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HM Nuclear Installations Inspectorate

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Hinkley Point B Power Station
British Energy Generation Ltd
Near Bridgewater
Somerset
TA5 1UD

Date: 16th September 2009

Ref: 5.1.3.347. 2009/363316
4.7.2610.

UN: HPB71673R

Dear [redacted]

NUCLEAR INSTALLATIONS ACT 1965 (AS AMENDED)
HINKLEY POINT B POWER STATION
GAS BYPASS CONTAMINATION EVENT ON 16TH JULY 2009

1. I visited Hinkley Point B on 22 July 2009 and 18 August 2009 to gather information concerning the release of radioactive dust from the Reactor 3 gas circuit into the gas bypass plant that took place on 16 July 2009. This event resulted in contamination of the gas bypass plant and eight workers. I have now completed my investigation and analysis of the circumstances surrounding the event.

2. I have identified a number of shortfalls against applicable legislation, however in my opinion, the most significant shortfalls concern your arrangements for the control and supervision of work. My investigation has identified the following issues:

- It was not clear who was in charge of the work team.
- There was no clear line of accountability back into the licensee organisation.
- The work team was not provided with adequate instructions.
- The work team was not properly briefed and set to work.
- Adequate steps were not taken to ensure procedural adherence.
- Coordination of work team members and their organisations was inadequate.
- The direct supervision necessary to provide leadership and enforce standards of work was absent.

3. In my opinion the above shortfalls contravene site Licence Condition 26 and also the requirements of Health and Safety at Work etc. Act 1974 Sections 2 and 3. The key issue being that the safety of the work activity was reliant on a system of work, which in the event was not properly controlled or supervised. I am furthermore of the opinion that the shortfalls identified are particularly acute in circumstances where contractors are involved with outage

work.

4. In view of the above findings, I require you to take suitable and sufficient measures to improve arrangements for the control and supervision of work at Hinkley Point B and in particular the control and supervision of contractors. The improved arrangements should:

- be based on an analysis of the arrangements for control and supervision relevant to the contamination event on 16th July 2009 at Hinkley Point B and any identified shortfalls;
- include measures to ensure that safe systems of work are established and followed;
- ensure adequate coordination and leadership of mixed British Energy and contractor work parties;
- ensure that clear lines of accountability are established between persons undertaking work and British Energy management responsible for control and supervision of work, and;
- include measures to ensure that the improved arrangements are followed.

5. NII have written separately to [redacted] (CNO Region One) noting the above deficiencies and requesting that that the new arrangements for management of contractors that are currently being rolled out across the BE fleet take full cognisance of this event.

6. The NII inspections on 22 July 2009 and 18 August 2009 also identified a number of other shortfalls in relation to separate licence conditions and regulations, which I consider should be addressed.

a) The Ionising Radiations Regulations 1999 (IRRs) Regulation 7 require the duty holder to undertake a risk assessment prior to undertaking any new activity involving work with ionising radiation. The assessment must be suitable and sufficient and should identify any measures needed to control exposure. The risk assessment underpinning RWP 3446 was produced before the decision was taken to adopt “open hole” working and there is no evidence to show that this RWP was reviewed in the light of the revised system of work. Had a risk assessment of the work actually undertaken been carried out, the key step of restoring the pressure boundary could have been identified and highlighted in the documentation.

b) IRR Regulation 8 requires, where practicable, that restriction of exposure is achieved by engineered means in preference to safe systems of work and PPE. There is evidence to show that isolation of the gas bypass plant was the preferred option and that “open hole” working was adopted only when the presence of CO2 evolution was identified as an additional hazard. However, the vigour with which solutions to the CO2 evolution problem was pursued is questionable and there is no record that the hierarchy of control measures was dealt with explicitly in the risk assessment.

c) Licence Condition 24 requires that all operations which may affect safety are carried out in accordance with written instructions. There were instructions on the work order card regarding the replacement of the valve, but they were flawed. The instructions assume that there is an isolation and a requirement to check it. Experience with Reactor 4 was that the valve operating handle had to be removed because of confined space working, which was not factored into the instructions. Finally, the instructions contain an option to fit a blank, which would have been impossible with the inflow of air created for “open hole” working. The work instructions were not taken to the point

of work and were not followed. Instruction exists for pilecap "open hole" working and specific pilecap operations, but no specific instructions were available for the open hole operation carried out at the gas bypass plant.

d) IRR Regulation 14 requires training to be given to employees regarding the risks to health caused by ionising radiations and the precautions that should be taken. LC10 requires suitable training to be given. The response of the work team following the ejection of dust into the gas bypass plant area gives some cause for concern. The three people wearing powered air hoods appear to have removed them prematurely and the whole work party waited in the contaminated area for an extended period, rather than escaping to the corridor. There is therefore a shortfall against IRR Regulation 14 and LC10 concerning training of staff in the response to an airborne contamination event.

e) Licence Condition 34 requires that radioactive material is at all times adequately controlled or contained. A quantity of radioactive material was ejected in to the gas bypass plant as a result of this event. Steps should be taken to ensure that a similar event involving the ejection of material from the reactors cannot occur in the future.

f) RWP 3446 is only applicable to classified persons, however station records show that non-classified workers received an ALARP brief against RWP 3446 and entered the radiation controlled area under code RWP 3446. Although these non-classified workers were not required to work within the requirements of RWP 3446.

g) It is stated in letter HPB51102N that at the end of the phase 2 gas bypass plant clean-up programme that this plant area will remain at C2 classification due to the residual activity in inaccessible areas. It is not clear that the implications for nuclear safety caused by this change have been considered, particularly with respect to plant operability and response in an emergency.

h) During my site inspection visit between 8 and 11 June, I noted that the LC36 management of change arrangements do not appear to have been followed regarding the phasing out of Site Liaison Officers at Hinkley Point B (NII Action HPB 09/8.5 refers). As a result, there is a potential for changes to the arrangements for the management of contractors during the 2009 R3 outage to have been compromised.

7. In order for NII to monitor your progress to address the matters identified in this letter, please supply a copy of your plan to implement the corrective measures you identify as necessary by 30 November 2009. You are also invited to attend a meeting in Bootle to explain the event, the lessons learnt, your proposed corrective actions and to provide a personal commitment to remedy the identified shortfalls, at a date to be arranged.

8. If you require any clarification of the areas for improvement identified in this letter or should you wish to discuss further any of the matters covered, please do not hesitate to contact me at the direct dial number given above or during my visits to site.

9. I am copying this letter to [redacted] (CNO Region One), [redacted] (SRD), [redacted]), [redacted] and [redacted] in [redacted] role as [redacted].

Yours sincerely

[redacted]

Nuclear Installations Inspectorate

External Distribution:

[redacted], Hinkley Point B
[redacted], Hinkley Point B
[redacted], CNO Region one, Barnwood
[redacted], Hinkley Point B
[redacted], Hinkley Point B
[redacted], Supply Chain, Barnwood
[redacted], SRD Barnwood

Internal Distribution:

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