

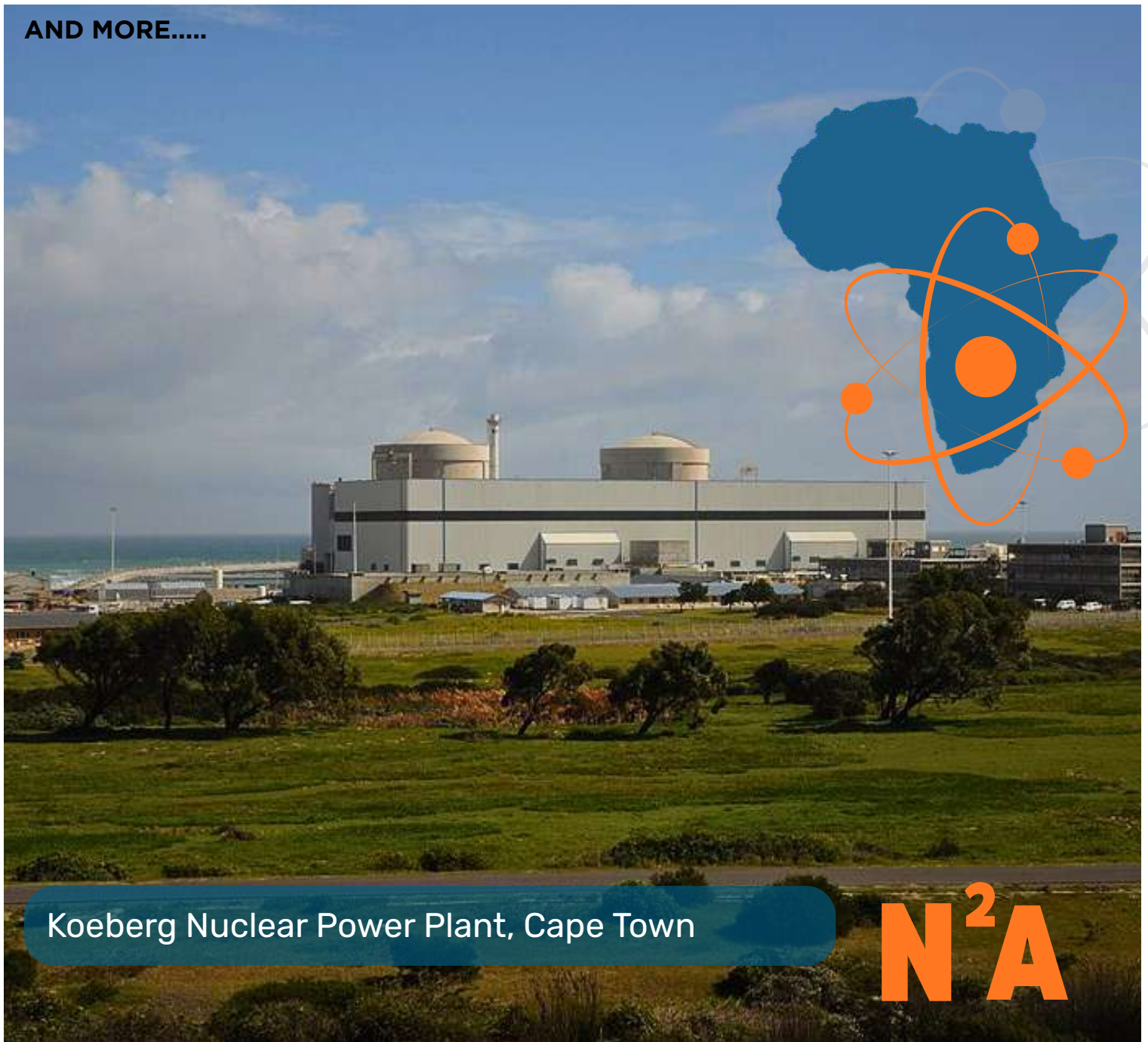
NUCLEAR NETWORK AFRICA

THE WORLD OF NUCLEAR

KOEBERG: SEPARATING RADIATION FACTS FROM FEAR

HOW NUCLEAR FOUND ME - PRINCY MTHOMBENI

AND MORE.....



Koeberg Nuclear Power Plant, Cape Town

N²A

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FROM THE EDITOR

Welcome to the 24th edition of N²A, and to our July 2026 issue.

As we reach our 24th edition, we are reminded once again why informed conversation about nuclear energy matters. Nuclear is not simply about reactors, technology, and megawatts. It is about people, trust, skills, innovation, manufacturing, energy security, and the choices we make about the future.

This month, we explore these themes from several different perspectives. We begin by looking at Koeberg: Separating Radiation Facts from Fear. Few subjects generate as much public anxiety as radiation, yet fear often grows where information is limited or misunderstood. This article takes a closer look at the facts surrounding radiation and nuclear safety, encouraging us to distinguish between genuine risk and perception.

We then turn to the human side of the nuclear industry with How Nuclear Found Me by Princy Mthombeni. Her story is a powerful reminder that careers in nuclear are not always planned from the beginning. Sometimes, opportunity finds us, and what follows is a journey of discovery, purpose, and passion. Africa's nuclear future will ultimately depend on people like Princy who choose to step forward and become part of it.

