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Nuclear Fuel Cycle Royal Commission,
Dear Sir,

I wish to respond to the Tentative Findings of the Nuclear Fuel Cycle Royal Commission.

South Australia currently faces serious problems, the most pressing of which is unemployment. This leads to Brain Drain and the potential for Ghost Town generation of Leigh Creek & Whyalla.

Current high levels of unemployment are caused by

- (i) closure of the car industry & associated support industries

- (ii) the mining industry moving from "boom to bust" as it does. Jobs are lost from all sectors of the mining industry, first in exploration. Expansion projects are put on hold of Olympic Dam.

We urgently need new industries, preferably hi tech

- (i) to stop brain drain of our most able people
- (ii) to utilise an existing work force & infrastructure
- (iii) to minimise dislocation and disruption of families.

We need extra power generation with closure of Leigh Ck.

Further involvement in the nuclear fuel cycle does not provide a solution to the URGENCY of these problems.

wrt specific aspects
THE ENERGY FUTURE.

2-9 In 2000 the proposal of an international nuclear fuel dump was rejected by 95% of people. The facts relating to the nuclear fuel cycle remain unchanged.

(2)

2 things have changed significantly

- (i) the employment situation in S.A.
- (ii) terrorist activity worldwide.

There are other options for S.A. to reduce greenhouse gas emissions which pose little risk to public safety or to the environment, both in the immediate future and in the longer term, eg a large array of solar collectors (not in the Commission's brief to examine)

11. Yes. While perhaps not the oldest profession, mining + metallurgy date back to thousands of years BC. Accidents happen. In all sectors of mining operation for all minerals. In exploration and milling sector, in mining (particularly, but not only, underground) more. If fatalities occur they generally involve at most a handful of people. Accidents in the waste disposal sector can involve many more of failure of a slimes dam/tailings dam wall, killing villagers downstream. Some commodities are inherently more dangerous with long term deleterious health effects of asbestos, uranium.
15. The N of S.A. is certainly prospective for uranium, but as every exploration geologist knows "there's many a slip twixt the cup and the lip."
18. In addition to the barriers stated, currently in a mining downturn, the exploration sector is the first to feel the effects. New people will not enter the industry. When metal prices pick up in the nebulous future there is a lag period in exploration. It takes years to train new people to replace those that have left the industry.

19-22. Yes, I agree

FURTHER PROCESSING AND MANUFACTURE

32 I agree. Market oversupply + uncertain future indicate expenditure involved in creation & operation of conversion, enrichment, + fuel fabrication facilities is untenable, particularly given high risks (23-27)

ELECTRICITY GENERATION

38. I agree. Accidents happen. To quote my late husband, a chemical & metallurgical engineer in despair at yet another accident (though minor) "no matter how many fail safes you incorporate, some smart bastard will side step them all." It does not even require a "smart bastard." An ordinarily conscientious worker distracted by a heavy cold, a few too many drinks last night, a sick child, a domestic argument or any of the usual vicissitudes of daily life can open the wrong valve, operate the wrong switch/button/lever.

42. I disagree. The consequences of accidents (40, 41) are qualitatively + quantitatively more disastrous than accidents in copper or gold mines eg. SO LONG AS OTHER OPTIONS ARE AVAILABLE, we should not contemplate nuclear power generation in SA, which in any case is not commercially viable now or in the foreseeable future, given large upfront capital costs, lengthy construction time + water requirements in a thirsty state (43, 44)

46-52 I agree. Nuclear power generation in SA. is not viable

54. I agree. S.A. already leads the other states in wind generated energy. Intermittency (55) could potentially be offset (partially/largely) by increased solar PV. Given S.A.'s large expanse of desert we have an advantage over other NEM states, to whom we could export energy. This would necessitate expanded transmission interconnections to N.S.W + Victoria. This option is also low C & reliable (low cloud cover in the North of S.A. (57))

56. I disagree. Explore other options.

59, 60, 61. I agree. Analysis of a future NEM examining total system costs is required.

MANAGEMENT, STORAGE + DISPOSAL OF WASTE.

62-71. I agree. Australia has an obligation to manage the waste it generates, as do all other countries. With our limited involvement in the nuclear fuel cycle we generate relatively small volumes of only low level & intermediate level waste. These wastes would certainly be better handled in a purpose built, long term central repository. S.A. could host a facility relatively easily, cheaply, safely & rapidly, & be paid by the other states for accepting the (relatively small) risks. We await Federal Government decision on the site.

