

**STAKEHOLDER NOTIFICATION OF THE OUTCOMES OF THE PUBLIC COMMENT
PROCESS ON THE AUTHORISATION CHANGE REQUEST APPLICATION MADE BY THE
SOUTH AFRICAN NUCLEAR ENERGY CORPORATION (Necsa) FOR THE EXTENSION OF
THE THABANA PIPESTORE FACILITY**

- (1) Pursuant to the NNR directive DIR-NTWP-0006, the period for public comment on the Necsa application, safety documentation and Public Information Document was concluded on 30 September 2023.
- (2) An extension was granted to Estate d' Afrique Master Owners Association NPC to provide comment by 13 October 2023.
- (3) A total of three (3) responses comprising fourteen (14) comments were received and are included in the attachment.
- (4) Necsa has provided the NNR with responses to the public comments.
- (5) Necsa has been directed by the National Nuclear Regulator (NNR) to publish a copy of the public comments and Necsa responses on the application for the Authorisation Change Request for the extension of the Thabani Pipestore Facility under Nuclear Installation Licence NIL-04 on the Necsa Website.
- (6) The public comments and Necsa responses can be accessed from –
 - (a) the NNR Website using the URL:
<http://www.nnr.co.za/news-room/public-notice/> under 'Necsa Thabana Pipestore Extension' or
 - (b) the NECSA Website using the URL:
<https://www.necsa.co.za/public-notice/>

ATTACHMENT

Note that the Necsa responses in the table below refer to sections of the previously shared Public Information Document: NLM-PRO-00171 rev 02: 'PUBLIC INFORMATION DOCUMENT: EXTENSION OF THE NECSA PIPESTORE FACILITY ON THABANA'.

No.	Organisation	Public Comment	Necsa Response
1	WiNSA	Thank you for the invitation to comment on the NECSA Extension of the Thabana Pipestore facility. As one of the WiNSA executive members, I have read the notification and are satisfied that all the safety measures have been applied, and we are in support of the extension of the pipestore to take place.	No further action.
2.1	Fresh.ngo	As Fresh.ngo we work with the waters and River in the area and are worried about the impact on the ground water. The area is situated on a dolomitic Karst system, which contains a large portion of our freshwaters. Over 50% of the country's total supply are contained in this interconnected system. We feel that there is a danger of contaminating this system or a part of it, should anything go wrong with this storage facility.	<p>The geology of the area where the Thabana Pipestore (TPS) is located, and to be extended is detailed in the shared Public Information Document (NLM-PRO-00171 Rev 02), refer to Section 5.4. "The proposed extension for the TPS is located on interbedded slates and quartzites of the Rooihooft and the Timeball Hill formation of the Pretoria Group".</p> <p>No liquid waste is stored in the TPS, only solid material is stored in the TPS. The spent fuel is solid metal items (refer to Section 3.4.1). The uranium residue is also solid material, which firstly is contained in a 2 L tin. Two of these tins will be inserted in a 174DPTE container and then finally seal welded into the LTS container (refer to Section 3.4.2).</p> <p>These solid items (spent fuel and LTS containers) are finally stored in the airtight sealed stainless steel storage vessels/pipes, refer to Section 3.3. The possible corrosion/degradation of the stainless steel storage vessels' external surface is prevented by the fibre cement pipe located around the vessel. The degradation/corrosion of the internal surface of the storage vessel/pipe and the stored items, is prevented by keeping the vessels under an inert gas pressure (refer to Section 4.2).</p> <p>These storage vessels (17m long) are located well above the water table which is at 52-60m below the TPS (refer to section 5.4, page 30).</p> <p>It should be noted that Necsa went through the EIA process with DFFE, and received an environmental authorisation (14/12/16/3/3/2/2048). This decision was also based on independent expert geotechnical and hydrogeological assessment studies.</p> <p>Necsa also performs environmental monitoring as detailed in Section 4.3.</p>

