

Albertina Kakaza - Submission on Nuclear Energy

From: "Glen Adams"
To:
Date: 6/14/2007 4:53 PM
Subject: Submission on Nuclear Energy
CC:



Hi

There are several reports that can be studied that indicate the risks posed by nuclear power generation. Here are a just a few that I've had the time to put together, on short notice, as a concerned member of public:

- health risks for those who work with radioactive materials or live nearby, specifically increases in childhood leukemia in residents living close to Sellafield Nuclear facility in the UK during the 1980's
http://www.environment.co.za/topic.asp?TOPIC_ID=814
- long term storage of radioactive waste is problematic, with stories regularly appearing in the media where storage facilities have not been properly maintained resulting in leaks in to the environment
http://www.theecologist.org/news_detail.asp?content_id=945
- the risk posed by nuclear terrorism, nuclear weapons proliferation and global warming was published by the Oxford Research Group in March 2007
http://www.oxfordresearchgroup.org.uk/publications/briefing_papers/pdf/secureenergy.pdf
- uranium mining produces dangerous radioactive mine tailings
<http://theantidote.wordpress.com/2007/04/20/nuclear-power-is-dirty/>
The principal radiation risks from uranium tailings are radon gas, windblown radioactive dust dispersal and gamma radiation. Mill tailings are also frequently associated with elevated concentrations of highly toxic heavy metals which are a major source of groundwater and surface water contamination. Improper disposal of mill tailings in the past has led to substantial water and soil contamination and disposal sites with no effective containment of the tailings are widespread. Hundreds of incidents of containment failure, resulting mostly from slope instability, earthquakes, seepage and overtopping, have been reported.

There are other less risky forms of power generation that should be adopted. Using a combination of energy efficiency initiatives, carbon capture and storage (for existing dirty coal-fired power) and renewable energy resources South Africa's energy requirements can be met without resorting to Nuclear Power AND without further contributing to global warming.

Glen Adams
www.urbansprout.co.za

Albertina Kakaza - Submission on Nucear Energy

From: "Mark Wells"
To:
Date: 6/18/2007 7:57 AM
Subject: Submission on Nucear Energy
CC: , "Mark Richardson"



Dear Mr Langa Zita,

Please will you ensure that the full cost all energy production options (including Nuclear Energy) are properly explored before continuing on a path of nuclear energy technology.

Using biogas technology it is possible to generate 1800MW of electrical energy from the existing kraaled animals waste in the former Transkei. Furthermore by integrating biogas with zero waste agriculture it is possible to generate about R180000 per year for typical rural households with access to 5ha of land. (Refer http://en.wikipedia.org/wiki/Zero_waste_agriculture). This would creat thousands of jobs, biofuel and food security.

Another possibility is the accelerated roll out of the new South African solar panel electrical technology developed by Prof Vivian Alberts which costs about R7 to R8 per Watt

According to Business Report (February 2007) South Africa will plans to generate 25000MW capacity from nuclear power, according to the World Nuclear Power Association 2005 Report entitled the new economics of nuclear power, the capital costs for Nuclear power stations is at least US\$2000/kW and the operating maintenance and fuel cost for nuclear production is at least \$1.72 per kWh.

This means that solar can be rolled out for 52% of nuclear capital costs and there is not fuel costs as the solar energy is free.

Regards
Mark Wells
0835006276

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Albertina Kakaza - Call for Written Submissions on Nuclear Energy in South Africa

From: "Pieter J Venter"
To:
Date: 6/13/2007 6:00 PM
Subject: Call for Written Submissions on Nuclear Energy in South Africa
Attachments:



To: Mr Langa Zita, Chairperson
For the attention of: Ms Albertina Kakaza

Dear Ms Kakaza

I refer to the call for Written Submissions on Nuclear Energy in South Africa as recently published in the press.

Please find attached to this e-mail a submission prepared by myself and Mr. MJ Deats for your consideration.

We are at your disposal should you require any further elucidation of our submission.

Kind regards.

Pieter J Venter

PO Box 14568, Lyttelton, 0140, South Africa
Tel: + 27 (0) 12 664-2143 or + 27 (0) 83 283 7137
Fax: + 27 (0) 12 664-2143
e-mail: piet.venter@pixie.co.za
e-mail2: VenterP98@alum.darden.edu

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WRITTEN SUBMISSION ON NUCLEAR ENERGY IN SOUTH AFRICA

Qualifications of commentators: Commentator 1 is a past Executive Director of Eskom responsible for all primary energy supply including Nuclear Fuel Supply to Koeberg and management and direction of the Generation Division of Eskom, including Koeberg Nuclear Power Station. Commentator 1 was also Executive Director of Iscor Mining and BP Coal, Southern Africa and has an exhaustive knowledge of the South African Mining Industry with specific reference to coal.

