Nuclear Free Local Authorities Secretariat
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Chair: Councillor George Regan Secretary: Sean Morris
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BBC Complaints Unit
PO Box 1922, Darlington,
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19th September 2011

Dear BBC Complaints Unit,

'FUKUSHIMA – IS NUCLEAR POWER SAFE? : HORIZON SERIES, BBC 2

We wish to make a joint complaint concerning the content, lack of balance and lack of the right to reply to a BBC2 documentary transmitted on the 14th September 2011. This is a slightly updated and reworked complaint from the one sent on your webform on the 15th September, and it is also counter-signed by some additional organisations.

This follows an earlier joint complaint sent to the BBC Complaints Unit on May 4th this year about the Radio 4 documentary on '*Fallout – the Legacy of Chernobyl'*. I understand from the Controller of Radio 4 that the content of this complaint is still being considered by the Unit and a detailed response is being drafted to the joint complainants. We await this with interest. I attach a copy of this earlier complaint for your information.

The earthquake, tsunami and nuclear disaster at the Fukushima Daichii nuclear plant are obviously worthy of attention and six months after the event provided the opportunity to raise the issues concerning damage to the area, to the economy, to the communities and the potential health of people exposed to radiation. We had hoped for an objective and balanced examination of these issues. This is not what was broadcast. Instead, the programme presented a one-sided opinion piece with no counterbalancing comments on a subject where differences of view clearly exist.

The BBC has clearly not learned the lessons from the many concerns expressed about the April Radio 4 programme and a similar Horizon TV Programme, "Nuclear Nightmare", broadcast on BBC 2 on July 13, 2006, as it has repeated many of the errors in this latest documentary. In the latter case, you will be aware the BBC Trust upheld complaints that the programme lacked balance.

We remain concerned that the BBC has not commissioned any documentary - whether on Panaroma, Horizon, Today or its other programmes of investigative journalism - that allows for those concerned about the proposed new development of nuclear power in the UK to put forward legitimate concerns in the same amount of detail as Professor Al-Khalili had in supporting nuclear power.

What was the aim of the programme makers in the development of this documentary? Who were the key decision makers and who cleared it for screening? We ask these questions because an important and unusual aspect of Fukushima is that two of the four explosions were actually filmed and are available on the web. Why were these films not shown in the Horizon programme? In our view, the decision not to show these films is indicative of a pro-nuclear bias among the programme editors.

At the end of this documentary, a lay uninformed member of the public could well think that science will come up with all the answers to the risks of nuclear power and in the end there is little to worry about. Yet, it is also reasonable to suggest that 'bad' science linked to

political and economic considerations has created as many of the problems around nuclear power as it is claimed it can solve. It is difficult to avoid the unpleasant feeling that we are witnessing scientific evidence being “fitted up” around decided policy once again - this time in favour of more nuclear power.

In sum, this documentary was unbalanced in that countervailing opinions were neither presented nor discussed. This might not be vital for subjects where a consensus exists: this is decidedly not the case with nuclear power, especially after Fukushima. It is disappointing that a serious documentary stream about the ethics of science made little attempt at providing a rounded programme on such an important policy area.

Detailed comments on the documentary are in the Appendix to this letter.

I would be grateful if you would forward this complaint to the attention of the programme makers, senior editorial staff on BBC News, the Controller of BBC2, and the BBC Trust.

