner Ewald (Bannerman Resources)
- Martin Hirsch (Reptile Mineral Resources and Exploration Ltd)
- Bob Meiring (Marenica)
- Sandra Müller (Orano Mining Namibia)
- Augustinus Mungunda (Swakop Uranium)
- Tinus Prinsloo (Bannerman Resources)

2.1.2 Radiation Safety Working Group

Uranium mining has the potential to contaminate the environment and to affect the health of workers and the public by exposing them to ionising radiation. Consequently, the discipline of radiation safety in the Namibian uranium mining industry requires skilled professionals able to competently manage radiation safety in the workplace and in the environment affected by uranium mining. Effective radiation protection must ensure minimal harm from ionising radiation to people and the environment.

This can only be achieved if adequately trained professionals manage radiation protection in the workplace. A structured uranium product stewardship program is required to ensure that public fears about radiation are addressed factually and unemotionally. The Radiation Safety Working Group was established to address the challenges associated with building and maintaining capacity in radiation safety in Namibia, and

consists of members from the operating uranium mines in Namibia, as well as from exploration companies.

The Working Group identifies issues relating to radiation protection that may potentially pose a risk to the industry; develops and promotes best practice guidelines for radiation protection in the uranium mining industry; suggests initiatives to promote awareness about radiation protection; and supports NUA in its initiatives towards building capacity in radiation protection. During the course of 2018, the Working Group addressed Radiation Emergency Response Procedures, calibration, dust monitoring, negative publicity on social media, and uranium in urine testing.



Radiation Safety Working Group Members at the Bannerman Heap Leach Demonstration Plant

A very successful emergency drill was conducted with the participation of all members, and the drill was also observed by the National Radiation Protection Authority. The Working Group visited the Husab Mine, where radiation safety measures were inspected. Regular feedback on the Rössing Health Study was given to the members. Furthermore, NUI assists the Ministry of Mines and Energy's Geological Survey with its radon monitoring programme.

Members of the Radiation Safety Working Group

- Dr Gunhild von Oertzen, Chair (Rössing Uranium Ltd)
- Augustinus Mungunda, Chair (Swakop Uranium)
- Rebecca Bengela (Swakop Uranium)
- Nelao Endjala (Rössing Uranium Ltd)
- Temwani Kayira (Langer Heinrich Uranium)
- Ian Marshman (Langer Heinrich Uranium)
- Bob Meiring (Marenica)
- Sandra Müller (Orano Mining Namibia)
- Kaarina Nkandi (Areva Resources Namibia)
- Martinus Prinsloo (Bannerman Resources)
- Dr Bertram Schleicher (Rössing Uranium Ltd)
- Dr Gabi Schneider (NUI)
- Zhang Xiaoke (Swakop Uranium)



Emergency Drill

2.1.3 Water and Air Quality Working Group

The Water and Air Quality Management Working Group was established to address any negative impacts that the uranium operations may have and the avoidance and monitoring thereof. The Working Group assists NUA members in promoting and sharing leading practices and transferring knowledge with regard to water and air quality management. It advises NUA and NUI from an industry-wide perspective. The Working Group also provides an opportunity to discuss and examine water and air quality related risks and advises the Sustainable Development Committee on the co-ordination and prioritization of water and air quality risk management issues. It also encourages and fosters greater awareness of water and air quality risk management aspects at all levels in the uranium industry, which calls for the understanding of pressing issues and their effects in the longer term.

During the course of 2018, the Water and Air Quality Working Group addressed the handover of Khan-Swakop Groundwater Model; the Air Quality Study conducted by the Ministry of Mines and Energy's Geological Survey of Namibia, including the participation of the Working Group; the update of the Regional Water Quality Database; water sampling techniques; waste water permits; predator presence on mining sites; the SEMP air quality website; water quality monitoring for mines under care and maintenance; and engagement with the Ministry of Agriculture, Water and Forestry regarding legislation, permit conditions and inspection visits. Interaction with the Swakop River farmers was also initiated, and a field familiarisation visit to farm Palmenhorst in the Swakop River was undertaken. Another field visit was made to Bannerman Resources Etango project. The working group contributed significantly to the compilation of the 2017 Strategic Environmental Management Plan report, and has maintained a close working relationship with the Ministry of

Mines and Energy's Geological Survey of Namibia.