Commentator 2 is a qualified Nuclear Engineer (MSc (Nuclear Reactor Science and Engineering; University of London)) with 25 years experience in the nuclear industry. Commentator 2 is a past Executive General Manager of the AEC (now NECSA) who served on the AEC's Management Board and held responsibility for the organisation's Nuclear Fuel Cycle activities, viz. Uranium Conversion Plant, Uranium Enrichment Plant, Nuclear Fuel Manufacturing Plants (Materials Test Reactor and Koeberg) and Nuclear Waste Management Facilities (including Vaalputs).

Overall background to this comment: South Africa is considered to be far too dependent on coal for its energy supply. The potential risk of this energy concentration is exacerbated in particular, by the fact that some 10 of its major coal fired power stations are concentrated on the Highveld/Mpumulanga coal fields, which naturally includes the concomitant transmission and water supply networks. These coal fields will be exhausted for this purpose within the next 20 to 30 years from now. This concentration is the result of the localisation of exploitable thermal coal reserves and will be increased in the Highveld and Waterberg regions when the new Medupi and Project Bravo power stations are commissioned.

Renewable energy options have been under scrutiny for some years now. Unfortunately the regions needing the most urgent attention in terms of energy delivery are also those that suffer most from water shortages and the like that render these options of little value to solve the pressing challenges. Renewable resources and other alternatives to coal and conventional nuclear power stations are furthermore in general of such small scale compared to the concentrated need for electricity that their potential is restricted to specialist applications, especially in the short to medium term.

Quo Vadis on energy: Considered in the light of the very brief introduction above, South Africa therefore has no other option but to go nuclear and embark on a renewed nuclear energy initiative. The 20 additional reactors of some 1000 MW each that are reportedly under consideration will not be enough to replace the coal fired capacity in the Highveld/Mpumulanga area that will run out of coal in the next 3 decades. In addition there is a synthetic fuel capacity that also has to be maintained and increased over the same time frame and beyond, thus also impacting markedly on the expected life of South Africa's coal reserves. The Waterberg coal field has colossal reserves but global warming considerations make it imperative that the nuclear option moves more sharply into focus.

Priorities: The key role players in South Africa's energy industry must confirm a fundamental decision to embark on a nuclear programme of optimal proportion to satisfy the identified needs as well as be techno-economically sustainable. Capacity (in terms of skills and other resources) should be built or otherwise sourced to be able to execute any nuclear power program. This naturally also holds true for conventional and alternative power generating options. All coastal sites that have potential for nuclear power stations should be earmarked particularly those that have transmission lines and capacity to feed back into the traditional upcountry industrial areas. Inland nuclear sites at or near nodes that will replace coal fired sites that will require replacement soonest should be identified and planning for their establishment should commence.

Orchestrated integrated planning: The current seemingly haphazard planning of recommissioning 3 mothballed power stations, 1 large power station "Medupi" at Lephalale, a 2 reactor nuclear power station, 1 station "Bravo", 1 pumped storage station, with steadily decreasing availability on existing stations needs to be replaced with an integrated capacity plan for the next 30 – 40 years. This needs to include the 20 000 MW of new reactors in a far more definitive way and much more definitive planning on what, where and when will replace the 10 coal fired stations that will reach the end of their lives between now and 2050 or run out of coal before then. A meaningful capacity plan(s) will necessarily include planning for the long term supply of fuel requirements, in particular nuclear fuel, and the management of any waste created (especially spent nuclear fuel) in the process of generating electricity.

The new nuclear energy transmission power grid: This should make as much use of the currently established transmission network as possible and slot into it in an integrated fashion.

Nuclear fuel supply: The question of possibly re-establishing a nuclear fuel manufacturing facility in South Africa needs to be carefully considered. Such a venture could conceivably add significant value to South African uranium resources and be financially lucrative whilst securing fuel supplies for a local nuclear power programme. However, it will require significant human and financial resources whilst also adding to the risk associated with the vagaries of the nuclear fuel supply industry.