In Nuclear Manufacturing Is Not Ordinary Engineering And Must Never Be, Johan Jansen Van Vuuren explores an area that is often overlooked when we talk about nuclear development: the extraordinary level of precision, discipline, and quality required to manufacture nuclear components. Nuclear manufacturing is not simply about making something that works.

Heather Veldhuis
HEATHER VELDHUIS
EDITOR



At N²A, we believe nuclear communication matters because policy follows perception, and perception is shaped by truth, evidence, and informed conversation. Our role is not only to report on the industry, but to strengthen the dialogue around it.

The future of nuclear is being written now. Africa has every reason to be part of authoring it.

It is about creating something that must perform reliably, safely and consistently for decades. Finally, Don't Stop Progress. Fix the Problems looks at a challenge that extends well beyond nuclear energy. Progress rarely happens without obstacles. The answer, however, should not always be to stop moving forward. Instead, we need to identify the problems, understand them honestly, and work together to solve them. If Africa is serious about securing a reliable, sustainable, and prosperous energy future, we must be prepared to tackle challenges rather than allow them to define our ambitions.

Together, these articles reflect what N²A strives to achieve: to educate, to inform, and to encourage constructive discussion about the role of nuclear energy in Africa's future.

The nuclear conversation is evolving. As new technologies emerge, manufacturing capabilities grow, and countries across the continent reconsider their energy strategies, there is an opportunity to replace fear with knowledge, uncertainty with understanding, and hesitation with informed decision-making.

Thank you for joining us on this journey.

The future is not something we simply wait for. It is something we build together.

HOW NUCLEAR FOUND ME

PRINCY MTHOMBENI

Some years ago, Princy Mthombeni saw an advertisement for a job and applied. She did not know that the position was at the South African Nuclear Energy Corporation (Necsa). On the day of the interview, she travelled approximately 90 kilometres from her home in Vosloorus to Pretoria, only to discover that the Necsa site was still more than 30 kilometres outside the city, in a picturesque country setting. She was quite demoralised when she realised how remote it seemed to be. The young Princy inwardly decided that she would not take the job if it were offered to her. A few days later, Norma from the recruitment agency phoned to tell her that she had been successful. Princy was reluctant to take the call and, when she eventually did, Norma spent nearly an hour persuading her to accept the job.

Here is Princy's story:

Norma spent nearly an hour convincing me not to throw away the opportunity. Finally, I agreed. That decision changed my life. The following Sunday, I packed my bags and left for Pretoria to stay temporarily with a friend of a friend named Sphiwe. We spent the night talking, and she encouraged me to approach this opportunity seriously and prove myself once I arrived there.

Then came my first week at Necsa. Soon afterward, another friend helped me find accommodation with a woman named Nhlanhla, who welcomed me into her home and told me I could stay for as long as I needed.

And slowly, the place I had once rejected became the place that transformed my understanding of the world. For the first time in my life, I encountered people who genuinely believed that infrastructure problems could actually be solved permanently rather than merely managed temporarily.

Scientists.
Engineers.



Princy Mthombeni, an award-winning nuclear communicator writes in her role as a founder and communications lead at Africa4Nuclear

Reactor operators.
Radiation protection specialists.
Advanced laboratories.
International cooperation.
Before arriving at Necsa, I had never heard of nuclear energy before.

I did not know South Africa had a nuclear power station. I did not know what a reactor was. I did not know nuclear technology was used in medicine, research, agriculture, or industry. The word "nuclear" simply did not exist in the world I grew up in.

CONTINUED ON PG 05



But slowly, my world began changing

I started attending outreach programmes with colleagues and listening to scientists and engineers speak about energy, medicine, desalination, industrial development, and the future. For the first time, I realised that nuclear energy was not only about electricity. It was about whether societies could provide stable infrastructure, clean water, modern healthcare, industry, and opportunity at scale. The more I learned, the more disturbed I became by how little most South Africans knew about this extraordinary field despite living in the only African country with a commercial nuclear power station. Many people did not even know it existed. I wish more people knew what the evidence actually shows. Nuclear power is not the uniquely dangerous technology many people imagine. Measured by deaths per unit of electricity produced, it ranks amongst the safest and cleanest forms of energy humanity has ever used.

Like many people, I had heard of Chernobyl and Fukushima before I understood them.

As I learned more, I discovered that Chernobyl was not simply a story about nuclear technology. It involved a flawed Soviet reactor design and a dangerous experiment carried out in violation of safety procedures. Fukushima was different again. It followed one of the most powerful earthquakes and tsunamis ever recorded, which disabled backup systems and led to reactor meltdowns. Both events were serious, and both changed the industry forever. But neither led me to conclude that nuclear energy was inherently unmanageable.

Instead, they taught me the importance of engineering, safety culture, transparency, and continuous learning. What struck me most was that while public debate often focused on fear, the evidence pointed elsewhere. Nuclear energy had already provided reliable electricity to millions of people while avoiding the pollution and health impacts associated with fossil fuels.

For me, nuclear was never primarily about reactors. It was about what reliable energy makes possible: clean water, functioning hospitals, industry, jobs, education, and human development.

That matters, especially for South Africa. Water systems, hospitals, factories, mines, schools, and future desalination plants need electricity every hour of every day. Solar and wind have an important role to play, and South Africa should use them where they make sense. But an industrial society also requires firm power — electricity that remains available regardless of the weather.