Groundwater Balance Monitoring for the Aquifers of the Khan and Swakop Rivers

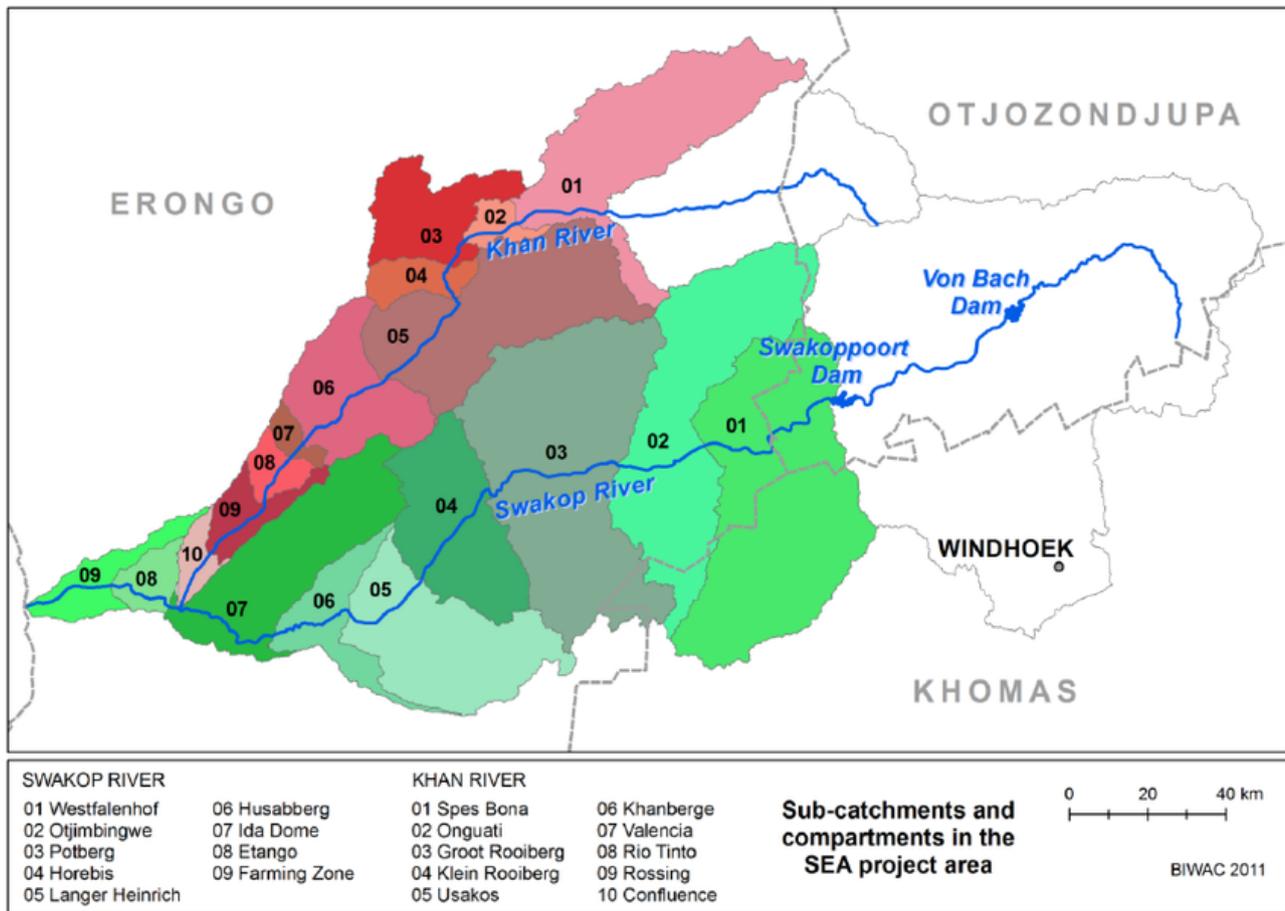
Vegetable farmers on the lower Swakop River smallholdings have noticed for years that their water resources were not as reliable as they used to be in the past. The water levels in wells and boreholes appear to drop faster and the water seems to become more and more saline. A suspicion that the uranium mines reduce groundwater flow by pumping from wellfields was raised. During the Strategic Environmental Assessment (SEA) of the Namibian uranium province, the water issue was addressed for the first time in a scientific manner. The study aimed amongst others to identify the causes of declining water levels and dwindling resources. The Von Bach and Swakoppoort Dams on the upper Swakop River were identified as causing the decline, as they catch most of the rainwater that would otherwise run further down the river. Almost a decade lapsed since the SEA study was undertaken, and this decade has seen devastating draughts, as well as



