This is my individual response to the consultation on a procedure for the statutory justification of processes for the re-use of plutonium. My name is Christopher Gifford. I am a Chartered Consultant Mining Engineer formerly engaged within the Health and Safety Executive in risk assessment in high risk industries.

Question 1. Is it sensible to issue generic guidance for the re-use of plutonium?

Yes. Guidance would help an applicant to bring to the attention of the Justification Authority a wider range of benefits and detriments, but see my response to Question 4 on conflicts of interests.

Question 2. Can the proposed application and decision-making process be improved?

Yes, by ensuring that the Justification Authority and the public are fully informed of the nature of the worst outcomes of the proposed practices. This is dealt with in more detail in my response to Question 3 below.

Question 3. Is the indicative list of information is Table 3 sufficient and appropriate...? It is Table 2 that contains the indicative list and this response assumes that there is a misprint in the question.

In Table 2 detriments arising from accidents are mentioned but there should be included here detriments arising from action by terrorist or other hostile action rather than simply terrorism mitigation strategies. The Justifying Authority needs to know the worst and the best outcomes to make a balanced decision. There is evidence from the Fukushima and the Chernobyl disasters that even heads of government did not know the possibility and the nature of the worst outcomes. At Fukushima a fifth explosion and a change of wind direction could have required the evacuation of millions of people from Tokyo and the Prime Minister resigned in shock when he was advised of such a prospect which he said would lead to the collapse of the Japanese economy.

In Britain our Prime Minister believed (before Fukushima) that nuclear safety was no longer an issue. He needs to be appraised of Interim Report Recommendation No 25 (confirmed in the Final Fukushima Report) by HM Chief Inspector of Nuclear Installations and Director of the Office for Nuclear Regulation, Dr M Weightman which deals with the question of worst outcomes. He wrote

> ***the industry needs to ..... ensure it has the capability to analyse severe accidents to properly inform and support on-site severe accident management actions and off-site emergency planning. Further research and modelling development may be required.***

Dr Weightman also stated in his report on Fukushima that nuclear policy is beyond the remit of the Nuclear Installations Inspectorate. In the context of terrorism that may be so. Terrorism is not beyond the remit of the Office for Nuclear Security whose deliberations are largely unpublished. There is an implication in Table 2 that it is beyond the remit of the Justification Authority. This could invalidate the Justification process. It can be corrected by referring explicitly to the need for the applicant to describe the possible detrimental results of terrorist and other hostile action. The Justification Authority should be provided with all the information required to assess the worst outcomes of loss of control of nuclear installations and nuclear material. Other consultations have been declared invalid in judicial review because the information provided was "wholly insufficient for the public to make an intelligent response" (1). Terrorism was a matter

excluded from the 'Stress Tests' made on British Nuclear installations apparently at the insistence of the British government. Such exclusion should have no place in the Justification process.

The debate about worst outcomes, including mention of several authorities who contend that loss of control of nuclear reactors and spent fuel stores can lead to nuclear explosions, is reviewed in my article *Nuclear Explosions* published in the journal Spokesman 115 by the Bertrand Russell Peace Foundation. It is also available on-line with the title *Fukushima Dai-ichi V4* on the website of the South Wales Institute of Engineers Educational Trust www.swieet2007.org.uk /files/papers. I offer it as part of my response to this consultation.

Question 4. Are there other ways in which the draft justification process can be improved?

Yes. The Justification Authority should be independent of those who promote the nuclear industry or who support the practices which are the subject of the application. It is surprising that the extant Justification decision on nuclear new build was made by the government's energy minister and accepted by Parliament notwithstanding European requirements for independence. Conflicts of interest between those promoting and developing the Japanese nuclear industry and those regulating it were regarded as one of the causes contributing to the Fukushima disaster in the report of the Japanese government to the International Atomic Energy Authority in June 2011 and a need for structured independence was advised and accepted by the Japanese government. It is a topic not yet adequately dealt with in Britain.

(1) The High Court 15 February 2007 in Judicial Review on the application of Greenpeace and others of the government's second consultation on energy policy.

Christopher Gifford. 8th June 2012