

NNR
Koeberg Nuclear Power Station
Life Extension
Oral Submission

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Who we are

The Southern African Faith Communities' Environment Institute, SAFCEI, is a multi-faith environmental organisation committed to increase awareness, understanding and action on eco-justice, sustainable living and climate change.

We emphasise the spiritual and moral imperative to care for the Earth and the community of all life. We call for ethical leadership from all in power and speak out on issues of eco-justice, encouraging citizen action.



Who we are

SAFCEI has a dedicated staff team of 13 and nine Board members, representing different faiths. We enjoy a broad spectrum of membership, including African Traditional Healers, Baha'i, Buddhist, Hindu, Jewish, Muslim, Quaker and a wide range of Christian denominations.





General concerns

- Preparation for Eskom's LTO authorisation has suffered significant delays and missed deadlines.
- The International Atomic Energy Agency IAEA's **2022 SALTO report** highlighted serious concerns: in particular, the containment building's monitoring system, cracking concrete, aging management and **reactor cooling concerns** and lack of timely management for an LTO. **These issues are critical to defence-in-depth.**

General Concerns continued

- Eskom's Safety Case was originally highly redacted. Only after civil society pressure in its submissions and then further PAIA, was un-redacted Safety Case published along with all the technical documents referenced in the Safety Case only very recently, since the last hearings.
- SAFCEI has endeavoured to review and analyse some of these technical documents and has found serious deficiencies. The following slides will illustrate the major problems.
- The defects highlighted in the technical documents lead to the conclusion that the NNR cannot grant an LTO authorisation at present as Eskom is not yet ready: i.e. not all the necessary safety upgrades to Koeberg have been made.

Legal concerns

- Documents not disclosed as required by regulations, when the notice initially given for public comment on LTO (by 16 march 2023).
- Safety case was extensively redacted at that time, without explanation or good reason.
- Documents supporting the safety case since released are too voluminous for proper comment in 35 days.
- Significant number of documents released that are out of date.
- **If the authorization was granted the result** would procedurally unfair administrative action.

Hydrazine Plant

- File: Feasibility Study for Hydrazine reduction at KNPS
- Safety Case Reference document no [60]
- Eskom admits that its discharges of hydrazine, a dangerous and corrosive substance into the ocean, at **levels** higher than limits set out in law.
- In 2021, Eskom decided that Framatome was the preferred contractor to implement hydrazine reduction at a cost of R17 million
- This has not been done.
- **Required action:** An LTO cannot be granted until hydrazine discharges are reduced.

Impressed Current Cathodic Protection (ICCP)

- The need for ICCP to deal with concrete cracking on the containment building is common cause according to IAEA, Eskom and Eskom's own expert panel.
- The Eskom expert panel in 2015 recommend ICCP no later than 2018
Described as "urgent" in Eskom reports in 2022. See next slide.
- ICCP has still not been done and is proposed for November 2024 ie after the LTO licence is granted, so no guarantee when it will happen.
- **Required action:** ICCP completed before LTO authorisation granted.

2024 – Plant Engineering Life of Plant Plan – key aspects of containment buildings described as “extreme” and “urgent”:

“The main structural threat for the buildings is chloride induced corrosion. Without a permanent intervention the delamination on the structures will continue until they are degraded thus needing to be decommissioned.”

9.1 Maintenance Required and Notifications

	Component	Condition	Planned Rehabilitation	Notification/Project
Main Structural Components	Base Mat	None	-	
	Gusset	None	-	
	Cylindrical Wall	Extreme	ICCP Required to ensure continuous operation of KNPS	Mod 16002
	Ring Beam	Urgent	ICCP required to protect embedded tendon heads	Mod 16002
	Dome	Extreme	ICCP Required to ensure continuous operation of KNPS	Mod 16002

Emergency planning

- File: Re-assessment of Current Koeberg Emergency Planning Technical Basis (EPTB) for Long Term Operation.
- Safety case document no: [224]
- This document has been submitted to NNR for review and acceptance.
- Has it been reviewed and accepted?
- If not, how can a LTO be granted?

Emergency drills

- File: Emergency Exercise Management and Assessment
- Safety case document no: [156]
- Emergency drills are self-evidently necessary
- Eskom says drills should be held at least once a year
- **Not clear from the documents that this has been taking place**
- Required action: Eskom needs to prove compliance before an LTO is granted and the NNR needs to provide its qualitative assessments of the actual drills themselves.

Out-of-date documents

- Eskom's document review mechanism provides dates for each document to be reviewed.
- 55 of 300 documents assessed are out-of-date (18%).
- One document was supposed to be reviewed in 2016.
- The result is that both the NNR and the IAEA have/are assessing the LTO application based on old documents.
- One document was updated in April 2024, proving Eskom can and has updated after publication of the Safety Case.
- **Public cannot comment meaningfully on out of date documents**
- **Required action:** Eskom must up-to-date ALL documents before an LTO authorisation can be granted.

Containment Building Monitoring

- **Containment monitoring is critical to safety.**
- Eskom report: Engineering Position on Containment Structures for Long-Term Operation (2022) page 10 refers to several shortcomings in the on-line monitoring equipment.
- Noted by the SALTO report 2022.
- **Eskom is “currently addressing the issues”.**
- **Required action:** all of the actions on the following slide must be completed prior to LTO has been granted.

3.2 Functionality of the monitoring system

The TLAA highlights shortcomings in the condition of the on-line monitoring equipment.

The following recommendations are made in the TLAA:

- 3.2.1 The number of dome monitoring sensors is at the lower limit and leading to less reliable analysis results than the data for the cylindrical part,
- 3.2.2 There is a possibility of failure of the remaining functioning strain gauges over the next 20 years (LTO). It is thus recommended to install additional strain gauges fixed to the exterior surface of both domes.
- 3.2.3 The assumed erratic behaviour of load cell (dynamometer) number 152 shall be observed.
- 3.2.4 In case of further erratic behaviour of load cell number 152, it is recommended to recalibrate the load cell or to exchange it, if damaged.
- 3.2.5 It is recommended to perform the outstanding repair of the 4 erratic pendulums in Unit 1.
- 3.2.6 It is recommended to install additional temperature gauges to improve the temperature monitoring.

Conclusion

- Documents disclosed reveal unacceptable delays in maintenance and safety upgrades.
- The defects highlighted in the technical documents lead to the conclusion that:

The NNR cannot grant an LTO authorisation at present as Eskom is not ready: i.e. not all the necessary safety upgrades to Koeberg have been made.