

OUTA

ORGANISATION UNDOING TAX ABUSE

**NO NEW
NUCLEAR**



30 July 2021

Comment on the Eskom application for a nuclear installation site licence for the Thyspunt site

**Submission by the Organisation Undoing Tax
Abuse to the National Nuclear Regulator**

Submitted by:

Liz McDaid
OUTA Parliamentary Advisor and Energy Advisor
liz.mcdaid@outa.co.za
087 170 0639

Kulawula House

526 Madiba Street

nerisa

SUBMISSION TO THE NATIONAL NUCLEAR REGULATOR OF SOUTH
AFRICA

RE: ESKOM APPLICATION FOR A NUCLEAR INSTALLATION SITE
LICENCE (NISL) - THYSPUNT

Attention: Manager: Communications and Stakeholder Relations

Mr Gino Moonsamy

Email: gmoonsamy@nnr.co.za; NISLPublichearings@nnr.co.za

30 July 2021

For further information contact:

OUTA Parliamentary Advisor and Energy Advisor

Liz McDaid

liz.mcdaid@outa.co.za

1. PRELUDE:

1.1 The Organisation Undoing Tax Abuse (“OUTA”) hereby makes its submission in response to a call for public comment on Eskom Holdings SOC (Ltd)’s application for a nuclear installation site licence (“NISL”) at Thyspunt. OUTA trusts that the inputs reflected in its submission will assist the National Nuclear Regulator of South Africa (“NNR”) in its decision-making .

1.2 By way of introduction, OUTA is a proudly South African non-profit civil action organisation, comprising of and supported by people who are passionate about improving the prosperity of our nation. We envision a prosperous country, with an organised, engaged and empowered civil society that ensures responsible use of tax revenues.

1.3 Part and parcel of OUTA’s mission is the challenging of legislation and regulatory environment, this includes participating and engaging with government where public interest is concerned, as is the case with Eskom’s application for a NISL.

2. NNR INTERNAL REVIEW OF ESKOM’S NISL APPLICATION:

2.1. The review in question has been ongoing since 2016 according to the NNR (correspondence received 20/7/2021), attached hereto for ease of reference. There is no official document outlining the results of such internal review, purportedly ongoing for the last 5 years, which the public may comment on for the purposes of this submission.

2.2. The information made available for public comment includes:

- 2.2.1. A Public Information Document (PID)) on the licence authored by Eskom, ID 240-147175950 signed by A.Killian, S. Touffle and R. Bakardien on 29th August 2019, 30th August 2019 and 2 September 2019, respectively
- 2.2.2. Press release by NNR outlining the process followed since 2016, dated 6th December 2018
- 2.2.3. The Eskom PID refers to other documents which are not provided for review by the public. Attention is drawn to a selection of these documents in the text where applicable.

3. CONTEXTUAL BACKGROUND:

- 3.1. The National Energy Regulator of South Africa (“NERSA”) has not yet determined via a section 34 determination in terms of the Electricity Regulation Act, 2006 (“ERA”), that any nuclear energy power plant is needed. There is no provision in the Integrated Resource Plan 2019 (“IRP2019”) for nuclear energy before 2030. Our interpretation of decision 8 is that the preparation outlined would include the investigation into the affordability of nuclear energy. And that such preparations would provide input into the next iteration of the IRP. OUTA contends that the application by Eskom, for this reason, is premature.
- 3.2. Given that nuclear energy is expensive and is not considered an adequate response to climate change¹ and its role in ensuring energy security has been surpassed by technological advances through storage, hydrogen and renewables,² it is likely that the next IRP would also contain no new nuclear.
- 3.3. The programme by the previous Government under former President Jacob Zuma to build a fleet of nuclear reactors was shown to have misled cabinet regarding the cost

¹ Mycle Schneider et al. September 2019. World Nuclear Industry Status Report 2019. Available online at: <https://www.worldnuclearreport.org/IMG/pdf/wnisr2019-v2-lr.pdf> WNISR 2019, page 15

² https://meridianeconomics.co.za/wp-content/uploads/2021/06/A-500-day-game-plan-for-SAs-energy-sector_June-2021.pdf

of nuclear energy and the nuclear deal was also shown to have been unlawful³. President Ramaphosa has focused on renewable energy expansion and there is no evidence that has been presented that nuclear energy is affordable and is financially or economically feasible. In the absence of a proper feasibility exercise by government, OUTA reiterates the premature nature of Eskom's application for a NISL.