That is why nuclear matters to me. Not because it replaces everything else, but because it provides the dependable foundation on which everything else can function.

I kept thinking about the distance between the world I came from and the world I was now entering. I thought about children carrying water before sunrise, while advanced technologies capable of transforming societies already existed.

What started as curiosity slowly became advocacy. Perhaps what moved me most was recognising my own childhood inside the problems these technologies were trying to solve.

International Travel

Eventually, I travelled to Finland, Canada, IAEA conferences, World Nuclear University, COP meetings, and global energy forums. Over time, that journey led me to establish Africa4Nuclear so that African voices, African realities, and African developmental aspirations could become part of the global energy conversation. I began creating educational videos, writing opinion pieces, speaking publicly, and participating in international energy discussions because I felt a growing responsibility to communicate these ideas beyond technical spaces.

I met scientists, engineers, policymakers, and energy thinkers from around the world. I realised that many of the technologies capable of changing Africa's future already existed.

The problem was never only technology.

The problem was imagination, political will, infrastructure and the unequal distribution of modernity itself.

I also realised something else: that children from places like Nquthu, eTholeni, eNanda, and countless forgotten communities across Africa rarely see themselves reflected inside global scientific conversations.

Yet I had somehow crossed that distance.

The little girl who once carried water before sunrise was now speaking in international forums about energy systems, infrastructure, and development. My story later appeared in books discussing the future of nuclear energy and global development, including *The Power of Nuclear: The Rise, Fall and Return of Our Mightiest Energy Source* by Marco Visscher and *Planet Pragmatism: Common Sense for the Common Good* by Mark C. Coleman.

Sometimes I think about that child standing beside buckets in the dark, and I wish she could have seen even a glimpse of the life waiting ahead of her.

Not because my journey is unique. But because children deserve to know that their environment is not the limit of their imagination.

Electricity is freedom.

The advanced world must be realistic. Perhaps the greatest injustice of all is not that humanity lacks solutions, but that so many people are still expected to survive without them. Africa does not need outsiders to romanticise scarcity for us. We need honest decisions, based on evidence, about how to build clean, safe, firm, abundant energy for the people who have waited long enough.

Somewhere inside me, there is still a little girl carrying water before sunrise.

I still speak for her.

I also hope that climate activists who grew up with clean water, reliable electricity, working hospitals, refrigerators, streetlights, schools, and safe homes will take the time to understand energy before they tell poorer countries what kind of energy future is acceptable.



Children in Africa still today often collect water and carry it home. They sometimes walk kilometers to get it home to their families.



AFRICA'S NUCLEAR POWER LANDSCAPE.



TOP HIGHLIGHTS JULY 2026

Koeberg Safety Events Highlight Strength of South Africa's Nuclear Oversight

The National Nuclear Regulator confirmed no radioactive release, reinforcing public safety and the importance of robust regulatory oversight as Africa expands nuclear capacity.

Africa Turns to Nuclear as Electricity Demand Outpaces Existing Power Capacity

Rising electricity demand and energy shortages are driving more African countries to consider nuclear power as a dependable source of long-term baseload electricity.

African Countries Move Closer to First Nuclear Power Plants

Countries including Ghana, Kenya, Nigeria, Rwanda, and others are advancing nuclear plans, signalling a broader continental shift towards nuclear energy.

Egypt's Nuclear Programme Advances Africa's New-Build Ambitions

Egypt's four-unit nuclear project remains a landmark development, demonstrating that large-scale nuclear construction is moving from ambition towards reality on the continent.

Africa's Nuclear Race Enters a New Phase as SMRs Offer a Smaller Route to New Power

Small modular reactors are gaining attention across Africa, potentially offering countries a more flexible and scalable pathway to nuclear-generated electricity.

DON'T STOP PROGRESS. FIX THE PROBLEMS.

HEATHER VELDHUIS



The recent news that two massive data centres have received an initial green light in Cape Town has sparked a familiar debate: Do we have enough electricity and water to support this kind of development?

It is a fair question. South Africa has real infrastructure challenges. Cape Town has faced serious water shortages, while the country's electricity system has been under pressure for years. The proposed data centres, which could require more than 170MW of electricity, have therefore raised concerns about how these resources will be supplied. The latest approval is also an initial land-use decision, with further planning and development approvals still required.

But perhaps we should ask a different question. What if, instead of asking whether we can afford to develop, we ask how we can build the infrastructure needed to support development?

There is an important difference. Imagine if South Africa had decided years ago that we should stop mining because mining uses electricity and water. Or that we should stop manufacturing because factories need reliable power. We would never accept that as a serious long-term strategy. Instead, we would look for better technology, improve our infrastructure, and find more efficient ways to use our resources. So why should data centres be treated differently? The concerns about water and electricity should not be ignored. They should be used as a starting point for finding solutions.

This is where South Africa needs to bring its best professional minds together. Engineers, scientists, planners, energy specialists, technology companies, government, and the private sector should be asking: How do we make this work?

Heather Veldhuis holds a Bachelor's degree in Industrial Psychology and Sociology and is Editor of N²A (Nuclear Network Africa) Digital Magazine. Through her work in nuclear training development and communications for Stratek Holdings, she focuses on the human side of nuclear energy, exploring how people perceive, understand, and engage with complex technologies.

