

Nuclear Free Local Authorities Secretariat

c/o Manchester City Council, Town Hall, Manchester, M60 3NY, UK

Tel: 0161 234 3244 Fax: 0161 274 7397

Chair: Bailie George Regan Secretary: Sean Morris



Mike Weightman
HM Chief Inspector,
Nuclear Installations Inspectorate
Office for Nuclear Regulation
C/o Health and Safety Executive
Redgrave Court, Merton Road
Bootle, Merseyside
L20 7HS

14th April 2011

Emailed to: FukushimaONRReport@hse.gsi.gov.uk

Dear Mr Weightman,

ISSUES TO CONSIDER IN UK NUCLEAR SAFETY REVIEW FOLLOWING THE FUKUSHIMA DAIICHI INCIDENT – SUBMISSION BY THE NUCLEAR FREE LOCAL AUTHORITIES

I would like to bring to your attention a submission from the UK and Ireland Nuclear Free Local Authorities (NFLA) of the main issues it feels that you should consider for the nuclear safety review following the Fukushima nuclear incident in Japan. The NFLA will make a more considered response prior to the interim review. It should be noted that the NFLA Secretary is planning to take part in the proposed meeting which the NII is organising with nuclear concerned groups on the 5th July at your Bootle offices.

The NFLA would like to record its concern about the speed, length and scope of this inquiry. The Fukushima incident is still ongoing, and it is likely to continue to be ongoing for some months to come. Being asked to respond within such a short period after this incident occurred, and whilst the Fukushima incident is still developing, does not provide opportunity for organisations like ours to be able to gauge all the views of our member authorities.

The NFLA also remains concerned that the speed of this inquiry may have much more to do with ensuring that the UK new nuclear build programme is not put off track too much rather than to get to the heart of all the key detailed and complicated issues that the Fukushima incident raises for UK nuclear safety. The NFLA is also disappointed that the UK Energy Minister Chris Huhne and the UK Government did not determine the remit of your inquiry, and that you are therefore restricted yourself to strictly narrow technical terms, not allowing for wider policy issues to be considered in any depth.

The NFLA has already submitted to you a detailed set of demands agreed by over 30 nuclear concerned groups following the Fukushima incidents. I attach these again as Appendix 1. They have also been sent to Chris Huhne and were discussed at the recent stakeholder dialogue meeting between DECC and nuclear concerned groups. The NFLA believes these demands should be thoroughly considered as part of the safety review, particularly points 1 and 2 of the document.

With all this in mind, I attach the NFLA's key issues for the inquiry in four subject areas – general issues, engineering issues, marine pollution concerns and emergency planning issues.

GENERAL ISSUES:

The NFLA would like to make a number of initial comments about the scope of the review and who will be involved within it.

- The comments made in this letter can only be seen as a provisional set of comments by the NFLA, given the extremely tight deadline. It may add extra points in future submissions.

- The NFLA asks the NII to fully and publicly explain - as soon as is possible - precisely what issues it considers should or will be covered from its perspective.
- The NFLA asks how the NII will take on board additional points of concern which stakeholders put forward and how these will be incorporated into the review e.g. will the NII review consider how emergency services work with nuclear plant operators in the event of an accident? Further issues like this are included in a preliminary list of points / questions for further consideration below.
- The NFLA note that for many organisations such as ours – and others including nuclear specialists, advisory bodies and regulators - a deadline for the interim review of mid May could be far too premature in terms of being able to submit substantive evidence. The NII should publicly acknowledge this point. The fact that the Fukushima incident may still get much worse than it currently has been reinforces this point.
- The NFLA asks how nominations to any panel of specialists will be made and who will make the final decision on who is on the panel.

ENGINEERING ISSUES:

The NFLA urges the NII to ensure that there are independent engineering specialists involved in the expert panel considering the failure of the Fukushima reactor cooling systems to withstand the earthquake and the tsunami. With this being such a specialised field of research, the NFLA believes it is essential to bring knowledgeable independent analysts in to complement the NII's inspectors.

The NFLA strongly recommends the NII appoints (and pays appropriate expenses to) John Large of Large Consulting Engineers on to an expert panel as a respected nuclear safety engineer with the technical capability to assist the NII in providing an independent perspective on all the aspects of reactor failure and meltdown. John Large has provided the NFLA with excellent and detailed technical reports over our 30 year history and we are unaware of anyone else in this field that would provide the type of detailed information on this incident to the NII. He has already submitted a detailed report to the European Parliament on nuclear safety and the nuclear regulatory regime.

