

5 August 2015

Our Ref: J27035 / J31314
Your Ref: Email dated 07 July 2011

Marylou and Bruce Botha
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Dear Mr and Mrs Botha



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RESPONSE TO MR AND MRS BOTHA – INTERESTED AND AFFECTED PARTY

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

Comment 1:

As an interested and affected party, herewith my comments on the above mentioned proposal: I do not believe that the health and well being of the planet's citizens and future citizens is under consideration when nuclear energy is being proposed. The evidence of this attitude is everywhere. You just need to look out the window (or in the cancer wards at hospitals).

Response 1:

Thank you for your comment. The Human Health Risk Assessment (HHRA) Report (Appendix E24 of the Revised Draft EIR) considered the impact of the proposed Nuclear Power Station on the human health. The study has a qualitative interpretation in terms of assessing the health risk and uses a dose assessment approach. The assessment of dose to the public takes into account all possible pathways, including through air/atmospheric emissions at different intervals (both for normal operating conditions and accidental conditions). Dose limits are there to ensure protection to the members of the public. Furthermore, exposures must be as low as reasonably achievable (ALARA), as has been explained in the HHRA. The nuclear industry is well regulated to ensure that systems are in place to ensure safe operations of the facility without risk to the public and the environment taking into account lessons learned from past historic incidents and accidents (including Chernobyl and Three Mile Island). The fact that there is a known risk to deleterious effects of ionising radiation does not mean that the health outcome will in fact manifest at the exposure levels near a nuclear power plant. The risk is based on the amount of radiation dose one will receive within a certain period of time and how this risk increases with the amount of radiation dose. The risk becomes significant only at exposure above a certain level of exposure. For exposures in the *de minimus* range this risk would be trivial. Hiroshima and Nagasaki was used as an example to illustrate the risk of hereditary effects associated with ionising radiation. Regulatory dose limits are based on many studies and the dose of 100 mSv is more than 2 orders of magnitude higher than what would be the case at the nuclear power station under the requirement for ALARA.



GIBB Holdings Reg: 2002/019792/02
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A list of divisional directors is available from the company secretary.



This approach is in line with the regulatory requirements as set out by the National Nuclear Regulator on safety standards and regulatory practices (R388) which is based on the accepted international system of radiation protection to ensure that public and the environment are not at risk from the effects of ionising radiation. Regulatory limits set by the National Nuclear Regulator are in line with recommendations from the International Commission of Radiological Protection (ICRP). The ICRP is an advisory body that offers its recommendations to regulators and advisory agencies, mainly by providing guidance on the fundamental principles on which radiological protection can be based. Virtually, all international standards and national regulations addressing radiological protection are based on the commission's recommendations. This includes international basic safety standards (from the International Atomic Energy Agency (IAEA)) and various labour conventions. The system takes into account biological information and trends in the setting of radiation safety standards. The recommendations made by the ICRP are based on scientific knowledge and expert judgement also balancing societal and economic aspects. The commission uses information from various sources such as epidemiological studies, experimental studies to estimate risks associated with external and internal exposure to radiation and provides risks estimates at the low dose of interest in radiological protection.

Lastly, the National Nuclear Regulator will not grant a Nuclear Installation Licence (based on NNR act (act 47 of 1999) if the applicant can not demonstrate that the risk to the public remains as low as reasonably achievable. Such analysis is performed through the licensing process with the National Nuclear Regulator details of which are contained in the Site Safety Report (SSR) and Safety Analysis Report (SAR), respectively) which will form part of the NNR licensing process which includes a public participation process. The HHRA specialist report is based on these principles, that no plant will be build on the site unless it can be demonstrated that it will comply with the limits as set out by the NNR. Should the cumulative impact exceed the regulatory limit, a license shall not be granted by the regulator.

COMMENT FROM INDEPENDENT NUCLEAR SPECIALIST:

Epidemiological studies do indicate a statistical link between high level radiation exposure and the risk of excess "cancers" within a study population. Indeed the ongoing studies of survivors of the second world war Japanese atomic weapons continue to inform the basis of radiation protection risk factors and associated exposure limits based on the assumption of the existence of "the linear no threshold" relationship between exposure and risk. However at low exposures associated with occupational and environmental exposure to sources originating from man-made radioactivity this relationship is unproven and remains the subject of intense scientific debate and in particular no direct causality between specific elements such as caesium or their isotopes has been established. However the Radiation Protection community continues to adopt a conservative approach in assuming the linear no threshold model applies in these situations. There have been a number of epidemiological studies undertaken around various industrial facilities including for example studies undertaken around nuclear fuel reprocessing sites which historically had enhanced Cs discharges and also around non-nuclear facilities and which have in some instances indicated statistical "clusters" of excess "cancers" however in general the results and causality remain inconclusive and various theories have been proposed including those relating to the migratory nature of the workforce and genetic interaction with other non-radiological environmental stressors.