We already have many tools available. Data centres can explore advanced cooling technologies, including systems that dramatically reduce or avoid water use. Energy efficiency can be improved.

Renewable energy can form part of the supply mix. Battery storage can help manage demand. Waste heat can potentially be recovered and used. Water recycling and alternative water sources can also be considered where appropriate.

And then there is nuclear energy. Small Modular Reactors (SMRs) could offer an opportunity for large, reliable electricity users such as data centres. Unlike intermittent sources of energy, nuclear power can provide dependable electricity around the clock, with a very low operational carbon footprint. Modern reactor technologies are also being designed with passive safety systems and smaller, modular construction approaches. **CONTINUED ON PG 09**

CONT.... FROM PG 08

Imagine a future where a data centre is not simply connected to an already-stretched electricity grid, but is part of a carefully planned energy ecosystem designed around reliable, low-carbon power. That is the kind of thinking South Africa needs.

Interestingly, we do not see people marching in the streets because we have not yet built an SMR to power a data centre. Yet we regularly hear that development should be stopped because our infrastructure is not ready. Perhaps we should be making noise for the right reasons.

We should be demanding better planning. Better infrastructure. More innovation. More investment. More transparency. And faster action on solutions.

The digital economy is not going away. Artificial intelligence is not going away. Data centres are not going away. South Africa can either watch these industries develop elsewhere, or we can become part of the solution and build the infrastructure needed to support them.

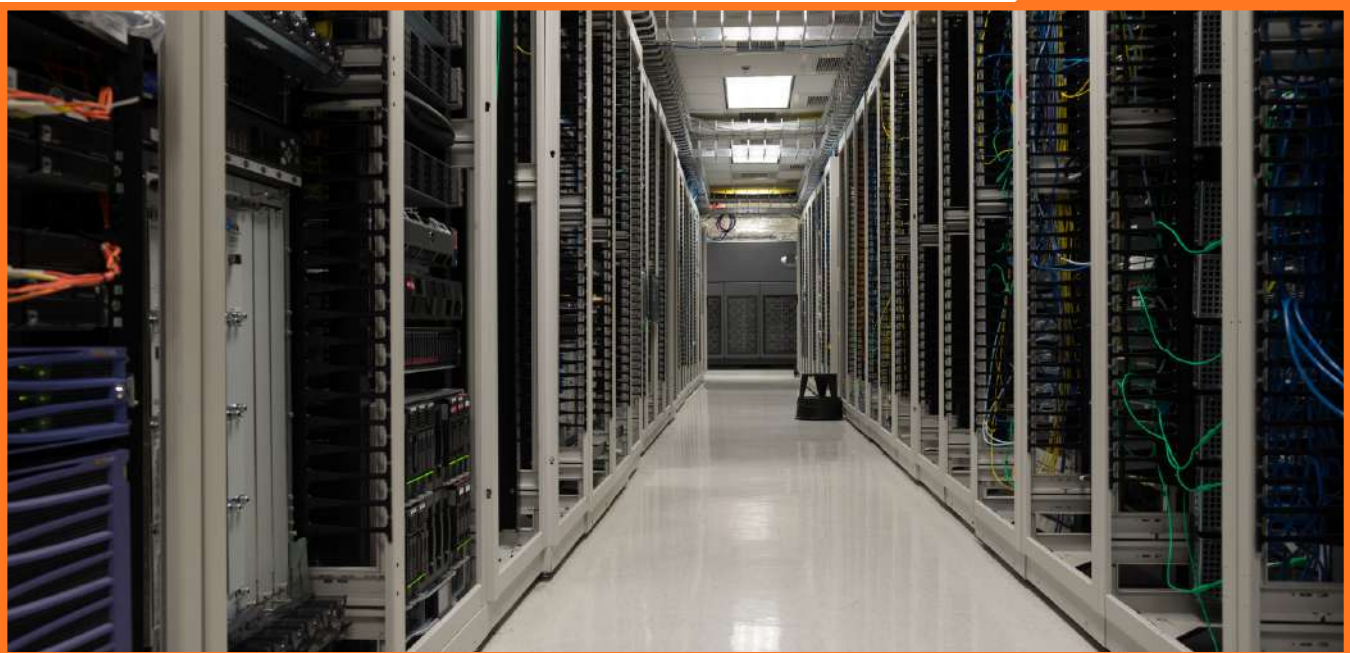
South Africa has some of the brightest engineers, scientists, entrepreneurs, and business minds in the world. We should be putting them in the same room and challenging them to find workable answers.