Vegetables are irrigated with groundwater at Palmenhorst farm in the Swakop River

the 2011 exceptional floods. NUI therefore commissioned an update to confirm the original results by updating the Groundwater Balance Model with the latest water level data. The outcome of the new version validates the previous model and it contains graphical output that is useful for stakeholder

communication. It shows that pumping of groundwater at the mines has no effect on the water levels in the farming area. Bedrock barriers that occur on average every 15-20 km subdivide the rivers into compartments.



Each compartment is mostly filled up by recharge from floods, while inflow from upstream is balanced out by outflow to the next compartment downstream. Compared to floodwater, groundwater flows very slowly, for the Khan and Swakop Rivers only a few kilometres per year. The river aquifers currently contain over 50 million cubic metres of groundwater, which is more than the full capacity of the Von Bach Dam, just to give a comparison. The average annual

recharge to the lowest three compartments of the Swakop River is around 12 million cubic metres, while the mines and the farmers together abstract less than 1 million cubic metres per year.

2.1.4 Swakop River Farmer's Working Group

The Swakop River Farmer's Working Group was put in place in order to address concerns of this particular stakeholder group. Farming in the immediate vicinity of mining operations can potentially lead to conflicting situations, such as competition for water, to name but one example. Indeed, the Swakop River farmers utilise a source of groundwater for their irrigation schemes, which is also utilised in part by the uranium mines, and a coordinated approach is therefore required. Of particular importance here is the quality of the water, as the irrigation schemes are downstream from the mines. Meetings are held to give information about projects and mining operations to the farmers, as well as availing them an opportunity to raise any concerns they might have.

Matters addressed in 2018 included feedback on the Air Quality Monitoring Study and the update of the Groundwater Balance Model; road conditions; and the quality of water supplied by NamWater. In cooperation with NUA's Scientific Committee and the Namibian University of Science and Technology, a study was initiated to research the reason for low infiltration rates, which have been observed by the farmers ever since the water supply includes desalinated water.

Members of the Water and Air Quality Working Group

- Sandra Müller, Chair (Orano Mining Namibia)
- Carlene Binneman (Swakop Uranium)
- Michael Binneman (Swakop Uranium)
- Olga Coetzee (Adamas Drilling)
- Stefaans Gaeseb (Rössing Uranium Ltd)
- Martin Hirsch (Reptile Mineral Resources and Exploration Ltd)
- Julia Kamatoto (Rössing Uranium Ltd)
- John Kandjungu (Reptile Mineral Resources and Exploration Ltd)
- Ian Marshman (Langer Heinrich Uranium)
- Bob Meiring (Marenica)
- Vistorina Nangolo (Rössing Uranium Ltd)
- Kaarina Nkandi (Orano Mining Namibia)
- Martinus Prinsloo (Bannerman Resources)
- Rainer Schneeweiss (Rössing Uranium Ltd)
- Dr Gabi Schneider (NUI)
- Ilka Schroer (Swakop Uranium)
- Ignatius Shaduka (Rössing Uranium Ltd)