Other issues in this area that the NFLA would like to see the review consider –

- Why were the reactors unable to withstand the combination of an earthquake and a tsunami of this magnitude? Are UK reactors built any better?
- Why did the cooling systems fail and what implications does this have for UK civil and military reactors (in light of the MOD decision on new nuclear submarines and the existing nuclear powered submarine fleet)?
- What additional safety measures should now be added to existing UK reactors and the two proposed new build designs?
- The Fukushima reactor was designed to deal with a tsunami of 6.51 metres and on March 11th was hit by a 7 metre wave – are safety measures across the board on existing and proposed UK civil nuclear reactors adequate given the Japanese under-estimation of risk?
- The engineers at Fukushima were unable to stop large hydrogen explosions of the reactors. What learning points need to be considered for the UK nuclear programme?
- How do the HSE and Environment Agency 'Generic Design Assessment' take into account issues raised from the Fukushima incident with the AP1000 and EPR designs?
- The French nuclear regulator (ASN) President Andre-Claude Lecoste has been quoted in the French media that he "could not rule" out a moratorium on the third generation European Pressurised Reactor (EPR) nuclear power plant under construction at Flamanville in northern France. Mr Lacoste said the reactor, which is currently closed after a fatality in January 2011, would be "very compromised" and a moratorium may be required to consider all its safety issues. The NFLA would like to see the review discuss these concerns with the French nuclear regulators.
- In the same vein, American nuclear concerned groups have raised concerns over the safety of Westinghouse's AP1000 design. The NFLA believes the review has to consider issues from the Fukushima accident in reference to design concerns over the AP1000 and the EPR as a matter of urgency.
- Though the UK does not have seismic events like the Japanese earthquakes there have been two minor earthquakes in northern England in the last year. Radioactive materials also remain in this state for many thousands of years and it is not just short-term but long-

term studies on seismic activity and tsunamis that need to be considered with the appropriate expert bodies.

MARINE POLLUTION ISSUES:

The NFLA has been discussing the implications of the Fukushima incident with the independent marine pollution specialist Tim Deere-Jones, who will provide us shortly with a detailed analysis of the marine environment issues from the Fukushima incident. The NFLA will submit this as part of its submission for the interim review. The discharging of radiation into the Pacific Ocean has been one of the most disturbing elements of this incident. His 9 initial issues are noted below.

1. The NFLA reserves the right to submit additional commentary as and when facts/issues become clearer) because of:
 - low standard of accuracy and transparency of reporting;
 - confusion of chronology;
 - confusion of factual detail (mistakes);
 - inadequate number of parameters reported.
2. Assessing the Tsunami / Storm Surge risk for UK coastal reactors.
3. Loss of reactor coolant water and spent fuel storage pond containment:
 - why did this happen?
 - how might it have been prevented?
4. Post-containment breach radioactive pollution of the marine environment:
 - why did this happen?
 - how might it have been prevented?
5. Use of improvised cooling water supplies to remedy loss of reactor coolant and spent fuel storage pond containment:
 - sources of water;
 - containment;
 - risk assessment.
6. Post incident monitoring/analysis of seawater:
 - choice of isotopes to be monitored/analysed for;
 - choice of sites for monitoring/analysis;
 - choice of environmental media to be sampled for monitoring/analysis.
7. Modelling the marine environmental potential distribution, behaviour and end-fate of radioactive pollution lost from reactors as a result of tsunami/storm surge events and improvised cooling activities:
 - isotopic / nuclide data input;
 - water body movement input data;
 - sea state / meteorological conditions input data;
 - water column thermo-haline data, sedimentary data;
 - chronology / time lines.
8. Public health risk assessment:
 - marine external exposure pathways;
 - coastal zone terrestrial external exposure pathways;
 - marine seafood ingestion pathways;
 - terrestrial food ingestion pathways;
 - inhalation pathways.
9. Commercial impact assessments (non nuclear).

EMERGENCY PLANNING ISSUES:

A key additional issue in the Fukushima incident is the failure of the emergency plan to deal with the damage and subsequent problems. Serious issues also exist around the extent of the evacuation zone and the dangers being faced for emergency workers on site. All of these should be considered in reference to the UK's existing and new nuclear programme.

Clear issues of concern for the NFLA include:

- Given that nuclear materials can remain radioactive for thousands of years; do risk assessments on natural disasters affecting nuclear plants need completely revisiting?
- Even if the UK is in a low risk area for earthquakes and tsunamis, the potential for major widespread coastal flooding and terrorist attack remains high and must be re-evaluated following this incident.
- Why was the risk assessment for the reactor so woefully inadequate at assessing the potential for a 9.0 earthquake and 7 metre tsunami wave?
- There has been much debate over the adequacy of a 20km evacuation zone for Fukushima, with American and French nuclear regulators suggesting it is too small. There is also inconsistency in the size of initial evacuation zones – the UK has 1km, France has 5kms and the USA 10kms. Are the UK REPPIR (Radiation Emergency Planning and Public Information) Regulations therefore fit for purpose in the event of this type of accident occurring in the UK?
- Would the UK emergency services and local authorities be able to deal adequately with an emergency response of this magnitude, particularly given the serious cuts in staffing across all such authorities?
- Emergency evacuation plans were affected by serious damage to the transport infrastructure in eastern Japan. Some UK reactors would face serious problems in emergency evacuation due to lack of evacuation routes – Mersea Island near Bradwell and main routes off Anglesey with Wylfa are obvious examples. Does the Fukushima incident show the need for plans to be fully revisited, particularly in the light of nuclear new build?
- Are there adequate stocks of iodine tablets around the UK and how accessible are they to communities over 10kms away?
- Fukushima emphasised the possibility that a terrorist attack on the cooling systems, rather than on the main reactor, could be just as devastating. Do security plans around civil and military reactors need to be reconsidered following this incident?
- Given the health risks to the emergency workers courageously attempting to prevent a greater disaster taking place, what guidelines need to be put in place for worker health and safety on site? Fukushima has clearly suggested on site workers could be putting their own health and safety at great risk under pressure from the site owners, with the safety regulator seemingly acquiescent to this. The NFLA notes that workers have been paid much higher fees for working on site since the reactor accident.
- There has been considerable evidence that as many as 2,400 people remain in the evacuated area. Do UK emergency plans need to be reconsidered to ensure all vulnerable people would be evacuated following an incident of this magnitude in an existing civil nuclear reactor?

This long list of issues is just a summary from the NFLA of what it feels needs to be included in your review. The list is such that the NFLA believes that a considerably longer period of time should be provided to consider all the learning points from the Fukushima incident, which is still taking place. The NFLA has offered to take a full part in discussion on the incident and will seek to provide more detailed comments prior to the interim and final reports.

If you have issues of clarification with any part of this submission please contact the NFLA Secretary, Sean Morris, through the email address - s.morris4@manchester.gov.uk.

Yours sincerely,



Bailie George Regan
Chair of UK and Ireland Nuclear Free Local Authorities

List of NFLA / NGO demands of the UK Government, nuclear regulators and the nuclear industry following the Fukushima incident

24th March 2011

In the light of the tragic events in Japan in recent weeks, and with particular reference to the crippling of the nuclear plants at Fukushima; the UK and Ireland Nuclear Free Local Authorities, the undersigned NGOs (non governmental organisations), and individuals who have an interest and long-held concerns about nuclear safety* make the following demands on the government, the nuclear industry, its trade bodies, government agencies and regulators on the review of, and input to, official processes on key areas of the new nuclear build programme in the UK. All the groups mentioned below are opposed to the development of a UK nuclear new build programme.

1. **The recently announced review being carried out by the Health and Safety Executive's (HSE) Nuclear Directorate (ND) must:**
 - be carried out with a presumption of disclosure of all information: any information which, for security or commercial confidentiality reasons cannot be disclosed, must be accompanied by a full explanation of the reasons for confidentiality and subject to a challenge process;
 - include non-industry personnel on the review body;
 - include independent respondents and consider involving groups from the undersigned;
 - include a full review of the GDA process and the complete governance regime of the nuclear industry in the UK, given the failings identified in Japan;
 - ensure that spent fuel stores and other relevant facilities such as reprocessing plants are included in its remit.

2. **The HSE's 'exclusions' arrangement in the GDA process and those arrangements such as deferring issue resolution in order to artificially meet the nuclear new build timetable must be abandoned.** *All outstanding issues relating to the engineering, technical and waste management aspects of new build should be demonstrably dealt with in a sequential, transparent and open programme and with appropriate scrutiny, peer review and accessibility in the public domain. These processes cannot be left to be 'resolved' through the licensing process which will follow the GDA process as licensing is effectively a close-door system.*

3. **There should be NO public subsidies for nuclear new build as agreed in the UK Government's coalition agreement:** *The subsidies which have been identified in the "[Nuclear Subsidies](#)" report from the Energy Fair group (1), including limitations on liabilities for nuclear accidents, subsidies for the disposal of nuclear waste, and subsidies for the decommissioning of nuclear plants, should be withdrawn, without the transfer of financial risks from nuclear operators to taxpayers or members of the public. All the undersigned groups oppose a development of new nuclear build in the UK.*
 (1) http://www.energyfair.org.uk/actions/ec-complaint/nuclear_subsidies_feb_2011.pdf

4. **The health effects of low level radionuclide releases on land, to the environment by air emissions and into the marine environment need to be independently verified; with full and prompt publication of the COMARE 2011 report and its analysis of the German Government's KIKK report, and wider and detailed analysis made of the robustness and accuracy of the ICRP model and monitoring techniques of radiation discharges into the environment. The justification decision on new nuclear reactor designs should be reconsidered in reference of such a review:** *The issue of low level radiation impact upon which the justification process relies should be subject to a further and detailed review through a joint-fact-finding exercise involving, at the very least – a range of independent low*

level radiation experts and groups, stakeholder representatives from the nuclear industry, the Health Protection Agency, the European Committee on Radiation Risks and COMARE. Furthermore, as part of this review, independent specialists on low level radiation must also be called on to provide evidence to it.