Now that there is such a precedent in the world, a one-stop nuclear fuel supply concept is an extremely attractive option. This idea conceptually allows for the supply of the energy content of uranium-based fuel by a responsible country of origin to South Africa with a proviso that the spent fuel be returned to that country of origin. In doing so the concept eliminates the spent nuclear fuel management implications and associated liabilities completely. This implies, naturally, that the fuel supply contract and possibly the reactor supply contract arrangements are locked in during early negotiations. It may also involve arranging for training and education of future operators, maintenance and management personnel which can only be to the advantage of what will be a very large nuclear industry in South Africa.

Alternative waste management strategy: With a possibility of 20 plus reactors a large spent nuclear fuel repository will be required. Vaalputs may or may not be unsuitable for geological reasons et al. In any event, an extended and costly development and engineering project will be required to bring such a repository to fruition. If the one-stop option mentioned above is not favoured and the decision is made to commission South Africa's own repository, consideration could be given to offer space in this repository to other responsible countries for permanent waste storage (for an appropriate fee), i.e. a one-stop option with South Africa being the provider of the energy contained in locally mined and beneficiated uranium ore.

Pebble Bed Modular Reactor: The energy requirements of South Africa and nuclear energy requirements are of such magnitude that the PBMR should only be seriously considered once the initial pilot commercial unit has demonstrated its potential as an undoubted success and should not figure in these deliberations until that milestone has been reached.

Commentators:

Commentator 1:

Michael J. Deats Pr Eng, C Eng, BSc (Eng) (Mining), MSAIMM, MIMM
E-mail: mdeats@iafrica.com

Commentator 2:

Pieter J. Venter Pr Eng, BSc (Eng) (Metallurgical), MSc (Nuclear Reactor Science and Engineering), DIC (Chem Eng & Chem Technology), MBL, TEP (Darden)
e-mail: piet.venter@mweb.co.za

Date: 12 June 2007

Albertina Kakaza - Submission of comments on Nuclear Energy Development in South Africa

From: "bluepebble"
To: , "Bongi Shinga"
Date: 6/12/2007 2:09 PM
Subject: Submission of comments on Nuclear Energy Development in South Africa
CC:



To: Mr. Langa Zita (Chairperson)
Attention: Ms. Albertina Kakaza
Box 15, Parliament, Cape Town, 8000
E-mail: akakaza@parliament.gov.za

Dear Members of the Portfolio Committee on Environmental Affairs and Tourism,

Better the dragon you know than the one you don't.

I thank you for holding a meeting to discuss nuclear energy development. I am personally concerned by the manner in which nuclear energy development is being investigated in South Africa. I am sure there are very few who will disagree with the fact that nuclear energy development is a serious matter and needs thorough investigation.

The impacts related to nuclear energy generation, in terms of radioactive pollution, are potentially extremely severe and could potentially harm the next 100 generations in this country over tens of thousands of years. In particular the uranium tailings resulting from the mining of uranium, the level of technology proposed for nuclear power generation and the disposal of radioactive waste are of specific concern in terms of location, scale, depth of investigation and waste management. These activities, as I am sure you well know, can release radioactive pollution into this country. Yet has the extent and scale of this been investigated and communicated? The citizens will then have to live with the impacts of such radioactive pollution, if we in fact decide to continue along this path. The extent and scale of this environmental health threat is currently not clear and does not seem to have been assessed at a national level. Are these impacts the least significant relative to the development of other alternative energy sources? What is clear at this point is that uranium has a half life of approximately 80,000 years, after which time it is still extremely harmful to all humans and the entire ecological system.

Of concern is the fact that ESKOM (a state owned entity) is currently exploring the location for another nuclear power generation facility in South Africa. The environmental impact assessment (EIA) process that is currently being conducted by ARCUS GIBB seems to be limited to the physical location of this facility alone. Has a fundamental step not been missed here? Where is the assessment process of alternative energy sources for this country, including nuclear energy development as but one alternative? Has this been conducted and where is this information? What about the impacts related to the mining of uranium and the disposal of radioactive waste? These are potentially more of a threat than the nuclear power generation facility. Have the citizens of this country had the opportunity to make up their own minds up as to what the future should hold in terms of further energy needs? Is this nuclear power development a matter driven solely by short term and limited political/economic gain? From what I see this seems to be a strong possibility.

Please understand that I am not supporting or obstructing nuclear energy development. I am merely making the point that the process by which it is being done is not thorough. Where is the information and the thorough consideration that all can view and the transparent decision-making that all can participate in? For instance, prospecting for uranium has already begun in the country. What precautions have been taken to avoid radioactive pollution in these prospecting activities. I am fully aware that the current EIA Regulations allow the mining sector their own set of rules in terms of environmental control. Yet in the matter of mining radioactive material, surely it is not wise to play with the health of 100 future generations. What is this short term urgency to suddenly boost the generation of power in the country? There seem to be a few people in this country that are directing nuclear power development at the moment, at the possible cost of every person in this nation. The socio-economic, human development, long-term economic and ecological issues related to nuclear energy development and compared to alternative sources such as solar energy

development and wave energy development need to be assessed thoroughly at a national level.