Members of the Swakop River Framers Working Group

- Rainer Schneeweiss, Co-Chair (Rössing Uranium Ltd)
- Siegfried Eckleben, Co-Chair (Farmer)
- Frances Anderson (Langer Heinrich Uranium)
- Elbe Becker (Gobabeb/NERMU)
- Carlene Binneman (Swakop Uranium)
- Hartmut Fahrbach (Farmer)
- Valereis Geldenhuys-Venter (Farm Owner)
- Mike Leech (NUA)
- Bob Meiring (Marenica)
- Sandra Müller (Orano Mining Namibia)
- Norwal Mwananawa (SEMP)
- Fanie van Niekerk (Farmer)
- Prof Gustav Obermair (Farmer)
- Hümpi Obermair (Farmer)
- Tinus Prinsloo (Bannerman Resources)
- Titus Shuuja (Gobabeb/NERMU)
- Dr Gabi Schneider (NUI)
- Dr Theo Wassenaar (Gobabeb/NERMU)



Swakop River Farmers' Working group meeting

2.2 The Communication Technical Advisory Committee

The Communication Technical Advisory Committee (C-TAC) was established in order to recommend to NUI the overall strategic direction of the institute's communications. It is an advisory committee tasked to advise and assist NUA through NUI in carrying out its mission and strategic plan by developing and monitoring communication protocols, initiatives and policies, and formulating and implementing a stakeholder engagement and communication strategy for the uranium mining industry in Namibia.

During 2018, the communication strategy was implemented. This strategy can be described as a roadmap that aligns communications in support of NUI's vision, goals, values and priorities, thereby enhancing performance and reputation in a measurable way. It aligns specific groups of stakeholders, internally and externally, to act in support of each of these areas. The overriding objective of the strategy is to gain the public and stakeholders' recognition and respect as an industry that goes about its activities in a safe, environmentally-friendly and responsible manner. Further objectives are to co-ordinate communication by and between the various role players in the uranium industry; to ensure consistent communication and messages to all stakeholders; to develop a base of mutual trust and understanding with core stakeholders and key media personalities; to ensure controlled, factually correct information about the uranium industry and the uranium fuel-cycle; to address the many misconceptions about the uranium and nuclear power generation industries; to address the many myths about uranium mining and nuclear power generation; to minimise negative publicity and perceptions about the uranium industry; to highlight the socio-economic benefits of the uranium mining industry to the people of Namibia; to educate the general public about uranium mining and the

uses of uranium; and to create a channel of communication that encourages the public to report observations that may affect their safety or the environment in an unacceptable manner.

The C-TAC facilitated the participation of NUA in the Chamber of Mines Mining Expo, and the Swakopmund International Trade Exhibition (SWAITEX). The booth was a joint effort of all NUA members, carrying a message of cooperation. The activities at the booth generated a lot of interest, allowing NUA to provide information about the Namibian uranium industry. The Erongo Career Fair was once again attended, and NUA's career booklet was distributed. C-TAC also participated in the National Clean-up Campaign, and in the West Coast Safety Initiative during the festive season, and a flyer explaining radiation and sun burn was distributed. C-TAC submitted NUA-related articles for publication in the Chamber of Mines of Namibia newsletter.