Yours sincerely,

Baillie George Regan, Chair of the UK and Ireland Nuclear Free Local Authorities
Dr Kate Hudson, General Secretary, Campaign for Nuclear Disarmament
Dr Paul Dorfman, Founding Co-ordinator, Nuclear Consulting Group (NCG)
Dr Jill Sutcliffe, Low Level Radiation and Health Conference
Dr Tim Deere-Jones, independent marine pollution consultant
Dr Stuart Parkinson, Scientists for Global Responsibility
Prof Andy Blowers, NCG member & Co-ordinator of Bradwell Against New Nuclear Group
Dr Carl Clowes, NCG member and Co-ordinator of People Against Wylfa B
Val Mainwood, Co-ordinator of Bradwell for Renewable Energy
Joan Girling, Communities Against Nuclear Expansion
Marianne Birkby, Co-ordinator of Radiation Free Lakeland

Agreed on their behalf through direct emails to the NFLA Secretary, Sean Morris

APPENDIX: Detailed comments on the BBC Horizon programme: ‘FUKUSHIMA – IS NUCLEAR POWER SAFE?’

1. Professor Al-Khalili started by stating that he is not a spokesperson for the nuclear industry or the environmental movement implying that he is “neutral” or not taking sides. This is misleading as Professor Al-Khalili lectures nuclear engineering at Surrey University to students for future employment in the nuclear industry. It is in his own personal and departmental interest for nuclear power to be expanded in the UK.

2. Early in the programme, Professor Al-Khalili stated that he would only address the science of nuclear risk – yet later he expressed, in some detail, pronounced social and political views about nuclear power. For example, he spent much time minimising the health effects of the disaster and emphasising the benefits of nuclear power.

3. There is copious evidence of health impacts from the Three Mile Island accident, the Chernobyl disaster and the Windscale accident in 1957. This evidence was not examined and, apart from the 2005 Chernobyl Forum, not referred to.

4. Both the Fukushima and the Chernobyl disasters show the inherent risks of nuclear accidents and the huge logistical problems they create. Professor Al-Khalili made a sweeping statement that all energy sources have risks, implying that other sources had similar kinds of risks. This is incorrect and misleading.

5. On the health effects of nuclear disasters Professor Al-Khalili repeatedly stated that few people actually died in either the Fukushima or the Chernobyl disasters, as if this were the only health effect. He did not refer to long latency periods for solid cancers, i.e. the fact that most solid cancers take several decades to appear. Epidemiological evidence from the Chernobyl disaster, and from the Hiroshima and Nagasaki atomic bombings, clearly indicates serious long-term health problems and cancer inductions that occur later in life and can be passed on to future generations. If the public authorities felt no one would be harmed by radiation in the long-term why did they evacuate over 80,000 people from around Fukushima and 250,000 from around Chernobyl? Although Professor Al-Khalili spent much time discussing evacuation zones he fails to explain the health reasons for implementing the evacuation zones.

6. The programme pointed out that over 6,000 children in the countries affected by Chernobyl had developed thyroid cancer so far. However Al-Khalili repeatedly stressed that “only” 6 or so had died, ignoring the serious health problems for life of the 6,000 children whose thyroids have been removed or ablated.

7. Al-Khalili stressed the psychological fear of radiation, implying that many of the symptoms observed at Fukushima and Chernobyl are “all in the mind”. This is a contentious allegation as most radiation scientists would disagree with it.

8. Professor Al-Khalili reported initial IAEA findings that it was mainly the tsunami that led to the Fukushima reactor disaster. However, as reported in ‘The Independent’ following interviews with Fukushima workers it appears that the earthquake may have caused major damage to the reactor and the tsunami exacerbated this. For example, radiation alarms were reported as going off before the tsunami. Therefore the potential for further disasters at reactors on known earthquake fault lines is an important issue but this was not mentioned by Professor Al-Khalili.

9. Professor Al-Khalili made much out of the age of the Fukushima reactors. There are existing UK reactors of a similar age that are still in operation yet he makes no mention of whether these should remain open – an important issue.

10. The documentary apparently showed pictures of a clean-up operation. If these pictures are accurate they are disturbing as the way the top soil was being scraped by people without face masks risked radioactive particles being disturbed and becoming airborne as dust that they could inhale. This was irresponsible of the BBC if this were the case.