Let's just **STOP and CONSIDER**. Nuclear power development in this country is a serious matter and the decision to do so or not, and how, belong in the minds of the people of this country and not with a few isolated individuals squeezed by short-term political and economic agendas. I therefore urge the President of this country, to make the development of nuclear energy a national priority. Not in terms of building a nuclear power plant however, but rather in educating and asking the people about what the future should hold. And then every one of us can make that decision. We need a national referendum on matters of such importance.

Each person in this country has a right to make such an important decision. Or did 1994 not happen? Perhaps then and in conclusion, the answers to the questions raised could be investigated broadly and deeply so that all who wish to participate can and are then willing to accept the responsibility of those decisions and the resultant actions.

Thank you for your time and please consider your own thoughts and actions in this matter deeply,
Jonathan Kingwill

bluepebble

independent environmental agency
Suite 30, Private Bag X1006
Plettenberg Bay, 6600
082 777 0705 (mobile)
044 533 9129 (fax)
bluepebble@iafrica.com

From: "Mike Kantey" <mike.kantey@gmail.com>
To: <akakaza@parliament.gov.za>
Date: 6/12/2007 6:53 AM
Subject: nuclear submission

CC: "Andy Pienaar" <komaggas@kingsley.co.za>, <daniel@makhetha.co.za>, "Mich...

Mr Langa Zita
Chairperson
(Attention: Ms Albertina Kakaza)
Portfolio Committee on Environmental Affairs and Tourism
Parliament
PO Box 15
Cape Town



Dear Mr Zita

IMPLICATIONS FOR THE FURTHERANCE OF THE NUCLEAR ENERGY INDUSTRY IN SOUTH AFRICA

With reference to your request for submissions to the Portfolio Committee on the question of nuclear energy in South Africa, I would like to make the following preliminary and therefore short observations on the topic.

1. Socio-economic implications

1.1. Nuclear Energy is being proposed here as the only possible source of baseload electricity. This should be compared with baseload supply from cleaner coal technology and with natural gas as viable economic options. As far as global warming is concerned, nuclear power has been excluded from the Kyoto Protocol and is therefore irrelevant, since – not only does nuclear power INCREASE the levels of global warming by the extraction of uranium, enrichment, fuel fabrication, and normal operational life – but the enrichment of uranium for the manufacture of nuclear fuel has been proven to produce masses of carbo-fluoro-chlorines (CFCs), a known contributor to ozone depletion at upper atmospheric levels.

1.2. While the construction of a capital-intensive power plant might create jobs in the immediate short term, the amount of full-term employees is pitiful relative to the scale of investment, their average salary scales way above any working-class man or woman, while the average unskilled nuclear industry worker is subject to massive doses of radiation, which tends to render him or her a risk to public health. The monies would be far better spent on investment in labour-intensive, appropriate technology, such as:

(a) Solar water heating development for mass housing (relieving the burden on geysers, which currently consume an average of 60 percent of household expenditure on energy where there is electricity supplied, and would further provide great relief for those who do not have – or cannot afford – electricity). The Sri Lankan solar industry has shown a massive increase in sustainable job creation through:

(i) factory production of solar technology under licence;

- (ii) distribution of products, spares and replacements;
- (iii) installation and maintenance, including the acquisition of basic plumbing skills which can be further applied in the provision of water & sanitation dormitory townships and rural villages;
- (b) insulation of ceilings to reduce heat loss in winter;
- (c) encouragement of cooking on fuel-efficient stoves, including liquid petroleum gas (LPG)
- (d) biogas technology, as in China and India
- (e) photo-voltaics for lighting and small appliances, as in the recent breakthrough at the University of Johannesburg, which has been snapped up by investors in Germany. Japan recently committed to a ONE TERA-WATT supply of photo-voltaic energy. This has spawned a massive photo-voltaic market and tremendous innovation in photo-voltaic technology, including a steep fall in costs.