3.4. Eskom is R401bn⁴ in debt and should not have money to waste on costly capital-intensive power projects that would take decades to build. A prime example of prolonged wasteful expenditure can be observed with reference to Eskom's other large power projects such as Medupi and Kusile. It is of concern to OUTA that Eskom is spending money it does not have on an application to NNR for a site licence for a project that has no other approvals. Should Eskom proceed on this basis without the necessary approvals, it will potentially incur costs at the expense of taxpayers.

3.5. The Environmental Impact Assessment (EIA) process was conducted for three sites, reduced to two and eventually provided a positive Record of Decision (ROD) for Duinefontein site, near Koeberg. This ROD was appealed and four years later, the appeal has not been decided. There is therefore no rationale that we can see that would justify the NNR embarking on a site licence for a nuclear plant at a site that has been rejected by the EIA authorisation.

4. PROVISION OF EVIDENCE ON WHICH TO BASE MEANINGFUL COMMENT:

³ Affidavit to Zondo Commission as part of Mr Pravin Gordaan submission. cabinet memo of 9 December 2015
Judgement of court case ELA Jhb/SAFCEI vs Minister of Energy and others.

<http://www.saflii.org/za/cases/ZAWCHC/2017/50.html>

⁴ <https://www.engineeringnews.co.za/article/eskom-debt-solution-remains-a-work-in-progress-despite-reduction-to-r401bn-2021-05-25>

4.1. In a public letter dated 6 December 2018, the NNR outlines how it distilled from the more than 25000 comments it received, those which it regarded as part of its mandate. OUTA has been unable to confirm whether any of these listed points had been adhered to or even considered. It lists these as follows:

- 4.1.1. The need for higher safety standards considering lessons learned from Fukushima Daiichi accident;
- 4.1.2. Assessment of seismic hazards and other site characteristics;
- 4.1.3. Impact of nuclear emergency plan restrictions on land-use planning and development;
- 4.1.4. Evaluation of economic consequences of radiological accidents;
- 4.1.5. Inadequate emergency and disaster management infrastructure in the country;
- 4.1.6. Liability in the case of a nuclear accident;
- 4.1.7. Adequacy of information provided in the applications including lack of design specification;
- 4.1.8. On site storage, management and disposal of radio-active waste;
- 4.1.9. Impact on the surrounding areas due to plant operation and accidental releases;
- 4.1.10. Risk associated with the operation of nuclear power plants;
- 4.1.11. Manufacturing and construction concerns impacting safety;
- 4.1.12. Lack of operational experience with Generation 3 plants;
- 4.1.13. Potential releases to the public and environment;
- 4.1.14. Emergency plan zoning and arrangements;
- 4.1.15. Impact of the nuclear reactors on the marine and inland environments;
- 4.1.16. Socio-economics and environmental impacts in general;
- 4.1.17. Scarcity of water and impact on water resources;

- 4.1.18. Health effects due to radiation exposure;
- 4.1.19. Issues related to the regulatory process and adequacy of application documents

4.2. In its letter the NNR states that the NNR will *“conduct an in-depth review and evaluation of the above issues in the next stage of its NISL review process and will decide on the need for further public consultation as appropriate”*.

4.3. It would seem that the NNR has decided that there is a need for public consultation, and this has given rise to this round of public comment.

4.4. On the NNR website, there is a 2019 document, provided by Eskom, such document is titled *“Public Information document in support of the Eskom nuclear installation site licence application for the Thyspunt site”*.

4.5. There is no document available that provides the NNR results of the in-depth review and evaluation it conducted as a result of the public inputs of 2016.

4.6. The Eskom application in 2016 was 8 pages in length and the Eskom 2019 PID is 109 pages in length but it does not address in any meaningful manner the issues that were raised by the public in 2016.