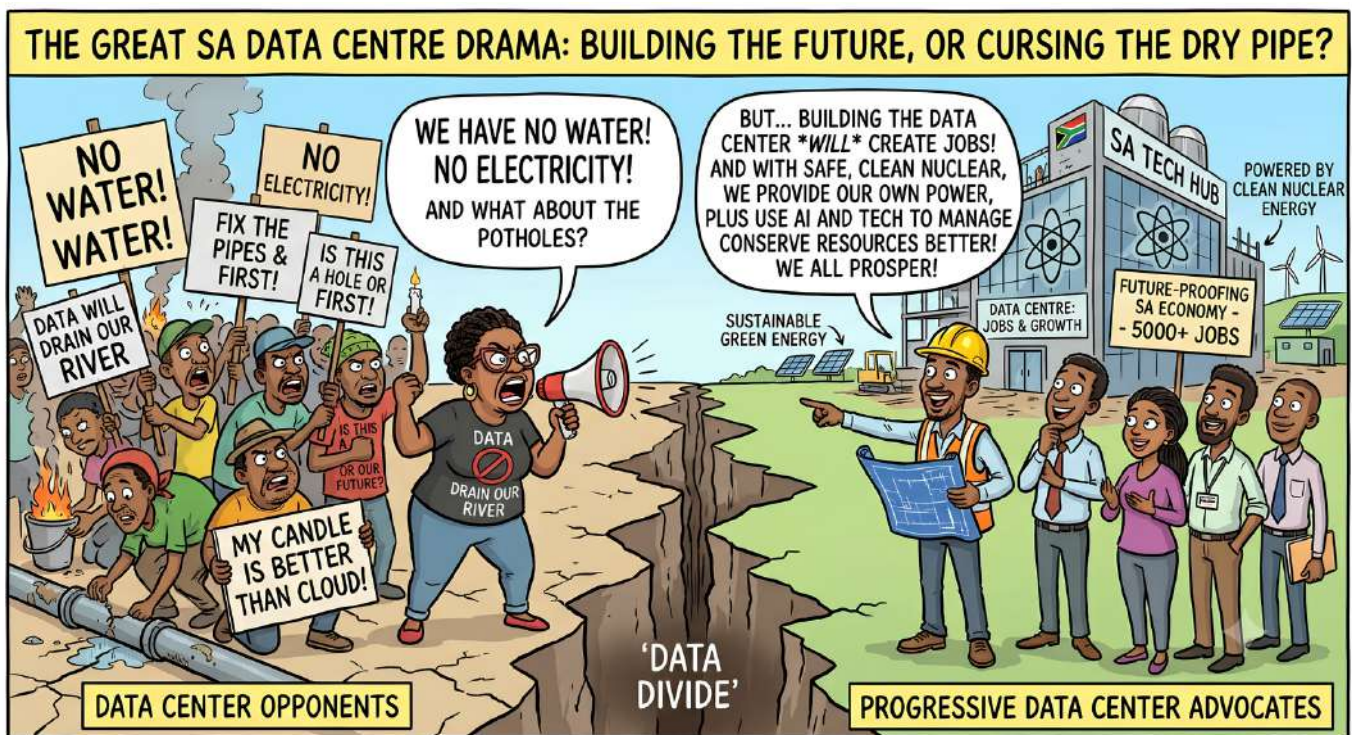
Progress will always create new challenges. The answer cannot be to stop progressing. It is time for the private sector to be brave enough to step forward and provide solutions where there are clear gaps. Nuclear energy is one of those solutions.

The question is no longer whether South Africa can afford to develop. The question is whether we can afford not to find smarter ways to develop.

This does not mean approving every project without proper scrutiny. It means asking the right questions and then having the courage to solve the problems we identify.

If water is the problem, let's innovate. If electricity is the problem, let's build more electricity. If the grid is the problem, let's strengthen it. If the technology does not yet exist at the scale we need, let's develop it.





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Stratek Holdings delivers innovative nuclear solutions that power progress, strengthen infrastructure, and create a cleaner, more secure tomorrow.

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KOEBERG: SEPARATING RADIATION FACTS FROM FEAR

Few words can create as much public anxiety as "radiation leak". When those words appear in a headline alongside the name of a nuclear power station, it is understandable that people become concerned. After all, radiation is invisible, and most of us cannot easily judge whether a situation is dangerous simply by looking at it.

But in the case of recent events at South Africa's Koeberg Nuclear Power Station, the facts tell a very different story from the alarming headlines that have circulated.

According to Eskom and the National Nuclear Regulator (NNR), there was no radioactive leak into the external environment, no threat to the public, and no nuclear safety incident.

So, what actually happened?

During scheduled maintenance and inspections on Koeberg's Unit 2, highly sensitive radiation monitoring equipment detected elevated airborne radioactive contamination within a controlled work area inside the reactor building. Events were recorded on 30 June, 2 July, and 7 July, with a further event reported on 16 July. Unit 2 has been undergoing a planned outage since April, with maintenance work and inspections taking place. This is a standard refuelling outage during which maintenance work and inspections are carried out. The important distinction is between contamination inside a controlled area and a release of radioactive material into the environment. These are not the same thing.

Think of it like a smoke alarm going off in a kitchen. The alarm detects something that needs attention, but it does not automatically mean the entire house is on fire. In this case, the radiation-monitoring systems detected a localised condition inside a controlled area, triggering the appropriate safety procedures.

Eskom explained that the events occurred during Eddy Current Testing, a specialised inspection process used to check the condition of steam generator tubes. During the inspection, tiny microscopic particles from inside the tubes, just called "crud", became airborne within the enclosed work area.

These particles remained within the plant's protected barriers and were managed according to established radiation protection procedures.

The NNR confirmed that no radioactive material was released into the external environment and that there was no danger to surrounding communities. The fourth event was classified as Level 0 on the International Nuclear and Radiological Event Scale (INES), meaning it had no safety significance and no impact on the public or environment.