2. Waste Management Implications

2.1. Surely it is inconceivable for the Eastern and Western Cape to "export" radioactive waste to the Northern Cape, when the Western Cape failed to approve the "import" of chemically toxic waste from the Eastern Cape. Given that Environment is a provincial competency under the South African Constitution, each province should take care of their own waste within their own borders. This rules out the Eastern and Western Cape, since no such storage facility exists for nuclear waste and is unlikely to be approved in the time allocated for nuclear electricity production. Any attempt to build a nuclear reactor without an operational waste storage facility, therefore, will be subject to a legal challenge under Section 26 of the Constitution, read together with the principle of "Sustainable Development" and its globally recognised definition in the Brundtland Report.

2.2. The original and therefore rightful owners of Namaqualand (as respected by the United Nations Charter on the Rights of Indigenous Peoples) are entitled to a fair hearing with respect to the despoliation of their heritage and are on record in Leliefontein, Steinkopf, Concordia, Springbok and Kommaggas as wanting no further development of nuclear power or nuclear waste facilities on their ancestral lands. I also believe that this rejection is understandable and that their legitimate claims to full participation in the decision-making process is legally and Constitutionally defensible.

2.3. There is no proven technology world-wide for the long-term storage of high-level nuclear waste (spent fuel) and that this fact alone should be sufficient to deter reasonable and sensible legislators from approving the expansion of the nuclear industry in South Africa. In 1986 I made a full submission on this matter to the then President's Council and I have such complete trust in the Parliamentary library system that I am fully convinced that my submission in this regard can be made available not only to Members for a thorough study of the issues contained therein but also to the

Minister, the Honourable Marthinus van Schalkwyk, so that it may not be said in a later, tediously legal process that the Honourable Minister had "failed to exercise his mind" in this, most important matter.

In the interests of brevity, I shall leave the issues – security of supply, human-resource development, and science and technology – for another occasion but rather wish to conclude in saying that, in your committee, sir, the hopes of the nation reside, since it is your historic privilege and duty to exercise your own minds as to what is just and fitting in this regard. I have again, however, every faith that – when all the unbiased, scientific and unemotional facts have been brought before you – you will have no hesitation (Party allegiance notwithstanding) in rejecting the overtures of the global nuclear industry with all the contempt that it deserves.

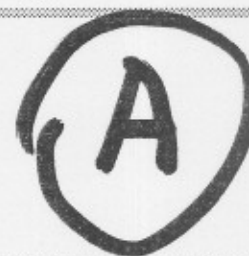
Yours sincerely

Mike Kantey
Director
Watercourse cc
2 Pillans Court
Pillans Road
Rosebank 7700
Cape Town

072 628 5131

Albertina Kakaza - Att: Ms Albertina Kakaza - Alternative vs nuclear energy

From: Deon Braun
To:
Date: 6/11/2007 4:25 PM
Subject: Att: Ms Albertina Kakaza - Alternative vs nuclear energy
CC:



Dear Mr Langa Zita

Please would you relay the concern of myself, my staff and family at the lack of information available to the SA public regarding nuclear power.

We feel that more emphasis should be placed on renewable energy sources such as solar, water and wind energy, not on technology which caused disasters like Chernobyl and which may result in future nuclear fall-out, and compromise the safety of the human race.

There is a lot of conflicting information doing the rounds and we feel that much of it is kept out of the public realm.

Please seriously consider our sentiments in your discussions.

Kind regards

Deon Braun
Publisher

Cell 082 377 4669 Fax 086 609 4429

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I am a Business Warrior. Are you? www.businesswarriors.co.za

June 11, 2007

Mr Langa Zita / Ms Albertina Kakaza
Box 15
Parliament
Cape Town
8000



Dear Madam / Sir:

CALL FOR WRITTEN SUBMISSION ON NUCLEAR ENERGY IN SOUTH AFRICA /

EIA NUMBER: 12/12/20/944

I am an interested individual wishing to comment on the subject of Nuclear Energy. I would like to object to ESKOM, or any other party, focusing exclusively on nuclear power generation in this country, as there are other means of power generation which would make much more sense, from an environmental and safety point of view. We have an abundance of solar radiation and wind in this country. Northern European countries, such as Scandinavia and Germany do not enjoy nearly as much sunlight and wind, yet they have been moving towards solar and wind-generated power. Why do we insist on pursuing nuclear power, when there have been notable unforeseen nuclear tragedies, such as the Chernobyl disaster in 1986. To this day, the nuclear waste is still smouldering under the failed reactor and renewed attempts have to be made to encase the radioactive matter.

The point can be argued, that more up-to-date technology will be employed in South Africa, but the hazards of working with radioactive matter to generate power, are simply too great to contemplate, when we are faced with other workable and infinitely more safe alternatives.

Yours Sincerely,

Nina P. Bodisch

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