



British Energy

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7 July 2006

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HM Nuclear Installations Inspectorate
Redgrave Court
Merton Road
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Dear [REDACTED]

**Hinkley Point B/Hunterston B Power Stations
Boiler Tube Failure (BTF) Safety Case/Gas Circulator Endurance (GCE) Modifications Project**

I am writing to confirm and formalise the agreements made at the meeting held on 9th June 2006 at Booths Hall to address the impact of oil disruption during recent testing at Hinkley Point B (HPB) on our previous commitment to have GCE modifications in place on both reactors on HPB and Hunterston B (HNB) by the end of 2006.

We discovered during the initial testing of the GCE CO₂ purge system at HNB R4 in 2005 that its operation led to disruption of the oil flows in, and oil loss from, the Gas Circulator (GC) lubricating oil system in some plant configurations. This presented the risk that operation of the purge, either under BTF conditions or spuriously, might lead to common cause failure of GCs due to oil loss as opposed to the intended function of preventing common cause failure by protecting against moisture ingress to the motor compartment.

During the recent HPB R4 short-shutdown, the opportunity was taken to carry out a limited scope of further GCE testing to assess performance under the proposed purge conditions. These tests, which were carried out at intermediate reactor pressure, again resulted in loss of lubricating oil. It is still planned to carry out some further testing at low reactor pressures on HNB R3 during the forthcoming outage in 2006 to increase our understanding of the potential detriment under the fault conditions of most concern (depressurised, when forced gas circulation is essential for adequate post-trip cooling).

However, it is now considered that there is a significant risk that the GCE modifications, as originally envisaged, will not be functionally capable of delivering the anticipated safety benefit. The previous commitment to have GCE installed on all four reactors by the end of 2006 is therefore unlikely to be met.

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In parallel with these activities, further analytical and modelling work on the capability of the GCs to withstand the potential effects of moisture in coolant gas has been in progress, with a positive outcome.

Because both the potential disbenefits associated with the GCE modifications and the GC withstand capability are now therefore judged to be greater than previously assumed, the overall ALARP balance has changed. Accordingly, we have reviewed the safety case strategy. In the short term, we intend to develop a revised interim safety case based on:

- arguments and evidence to underwrite the claim that the GCs have a greater capability to withstand the effects of moisture ingress into the pressure circuit than previously assumed;
- claims on operators being able to terminate the water ingress on a timescale which avoids GC failure, given the revised GC withstand capability;
- preliminary ALARP assessment of alternative engineered protection.

The attached NSRS provides more detailed information on the scope of the submission being prepared, and we would welcome any early comments you might have on the proposed safety case approach.

I understand that completion of this submission will be a condition of start-up of HPB R3 following its Periodic Shutdown later this year. It is therefore planned to present the interim safety case to the HPB and HNB Nuclear Safety Committees in October and then forward it to you: arrangements will be made to provide early copies of the approved paper and key supporting references. On the same timescale, we will provide you with a programme for the completion of the modifications and safety case work for the consolidated BTF safety case. We intend to set up a meeting with you towards the end of October to discuss the submission and forward programme, and to address any queries and concerns you may have.

Yours sincerely,

Encl: Nuclear Safety Requirements Specification for associated NSC Paper

