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Dear Bishop Geoff Davis

**RE: ESKOM EIA CONCERNS FOR THE PROPOSED NUCLEAR POWER STATION AND ASSOCIATED INFRASTRUCTURE (DEA Ref. No: 12/12/20/944)**

**ESKOM ENVIRONMENTAL IMPACT ASSESSMENT (DEA REF. NO.: 12/12/20/944) FOR A PROPOSED NUCLEAR POWER STATION AND ASSOCIATED INFRASTRUCTURE – REVISED DRAFT ENVIRONMENTAL IMPACT ASSESSMENT REPORT: SAFCEI SUBMISSION**

**Comment 1:**

The Southern African Faith Communities Environment Institute (SAFCEI) believes that the current preoccupation with nuclear energy is a dangerous distraction for South Africa. South Africa needs to ensure energy security for all South Africans and the most sustainable way of doing so is to focus on renewable energy.

**Response 1:**

As indicated in Chapter 3 of the Revised Draft EIR (Version 1), the application for Nuclear-1 is targeted at providing baseload power generation, which renewable sources such as wind and solar cannot provide. Furthermore, all available sources of power generation will have to be employed to make up the estimated 40,000 MW of new generation capacity required by 2025.

The fact that Eskom intends to develop a nuclear power station does not imply that it opposes renewable technologies. However, the conclusion of the Integrated Resource Plan, which is the South African government's strategic plan for electricity security, is that 9,600 MW of nuclear generation must (in parallel to renewable technologies) form a part of the mix generation technologies. The EIA process, which is a project-specific environmental management tool, does not have any mandate to revisit the strategic analysis of power generation alternatives that was completed in the IRP.

The Nuclear-1 EIA process is therefore not in a position to assess the merits of different power generation alternatives e.g. nuclear power vs. other forms of renewable power generation. The environmental application for Nuclear-1 is for a nuclear power station, as has been the case with other power stations such as the gas-fired power stations that have been constructed at Mossel Bay and Atlantis and the Medupi and Kusile coal fired power stations currently under construction. In all these previous instances, the scope of the EIA was restricted to a specific power station, for specific electricity generation source, on a specific site or sites and within a defined geographical area.

### **Comment 2:**

The nuclear1 EIA is a deeply flawed document that we would contend contravenes the EIA regulations (including section 81(1)). The report fails to consider alternatives in any substantive manner, particularly renewable energy. The consultants appear biased towards the nuclear industry and have produced reports where their specialists appear to be either incompetent or deliberately misleading in their analysis.

### **Response 2:**

Your comment is noted. Please refer to Response 1 regarding the alternatives considered in the Nuclear-1 EIA process. The EIA report is not pro- or anti-nuclear. However, the decision whether or not to include nuclear generation in South Africa's generation is, as indicated in Response 1, not a decision that can be influenced by a project-specific EIA.

### **Comment 3:**

In order to effectively assess the environmental impacts of a nuclear reactor, the entire life cycle costs must be assessed. This report is fatally flawed in that it only addresses the nuclear reactor, and fails to address the issues of decommissioning costs, waste storage and disposal in any meaningful way. By failing to assess the total life-cycle impacts of the proposed nuclear 1 reactor, the costs of any such generator are passed on to future generations. That is ethically insupportable, as well as contravening the legal principles of NEMA.

### **Response 3:**

Life-cycle assessment of the entire supply chain of nuclear energy generation from mining of uranium ore to final disposal of high-level nuclear waste is not practical within the bounds of a project-specific EIA. Such an approach would imply that all other construction projects should likewise be subjected to complete life-cycle assessments of the entire supply chain for all materials making up part of a construction project (e.g. extraction of clay for bricks, extraction of lime for cement, extraction of raw materials for a range of other construction resources, transport of materials to and from site, disposal of building rubble, etc.). However, these aspects are covered in various other processes that a company is required to carry out in order to progress a project such as to obtain funding, the licensing of the plant through the National Electricity Regulator and so on.

Waste disposal of nuclear waste is addressed in the Nuclear Waste Assessment (Appendix E29 of the Revised Draft EIR).

Your comment regarding the impact on future generations refers. The fact that impacts are produced that will be felt in future does not imply that the development cannot be considered. All forms of development in a modern technologically-driven society produce waste and all forms of waste and all these forms of waste produce burdens for future generations, since no waste (whether nuclear or domestic waste) disappears, unless it is recycled or re-used. Once waste is disposed, it is effectively permanently stored on a disposal site, irrespective of whether it is a domestic waste, hazardous waste or nuclear waste disposal site. Leachate, for instance, needs to be continually managed after the closure of a domestic or hazardous waste disposal site.

