

Our Ref: J27035

04 August 2009

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ESKOM ENVIRONMENTAL IMPACT ASSESSMENT (EIA:12/12/20/944) FOR A PROPOSED NUCLEAR POWER STATION AND ASSOCIATED INFRASTRUCTURE: COMMENTS ON THE REVISED PLAN OF STUDY FOR EIA

Your correspondence to Ms. Bongzi Shinga of ACER (Africa) entitled “*Comments Regarding the Revised Plan of Study for Nuclear 1, 2 and 3 and in particular Bantamsklip Nuclear Power Station*” refers.

Arcus GIBB acknowledges receipt of the above-mentioned letter. We thank you for your valuable comments and your participation in the Eskom Nuclear Power Station (NPS) Environmental Impact Assessment (EIA) process to date. Your questions and comments concerning the Nuclear-1 EIA process have been noted.

Responses to your comments / questions are as follows:

Your comment (1)

Regarding the siting of Nuclear 2 at Bantamsklip

Eco-tourism impact: It is completely unacceptable to have a nuclear power station in the middle of an eco-tourism hot spot area, which constitutes a major portion of the economy of the Southern Overberg. This is not an industrial area and as such is completely unspoilt by any form of industrial activity. The area has spent millions over the past 30 years establishing itself as the whale, shark and fynbos eco-tourist destination as well as wine and heritage tourist destination of national and international renown. It relies on natural beauty and the unspoilt openness of the landscape and coast in its appeal. According to the Scoping Report a nuclear power station here will have little to modest impact on tourism. This is a completely erroneous supposition, which has no basis in fact, and the EIA is urged to properly assess the tourism impact thoroughly.

Response (1)

You state that according to the Scoping Report, a NPS here (Bantamsklip) will have “little to modest impact” on tourism. According to the Tourism Specialist Study, “the normal operation of a reactor at ... Bantamsklip could limit future tourism development with significance for the local and provincial economies”. Further, Table 6.1 on Page 13 identifies a number of potential moderate and major negative impacts on the Tourism Sector for the Bantamsklip site.

The results of the detailed tourism impact assessment will form part of the detailed Impact Assessment Phase of the EIA process.

Your comment (2)



Food production impact: The Overberg in addition to being a tourist hot spot is also a major food producing area with beef, lamb, dairy, wheat, canola, grapes being some of its main agricultural activities. Of major concern is the health of plant, animal and human life with Strontium-90 and Cesium-137 emissions, which are released by nuclear fission into the air, water (both fresh and sea), by deposition to land and thus into the human food chain. Some farms within a radius of 20 km of Bantamsklip or more will not be able to continue marketing their food crops because of this danger. Since we live in a world where food crops are becoming less and less available and there is a dire need to encourage farming to meet human food needs it is completely unacceptable that a nuclear facility is being positioned within a food-farming zone, thereby rendering the area non-agriculturally sustainable. The agricultural soils of this area are some of the cleanest, being free of fertilizer and herbicide chemicals. Many meat and dairy farmers practice organic farming activities, with free range, grass-fed cattle and sheep. Certification for organic farming would be rendered impossible as a consequence of a nuclear facility nearby.

Response (2)

Thank you for your comment. Your comment will be passed to the Agriculture and Human Health Risk Assessment Specialists.

Your comment (3)

Export cut-flower impact: In addition to eco-tourism and food farming, cut-flower harvesting constitutes a third major economic force in the area. The Southern Overberg and the Agulhas Plain, which has its own Agulhas National Park, is the fynbos eco-destination of the world and cut-flower production is practised in addition to eco-tourism as a means of generating an income on fynbos farms. These farms form a complement to the food-producing farms and often have more mountainous areas than arable land with 'virgin fynbos' protected by government legislation. Incentives are given to farmers to develop protea/fynbos orchards for the cut-flower export market and to remove alien vegetation to protect and preserve the natural fynbos veld. To meet the stringent European Union cut-flower import regulations, all flowers have to be tested and proved free of harmful chemicals. It is then highly questionable as to whether any export flowers from this region will be acceptable by the EU or the USA, when they are found to have been contaminated by radioactivity. This is another flourishing and important economy of the area which would be rendered unviable by the negative impact of a nuclear power station at Bantamsklip. One only has to look at the devastation caused by the Overberg fire of 2006 to see how it collapsed the cut-flower market and caused untold people to lose their jobs.

Response (3)

Thank you for your comment. Your comment will be passed to the Agriculture and Economic Specialists.

