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Dear Alistair

Thank you for the opportunity to provide feedback on the proposed Mullaquana Uranium Mining Project.

The Conservation Council of South Australia (Conservation SA) is the Peak conservation body for South Australia representing over 50 of the State's environment and conservation organisations.

We provide our comments in relation to field trials in two areas (Blackbush and Plumbush Prospects) and subsequent potential production that may take place as a result of the field trial.

In this submission Conservation SA identifies its preliminary concerns in relation to the nuclear industry and environmental risks and consequences. We note that we cannot provide our full input until we see the detailed application for a retention lease.

I would like to thank Uranium SA for presenting to Conservation SA on aspects including the project outline, hydrogeology, environmental management, radiation and metallurgy.

Kind regards

Tim Kelly



Chief Executive

General comment on the proposal

This activity is part of the larger nuclear industry. Conservation SA does not support the nuclear industry because of hazards throughout the nuclear cycle and would instead support greater investment in the development and large-scale implementation of renewable energy.

Question

- Given that uranium is the feedstock for nuclear weapons, and that the International Atomic Energy Agency has publicly stated that it is woefully underfunded, what steps will be taken through this venture to assist in the worldwide better and safer management of nuclear materials?

Impacts on the ground water

It is 100% certain that use of the acid leaching process to inject vast amounts of sulfuric acid into the water table will pollute the groundwater by changing the chemistry of the aquifer to mobilise uranium and other toxic metals. Disposal of waste to groundwater will add to this pollution.

Acknowledging that groundwater in this area is salty does not justify polluting it. We understand that there is a level of unpredictability when sulphuric acid changes the chemistry of the groundwater, and it is possible that the contaminated water plume could eventually extend to the marine environment.

The acid leaching process has caused significant pollution problems in many countries because it pollutes groundwater systems.

We understand that a 'bleed stream' will be disposed of by reinjection to a nearby formation.

We also understand that surplus uranium enriched fluid will be pumped into the low-grade area of the mineralised zone for later extraction or rehabilitation.

Questions

- How many waste disposal wells will there be and where?
- Can Uranium SA provide details of the chemistry of the material extracted and re-injected, including the remaining uranium containing solution then being stored by injection into the mineralized formation?
- What evidence is there that the uranium mobilized by the acid treatment will have no significant impact when it is re-injected?
- Can Uranium SA provide detailed information relating to the 'bleed stream' including where the nearby formation is, implications of this disposal and consequences of it?
- Can Uranium SA describe who decides whether rehabilitation is necessary? Against what standards? With what precautions?
- Can Uranium SA quantify approximate (order of magnitude) estimates of the following for both the trial phase and production phase (based on a nominated production outcome):
 - Total volume of sulphuric acid and other chemicals injected
 - Total volume of waste re-injected material reinjected
 - Total amount of uranium that will be mobilized?

Solids waste and low level waste disposal

We have been advised that solids from the filters will be appropriately treated depending on radiation content.

Questions

- Can Uranium SA describe the detail of 'appropriate treatment' and comparison with best practice?
- What will happen to contaminated materials and equipment in the absence of a State storage facility?
- How is Uranium SA accountable for the storage of low level radioactive waste and for how long?
- What is the life on ion exchange columns? To what extent do they contribute to radioactive waste?

Impossibility of remediating groundwater

Conservation SA is concerned that once polluted, the groundwater system cannot be remediated and will not self-remediate.

Surface risks of leaks and spills

Conservation SA is concerned about surface leaks and spills, particularly as other similar acid leach uranium mines in Australia such as the Beverley Uranium Mine are prone to leaks and spills.

Potential leaks can occur between aquifers, from bore casings, from detention/evaporation ponds and from above-ground pipes. Conservation SA is very concerned that pipework is often not banded with little protection against pipe breakages.

Questions

- Given leaks and spills that have occurred in other South Australian uranium mines, what specific strategies for prevention and accident response exist? To what extent does this constitute 'best practice'?
- Can Uranium SA assure South Australians that surface pipework and liquid containment vessels and ponds will be both robust and fully banded so that should a leak take place, it will not flow directly to the environment?

Proximity to Whyalla and Major Roadway

Conservation SA is concerned about the location being in the proximity of Whyalla and near a major road. As this site is in no way remote, a higher level of security will be required at all times.

The risk of any impact on roadways (such as spillages) would need to be considered.

Question

- Can Uranium SA describe the level of security that will be established such as an on-site presence and continuous surveillance?

Coastal environment and water supply

To provide low-salinity water for process treatment (either during the trials or production) we understand that options include use of recycled water from Whyalla or water from a desalination plant.

Questions

- What specific measures will be taken to promote coastal conservation?
- Where would desalinated water be sourced from? If it is a new local desalination plant, what impact would it have on the marine environment during its construction and operation? What chemicals would be used to treat the water and as anti-scalants for the reverse osmosis membranes?

Impacts on wildlife

We are concerned about the impacts on birds from this operation including endangered species. In particular, birds may be attracted to future toxic open liquid ponds including toxic and acidic contaminated water ponds should the mine move to production. Open water sources can attract birds, causing poisoning, drowning, and various forms of entrapment.

Another source of attraction of avifauna will be the structures erected on site.

Questions

- What proactive steps will be taken to protect and enhance biodiversity in this area during the project?
- Can Uranium SA describe how fauna and avifauna will be protected from encountering open liquid storages of any kind?
- Can Uranium SA assure that fine mesh screening rather than inappropriate netting is used to cover all sources of open liquids?
- Can Uranium SA ensure that all structures are designed to minimise the attraction for birds to use as nesting sites (for example, by using sealed RHS section beams and purlins rather than C section to minimise birds nesting on site)?

Uranium processing and handling

Questions

- Can Uranium SA describe all steps in the off-site recovery and handling of uranium?
- What will be the provisions for safe transport of the material from which uranium will be extracted?
- What safety management procedures will be taken as this material is transported?
- What risk management/accident prevention/accident response mechanisms will be in place?

Greenhouse gas emissions

We appreciate that during trials, the greenhouse gas emissions footprint will be moderately low, but emissions from production will increase.

Questions

- What will be the estimated carbon footprint of this project at conclusion (trial and production phases)?
- What strategies will Uranium SA employ to minimise 'carbon debt' to the people of SA, and to take full responsibility for managing this footprint?
- Should this venture progress to production, would Uranium SA commit to establishing a combined renewable energy/diesel hybrid electricity supply system using technologies such as wind to minimise the volume of diesel fuel consumed on site?
- Would Uranium SA commit to public reporting of the annual scope 1, 2 and 3 emissions associated with this venture in its construction and operation?

Consultation

Question

- What level of consultation with local Aboriginal people has taken place? To what extent does this comply with any standards for consultation with indigenous peoples?

Management and remediation

Questions

- Which organisation will provide a critical examination of management systems?
- Will this critical examination of management systems be provided by an independent third party?
- What is the extent of the remediation bond?
- Please detail the site remediation arrangements if at any time the company becomes insolvent. Who would then clean up?