Comment 2:

I do not have any faith in any human beings to control nuclear energy. The Japanese have poisoned their environment and their people- and they are supposed to be an efficient and techno savvy nation.

Response 2:

It is acknowledged that the incident at Fukushima, as a result of a natural disaster, has highlighted many important safety factors in terms of the future of nuclear energy. The following from 18 Jan 2012 (NucNet) News reported; "About 30 workers at the Fukushima-Daiichi nuclear power plant in Japan received between 100 millisieverts (mSv) and 250 mSv of radiation exposure, which would have increased their chances of cancer by about one percent to 2.5 percent, a parliamentary committee in the UK was told. Her Majesty's chief inspector of nuclear installations, Mike Weightman, told the House of Commons Energy and Climate Change Committee that in terms of the workers, "there don't appear to be any acute radiation effects".

He said 30 of them have had "a significant dose", but it is not in the sense of an immediate life-threatening dose. In a declared nuclear emergency, the recommended limit is 100 mSv. The International Commission on Radiation Protection is mandated to sanction a maximum accumulated dose of 250 mSv in extraordinary circumstances. Mr Weightman said public evacuation was well-organised and exposure countermeasures for the public have been "effective so far", and there will be a longer-term health monitoring programme."

Nuclear safety risks will be considered in the National Nuclear Regulator's licensing process. Please refer in this regard to the Co-operative Governance Agreement included in Appendix B4 of the Revised Draft EIR.

Comment 3:

Supplying citizens with nuclear energy will not encourage our innate human ability to solve problems and find a cleaner better way to live. Too many fat cats get richer while ruining future generations' quality of life. The millions that have already been spent on this insane proposal could have been put to much better use. Please ditch the idea completely.

Response 3:

Thank you, your comment is noted..

Comment 4:

I have read and follow Dr Helen Caldicott's views on nuclear energy, how it pollutes the environment right from the mining of plutonium stage through to waste disposal. We have read as many articles as we can bear to read, and they are all terrifying. No comments on the details of the above mentioned proposal because the entire concept is flawed.

This is a link to the kind of article that we read:

<http://www.nuclearfreeplanet.org/articles/nuclear-witnesses-insiders-speak-out-john-w-gofman-medical-physicist.html>

"My particular combination of scientific credentials is very handy in the nuclear controversies, but advanced degrees confer no special expertise in either common sense or morality. That's why many laymen are better qualified to judge nuclear power than are the so-called experts."

"People like me and a lot of the atomic energy scientists in the late fifties deserve Nuremberg trials. At Nuremberg we said those who participate in human experimentation are committing a crime. Scientists like myself who said in 1957, "Maybe Linus Pauling is right about radiation causing cancer, but we don't really know, and therefore we shouldn't stop progress," were saying in essence that it's all right to experiment. Since we don't know, let's go ahead. So we were experimenting on humans, weren't we? But once you know that your nuclear power plants are going to release radioactivity and kill a certain number of people, you are no longer committing the crime of experimentation--you are committing a higher crime. Scientists who support these nuclear plants--*knowing* the effects of radiation--don't deserve trials for experimentation; they deserve trials for murder. . . ."

"Licensing a nuclear power plant is in my view, licensing random premeditated murder. First of all, when you license a plant, you know what you're doing--so it's premeditated. You can't say, "I didn't know." Second, the evidence on radiation-producing cancer is beyond doubt. I've worked fifteen years on it [as of 1982], and so have many others. It is not a question any more: radiation produces cancer, and the evidence is good all the way down to the lowest doses.""

Response 4:

Your comment is noted and we appreciate the submission of the article. The status quo at each of the site alternatives as well as the impacts of the proposed construction and operation of a Nuclear Power Station on the social, economic and biophysical environment has been fully assessed. The assessment of nuclear safety risks will be considered in the National Nuclear Regulator's licensing process. Please refer in this regard to the Co-operative Governance Agreement included in Appendix B4 of the Revised Draft EIR.

Comment 5:

We hope that the decision makers realise the incredible burden of responsibility they are taking on. Please deny this proposal.

Response 5:

Thank you, your comment is noted..

Yours faithfully
for GIBB (Pty) Ltd



The Nuclear-1 EIA Team