What is of greater importance than whether the activity will result in a future impact is whether or not the potential impact can be responsibly managed? Arguably, a nuclear waste site like Vaalputs could be regarded as potentially more secure than a domestic waste site, since the controls on waste that get disposed at a nuclear waste site as well as the mechanisms for containment of potentially hazardous waste are significantly more stringent on a nuclear waste disposal site. The potentially most hazardous nuclear waste (Intermediate level waste or ILW) that is disposed at a nuclear waste disposal site is encased in impermeable concrete drums to prevent leakage. That is only one of the control measures, besides other engineering methods that are applied to prevent movement of leachates into the groundwater.

Should we as a society wish to remove or avoid all burdens on future generations, we should avoid all forms of waste disposal, since all forms of waste disposal create potential future liabilities. If waste avoidance is an absolute priority, then even renewable forms of electricity generation should be avoided, since they also generate various forms of waste, which places burdens on future generations.

**Comment 4:**

It is estimated that there are at least 2 million households without access to electricity in South Africa. Electricity prices are rising at 25% per year and this will place an increasing burden on poor households. Fuel costs for both coal and nuclear generation will continue to escalate. There are no fuel costs for wind and solar generated electricity! Furthermore, nuclear energy by its nature supplies centralised grid electricity and is obviously designed for the energy intensive users. It will not benefit the 2 million rural households who cannot be reached by a centralised grid. The government's responsibility should be to provide decentralised renewable energy for rural homesteads, not subsidising the massive costs of nuclear.

**Response 4:**

Please refer to Response 1. The development of a nuclear power station does not imply that renewable electricity generation has no place in South Africa's energy future. Each form of generation needs to be rolled out in parallel to provide in South Africa's future electricity needs.

As indicated in Response 1, Nuclear-1 will be a baseload power station providing constant supply. A mixture of baseload generation (to provide consistent electricity supply throughout the day) and peaking generation (to provide additional power during periods of peak demand) is required.

In an electricity deficit situation, as was experienced some years ago when load shedding had to be applied, all users of electricity are affected, whether they are large industries that are bulk users of electricity or domestic consumers.

Your argument that rural households need to be provided with electricity is entirely valid. However, this does not negate the needs for baseload power supply and does not imply that other bulk users of electricity, who supply employment to thousands of people (who might otherwise be unemployed) should be neglected. South Africa needs to demonstrate that it can provide security of electricity supply in order to sustain current industries and to an attractive destination for the establishment of industries in future.

**Comment 5:**

The recently completed IRP2010 concluded that the most affordable electricity plan for South Africa did not include new nuclear plants. But nuclear generation was then forced back into the revised IRP, implying that the overall costs of implementing the electricity plan will rise yet again. It is our view that nuclear energy is the most costly form of energy known to humans – it is expensive to build, dangerous to operate and leaves a legacy of toxic waste for which a permanent solution has yet to be found.

**Response 5:**

Electricity generated from a nuclear power station has two advantages it is a base load technology and it is a low carbon technology. Nuclear power stations do not emit carbon dioxide. Alternative base load energy in South Africa is coal and possibly natural gas in the future, South Africa has pledged to reduce its carbon intensive activities in the interest of climate change. It is for this reason that nuclear is considered appropriate for the South African electricity mix.

**Comment 6:**

It is noted that Koeberg was projected to have an operating life of 40 years (Eskom 1996), yet its waste remains toxic for more than 240 000 years. Future generations who gain no benefits from this reactor will have to pay for its impacts, including its waste storage. How can we pass such a burden on to our grandchildren?

**Response 6:**

Your comment is noted. Please refer to Response 3 regarding the issue of nuclear waste management.

**Comment 7:**

This report fails to address recent events in Japan. The terrible consequences of such a nuclear accident have implications for any proposed new nuclear plants, both in terms of design improvements and in terms of the environmental costs for such a scenario. While we understand the specialists studies and EIA report were prepared prior to Fukushima, the Japanese nuclear accident has forced a rethink on nuclear energy, and several nuclear countries in the world have now turned away from nuclear energy as part of the mix. The implications of Fukushima must be included in the EIA report, particularly its impacts on financial costs, design, risk and worse case accident assessment.

**Response 7:**

Your comment is noted and the Revised Draft EIR (Version 2) contains an analysis of the Fukushima events and the implications therefor for future nuclear power station design and operation (see Appendix E32 and E33).

**Comment 8:**

SAFCEI believes that the information as presented by the specialists in the EIR fails to address the issues raised above. SAFCEI therefore believes that the EIR is incomplete and should be rejected as it fails to meet its legal obligations in terms of presenting sufficient information before the decision-maker to enable such authority to make an informed decision.

In principle, SAFCEI endorses the comprehensive analyses put forward by Greenpeace Africa, KAA and the LRC, all of whom have prepared detailed technical inputs.

We urge the authorities to reject the proposed nuclear application as we believe it fails to promote sustainable development as per our constitutional right.

**Response 8:**

Your comments and endorsement of the submissions by Greenpeace Africa, KAA and the LRC are noted.

Yours faithfully

for GIBB (Pty) Ltd

A handwritten signature in black ink, appearing to be a stylized 'S' or similar character, located below the typed name.

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The Nuclear-1 EIA Team