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2.2	Fresh.ngo	Furthermore, the Crocodile River Reserve is situated directly behind the Schurweberg and the proposed site. This area has a delicate and threatened ecological system, which can be damaged. Already trees have been dying here with tests by Fabi attributed to environmental factors, which cannot yet be determined but could be coming from Pelindaba side where the same symptoms in the indigenous trees can be observed.	Refer to Necsa response to 2.1 above. Thus there is no releases from the facility, and therefore none that can affect the ecological system. Even the accident conditions considered in Section 6.2.2, would not have an effect on the environment During the EIA process referred to in 2.1 above, an independent expert terrestrial biodiversity assessment was done, which concluded that no threatened faunal species are expected to be fatally impacted by the proposed development.
2.3	Fresh.ngo	Finally, we feel the area is too close to expanding urban areas and can pose significant danger in future, contaminating the Hartebeespoort Dam and it's vital irrigation supply.	As indicated in Necsa response on 2.1 and 2.2 above, the TPS is used to store only solid items and has been designed, tested, and licensed so that no releases from the facility can occur due to normal or accidental conditions. Thus even if urban areas extend closer to Necsa, these members of the public will not be exposed or placed in danger due to the TPS. Regarding the comment on the contamination of Hartebeespoort Dam and the irrigation supply, this cannot occur since only solid material is stored in the facility. Furthermore routine environmental monitoring is conducted around the facility and will identify any contamination. Refer also to Necsa response on comment 3.4 below.
3.1	Estate d' Afrique	Thank you for granting us the extended deadline for our submission. We have reviewed all of the documentation that was made available relating to this project and would like to make the following submissions and enquiries relating to the proposed project and other related matters.	No further action.
3.2	Estate d' Afrique	The Estate d' Afrique Master Owners Association NPC represents 314 privately owned full title stands with 130 completed houses and over 300 individuals in current residence and these numbers projected to double in the next 5 to 8 years.	Necsa took note.
3.3	Estate d' Afrique	Estate d' Afrique is located on the banks of the Crocodile river and the Saartjies spruit 2.5km North of the NECSA facilities making everyone residing and working in the Estate an interested and affected party to all nuclear related activities that do take place at NECSA.	Necsa took note.
3.4	Estate d' Afrique	Estate d' Afrique is solely reliant on ground water abstracted through several boreholes as a supply for both	Refer to Necsa response to 2.1 above. The spent fuel element and the triple contained uranium residue is solid material, thus if in this very unluckily

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		<p>irrigation and potable water. Our ground water is distantly connected to the river system and is very likely connected through various underground systems to the ground water that runs beneath the Pipestore facility. Because of this any leakage from the Pipestore facility is likely to reach our water supplies with time. "The only way that a stored element can be physically damaged, is for a fault break to rip right through the surrounding soil, the concrete and the storage pipe itself. It can be accepted that the seismic movement on a fault takes place deep underground, at least a few kilometres below the surface, and virtually never breaks through to the surface in the case of intra-plate earthquakes. Bending and folding in the sedimentary cover accommodates the deformation and these effects tend to disappear closer to the surface". Notwithstanding the unlikelihood of such an occurrence, if such an event were to occur, to what extent could this affect ground water in the area and specifically aquifers, from which members of the public are drawing water such as Estate d' Afrique. Is there a possibility of this contaminating the Hartbeespoort Dam?</p>	<p>event of an earth quake which damages the storage vessel, these items can only be bent or be compacted inside the storage vessel.</p> <p>Further, the storage vessels are made of 6.55 mm thick stainless steel, therefore the probability that the unlikely earthquake will shear this material is also highly unlikely. Therefore, there no foreseen impact on the aquifer, which is located many meters further below the TPS.</p> <p>In addition there is no known flow pathway between Thabana ground water and the aquifers linked to the Crocodile river and Hartbeespoort dam. Modelling has shown almost no movement of groundwater or mixing of aquifers that fall within the Pretoria slates and predict that if there were flow that this would take many thousands of years.</p> <p>As detailed in Section 4.3 Necsa performs regular environmental monitoring.</p>
3.5	Estate d' Afrique	<p>Please confirm that the SAFARI-1 and NTP storage pipes have been satisfactorily leak-tested after manufacture and that the new storage pipes will also be leak tested?</p>	<p>During the manufacturing of each storage vessel all the weld joints are non-destructive examined, and on completion a vacuum /helium leak test is performed.</p> <p>As detailed in Section 4.2 the storage vessels are kept under an inert gas pressure, and this pressure is routinely monitored by the facility and overseen by the NNR. Thus, a possible leak would be detected.</p>
3.6	Estate d' Afrique	<p>We have noted that the decommissioning of SAFARI is projected to be undertaken when the Pipestore capacity is full in 2035. By when, if full capacity is reached in 2035, will the decommissioning commence and by when will this be fully completed? It will be unacceptable if the decommissioning is not attended to in accordance with a set timetable. Please provide current projected dates, for the full completion of this.</p>	<p>The storage capacity of the extended TPS makes provision for all the spent fuel elements which is foreseen to be generated by SAFARI-1 until the end of its operation, which is currently foreseen to be beyond 2035.</p> <p>As per each NNR Nuclear Installation License the licensee is responsible for implementation of NNR approved processes for the decommissioning of the facility. Detail decommissioning plan must be prepared and NNR approved before the actual decommissioning is done. The actual implementation is also dependent on the many factors which includes the allowance of decay of the high radiation area, and when the other facilities on the Necsa site will be decommissioned, therefore at this stage a projected date when the actual</p>