4.7. According to the 2016 site licence application (the 8 page one), the NNR regulations 3 (2), require that an application must be supported by a Site Safety Report. In our correspondence with the NNR (9th July 2021), and their response (20th Jly 2021), no

mention is made of this document nor is it provided. The application refers to the Thyspunt Site Safety Report (TSSR)⁵ but this is not provided for public review.

- 4.8. The PID states that it is common practice for EIA to address the impact of the power station on the surrounding area⁶. However, in the case of Thyspunt, the EIA ROD decided that Thyspunt was not to be the authorised site.
- 4.9. Eskom details the process of the Vogtle nuclear power plant approvals as an example, but this example illustrates the point that nuclear power plants are delayed and incur cost overruns. Vogtle is under investigation by the Nuclear Regulatory Commission (NRC) in the USA due to issues related to the safety-related equipment. This plant was approved in 2009, with a projected cost of \$4bn and was expected to be operational by 2016. Analysts claim the costs are now \$27bn due to delays and it appears 5 years behind schedule.⁷ From this case study, OUTA concludes that nuclear power plants are not value for money and that the NNR should not process any authorisation until such time as any proposed nuclear plant can prove financial and economic feasibility.
- 4.10. Eskom's second example, the Barakah nuclear plant in the UAE, again raises the issue of environmental studies that were conducted prior to the issuing of the site licence. OUTA wishes to reiterate, no EIA has been authorised for Thyspunt. It should also be pointed out that Barakah, despite oversight by the nuclear regulator experienced a

⁵ Page 2 of the Eskom NISL PID

⁶ Page 17 of the Eskom NISL PID

⁷ <https://www.reuters.com/business/energy/us-nrc-launches-investigation-southern-georgia-vogtle-3-nuclear-unit-2021-06-21/>

number of safety issues, which resulted in delays and additional costs. These included cracks in the Containment vessel,⁸ and 400 adverse findings by the regulator FANR.⁹

- 4.11. Eskom indicates that nuclear procurement is not certain¹⁰, further emphasising the point that the processing of a NISL is premature and a waste of taxpayers and energy consumers money, given that such cost would be passed through by Eskom to consumers via the electricity tariff or taken from treasury as part of another bail out.
- 4.12. The NNR proposes to hold public hearings and incur the expense and risk thereof in the time of Covid19. Community consultation cannot take place virtually given their socio economic status which prevents access to advanced technology. Is the NNR acting in the public interest in carrying out this process at this time? Given that the NERSA section 34 determination is not finalised nor is the EIA complete, as per the IRP2019, OUTA believes that the NNR is increasing the risk of the public to covid as well as incurring expenditure needlessly in its continuation with the processing of a five year old application.
- 4.13. Eskom provides some key characteristics of known PWR designs. However, there is no independent review that enables comparison of the effectiveness of the safety issues and several questions are left unanswered.
- 4.14. AP1000 – speaks to minimising but not eliminating harmful radiation – no independent review of the harmful effects of such radiation is provided.

⁸ http://english.hani.co.kr/arti/english_edition/e_international/874728.html

⁹ <https://www.neimagazine.com/news/newsmore-delays-for-barakah-nuclear-plant-7591655>

¹⁰ Page 24 of Eskom NISL PID

- 4.15. APR1400 – states that it has *“systems for severe accident mitigation and management”* but provides no detail.
- 4.16. EPR – states that *“To protect the public and the environment from harm in the event that these barriers are not fully effective”*, but no further information is provided.
- 4.17. VVER1200 – raises the issue of ensuring that the primary cooling circuit is crucial and states redundancy is the answer but with little detail.
- 4.18. The description of the reactor types reads like an advertisement but provides no comparison of the implications that such different designs would have for the site. The usefulness of the information is therefore not clear.
- 4.19. Section 4.3 refers to the need to keep the spent fuel on site.¹¹ The used fuel assemblies are kept in spent fuel pools for a number of years to allow for cooling and depending on availability of space in the spent fuel pool. Given that the spent fuel is highly radioactive for tens of thousands of years, is not one of the important safety features to ensure that the spent fuel pool is built of sufficient size to enable the spent fuel to be kept there for sufficient time for it to have “cooled” and that building a reactor with insufficient space for the spent fuel that will be accumulated during its lifetime, would be increasing the safety risk deliberately? For the NNR to licence such a site would be in contravention of its mandate.
- 4.20. Planned exposure situations as explained in Eskom’s PID would include the deliberate release into the environment of radiation from a nuclear power plant, as explained on page 36. The presence of radiation results in increased health risks compared to the

¹¹ Page 32 of Eskom NISL PID

alternative of no nuclear plant. And the aim of the safety measures does not appear to be to ensure complete health and safety but only to reduce harm “to the extent reasonably achievable”. There is no explanation as to how the public that live in the area, which is currently free of radiation emitted by the nuclear plant, are involved in determining what they regard as “reasonable”.

