

VULCAN NRTE
BRIEF FOR THE DOUNREAY STAKEHOLDER GROUP – 18 May 2005

Programme and Contract

1. The last 6 months marks another period of strong performance on the Vulcan Site. The 2004 Calendar year was probably the best ever for the Shore Test Facility, STF, both in terms of core burn-up achieved (our measure of overall progress) and trials completed. The period since Christmas has been particularly successful, with no defects on the plant that impacted the programme, which is excellent.
2. The plant is now shut down for the long Spring Annual Maintenance Period, which is programmed to last until mid June. This is the time when the equipment is thoroughly maintained, calibrated and inspected, in accordance with the safety schedules, to ensure it is fully fit for function in the future. We are also undertaking a number of plant modifications to improve safety margins and performance, and to replace obsolescent equipments. The period requires the focussed effort of all staff to maintain progress across a broad front and so minimise plant outage. I am pleased to say that the early weeks have been successful, and the programme is well on track.
3. The prototype reactor core (Core H) continues to perform in line with design expectations. The first submarine to be fitted with this type of core, HMS VANGUARD started up successfully and went to sea before Christmas, and her programme is going well. We now need to keep well ahead of her in terms of core operation, so that we solve any issues in a timely fashion, and provide all the supporting knowledge and practical design substantiation that she, and other submarines so fitted, will require for their operational programmes. VULCAN therefore continues to have a critical role in the provision of this key Defence output.
4. The agreed Vulcan operational programme lasts until 2014 after which the reactor would be de-fuelled and the site de-commissioned unless a further operational contract were forthcoming.

Safety, Security, Environment and Waste

5. Despite a busy period for site operations, I am pleased to report another good period of safety and environmental performance, rewarding the continued strong management emphasis from both MoD and Rolls-Royce in this area. The Defence and Civil Regulators, and our many external auditors continue to pay us regular surveillance visits, and to challenge us to maintain excellent standards. I, as the MoD Authorisee (equivalent of Licensee), receive a personal de-brief from all of them, and of course we take any suggestions for improvements very seriously. They continue to back my judgement that the VULCAN safety culture remains in good and compliant shape.
6. The next major emergency arrangements exercise for VULCAN is programmed to take place on 20 July 2005. It is planned to test on site arrangements only and will not involve a response at strategic level.
7. There are no issues to raise under security, environment and waste.

Decommissioning and Socio-economics

8. As has been stated above, current operations last until 2014, when the validation of Core H should have been completed. After this the reactor would be de-fuelled and examined, and in the absence of further requirements, the site would be de-commissioned. The agreed plan is that this work should be integrated with UKAEA to minimise cost and make best use of facilities and expertise.

9. Current planning shows that numbers on site will remain broadly constant at around 280 until completion of the current contract. After that it is anticipated that substantial numbers would be required at least until completion of fuel movements off site.

C B HUME
Cdr RN
Naval Superintendent
VULCAN NRTE
26 April 2005

“Decommissioning within the Fuel Cycle Area (FCA)” and members visited the Dounreay Materials Test Reactor (DMTR) and the former MTR fuel reprocessing plant, which is now being decommissioned.

- 1.4 The next briefing session is to be held at Vulcan NRTE on 3 November 2004. Members will tour the site and be updated on site activities.

2. MINUTES OF THE 64th MEETING

- 2.1 The minutes of the 64th meeting held on 28 April 2004 were accepted without change.

3. MATTERS ARISING

- 3.1 There were two actions from the 64th meeting of 28 April 2004.

Action 1 – Dr Owen to include in the DLLC briefing session on 1 July 2004 an indication of the effects of the accelerated decommissioning programme on the income to the local economy.

Complete - Robert Nicol gave a presentation on “Acceleration of the Site Restoration Plan” to the DLLC briefing session on 1 July 2004.

Action 2 – Secretary to send out a letter to members to gauge the degree of support for inviting Mr Fry to re-join the committee

Complete - A letter was sent out to members on 16 June 2004. Mr Fry was previously representing Caithness and Sutherland Enterprise (CASE) Board but had been replaced by Miss Carol Gunn following his retirement from the CASE Board. Mr Fry did not receive the two-thirds majority required in the Constitution for election. Mr Fry has been informed of this decision.

Dr Owen also reported that on 7 September 2004, a collective response from the DLLC was sent to CoRWM on their Questionnaire of 13 July 2004.

4. PRESENT POSITION ON THE VULCAN NRTE PROGRAMME

- 4.1 Commander Hume gave this presentation. The last six months had been a satisfactory period for Shore Test Facility (STF) operation with the trials programme continuing to plan, and Core H prototyping in line with design expectations. HMS VANGUARD’s first critical operation (2nd Core H) is due shortly, and all scheduled STF trials prior to start-up are complete. This work is still under three years into a 13 year test programme, so Vulcan have a long period of through life core validation work ahead, to support operations for the full core lifetime of Core H. This will be the main driver for the rest of the current Rolls-Royce contract at Vulcan, and that contract might in itself be extended if further trials were required on completion.