11. Professor Al-Khalili made no mention of significant ongoing radioactive releases to air and discharges to sea from the Fukushima disaster and the evident effects on the marine environment and on local food supplies. Early evidence suggests major long-term problems in both areas.

12. Only three radionuclides were mentioned in the documentary. Iodine and caesium were mentioned with the inference being that caesium with a half-life of 30 years had a relatively long half-life. However caesium is relatively short-lived when

compared to alpha-emitting actinides many of which have half-lives of thousands or millions of years. Plutonium was mentioned as having been emitted but no attempt was made to investigate or report its fate, environmental behaviour or public health impact.

13. There was also no mention of the fact that, as a result of three reactor meltdowns and one cooling pond partial mount-down leading to severe and ongoing breaches of containment, large amounts of emergency cooling water have been (and still are) being applied to molten fuel. This process collects and transports a significant percentage of the inventory of reactor fuel and spent fuel cooling pond material into the environment. This process is injecting some 50 plus nuclides, including over a dozen alpha-emitting actinides, into the environment. One brief mention was made in the documentary but not followed up of the deposition of plutonium into the environment from Fukushima. This is insufficient in the context of the public health threat posed by plutonium.

14. Professor Al-Khalili gave much emphasis to the IAEA/WHO 'Chernobyl Forum' findings in 2005. As noted in or earlier complaint, which provided independent radiation consultant Dr Ian Fairlie's analysis of the April Radio 4 documentary, respected independent scientists have challenged its findings.

15. Professor Al-Khalili acknowledged the lack of scientific consensus around the effects of low-level radiation on health but the programme did not interview radiation biologists and other scientists who could have given a correct and more balanced view.

16. Many research findings now attribute a range of wildlife impacts from the Chernobyl disaster. These are reported in peer-reviewed journals but omitted from the Horizon programme.

17. Professor Al-Khalili repeatedly alleged that the number of deaths from Chernobyl was limited to a two figure sum but this is misleading as he omits to mention that the IAEA/WHO 'Chernobyl Forum' concluded that the Chernobyl death toll would be 4,000 - later amended to 9,000. Later the IARC report undertaken by Dr Elizabeth Cardis estimated 16,000 deaths as a consequence of the Chernobyl accident in Belarus Ukraine and the Russian Federation. The International Atomic Energy Agency (IAEA) has estimated a total collective dose of 600,000 person-Sieverts over 50 years from Chernobyl fallout. Applying a standard risk estimate from the International Commission on Radiological Protection (ICRP) of 0.05 fatal cancers per sievert would imply 30,000 fatal cancers. According to BEIR VII, the linear no-threshold model for radiation risks may overstate or understate risks by a factor of two. Therefore the number of cancer deaths from Chernobyl could range between 30,000 and 60,000. Professor Al-Khalili strongly contradicts these official estimates but he is an engineer not an epidemiologist or a biologist: he should have admitted this and interviewed some proper radiation scientists who know what they are talking about.

18. Professor Al-Khalili gave much emphasis to the possible development of thorium reactors in the future. We speculate this is coincidental with the recent development of a new group launched last week in the UK Parliament urging the same type of development. Again, no opportunity was given for those with reasonable concerns about the development of such reactors to adduce contrary evidence.

19. Professor Al-Khalili asserted that it is accepted that radioactive waste can be disposed at geologically suitable deep-underground repositories. However, no such repository exists worldwide for 'disposing' of such waste. Currently in the UK we are involved in the initial phases of discussion over such a facility – it may be decades before any such construction is developed.

20. Professor Al-Khalili puts great emphasis on experiments in Grenoble that 'transmutate' some of the most highly radioactive elements in radioactive waste to reduce their half-lives. However he does not mention how limited, early and embryonic such research is, and how expensive it is. Indeed the majority of nuclear engineers in Britain would consider transmutation a scientific non-starter.

21. Finally, Professor Al-Khalili made no mention of the UK's existing £100 billion radioactive waste legacy that the UK taxpayer is having to fund.