2018 National Clean-up Campaign

Members of the Communications Technical Advisory Committee

- Christine De Klerk, Chair (Orano Mining Namibia)
- Frieda Abraham (Swakop Uranium)
- Daylight Ekandjo (Rössing Uranium Ltd)
- Werner Ewald (Bannerman Resources)
- Martin Hirsch (Reptile Mineral Resources and Exploration Ltd.)
- Lourencia Mungunda (Reptile Mineral Resources and Exploration Ltd)
- Kaino Nghitongo (Rössing Uranium Ltd)
- Helena Niimbala (NUI)
- Monika Ruppel (NUI)
- Dr Gabi Schneider (NUI)
- Nanette Singh (Langer Heinrich Uranium)



NUI participating in the West Coast Safety Initiative

3 Training

An integral part of NUI's activities is teaching in order to improve knowledge, safety and the implementation of best practises in the field of occupational health, environmental management and radiation safety. As part of its stewardship mission, NUI has developed partnerships with various service providers to develop standards, guidelines and training courses to cater for the needs of the uranium industry. NUI is also officially registered with the Ministry of Labour and Social Welfare as an Approved Inspection Authority with competencies in the fields of health, environment and radiation safety and security in terms of the Regulations made under Schedule 1(2) of the Labour Act, 2007 (Act 11 of 2007). The following courses were presented during 2017:

- Radiation Safety Officer Part 1
- RSO Refresher
- Radiation Safety for Managers
- Radiation Safety for Radioactive Sealed Sources
- Introduction to Radiation for Members of the Public
- Spirometry Full Course
- Spirometry Refresher Course
- Audiometry Full Course
- Audiometry Refresher Course
- Protective Clothing (DuPont)

3.1 Radiation Safety Training at the Namibian Uranium Institute

Ionising radiation in the workplace can be a risk to the workforce. It is therefore essential that radiation-related risks are professionally managed, and that their impacts are deliberately and purposefully minimised. This can be achieved by ensuring that staff is aware of work-related risks, and by providing hands-on training on how to minimise the exposure to radiation-related risks at work. Relevant,

regular, and specific radiation-related training and raising of awareness are therefore essential, particularly for those who are or may be exposed to radiation risks. Such training must ensure that radiation-related risks are readily identified, comprehensively understood, and placed into perspective, without being dismissive or unduly afraid of any sources of risk.

The NUI, in collaboration with the specialist consulting firm VO Consulting, is therefore regularly offering radiation safety and radiation protection training courses. These are aimed at informing potentially affected persons about radiation-related risks, advising on suitable control measures, practicing monitoring, handling modern measurement instruments, and demonstrating how the concepts of radiation safety are best communicated and implemented. The courses are specifically designed for persons wishing to become radiation safety professionals and persons exposed to radiation-related risks, as well as for interested members of the public.

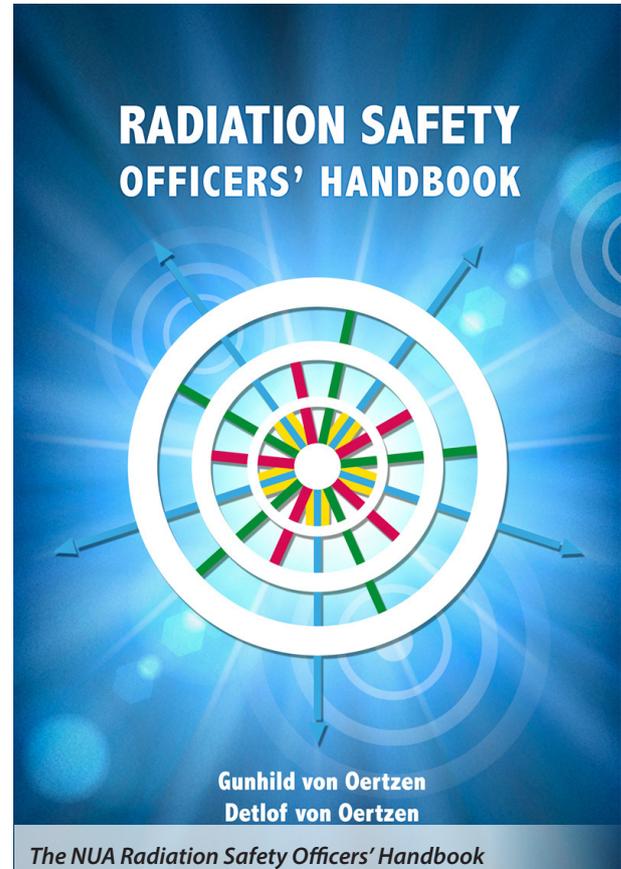
The main objective of contemporary radiation-related training is to empower staff responsible for the safety of the workforce, including those aspiring to become Radiation Safety Officers; and to ensure that radiation-related risks are neither trivialised, nor that staff are immobilised by fear of radiation and its potential impacts on the body. Effective radiation safety training is best achieved in an environment where qualified and experienced radiation safety professionals explain the do's and don'ts, provide systematic guidance on how radiation-related risks are identified, monitored, and managed, and systematically convey how exposure to radiation is kept as low as reasonably achievable.