Your comment (4)

Human health impact: The lack of any major industry in the Southern Overberg means the area is free of associated water and airborne pollutants. Building a nuclear power station within this 'pollution free zone' – with all its associated radioactive waste activities and emissions is completely unacceptable. The negative impact on human health will be critical and it is a well-proven fact that radioactive emissions cause various forms of cancer. Of particular concern are the long-lived isotopes Strontium-90 and Cesium-137, which both have half lives of up to 30 years and which attack the bone and tissue cells. In support of this argument please find attached with this letter, various articles, which – contrary to Eskom's claim that Nuclear Energy is safe – say exactly the opposite. The [United States] NRC publishes values of radionuclides that should not be exceeded by ingestion or inhalation in the course of a year to minimize any biological effects from radiation doses absorbed by tissues. The annual limit of intake (ALI) for Cs-137 is 100 micro-Curies or 3.7 million Becquerels for ingestion and 200 micro-Curies or 7.4 million Becquerels for inhalation.



http://www.uspharmacist.com/index.asp?show=article&page=8_1324.htm

Response (4)

Thank you for your comments and the information, which will be relayed to the Human Health Risk Assessment. The Terms of Reference for the Human Health Risk Assessment are available in the Revised Plan of Study for EIA. The Terms of Reference includes the quantification of "holistic health risks through all pathways and route of exposure".

Your comment (5)

Economic impact: Most of the local communities and the labour force of the Southern Overberg are involved in tourism (marine and terrestrial), farming and/or cut-flower production. Should this nuclear power station be erected, all these economies will suffer, and the very basis for the Overberg's existence will be wiped out. Job losses, loss of sustainable livelihoods and loss of property values will be just a few of the ramifications, which will destabilise the area. In short the Overberg will no longer have a value. To quote from your own document:

"It is possible that the normal operation of a reactor at Thyspunt and Bantamsklip could limit future tourism development with significance for the local and provincial economies. A substantial nuclear incident could have significant economic costs for tourism and the associated Eastern Cape and Western Cape economies." (NUCLEAR 1 ENVIRONMENTAL IMPACT ASSESSMENT AND ENVIRONMENTAL MANAGEMENT PROGRAMME SPECIALIST STUDY FOR SCOPING REPORTSPECIALIST STUDY: TOURISM Page 16.)

Response (5)

Your comment is noted and will be relayed to the Economic Specialist for consideration and inclusion in the respective assessment.

Your comment (6)

Health and Safety of Nuclear Power: We would like to analyze some answers which Eskom gave regarding questions at the original scoping phase of this EIA. The blue text represents Eskom's answers; the red text represents the response of the Coalition Against Nuclear Energy (CANE). Reading these responses, one is not at all reassured that Eskom in fact knows what they are talking about.

ESKOM: "Eskom will not construct and operate a nuclear power station if it is not safe."

CANE: the very concept of what constitutes safety and who decides what constitutes a reasonable risk is what the argument is all about.

ESKOM: "In addition, the nuclear safety of, and the risk of a nuclear accident at the proposed power station will be independently assessed by the National Nuclear Regulator. The NNR will only issue a nuclear installation license for the proposed power station if it is satisfied that the risk of an accident is acceptable low."

CANE: This delays the argument to another occasion, while the integrity and independence of the NNR is also under question. ESKOM must answer the question.

ESKOM: "Experience gained internationally is that people do not become ill or die from living in close proximity to a nuclear power station."

CANE: This is a blatantly false answer. See the response of Dr Leslie London with regard to the original PBMR EIR. See also Elizabeth Cardis et al, Ernest Sternglass, Rosalie Bertell, etc. etc



ESKOM: "Taking Koeberg as an example: Koeberg has operated for the past 23 years within very close proximity of wheat, cattle and dairy farms. The nearest farms are within 10 km of Koeberg "

CANE: No independent epidemiological studies have been done on the cancer rates before and after Koeberg was switched on.

ESKOM: "Everybody is exposed to natural background radiation everyday from, for example, the earth itself, the materials from which buildings are constructed, the sun, and on a less regular basis from medical exposures (X-rays)."

CANE: This is a red herring, designed to obscure the scientific facts. We are NOT talking about background or external radiation: we are talking about man-made, INTERNAL DOSES of ionizing radiation.

ESKOM: "The quantity of radiation exposure and what is absorbed by the body is measured in micro Sieverts (μSv) per annum. The National Nuclear Regulator (NNR) sets the limit of exposure arising from operations at nuclear installations. Hence the limit for Koeberg is set at 250 μSv per annum, far below the exposure from natural background radiation (which is about 2500 - 3000 μSv per annum), and less than the international standard of 1000 μSv per annum. The Koeberg Nuclear Power Station has been in operation for over 23 years - the public exposure to radiation as a result of Koeberg's operations has been less than 20 μSv per annum in general and less than 6 μSv per annum in 2005/6 - reference NNR Annual Report 2005/6 tabled in Parliament - available off the NNR website www.nnr.co.za), far below the limit set by the NNR."