- 4.2 Reactor Plant performance on site has been reliable, with no major outages, though routine upkeep and maintenance and more minor defect repair has continued. During spring 2004, the annual maintenance period was completed to programme, and it was considered as a major success for Vulcan since timelines were challenging. Routine maintenance and system validation checks were undertaken, and plant modifications to extend safety margins and improve operability and efficiency were implemented. These included an updated seaweed management system for the cooling water intakes, which proved effective during the recent extensive periods of rough weather.
- 4.3 The programme to deliver qualitative improvements to site and plant safety documentation is on schedule, and a number of safety case documents have been re-issued, continuing to incorporate lessons learnt from the first two years of Core H operation. The opportunity has also been taken to improve clarity and incorporate suggestions from many internal and external sources, and industry best practice. This process will continue with detailed plans to be agreed for further work during the forthcoming financial year.
- 4.4 The site fuel storage ponds continue to be used for the medium term storage of prototype used fuel. Commander Hume confirmed that there are no fuel movements scheduled during 2005. Normal housekeeping and maintenance routines continue with no foreseen problems.
- 4.5 Commander Hume also reported the successful completion of the major Vulcan Nuclear Accident Response exercise to demonstrate Vulcan's emergency arrangements on 26 May 2004 (Lonestar 2004). This was a MoD Grade B exercise involving full site play, and including site evacuation. It also demonstrated the new local authority plan, including the strategic control organisation in Inverness, London and Bristol. Site arrangements worked well though there were some lessons learnt which have been or are in the process of being addressed.
- 4.6 Vulcan have successfully completed a major upgrade to the active maintenance facilities. This will allow the expansion of active component validation, maintenance and repair capabilities, and potentially allow increased servicing work for submarine equipments. This is considered as a market opportunity for Vulcan in the forthcoming years.
- 4.7 As the Site Authorisee, and MoD direct equivalent of the Site Licensee on a civil site, Commander Hume re-emphasised his determination that the highest standards of safety culture and engineering practice are maintained. Staff morale and motivation appear high, and the regulators and external auditors continue to reassure Commander Hume by their positive reports. Vulcan intends to deliver continuous improvement in this area, and to pursue appropriate industry best practice. MoD Regulatory Panel and the NII continue to visit on regular basis, and to subject site to detailed audit on safety management systems and compliance improvements. They continue to confirm the assessment that the safety culture and infrastructure at Vulcan remains in good shape. In response to a question from Mr Jackson,

Commander Hume reported that there are currently 280 people employed at Vulcan and he confirmed that this number should only fall slightly over the 13 years of the existing contract. He also reported that nothing has been agreed on further site operations yet, but there is the potential for an extension of the existing contract or extra work. If no new work becomes available, Commander Hume confirmed that the site would move into decommissioning in conjunction with Dounreay.

5. PRESENT POSITION ON THE DOUNREAY PROGRAMME

- 5.1 Mr Norman Harrison gave this presentation. He started by outlining the significant organisational changes. Mrs Barbara Thomas Judge has been appointed by the DTI to become the new Chair of UKAEA. Mrs Judge has succeeded Denis Tunnicliffe who resigned in May 2004 to become a life peer. A New Build Project Group has been established at Dounreay and has been headed up by Simon Middlemas, the former Naval Commander at Vulcan.
- 5.2 The total number of staff currently working for UKAEA at Dounreay (including Pensions Office and staff at Forss) is 1277. UKAEA was audited during September 2004 against the Investors in People (IiP) Standard and convincingly met the requirements to retain accreditation to this standard.
- 5.3 UKAEA is currently investing in further improvements to its systems for the control of effluent arising from the decommissioning of the site. At the Low Level Liquid Effluent Treatment Plant (LLETP), additional mechanical filtration will provide further reassurance that particulate material of the type found in the offshore sediments and at Sandside is not being discharged to sea. The decision to install this filter follows discussion with SEPA. The filter is being installed and should be operational by the end of 2004.
- 5.4 The sodium disposal plant (SDP) at PFR has been working well and has successfully destroyed over 556 tonnes of sodium. UKAEA has now safely processed one-third of the 1,500 tonnes inventory of sodium at PFR. Subject to regulatory consents, a second liquid metal destruction plant will begin, in 2005, to destroy the 57 tonnes of sodium potassium mixture remaining inside the DFR reactor.
- 5.5 The Dounreay Cementation Plant (DCP) has now moved to 3-shift operation which enables UKAEA to accelerate conditioning of raffinates which removes one of the major hazards at the Dounreay site. With the introduction of this 3-shift pattern of working, production has increased from 12 to 17 drums of conditioned raffinate per week.
- 5.6 As reported at the last DLLC, the Fuel Fabrication Plant ceased operation at the end of March 2004 after 47 years operation. It moved immediately to decommissioning and is a model example of the modern approach to clean up. The first phase is to clean out leftover uranium and to remove redundant equipment. By mid-2007, decommissioning will be complete and the building will be due for demolition.