- 4.21. Section 5.2.1. The EIA authorisation rejected Thyspunt and found in favour of Duinefontein. Irrespective, an EIA which is at least 10 years out of date, would need to be restarted as environmental factors including need and desirability would need to be reassessed.
- 4.22. Section 5.2.2 Over the next 60 years, climate change could impact the amount of rainwater, saltwater ingress into groundwater, and the level of the groundwater could rise or lower considerably. 2 metres does not appear to be a reasonable safety margin to avoid flooding in the future.
- 4.23. In relation to section 5.3.3, there appears to be an assumption that there is sufficient groundwater available and that there will be zero impact of the surrounding area, but no evidence is provided to support this. until an environmental authorisation which includes the assessment of such issues, this assumption must be assumed to be false and a NISL should not be issued.
- 4.24. Section 5.3.4 stormwater discharge would once again need an EIA before the impact could be considered.

- 4.25. Section 6.3 describes the current situation with reference to the past. However, climate change has changed and will continue to change the natural environment. The site description with regards to seismic events, extreme weather events etc cannot be assumed to be stable on the basis of past events but can only be assessed through a climate change assessment which is normally part of the EIA.
- 4.26. Section 6.3.4.1 the demographical analysis is based on population numbers from 2000, that is more than twenty years out of date. However, the population of coastal towns such as Jeffreys Bay swells at events such as surf competitions or during the December holidays but while there is some acknowledgement, this is not addressed meaningfully in Eskom's PID.
- 4.27. In relation to section 6.3.4.4., there is little information provided for the potential radiological impacts on the dairy farms in the area, particularly the worst case scenario where there is a nuclear accident. Fukushima resulted in dairy herds being destroyed due to contamination. There is no assessment of the risk and evacuation of valuable dairy herds, nor the risk of milk contamination or grazing contamination that would result in radioactive milk ending up in the market. There is no worst case assessment provided for public review.
- 4.28. Section 8.1 refers to a Site Safety Report and the environmental impact assessment. Neither of these documents are provided for public comment. In addition it must be reiterated that the EIA was initiated in 2010¹², and only approved in October 2017 but then faced an appeal. Such an assessment must now be outdated and cannot be used to justify this NISL.

¹² <https://www.power-eng.com/nuclear/esi-update-history-of-nuclear-in-south-africa/#gref>

- 4.29. Within the PID, general assertions are made regarding protective countermeasures in case of an accident. However, there is no analysis of how such measures would be applied at Thyspunt nor of the potential for their failure due to the features of the site. For example, sheltering depends on the type of building, but no detail is given as to the type of buildings at the affected site and within the potentially affected areas. Informal settlements with no access to indoor ablution facilities cannot be regarded as having adequate shelter but there is no assessment nor mitigation offered. Evacuation is given as an effective measure, but no specific details are offered as to how such a process would be implemented and what the obstacles would be.
- 4.30. Transport of nuclear materials is assumed to be by road, but no assessment is provided as to the safety of this mode of transport given the South African road safety record.

5. CONCLUSION:

- 5.1. Neither Eskom nor the NNR has provided sufficient information for the public to make any meaningful contribution. The information provided is general, not specific to the site in many cases, the information provided also seems to be outdated.
- 5.2. Eskom has highlighted how in other countries the regulator used the EIA to inform the NISL and subsequent processes. Eskom has no valid EIA with up-to-date relevant information, has not provided any EIA as a supporting document, and yet depends on information from the outdated EIA to draw conclusions.