CANE: This is a completely irrelevant red herring. We would like to know about the projected output of Strontium-90 and Cesium-137 in Becquerels per annum INDEPENDENTLY VERIFIABLE by reference to an EXISTING technology such as the proposed AP1000 and EPR reactors. We cannot accept any other irrelevant references, since we have no SCIENTIFICALLY VERIFIABLE EVIDENCE on what is expected to come out of THESE SPECIFIC, NAME-BRAND reactors. You cannot measure exhaust fumes from a new BMW Z4 by using a 1976 VW Beetle as a reference! Nor can you refer to lead poisoning from pencils as a reference with regard to bird droppings in the garden! Let's have the actual facts, not obfuscation and technical garbage.

ESKOM: "Samples of fish, meat, vegetables, milk, water, etc are regularly collected from the area around Koeberg and analyzed to determine any possible effects on the food chain. Samples are also sent overseas for independent analysis and proof that Eskom is operating within the required limits."

CANE: And the results show what? How many Becquerels per kilogram (or per litre) per annum? We're not interested in microSieverts, or whether unnamed "overseas experts" may be considered by definition to have integrity and independence. Show us the unadorned facts.

ESKOM: "Although the risk of an accident is very low, the National Nuclear Regulator (NNR) nevertheless requires emergency planning to be undertaken."

CANE: We are not interested whether the risk is high or low. All we are interested in is an honest and scientifically verifiable example of the impact of a major accident on the INES-7 Scale. Give us the facts.

ESKOM: "For the proposed nuclear power station Eskom is considering the latest design of Pressurized Water Reactor (PWR) technology. Internationally, these designs have formal emergency planning zones less than 16 km."

CANE: We are indifferent to "international" standards. What does INES-7 tell us about the scale of a major accident? How far will the radioactivity from Cesium-137 stretch in kilometers, using that event of April 1986 as a benchmark? Why were all foodstuffs taken off the market for many thousands of kilometers away? What was the measurable impact on the reindeer economy of Northern Scandinavia? What was the impact on lamb and mutton production in Wales? How far afield were wild mushrooms and berries affected? Let us use this verifiable and scientifically testable data and apply the answers logically and without obfuscation to the impact of a major accident at Bantamsklip.



ESKOM: "The NNR will however determine the emergency plan requirements and the extent of the required zone based on a safety assessment of the design of the proposed nuclear power station and the proposed site and surrounds."

CANE, MK: Irrelevant. We are not interested in what NNR has to say. What do Eskom and Arcus Gibb have to say?

Response (6)

Please refer to the Plan of Study for EIA, which explains the co-operative arrangement between the NNR and DEAT. We refer to the document titled "*Notification of statement issued by the Department of Environmental Affairs and Tourism regarding the consideration of matters pertaining to nuclear safety in environmental impact assessment processes on nuclear installations*" dated 10 February 2009 (included as Appendix 2 in the Revised Plan of Study). The document serves to communicate consensus reached between DEAT and the NNR and is available on www.eskom.co.za/ Nuclea-1 EIA.

Your comment (7)

In Conclusion: we wish to say that a nuclear power station at Bantamsklip is not at all acceptable and we totally oppose it. We would urge Eskom to look at clean, renewable forms of energy that will do the minimum of harm to human and animal health and have the least impact on all aspects of the environment and tourism. Clearly a nuclear power station will have the opposite, having a major, dirty, unsafe and prolonged damaging impact.

Response (7)

Your comment is noted. Chapter 8 of the Final Scoping Report for the Nuclear-1 EIA discusses alternative forms of power generation. Eskom is in the process of exploring a number of different ways in which to generate electricity and plans to invest in further development of alternative technologies.

In conclusion, the project team would like to assure you that Interested and Affected Parties comments are important to us and that your continued involvement in this process as an I&AP is valued. Your comments/questions will be captured in the draft EIR that will be submitted to the decision-making authority in due course.

Please do not hesitate to contact us at any stage should you require any additional information regarding this proposed project.

We thank you for providing us the opportunity to respond to these questions and look forward to your ongoing involvement in the project.

Yours sincerely
For and on behalf of Arcus GIBB (Pty) Ltd

Jaana-Maria Ball
EIA Project Manager