INTERNATIONAL USED FUEL (HIGH LEVEL WASTE)

* INTERMEDIATE LEVEL WASTE

74. "The more advanced of the 2 projects will start receiving used fuel early in the next decade"

no country in the world is CURRENTLY storing their OWN high level waste in a safe, long term, engineered geological repository. Much less importing other countries' used fuel.

78,79. No compelling reason has been presented in the report for S.A. even considering accepting & disposing of intermediate level waste from other countries (currently 9.9 million cubic meters globally & growing (81)). A country with the technical ability to produce intermediate low level waste, also has the ability to dispose of it domestically. There are no insurmountable site restrictions. "There is no need for a perfect site; rather a sufficient one." (69) We do not need to shoulder the responsibilities & international obligations ~~of~~, with attendant risks, of any other country when they are capable of shouldering them domestically.

80. High level waste is a different matter. The geology of some countries poses huge problems in safe disposal of spent fuel. The tectonic situation may be unstable with volcanoes, earthquakes & tsunamis. Which of course raises the question of the responsibility (or irresponsibility) of siting a nuclear reactor in such countries in the first place, (witness the Fukushima disaster in Japan)

82+83 While accepting our international obligations, S.A. does not need to seek an international reputation as a "goodie two shoes" by indulging in a manifestly high risk operation which is unproven anywhere in the world. "there are no operating

models for the commercial transfer of used fuel for disposal" (82)

85. The main benefit for I.A. for accepting other countries' high level waste seems to be for a financial bonanza yet "there is no existing market to ascertain a price a customer may be willing to pay for the permanent disposal of used fuel." (83)
86. The prices quoted are generally being accepted as firm figures. Yet how "rubbery" are they seeing the activity is mooted as stretching >100 years into the future. "operating over about 100 years" (88)
88. The financial assessment uses a figure of 180,000 tHM of used fuel, which is about $\frac{1}{3}$ of the current global inventory. (81)
89. The time frames for development, construction & storage, & monitoring are estimated to stretch 120 years after project decision. This involves generations of children yet unborn.
90. "need to secure the long term trust & confidence of customer countries" Very problematic. esp in the Asia-Pacific region, countries with permanent storage risks because of tectonic instability, & with used fuel in temporary storage include Taiwan Japan & Korea. Are China, Japan, & Korea our trusted friends & allies now? Will they be in 20/50/120 years?
91. Given the long time frame, & future political & market uncertainties these figures are at best questionable.

92, 93, 94 These conjectures read like "pie in the sky."

95. The storage & disposal of used fuel in S.A. are currently prohibited & unlawful. We need to be very careful about the repeal of laws enacted at State level & federally for the welfare of Australian citizens.

98. If the storing of high level waste is rejected, fuel leasing is a non sequiter.

SOCIAL & COMMUNITY CONSENT

111. "It is essential that benefits are not oversold & risks are not underestimated." I agree.
However, this document appears to do both, which renders it unbalanced & seriously biased in favour of the pro-nuclear argument.

RISKS AND CHALLENGES

116-121 Under normal operation increase in radiation exposure is managed at acceptable levels.

122. This is indeed the problem. Accidents happen.

124. Fukushima,

(a) No people died or developed ARS

(b) Maybe an increased risk of thyroid cancer in vulnerable groups.

(c) Most important health ... psychological well being

It reads like "something - nothing"

But 7 towns of 170,000 people remain evacuated 5 years later.

This is not "something - nothing." It is a social catastrophe.

As a thought exercise let's put that close to home

Evacuate Adelaide
(including Pt Adelaide)
& Adelaide Airport

+ Crafers
Stirling
Mylor
Echunga
Hahndorf
Mount Barker.

- (a) where will these 170,000 people live?
- (b) what will they use for money?
- (c) what about their jobs, future employment prospects?
- (d) relationships disrupted - families, relatives, friends.
- (e) kids schooling disrupted
- (f) what will their abandoned houses be like on return?
- never mind the market value.

The seriousness of the disaster has been down-played, presumably in an attempt to avoid an emotional response.

Empathy with the victims of nuclear disasters is a proper & legitimate part of decision making on this issue.