This is where the language used to describe the situation matters. Calling the incident a "radiation leak" can create the impression that radioactive material escaped from the power station into Cape Town's environment. That is not what the Regulator or Eskom reported.

It is also worth remembering that nuclear power stations are designed with multiple layers of protection. These can be compared to the security of a modern bank. There is not simply one locked door. There are cameras, alarms, guards, access controls, and secure vaults. If something unexpected happens, multiple systems and procedures are in place to prevent it from becoming a larger problem.

At Koeberg, the same principle applies. The event was detected by monitoring equipment, contained within the facility, and managed by trained personnel. Eskom stated that there was no impact on nuclear safety, plant operations, employees, the public or the environment. The Unit 2 outage also remains on schedule.

The lesson here is not that nuclear power should never be questioned. On the contrary, nuclear safety demands scrutiny, transparency, and independent regulation. Questions should be asked, incidents should be reported, and regulators must continue to hold operators accountable.

However, there is a difference between responsible reporting and fearmongering. **CONTINUED ON PG 12**



KOEBERG NUCLEAR POWER STATION

BUILT WITH SAFETY. OPERATED WITH CARE.

Koeberg is South Africa's only nuclear power station and one of the safest in the world.

Advanced engineering, multiple safety systems and a culture of safety ensure the protection of people, the environment and our future.

**SAFETY FIRST
PEOPLE ALWAYS**

MULTIPLE LAYERS OF DEFENCE

Koeberg is designed with multiple, independent safety systems that work together to prevent any radiation release.

- FUEL DESIGN**
Koeberg uses low-enriched uranium fuel made of ceramic pellets that are extremely resistant to heat and damage.
- FUEL CLADDING**
Each fuel pellet is sealed in strong zirconium alloy tubes that contain fission products even under extreme conditions.
- REACTOR COOLING SYSTEMS**
Multiple, independent systems continuously remove heat from the reactor and shut down automatically if needed.
- CONTAINMENT BUILDING**
The reactor and primary systems are enclosed in a massive, airtight reinforced concrete containment building designed to keep radiation inside under all conditions.
- SAFETY SYSTEMS & AUTOMATION**
Koeberg has diverse safety systems with independent power supplies that operate automatically – even if operators take no action.
- EMERGENCY PREPAREDNESS**
Extensive training, regular drills and detailed emergency plans ensure a rapid and effective response to any unlikely event.

INSIDE THE PROTECTION

From the fuel to the environment, radiation is contained at every step by multiple barriers.

- FUEL DESIGN
- FUEL CLADDING
- COOLING SYSTEMS
- CONTAINMENT BUILDING

NATURE THRIVES AROUND KOEBERG

Koeberg is uniquely surrounded by the Duynefontein Nature Reserve – a protected 1 526 hectare sanctuary of incredible biodiversity.

- 235+ BIRD SPECIES**
including rarities like the Black Harrier and Cape Siskin
- 33+ MAMMAL SPECIES**
including bontebok, grey rhebok, porcupine and caracal
- 20+ REPTILE SPECIES**
including Cape skinks and striped mice
- 900+ PLANT SPECIES**
of fynbos, renosterfeld and coastal vegetation

Koeberg is the only nuclear power station in the world that borders a nature reserve.

OUR COMMUNITY. OUR COMMITMENT.

Koeberg has been a responsible neighbour for over 40 years.

- POPULATION AROUND KOEBERG**
Approximately 250 000 people live within 30 km of the power station, including Melkbosstrand, Atlantis, Mamelle and Blaauwberg.
- ZERO HARM TO THE PUBLIC**
In over 40 years of safe operation, there has never been a radiation-related illness or injury to any member of the public.
- REGULATED & MONITORED**
Koeberg is regulated by the National Nuclear Regulator (NNR) and monitored 24/7 for safety, security and environmental performance.

KEY FACTS

- IN OPERATION SINCE 1984**
Over 40 years of safe, reliable nuclear energy
- PROVIDES UP TO 5% OF SOUTH AFRICA'S ELECTRICITY**
Powering millions of homes and businesses
- THOUSANDS OF JOBS SUPPORTED**
Creating skills, opportunities and local investment
- LOW CARBON ENERGY**
Preventing millions of tonnes of CO₂ emissions every year

SAFE. SECURE. SUSTAINABLE.
Koeberg is proof that nuclear energy and environmental stewardship go hand in hand.
SAFE TODAY. SAFER TOMORROW.

Eskom

Koeberg Nuclear Power Station: Safety, Nature and Community

Koeberg uses multiple independent safety systems to protect people and the environment, supported by robust engineering, emergency preparedness and regulatory oversight. Surrounded by the 1 526-hectare Duynefontein Nature Reserve, Koeberg demonstrates how nuclear energy and environmental conservation can coexist.

CONT.... FROM PG 11

South Africa faces a very real energy challenge. We need reliable electricity to power hospitals, businesses, schools, homes, and industries while reducing our dependence on high-carbon energy sources. Nuclear power, alongside renewables and other technologies, has a potential role to play in providing reliable, low-carbon electricity.

Public debate about our energy future should therefore be based on evidence, facts, and context, not headlines designed primarily to create fear.