5. **UK Government Ministerial statements to the effect that there is confidence that arrangements for new build waste management will exist should cease or be required to be justified or qualified:** *in particular, government and / or appropriate authorities should be required to explain this statement of confidence in terms of:*
 - a) *how and when it will satisfy itself that the generic and then site-specific technical and scientific issues relating to the long term safety of a repository are to be resolved;*
 - b) *how it intends to demonstrate that a popular mandate exists in the potential candidate area, West Cumbria, including the definition of the community it intends to consult, how it intends to consult them along with details of the content, scope and detail of the information it intends to publish in seeking such a mandate;*
 - c) *explain what it intends to do should the only potential candidate community currently available to it decide to withdraw;*
 - d) *providing a technical demonstration of the safety of long term storage of new build spent fuel, its encapsulation and future management of it;*
 - e) *how it intends to demonstrate that the nominated sites being built near sea level can be protected giving the potential for an increase in predicted sea levels as a result of the onset of climate change;*
 - f) *undertaking a new process as recommended by CoRWM1 into attitudes towards the management of spent fuel from new build, given that CoRWM1's focus was entirely on legacy waste.*

6. **The UK Government should commission an independent body of experts to undertake a security review of current and projected nuclear waste and spent fuel interim storage arrangements and report directly to government on the adequacy or otherwise of those arrangements in the light of the CoRWM1 report and its recommendations on this issue:** *In our collective view, the NDA review is inadequate. The independent body could be comprised of those experts used by CoRWM1 in its process and a call for evidence from others with specialist knowledge in this field should be made.*

7. **Before further steps are taken in respect of developing the programme for managing radioactive waste safely, the following issues should be resolved:**
 - a. *The technical and scientific uncertainties regarding the safety of deep geological 'disposal' as identified in various official documents and as collated in the Nuclear Waste Advisory Associates' document, the Issues Register.*
 - b. *The definition of a 'community' in respect of the constituency to be consulted on as part of the voluntarism process for a deep geological repository.*
 - c. *The inventory for a national deep geological repository should be identified.*
 - d. *Should that inventory include waste from a national new build programme, the management and disposal of such waste should be subject to a separate and thorough-going review of safety, ethical and environmental considerations.*

e. *Full safety reviews need to be undertaken for the transportation of radioactive waste with extensive training provided for all appropriate staff in the emergency services, local authorities and the NHS.*

8. **The UK Government should abandon the option of using separated plutonium as Mox fuel for domestic or foreign use as fuel and instead investigate, through the establishing of a review body involving appropriately qualified experts the best means of dispositioning the plutonium: this should be drawn from work already carried out by the plutonium working group of the BNFL national nuclear dialogue and the NDA's Materials Issues Group. A stakeholder dialogue event to discuss the options for the safe management of weapons-grade plutonium and MOX fuel should be established as soon as possible.**

This statement of minimum demands has been fully endorsed by the following organisations:

- **UK and Ireland Nuclear Free Local Authorities**
- **Friends of the Earth UK**
- **Nuclear Consulting Group**
- **Campaign for Nuclear Disarmament and a number of its constituent groups**
- **Energy Fair Group**
- **Nuclear Information Service**
- **Kick Nuclear Group**
- **Low Level Radiation Group**
- **Low Level Radiation and Health Conference**
- **English Campaign for the Prevention of Cancer**
- **Chernobyl Children's Project UK**
- **Oxfordshire Peace Campaign**
- **Peace Moves Coalition Cornwall**
- **Child Victims of War Group**

Communities Opposed to New Nuclear Energy Development (CONNED) member groups:

- **Communities Against Nuclear Expansion (CANE)**
- **Stop Hinkley Group**
- **South West Against Nuclear (SWAN)**
- **South Wales Anti-Nuclear Alliance**
- **Cumbrians Opposed to a Radioactive Environment (CORE)**
- **Radiation Free Lakeland**
- **Heysham Anti-Nuclear Alliance**
- **Pobl Atal Wylfa B / People Against Wylfa B**
- **Shut Down Sizewell Campaign**
- **Blackwater Against New Nuclear Group**
- **Bradwell for Renewable Energy**
- **Shepperdine Against Nuclear Energy (SANE)**
- **Kent Against a Radioactive Environment (KARE)**

A number of individuals also signed this letter in a personal capacity and were noted in the original letter sent to Chris Huhne and Mike Weightman.