

## **Supplementary notes on the HSE Board Paper “Briefing on the Nuclear Programme” and subsequent media reporting.**

1. In January 2009, Dr Mike Weightman, Chief Inspector of Nuclear Installations and Director of the Health and Safety Executive’s Nuclear Directorate (ND), authored an HSE Board Paper entitled “Briefing on the Nuclear Programme”. The paper sought to provide a basis for HSE Board discussion on some major challenges facing HSE in its regulation of the UK nuclear Industry e.g. infrastructure ageing issues, nuclear new build, recruitment and retention difficulties relating to nuclear inspectors, the Stone Review and the draft EC directive on nuclear safety. Data on safety incidents was also included. The paper was drafted to support a presentation given by Mike Weightman to the HSE Board to further members understanding of ND’s operating environment, and was classified as “Restricted-Policy” reflecting the position at that time that it contained information about Stone Review advice to ministers and management information on resourcing. The information on incidents had been reported publically through individual inspector reports to sites and reports to the Nuclear Safety Advisory Committee.

2. The paper was released following a Freedom of Information request and together with other events, principally the Sizewell A cooling pond pipe failure in January 2007, instigated media attention in the Observer on 21 June 2009 and had been the subject of other media attention the previous week, including on Channel 4 News on 11 June 2009.

3. Parts of the HSE Board paper are self-explanatory or factual and require little elaboration. For example, issues surrounding ageing nuclear plant are well documented.

4. Other areas assume background knowledge or information and require further explanation. The purpose of this note is to place the issues in context, to provide an update and to explain these issues. There are five areas that we consider particularly require specific comment, as outlined in the sections below.

### **(I) Implementation of the Stone Review**

5. An important development since the above mentioned HSE Board paper was written was the publication of the summary recommendations of Dr Tim Stone’s Nuclear Regulatory Review and the Government’s response, both available on HSE’s website. The Government considers that it is timely and appropriate, to legislate and amend the organisational means by which the UK regulates both its current and potential future nuclear facilities. HSE has been working closely with DECC and DWP to develop proposals to give effect to the Government’s decision by re-establishing the ND, through a Legislative Reform Order, as an independent Nuclear Statutory Corporation (remaining within the auspices of HSE). A public consultation, run by DECC, on the LRO was started on 30 June. Further information can be found at:

[http://decc.gov.uk/en/content/cms/consultations/hse\\_restruct/hse\\_restruct.aspx](http://decc.gov.uk/en/content/cms/consultations/hse_restruct/hse_restruct.aspx)

6. These reforms are designed to lead to improvements in the transparency, accountability and consistency of regulatory activities, thereby seeking to enhance the confidence of all stakeholders, both duty holders and those with wider interests. They will also facilitate a more sustainable approach to regulating nuclear safety and security within a rapidly changing global nuclear environment and recruitment of high calibre of staff within a hardening market place for highly specialised skills.

## **(II). HSE/NII Resources.**

7. One part of ND is the Nuclear Installations Inspectorate (NII) and as of late June 2009 HSE NII currently has 178 nuclear safety inspectors in post, equivalent to 173.5 full time inspectors (due to some part time working). There were fewer inspectors in post when the HSE Board paper was written in January 2009. Of these inspectors, 20 are beyond normal retirement age and a further 26 will reach retirement age within the next 3 years.

8. We have had considerable success in the recruitment of new inspectors during 2008 and 2009 largely due to improved pay rates. For example, the latest recruitment campaign ran from 23 March until 30 April and attracted 283 applicants. However, recruitment and retention is likely to remain a challenge for HSE NII over the next couple of years due to its demographics and the present shortfall against plans. As indicated above, the move to the new Nuclear Statutory Corporation is designed, amongst other things, to improve recruitment through new freedoms on inspector terms and conditions to be able to sustain the levels of recruitment and retention required.

9. It is true that the number of HSE nuclear inspectors per nuclear installation is less than most other countries with active nuclear programmes. This is not a recent development and is a consequence of the goal setting nature of the UK regulatory system with its emphasis on ensuring that nuclear operators understand the hazards of their activities and how to control them. Unlike many foreign regulatory authorities we do not use our resources to develop detailed regulations that prescribe how the nuclear operators should set about their business. We set safety goals that are embodied in the licence conditions and require the operators to make and implement arrangements to meet these goals. UK law holds the nuclear operators responsible for safety. Our role is to ensure that they meet this obligation. The law, however, gives HSE NII the powers to intervene when and where appropriate (see also section V). However, the system does require highly experienced and technically qualified nuclear inspectors to operate efficiently and effectively.

## **(III). Assessment of new build**

10. A shortage of resources contributed to a slower start to our detailed Generic Design Assessment (GDA) than we would have liked, and we have extended the GDA programme by 6 months because of this. We are now helped significantly by the fact that we are only assessing two designs instead of the four originally submitted (due to the companies withdrawing) and, as a result, we are confident that we can complete a meaningful GDA on the EPR and AP1000 designs by June 2011 given we maintain our resourcing build up.

11. Although we have said that we could issue a Design Acceptance Confirmation with exclusions or conditions, this does not mean that we are prepared to undermine the

robustness of our requirements for safe and secure designs. If, by the end of GDA, we are unable to come to a satisfactory overall conclusion, then we will not issue a Design Acceptance Confirmation. The Design Acceptance Confirmation will be meaningful and if we have exclusions or conditions it will be because we believe that it is appropriate for these to be addressed later in the site and operator specific phase, where they will be scrutinised under the full rigour of the requirements of the nuclear site licence system.