In support of the training courses, the NUI published a comprehensive textbook for Radiation Safety Officers and related practitioners. This Radiation Safety Officer's Handbook

is authored by Dr Gunhild and Dr Detlof von Oertzen (VO Consulting). The Radiation Safety Officer's Handbook is complemented by two easy-to-read brochures which were previously published by the Namibian Uranium Institute, i.e. the Guide to Radiation in Namibia's Uranium Exploration and Mining Sectors, and Questions Answered about Uranium and Radiation, both written by the authors of the Handbook.



Participants of the 2018 Spirometry Course





Participants of the 2018 Radiation Safety Officers Course

4 The Strategic Environmental Management Plan for the Namibian Uranium Province

Thirteen years ago, when prices for fuel for civil nuclear reactors were rising fast, resulting in a worldwide boom in uranium exploration and mining, the Namibian uranium industry recommended to the Namibian Government to undertake a Strategic Environmental Assessment (SEA) of the Namibian uranium province, where exploration for uranium was also expanding rapidly.

Subsequently, such an assessment was carried out by the Ministry of Mines and Energy's Geological Survey of Namibia, and provided vision and generated a culture of cooperation between the uranium mining industry, Government and the public. The Strategic Environmental Management Plan (SEMP) was developed as a result of the SEA. It is an overarching framework and roadmap addressing the cumulative impacts of existing and potential developments and the extent to which uranium mining is impacting the central Namib. The SEMP has 12 themes, the so-called Environmental Quality Objectives (EQOs), each articulating a specific goal, providing context, setting standards and having a number of key indicators that are monitored. These themes include socio-economic development, employment, infrastructure, water, air quality, health, effect on tourism, ecological integrity, education, governance, heritage and future, and mine closure and future land use. Each EQO has a number of indicators that are assessed and placed into 4 categories, namely "met", "in progress", "not met" and "exceeded". NUI is actively contributing to the compilation of the Annual SEMP Reports.

The 2017 SEMP Report was released at the end of 2018. Compared to the preceding years, the performance of the indicators showed an increase in those that were met, but also in those that were not met. In summary, 60% of the indicators were met, 18% were in progress, 2% exceeded and 14% were not met. The remaining 6% comprise of indicators

that are no longer applicable, because of changes in the circumstances. The Socio-economic Development (EQO 1), Employment (EQO 2), Air Quality (EQO 5), and Heritage and Future (EQO 11) indicators were 100% met. 71% of the indicators for Infrastructure (EQO 3), 87.5 % of the indicators for Water (EQO 4), 60% of the indicators for Effect on Tourism (EQO 7), 64% of the indicators for Ecological Integrity (EQO 8), 60% of the indicators for Governance (EQO 10), and 75% of the indicators for Mine Closure and Future Land Use (EQO 12) were met, while some indicators remained in progress. Unfortunately, only 25% of the indicators for Health (EQO 6) and 14% of the indicators for Education (EQO 9) were met.