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			<p>decommissioning of the SAFARI-1 reactor will take place is not defined or specified. However Necsa will be required to perform the decommissioning as per NNR regulations and international practices (as per the IAEA guidelines).</p> <p>The decision to decommission SAFARI-1 is not a decision that can be made by Necsa as it is a State owned facility. A decision must be made based on a technical report to be submitted to the Department of Mineral Resources and Energy (DMRE) whereby the Minister of Mineral Resources and Energy and the parliament of the Republic of South Africa's approval processes will make a final decision on the future of SAFARI-1 operations.</p> <p>Therefore the extension of the TPS is not dependant on a decision to be made on SAFARI-1 end of operation, as many factors still needs to be considered before a decision can be made.</p> <p>Based on international experience, it would take about 5-6 years to decommission a research reactor. This will however also depend on the applicable nuclear installation requirements, technological techniques available and decommissioning required at the time.</p>
3.7	Estate d' Afrique	<p>"PRELIMINARY DECOMMISSIONING STRATEGY", "Phase 1 Decommissioning of the Thabana Pipestore facility will be done by removing the SAFARI-1 spent fuel and the NTP LTS container inventory. The destiny of this material still needs to be established at a later stage (e.g. reprocessing)." This is very vague. At this point in time, given the hazardous nature of the material, and long-term potential impact, thought and planning must already have been given to this. What are the options?</p>	<p>The further long-term management is primarily defined by government policies and strategies. The Department of Mineral Resources and Energy (DMRE) is finalising a Backend Strategy for the management of spent fuel and other strategic material. Necsa's further actions will be driven by this policy. Necsa got approval from DMRE for the extension of the TPS, since the implementation of the backend strategy will require time e.g. establishment by NRWDI of a Central Interim Storage Facility (CISF) and disposal site for spent fuel.</p>
3.8	Estate d' Afrique	<p>Are there any emergency safety measures in place to protect/ respond/ evacuate people/ public in the case of a disaster, at present and taking into account the planned activities/ development. If so, what are these?</p>	<p>Necsa has an established, and NNR accepted and regularly reviewed, emergency plan, refer to Section 7.0. This plan covers all the current possible accident scenarios, and the required responses.</p> <p>This plan also considers the current TPS. No changes are foreseen to the Necsa emergency plan due to the TPS extension.</p> <p>All the scenarios were considered in the TPS Safety Assessment Report, which was accepted by the NNR. These scenarios have a low risk and are lower as what was already considered in the Necsa site emergency plan.</p> <p>In addition it should be noted that no emergency was experienced in the 25 years operation of the TPS, and the facility is operated safely.</p>

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3.9	Estate d' Afrique	Does NECSA have third party or public liability insurance in place in the event of a disaster? If so to what value? Other than declaring a state of emergency how will the resulting damages and loss be compensated for in the event of such an occurrence?	<p>As indicated above, the possibility of an off-site event due to the TPS is extremely low.</p> <p>Public liability cover is a requirement for all Nuclear license holders according to the NNR Act (Act no 47 of 1999), refer to section 29 and 30. The level of financial security is defined in a Government Gazette as required in Section 29(2). As per the latest Minister notice: Government Notice R 1342 of 18 October 2019, Necsa is required to have a financial security for a category 2 facility (e.g. SAFARI-1) for the equivalent of 44 million Special Drawing Right (SDR), and for a Category 3 facility (e.g. Thabana Pipestore) for the equivalent of 6 million special drawing right (SDR). The Special Drawing Right or SDR is an international reserve asset created by the International Monetary Fund to supplement the official reserves of its member countries and can be exchanged for freely usable currencies. Based on the current exchange rate XDR - R of 24.90, these security amounts are about R1 096 million and R149 million respectively.</p> <p>Necsa has nuclear public liability insurance cover from THE SOUTH AFRICAN POOL FOR THE INSURANCE OF NUCLEAR RISKS which comply with the above NNR requirements. The public would claim from that facility, in the event of a consequential nuclear incident from the Necsa facilities.</p>
3.10	Estate d' Afrique	At present the Estate only has one access point for the residents of Estate d' Afrique, this access point connects to the surrounding main roads by means of a 2.5km provincial road that leads directly back towards the NECSA facility on the R104. Will NECSA support Estate D Afrique's current application in process at the Madibeng Municipality offices for a second access point and road that will allow residents to flee to the north and away from NECSA in the event of an emergency?	Necsa has responded to Estate d' Afrique in a letter dated 15 August 2018 in which Necsa expressed their support for the proposed second egress. Necsa will re-issue the letter of support if required.