Koeberg's recent events should remind us that nuclear safety systems are there precisely to detect, manage, and contain unusual situations. They should also remind us that when discussing nuclear energy, accuracy matters.



Fearmongering and negative publicity do little to help South Africa find practical solutions to its energy challenges. Constructive debate, transparent regulation, independent oversight and a commitment to safety are what will help us move forward.

If South Africa is serious about building a safe, reliable, and greener energy future, we need informed citizens and honest conversations. Nuclear energy deserves to be debated on the facts, not on fear.

The future of South Africa's energy supply is too important to be decided by sensational headlines.

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NUCLEAR MANUFACTURING IS NOT ORDINARY ENGINEERING AND MUST NEVER BE

JOHAN JANSEN VAN VUUREN

The development of the South African HTMR-100 Small Modular Reactor (SMR) represents far more than an energy project. It is a demonstration of some of the highest levels of precision manufacturing, engineering discipline, and industrial capability achievable anywhere in the world. Very few nations possess the technical ecosystem required to manufacture nuclear-grade components, and even fewer can do so consistently to internationally accepted standards. South Africa is one of them.

The HTMR-100, a high-temperature gas-cooled reactor derived from decades of South African nuclear innovation, is designed around modular construction principles. Unlike conventional mega-project nuclear plants that require enormous on-site construction complexity, the HTMR-100 is intended to be manufactured largely in controlled factory environments where precision, repeatability, and quality assurance can be maintained at the highest level. Stratek Holdings, a nuclear project development company based in Pretoria, has assembled a significant group of companies and individuals that is working on building an HTMR-100 in Pretoria. This group has been working on the project for some years and has made considerable progress.

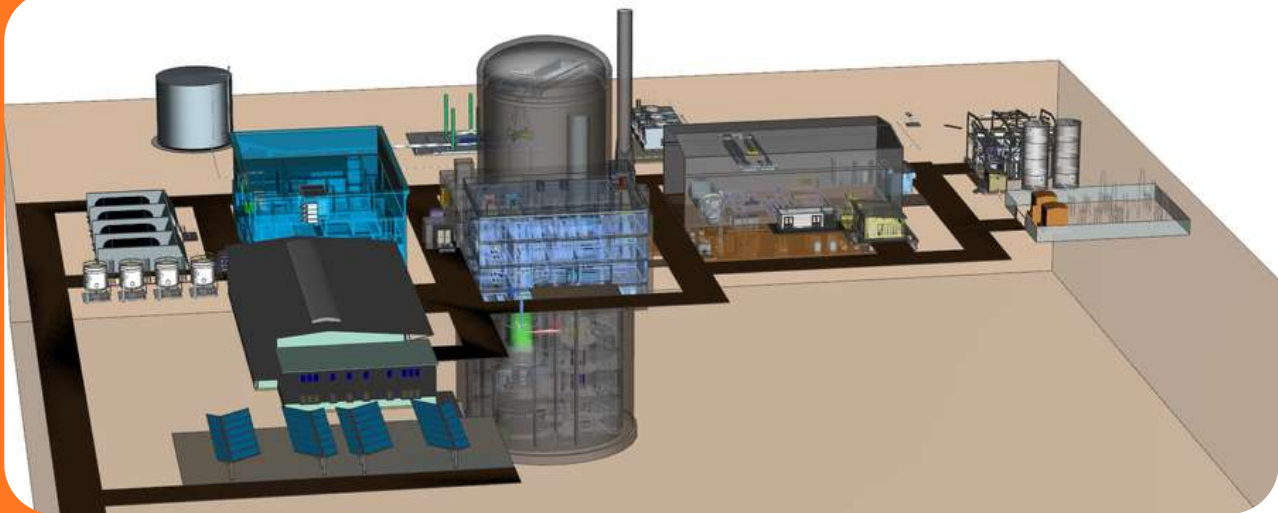
This is where advanced manufacturing becomes absolutely critical. Nuclear-grade fabrication is not conventional fabrication. Components for an SMR require tolerances measured in fractions of a millimetre, with machining accuracy maintained consistently across large and highly complex assemblies. Reactor pressure systems, heat exchangers, steam generators, graphite structures, piping systems, and containment interfaces demand exceptionally advanced CNC machining technologies, multi-axis milling systems, high-specification metrology equipment, robotic welding systems, and precision cladding technologies.



Johan Jansen van Vuuren has extensive international executive leadership experience across multiple industries and sectors. Johan has served on the EXCO of several international companies and has a solid technical background, accumulated over 30 years. Johan holds a Master of Science Degree, MSc (with merit), UK, as well as multiple professional qualifications within the mining, engineering, and construction industries. His expertise includes: Industrial, mining, and engineering process optimisation, Artificial Intelligence systems integration, and Productivity improvement frameworks. Johan is CEO.

The welding standards alone exceed what is normally encountered in heavy industry.

Nuclear welds must endure decades of thermal cycling, pressure loading, vibration, and extreme operating conditions, without compromise. Every weld procedure is qualified, documented, traceable, inspected, and repeatedly verified through non-destructive examination technologies such as ultrasonic testing, radiographic inspection, dye-penetrant testing, and phased-array scanning. **CONTINUED ON PG 14**



The HTMR-100 plant site layout. Most of the reactor is placed under the ground, and the modular nature of the design enables manufacture off-site and assembly on-site.