12. Using 'caveats' in this way is not a new concept; it is an existing regulatory mechanism that is used in conjunction with hold points to allow us to regulate progress through stages of construction in a controlled manner, with technical issues being linked to appropriate stages in the programme. This is set out in standard licence conditions 19 and 20. Construction cannot proceed beyond a hold point until related technical issues have been resolved to the satisfaction of the regulators. We would treat any exclusion or condition attached to a Design Acceptance Confirmation in this tried and tested way.

13. NII also works closely with other regulators internationally, sharing information and experience about designs being assessed and the standards used. We also are using specialist contractors to support our Assessment Teams and to improve our project management – this is not unusual; importantly, the regulatory decision remain the responsibility of NII's independent and specialist staff.

#### **(IV). Incidents reported to HSE NII by operators**

14. The nuclear safety obligations placed upon nuclear licensees include the requirement for them to report to the HSE NII incidents occurring on nuclear licensed sites. This is embodied in standard licence condition 7. HSE NII expectations are for very open reporting by licensees and preparedness to learn from operational experience. This is regarded as a key element of a positive process safety culture. Such expectations mean that many events are made known to the HSE NII, typically several hundred a year. The vast majority are in themselves not greatly significant; but collectively, on analysis, may identify underlying problems and/or provide information for HSE NII to plan its interventions strategy. The more significant events, relatively, are included in HSE's performance target. This sets out intended reductions in numbers of events against a 2001/2 baseline of 143, as a challenge to improve nuclear safety further, guarding against complacency. The current target requires such events to have been reduced to 117 by 31 March 2010 and present indications are that this will be achieved if not bettered.

15. A few of these events are classified on the IAEA INES scale as level 1 which is defined as 'an anomaly beyond the authorized operating regime' but the majority are deviations with no safety significance and are classified at level 0 (below scale). In past years there have typically been one or two INES level 2 events. Last year (2008/9) there were no events classified higher than INES level 1. The INES event scale goes from 1-7. Further information can be found at:

<http://www-ns.iaea.org/tech-areas/emergency/ines.htm>.

16. HSE NII expects licensees to investigate events at their sites, and will itself investigate events where it believes this is necessary and take [appropriate regulatory action](#). Recent press articles have cited incidents at Sellafield, Dounreay and Sizewell A. All these were investigated by our inspectors and remedial actions required of the licensees. These events were reported publicly in the HSE Quarterly statement of

incidents and/or in the four-monthly Nuclear Newsletter (both available on the HSE website).

17. The figure of 1767 events reported over a seven year period (~250 reported events per year) quoted in the HSE Board paper on the nuclear programme, is not unusual and indicates a healthy regulatory culture in that licensees are continuing to report low-level events. It reflects the open and full event-reporting regime that HSE NII actively encourages as a means of learning from experience and underpinning high standards of safety.

#### **(V). NII Enforcement Policy regarding Sizewell A leak**

18. In January 2007 an incident occurred at Sizewell A nuclear power station. A pipe that was part of the system for circulating water from the cooling ponds failed, resulting in the discharge of 40,000 gallons of radioactive water. In practice, this was a small fall in the level of water in the cooling pond. If the leak had been unnoticed for 10 hours some of the fuel would have been exposed to the air but water would have remained in the pond and the fuel would have remained adequately cooled.

19. The operator notified the incident to HSE NII and it was investigated. We worked closely with the Environment Agency as it has responsibility for regulating off-site emissions or releases.

20. The result of HSE NII's investigation was a decision not to prosecute but to issue a Direction. The Direction, which was issued under the Nuclear Installations Act 1965, required Magnox Electric Ltd to carry out a review and reassessment of safety and report its findings to HSE NII. This was completed to HSE NII's satisfaction, with appropriate safety measures being implemented by the licensee; lessons were learnt and further improvements made, which they implemented at this site and others.

21. In the Observer article on 21 June, there was an implied criticism of HSE NII's decision not to prosecute and that this was in part due to stretched resources. It should be noted that UK law gives HSE NII a range of enforcement options ranging from verbal and written warnings, prohibition and enforcement notices, specifications, directions and prosecutions. When considering enforcement action our inspectors used an HSE-wide procedure (Enforcement Management Model) to inform a judgement of which was the most appropriate for a given circumstance and to provide a consistent and transparent approach across all industry. The enforcement action chosen (a Direction) was effective in addressing the underlying issues on a firm and speedy basis. A Direction is solely determined by the NII and does not have to go through a potentially lengthy legal process to have effect.

22. It should also be noted that HSE NII's mission is to protect people and society from the hazards of the nuclear industry. To this end, the Nuclear Site Licence gives HSE NII powers to issue Directions to a licensee to implement specific actions. This ensures a quick response can be taken in the event of a significant safety situation to a safety issue to which there is no right of appeal. Prosecutions take many months to prepare, use valuable resources and do not necessarily provide the necessary quick improvements to safety. There are, however, cases where prosecution may be an appropriate action in terms of

setting an example to industry as a whole or be the best method of securing long term safety improvements in a particular situation.

More information on ND's regulation of the nuclear industry in the UK is available at:  
[www.hse.gov.uk/nuclear/index.htm](http://www.hse.gov.uk/nuclear/index.htm)

and about Generic Design Assessment (GDA) / nuclear new build specifically:  
[www.hse.gov.uk/newreactors/index.htm](http://www.hse.gov.uk/newreactors/index.htm)