- 5.3. OUTA concludes therefore that our right to be heard has been undermined. Without access to the relevant documents and information on which the NNR produced its 2016 evaluation, or other documents on which the NNR presumes to make its decision, meaningful public participation is limited. If the Eskom PID is the document on which NNR purportedly makes its decision, we submit this is woefully inadequate and potentially reviewable as significant relevant information to be considered informing such decision is absent.
- 5.4. Without any evidence to indicate the contrary, OUTA contends that the awarding the site licence paves the way for on site preparation for a nuclear build project which would amount to wasteful expenditure given that there is no positive record of EIA, nor has Eskom indicated that it has the financial capability to embark on such costly venture.
- 5.5. OUTA contends that the approval of Eskom's NISL application is not within the public interest, considering the current circumstances relating to the IRP2019.

6. RECOMMENDATION:

- 6.1. OUTA recommends that the NISL application be rejected until such time that Eskom can demonstrate a need and desirability for the nuclear power plant project and that sufficient information is provided, possibly through a new environmental impact assessment to enable the public to make meaningful inputs at all stages of the application process.

9 July 2021

Attention: Manager: Communication and
 Stakeholder Relations
 Mr Gino Moonsamy
 National Nuclear Regulator
Email: NISLPublichearings@nnr.co.za
CC: gmoonsamy@nnr.co.za

Dear Sir,

ESKOM APPLICATION FOR NUCLEAR INSTALLATION SITE LICENCE - THYSPUNT
OUR REF: EN2011-026
YOUR REF: UNKNOWN

1. We refer to the above and more specifically the notice of public hearings (“NNR notice”) in term of section 21(4)(b) of the National Nuclear Regulator Act 1999 (“NNRA”), as published in June 2021.
2. The Organisation Undoing Tax Abuse (“OUTA”) is a proudly South African non-profit civil action organisation, comprising of and supported by people who are passionate about improving the prosperity of our nation.
3. Part and parcel to OUTA’s mission is the challenging of policy and the regulatory environment as and when deemed as irrational, unfit or ineffective for their intended purpose as well as working with communities and authorities in improving administration and service delivery, within all spheres of government.
4. As per the published notice, it is noted that “[t]he National Nuclear Regulator hereby gives notice to convene public hearings relating to the Nuclear Installation Site Licence (NISL) application received from Eskom Holdings SOC Limited for the Thyspunt site.”
5. In this regard, OUTA refers to an application submitted by Eskom on or about 22 February 2016. Following this submission, the NNR has received approximately 45,000 comments from the public, however, the process seems to have halted abruptly during

the course of 2016. OUTA notes that no formal communication from the NNR was forthcoming in relation to an outcome on the comments received and subsequent hearing, alternatively OUTA is unaware of any such communication. In this regard, we kindly request a copy of all relevant decisions (and reasons therefore) made by the NNR relating the faltering of the process, if any.

6. Additionally, a public information document entitled “*Public Information Document in Support of the Eskom Nuclear Installation Site Licence Application for the Thyspunt Site*” was published in 2019, signed on 29 August 2019, 30 August 2019 and 2 September 2019 respectively and consists of 109 pages in total. Purportedly, this document is the only document available to public.
7. In this regard, we kindly request that you clarify whether in fact the hearings as referred to in the NNR notice relates to Eskom’s 2019 application for a NISL. Alternatively, we kindly request that you provide us with the following:
 - 7.1 All relevant documents and consultation papers intended for public consultation purposes in relation to the NNR notice;
 - 7.2 All relevant applications received by the NNR from Eskom for a NISL at Thyspunt, relating to the NNR notice.
8. We kindly await your response by no later than 20 July 2021.
9. We trust that you find the above in order and look forward to hearing from you.

Yours Sincerely,



Liz McDaid
Parliamentary Advisor
OUTA – Organisation Undoing Tax Abuse
Email: liz.mcdaid@outa.co.za

ORGANISATION UNDOING TAX ABUSE

Reg No: 2012/064213/08 – PBO No: 930042651

Directors: WL Duvenage (CEO), Adv. S Fick

Non-Executive Directors: F Adam (Chair), P Majazi, W Modisapodi, LJJ Pauwen, T Pillay Van Graan, Dr HC Volmink
www.outa.co.za