CONT.... FROM PG 13

In nuclear manufacturing, there is no tolerance for “almost correct”.

High-integrity alloys, specialised steels, corrosion-resistant cladding systems, and advanced materials treatments are required to ensure long operational life and absolute reliability. This level of engineering surpasses normal industrial manufacturing because the operational environment itself surpasses normal industrial conditions. The combination of high temperatures, radiation environments, pressure systems, and continuous baseload operation requires manufacturing perfection at a level most industries never experience.

Many companies around the world claim they can participate in nuclear manufacturing. Far fewer actually possess the certified systems, specialist personnel, quality cultures, documentation structures, and nuclear-qualified manufacturing environments required to execute work to nuclear standards. Nuclear projects quickly expose the difference between conventional fabrication capability and true nuclear-grade capability.



The size of this fan requires precision manufacture, as when it turns at speed, just the sheer size and weight can pull it off course.

South Africa’s nuclear history provides a strong foundation in this regard. The country has more than seven decades of nuclear engineering experience, supported by institutions, specialised engineers, metallurgists, physicists, welders, machinists, quality specialists, and project managers who have operated within nuclear environments for generations. The legacy of the Pebble Bed Modular Reactor programme created an exceptionally rare pool of expertise that continues to exist within the South African nuclear sector today.

The HTMR-100 programme draws from precisely this knowledge base.





Precision engineering, advanced manufacturing, and South African nuclear innovation converge in this visual.

CONT.... FROM PG 14

Stratek Holdings has assembled partnerships with specialised engineering groups, nuclear experts, industrial manufacturers, and international collaborators capable of supporting the development and eventual deployment of the reactor system. These partnerships are essential because a project of this scale and technical intensity requires multidisciplinary excellence across the entire supply chain.

Training standards for participation in nuclear manufacturing are equally demanding. Personnel involved in reactor fabrication require continuous qualification, procedural certification, safety culture development, traceability training, and compliance with strict nuclear quality assurance programmes. Every technician, machinist, welder, inspector, and engineer operates within tightly controlled procedural environments designed to eliminate error and ensure repeatability. This is one of the defining characteristics of nuclear manufacturing: quality is not inspected into the product afterwards. It is built into every process from the beginning.

The modular nature of the HTMR-100 also introduces major construction advantages. Large portions of the reactor system can be fabricated indoors under controlled factory conditions, before being transported to the site for final assembly.

This dramatically improves construction efficiency, reduces weather-related delays, enhances quality control, and shortens deployment schedules. It also allows multiple modules to be produced simultaneously, enabling future fleet deployment models that conventional large nuclear stations struggle to achieve.

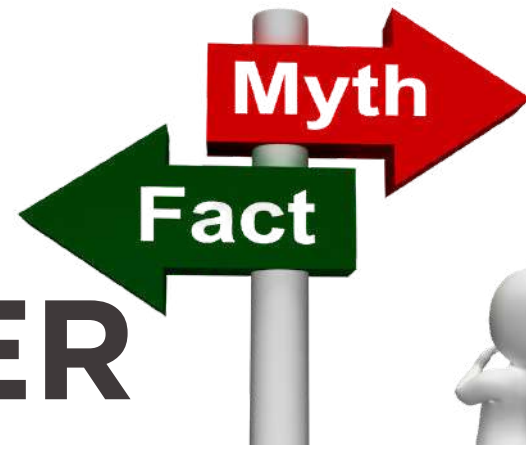
Importantly, the HTMR-100 demonstrates that South Africa's industrial capability extends well beyond mining and conventional heavy engineering.

It demonstrates that the country possesses an advanced manufacturing capacity at a level few nations can claim, enabling participation in one of the world's most demanding engineering sectors.

Nuclear manufacturing is often described as the pinnacle of industrial capability because it combines precision engineering, advanced materials science, absolute quality assurance, and highly specialised human expertise into a single integrated discipline.

The HTMR-100 is not simply a reactor project. It is a statement about South Africa's ability to engineer, manufacture, and compete at the highest technological level in the world.





MYTH BUSTER



MYTH:

You have to be born knowing everything about nuclear to work in the industry.

FACT:

Nobody is born with a nuclear engineering degree. Not even the engineers.

N²A VERDICT

Sometimes nuclear doesn't find you. You find nuclear... and then spend the rest of your career explaining it to your family!



MYTH:

Nuclear manufacturing is just ordinary engineering with a fancy safety helmet.

FACT:

In nuclear, "close enough" isn't close enough. If something is out by a millimetre, someone somewhere is probably reaching for a very large clipboard.

N²A VERDICT

Nuclear manufacturing: where precision isn't a preference... it's the job description.

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NUCLEAR NETWORK AFRICA

THE WORLD OF NUCLEAR

Any person who has influence and a role to play in representing any Nuclear-Related Developments to advance nuclear power in Africa. or in any international entity, which can contribute to the development of Africa's nuclear energy capability is encouraged to be part of this great journey.

Any company, ranging in capability from a nut and bolt to the most sophisticated piece of equipment, should join the journey now.

N²A IS AN INDEPENDANT PUBLICATION

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Rachel has been involved with our nuclear projects for over 10 years. She handles sales and marketing functions related to conferences, meetings, brochures, and publications like N²A