Sustained and effective communication is essential for every organisation. This is especially true for the uranium industry, where information and transparency are crucial. There is thus a continuous interaction with NUA members, the Namibian



Monitoring at Rössing Uranium's Plant

5 Stakeholder Interaction and Cooperation

Government, local communities, the Namibian Chamber of Mines, NGOs, academic institutions and international partners such as the World Nuclear Association and the International Atomic Energy Agency (IAEA).

In support of local development, the NUI provides secretarial services to the Erongo Development Foundation (EDF) and hosts the EDF board meetings. Regular interaction with the Regional Governor takes place, and water and corporate social responsibility are central points of the discussions. The NUI also serves on two bodies under the Erongo Regional Council, namely the Erongo Region Road Safety Forum and the Erongo Regional Disaster Risk Management Committee. Taking into consideration that one of the Desired Outcomes of the fifth National Development Plan is that by 2022,

Namibia will have integrated the mining industry with other sectors of the economy through up-stream, side-stream and down-stream linkages, a study on those linkages that already exist is ongoing.

Presentations on uranium, the economy and sustainable development were made to the Hon Minister of Mines and Energy, who visited the NUI in August 2018, to local and overseas students, at the SWAITEX 2018 Economic Forum, and by invitation at the International URAM 2018 Conference of the International Atomic Energy Agency (IAEA) in Vienna. At the 2018 Mining Expo the NUI director participated in Rand Merchant Bank's Economic and Commodity Update by making a presentation entitled "Uranium Stewardship - Managing the legacy of mining", and by being part of a panel discussion on "Surviving or Thriving – Positioning Namibia for the Commodity Bull Market".



The Minister of Mines and Energy, Hon Tom Alweendo, visiting the NUI

5.1 Nuclear Suppliers Group

The Nuclear Suppliers Group (NSG) is a group of nuclear supplier countries that seeks to contribute to the non-proliferation of nuclear weapons through the implementation of two sets of Guidelines for nuclear exports and nuclear-related exports. The NSG Guidelines also contain the so-called “Non-Proliferation Principle,” adopted in 1994, whereby a supplier, notwithstanding other provisions in the NSG Guidelines, authorises a transfer only when satisfied that the transfer would not contribute to the proliferation of nuclear weapons. The Non-Proliferation Principle seeks to cover the rare but important cases where adherence to the Non-Proliferation Treaty or to a Nuclear Weapon Free Zone Treaty may not by itself be a guarantee that a State will consistently share the objectives of the Treaty or that it will remain in compliance with its Treaty obligations.



Final product at Rössing ready for shipment

The NSG Guidelines are consistent with, and complement, the various international, legally binding instruments in the field of nuclear non-proliferation. These include the Treaty on the Non-Proliferation of Nuclear Weapons (NPT), and a number of regional Treaties such as the African Nuclear-Weapon-Free Zone Treaty (Treaty of Pelindaba). The NSG Guidelines are implemented by each Participating Government in accordance with its national laws and practices. Decisions on export applications are taken at the national level in accordance with national export licensing requirements.

Namibia has identified uranium as a strategic mineral and potential source of energy generation within the nuclear fuel cycle. The government of Namibia has furthermore expressed its desire to increase beneficiation to enhance economic development and is considering a nuclear power programme to augment its energy needs in the future. Namibia recognizes the Nuclear Suppliers Group as a key role player in mapping the direction of the nuclear industry and guiding policy decisions of major international suppliers within the nuclear fuel cycle. In recognition of its role as a major supplier of uranium, Namibia has decided to apply for membership in order to promote and safeguard the country's interests.

A National Technical Working Group on Namibia's Application for Membership of the Nuclear Suppliers Group was put in place by the Ministry of International Relations and Cooperation (MIRCO), and the Director of NUI represents NUA, as well as the Chamber of Mines of Namibia on that Working Group. This collaboration between industry and MIRCO is yet another example of the mutual assistance and good relations between the Namibian uranium sector and the Namibian Government.