This action was also complete with revised paperwork being sent out to the DLLC committee. Commander Hume confirmed that no further comments were received from the committee and the final letter was sent to DTI on 28 November 2003 with copies to the DLLC.

On 16 October 2003, there was a Department of Trade and Industry (DTI) stakeholder workshop held in Thurso which the DLLC were invited to attend. It focused on developing a framework for engaging stakeholders at a local and national level by the NDA. Commander Hume confirmed that there would be another stakeholder workshop to be held on 25 May 2004 in Thurso.

4. PRESENT POSITION ON THE VULCAN NRTE PROGRAMME

- 4.1 Commander Hume gave this presentation. The last 6 months had been a further satisfactory period for the Shore Test Facility (STF) operation with the trials programme continuing on schedule and the new Core H Core prototyping in line with design expectations. HMS VANGUARD's first critical operation (1st H Core) is due shortly, and all scheduled STF trials prior to start-up are complete. The focus now shifts to validation and support of operations for the remainder of the core lifetime, which will be the main driver for the rest of the 10-year programme.
- 4.2 Plant performance on site has been good with no major defects, though the normal diet of routine upkeep and maintenance has continued to keep the technical and engineering staff busy. Vulcan have now started the 2004 annual maintenance outage, which is programmed to complete in 6 weeks. During this time, Vulcan have a large volume of routine annual maintenance and system validation checks to undertake, and are implementing some modifications designed to further improved safety and reliability. Work is also being carried out on a new seaweed management system.
- 4.3 The programme to deliver qualitative improvements to site and plant safety documentation has also progressed well, and a number of key documents have been re-issued, incorporating lessons learnt in the first two years of core operation. The opportunity has also been taken to improve clarity and incorporate suggestions from many internal and external sources, and industry best practice. This process will continue with plans agreed for further work during the next year.
- 4.4 On plant management and operators, staff are continuing to perform well. Staff retention remains good and internal and external indicators continue to re-assure us that high training standards are being maintained. In response to a question from Mr MacDonald, Commander Hume confirmed that retention of staff who have been fully trained at Vulcan is generally very good. Commander Hume was pleased that is the case as well trained, experienced operators are critical to safe operations on the Vulcan site. Both Commander Hume and Mr Simpson confirmed that, following the current 10-year programme, both Commander Hume and Rolls-Royce management have a clear aspiration to win follow on work for Vulcan. Commander Hume

confirmed that there are 280 Rolls-Royce staff and 5 MoD employees at Vulcan.

- 4.5 The site ponds continue to be used for the storage of prototype used fuel. There are no fuel movements or pond operations scheduled during the coming year, though normal housekeeping and maintenance routines continues with no foreseen problems.
- 4.6 The next major Vulcan Nuclear Accident Response exercise is scheduled for 26 May (Lonestar 2004). It will be a full Grade B exercise involving site evacuation, and a demonstration of the local authority plan, and the strategic control organisation in Inverness. People in the vicinity may hear the site alarm and may notice additional activity including monitoring teams exercising in the area, but there should be no disruption to local residents or traffic.
- 4.7 Commander Hume also reported that Vulcan have completed a major upgrade to their IT systems and hardware across the site. On environmental improvements, Vulcan have successfully decommissioned a redundant fuel oil tank and disposed of a considerable length of transfer pipework, which extended across the site.
- 4.8 The MoD Regulatory Panel and the NII continue to visit on regular basis, and carry out detailed audits on Vulcan's safety management system and compliance arrangements. Their input has been helpful, with some suggestions for improvements, and advice as to perceived industry best practice. They continue to back Commander Hume's assessment that the safety culture and infrastructure at Vulcan remains in good shape.
- 4.9 On ISOLUS, the phase of consultation is now complete, and the report is being prepared by Lancaster University. This report is expected to be finalised and agreed within the next few weeks. Commander Hume believed it will then be submitted to Ministers and in due course a public announcement will be made. Commander Hume emphasised that MoD policy and release of public information on this matter continues to be handled centrally within the MoD.

5. PRESENT POSITION ON THE DOUNREAY PROGRAMME

- 5.1 Dr Guy Owen gave this presentation. On organisation changes, the new UKAEA Chief Executive, Dipesh Shah took up his appointment on 15 November 2003; and the Dounreay Director, Norman Harrison took his post up on 1 November 2003. A new Programmes Office at Dounreay has been headed up by Sandy McWhirter. The purpose of this Programmes Office is to drive forward the planning of future work programmes as required by the Nuclear Decommissioning Authority.
- 5.2 The total number of staff currently working for UKAEA at Dounreay (including Pensions Office and staff at Forss) is 1289. UKAEA anticipate