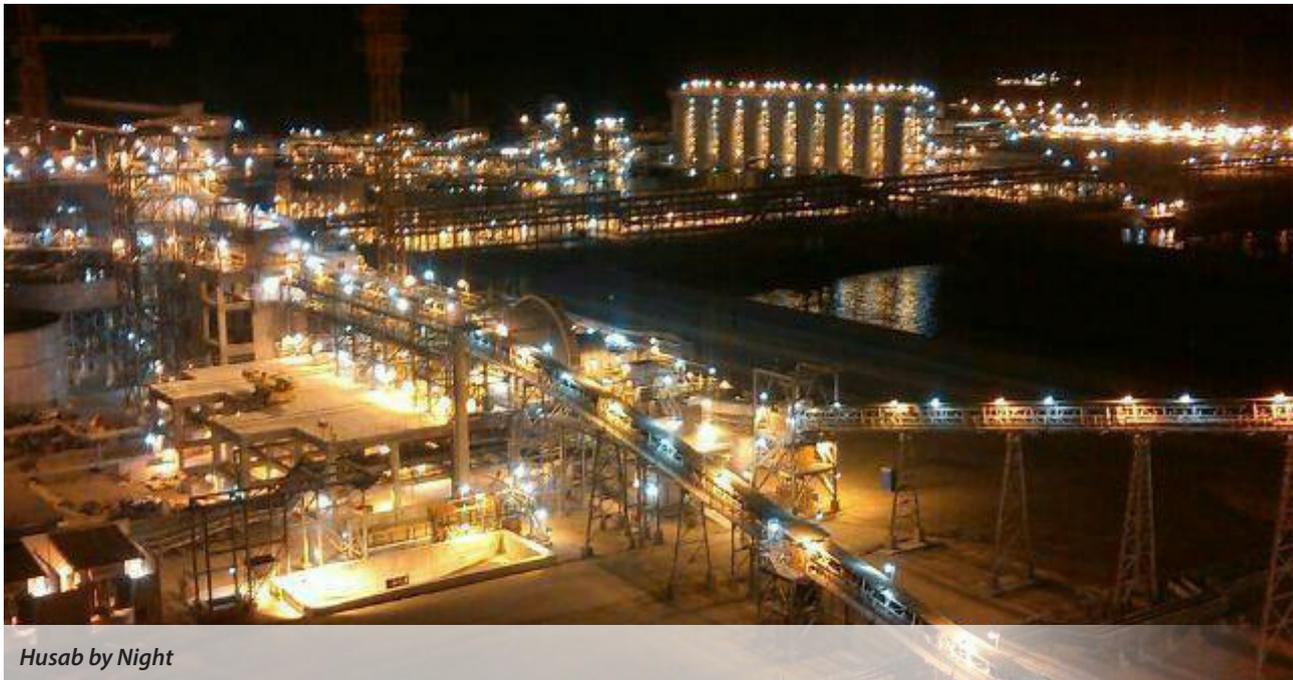
6 Conclusion

2018 has been a busy and eventful year for NUI, despite the fact that the economic challenges faced by the uranium industry worldwide continued unabated. At the beginning of 2018, the U_3O_8 spot price was hovering around US\$ 22.00, since then increased gradually, and by the end of 2018 reached a rise of 31 percent. While this is a welcome trend, it needs to be seen whether it will continue to reach a level, where the Namibian uranium projects become economically viable.

Nevertheless, the Namibian uranium industry has once again also in 2018 continued to position itself for the time when such a level will be attained. With some 30 percent

of production having been removed from the market due to reduced production in Kazakhstan and mine closure in Canada during the last two years, some analysts are optimistic that further price increases can be seen in the not too distant future.

NUI is well equipped to support existing projects and new developments alike, and will in 2019 continue with its mission to promote knowledge and capacity building in specialised skills in the fields of radiation safety, environmental management, and health.



Husab by Night