



MINISTRY OF DEFENCE

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31 May 06

**DNSR INSPECTION OF DLO NUCLEAR WEAPON CONVOY ROAD MOVEMENT OF NUCLEAR WEAPONS [redacted] AND ASSOCIATED COPI: INTERIM REPORT**

**REFERENCES:**

- A. Convoy Operating Procedures
- B. JSP 483 Vol. 2
- C. Operational Safety Case for Transport of Nuclear Weapons, dated Jan 05
- D. IRF Manual
- E. NWR/15/4/2 dated 6<sup>th</sup> April 2005

**INTRODUCTION**

1. DNSR-IT carried out an inspection of the DLO NWM/NARG road logistics movement of nuclear weapons 'Movement Order' [redacted]. The principal documents against which the convoy personnel were assessed were Refs. A, B, and C. This Interim Report conveys our initial assessment of the operation of this Convoy. A copy of the Convoy Commander's report and the COPI Report are requested. The final NWR report will follow receipt of these documents.

1.1. This was run utilised the 'Continuous Running' approach. In a 'Continuous Run' the same convoy vehicles are manned consecutively by two separate crews known as 'Port' and 'Starboard'. Each crew has a different Convoy Commander. A crew change takes place at a Crew Change Location (CCL). On this on this occasion the CCL was [redacted], the first time this establishment has been used.

1.2. Refuelling at the CCL was conducted by a self contained AWE team with their own new small fuel bowser, rather than the by use of establishment refuelling facilities or

hired/borrowed bowser, as previously customary.

1.3. [redacted]

1.4. The MCALO now rides in a convoy vehicle.

2. On the leg examined the convoy was commanded by [redacted], MDPGA.

### **AIMS**

3. The main aims of the inspection were:

3.1. To confirm that DLO continues to transport Nuclear Weapons in a safe manner consistent with the relevant procedures and orders.

3.2. To check the efficiency of the DLO 'Convoy Operational Proficiency Inspection' of the convoy.

3.3. To follow up the Findings and Observations of the last inspection of a NW Convoy (Ref. E).

### **ANNEXES**

4. Annex A contains the detail of this report. Annex B will contain our comments on the DLO COPI, Annex C the NWR 'Findings', Annex D the NWR 'Observations', and Annex E our 'follow-up' of our report on the last NWR Convoy Inspection (Ref. D).

### **INSPECTION TEAM**

5. The NWR team consisted of [redacted], DNSR-I(T).

### **INSPECTION SCOPE**

6. The following areas were inspected:

6.1. Plans and Orders

6.2. COPI Brief

6.3. Convoy Brief on [redacted],

6.4. Preparation & departure from Coulport.

6.5. Convoy movement from Coulport to the CCL, (travelling with CSV from Coulport, the EC from the first rest break, and the Convoy Command Team from the second rest break to the CCL).

6.6. Operations at the CCL.

**EXECUTIVE SUMMARY**

- 7. [redacted]
- 8. [redacted], used for the first time on this operation [redacted].
- 9. [redacted]
- 10. [redacted]
- 11. [redacted]
- 12. During the course of this inspection two Findings and several Observation were made. These are listed in Annex C and D and should be brought to the attention of appropriate staff.

**MAIN CONCLUSIONS**

- 13. [redacted]
- 14. [redacted]
- 15. [redacted]

**REPORT HANDLING**

16. The process for following up Findings and Observations from this report is as set out in JSP 538.

[redacted]  
DNSR-IT

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**List of Annexes:**

A. Inspection Report: Specific Matters

- B. Report on COPI
- C. List of Findings
- D. List of Observations
- E. Follow-up of Previous Report

**INSPECTION OF MO 4051: SPECIFIC MATTERS**

**PLANS AND ORDERS**

1. DLO/MDP have a quite detailed [redacted] set of orders, in particular Refs, A, B, and C.
2. [redacted]
  - 2.1. [redacted]
  - 2.2. [redacted]
  - 2.3. [redacted]
    - 2.3.1. [redacted]
    - 2.3.2. [redacted]

**Finding TRF 0104:** [redacted]

**ACTIVITIES AT FIXED LOCATIONS**

**Loading**

3. Not inspected by NWR on this MO. COPI report awaited.

**Departure From Coulport**

4. [redacted]
5. Activities at Coulport [redacted] prior to departure (convoy constitution, vehicle inspections, forming up, equipment checks, etc). [redacted] Departure was some 40 minutes behind schedule. [redacted]

**OBSERVATION TRO 0043:** [redacted]

**Rest Break Areas**

6. [redacted]
7. [redacted]

8. [redacted]

**Crew Change Location (CCL)**

9. Arrival & parking were uneventful.

10. **Refuelling:** [redacted]

11. **Crew Change:** [redacted]

**Observation TRO 0044:** [redacted]

**Unloading Operations**

12. Not inspected by NWR this year. COPI report awaited.

**CONVOY ON ROAD**

13. [redacted]

14. The convoy appears to have reverted to more use of MDP 'Traffic Motorcyclists', on the leg observed there were three MDP traffic motorcyclists and one MDP traffic car.

15. Traffic was a light and convoy running was largely uneventful. AND activists were spotted but did not affect operations.

16. Ref. B requires the support group to travel [redacted].

17. [redacted]

**Observation TR 00:** [redacted]

**Convoy Speed**

18. The convoy lost a little time in spite of the lack of significant traffic delays,

**Documentation Check (CSV)**

19. The DCSO had the latest copy of COPs.

**Crew Fatigue**

20. [redacted]

21. [redacted]

**FINDING TRF 0105:** [redacted]

21.1. [redacted]

21.2. [redacted]

21.3. [redacted]

21.4. [redacted]

**Overall Assessment**

22. [redacted]

**TASK CONTROL** [redacted]

23. Not inspected by DNSR on this occasion: [redacted]





**NWR REPORT ON COPI (Incomplete)**

**COPI PLANNING**

1. [redacted] The COPI covered activities at Coulport and used two shifts to cover the whole run from Coulport to AWE(B).

**COPI EXECUTION**

2. (To be completed when COPI Report seen).

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**ANNEX E to**  
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Dated 31 May 06

**NWR FINDINGS**

<b><u>Finding Number</u></b>	<b><u>Finding</u></b>
TRF 0104	[redacted]
TRF 0105	[redacted]

**NWR OBSERVATIONS**

<b><u>Observation Number</u></b>	<b><u>Observation</u></b>
TRO 0043	[redacted]
TRO 0044	[redacted]
TRO 0045	[redacted]

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**ANNEX E to**  
DNSR/18/4/3  
Dated 31 May 06

**FOLLOW-UP OF PREVIOUS NWR INSPECTION TEAM REPORT ON MO 40**

[To follow in final report]

# NUCLEAR WEAPON REGULATOR

## ANNUAL REPORT 2004 - 2005

### Introduction

1. This is the third Annual Report of the Nuclear Weapon Regulator (NWR) for the Chairman, Defence Nuclear Safety Board (DNSB). It covers the period April 2004 until March 2005 and addresses safety performance in the Nuclear Weapon Programme (NWP) and the activities of NWR. Through the DNSB, the Report will contribute to the Defence Environment and Safety Board's Annual Departmental Safety Report; it will be provided to the Defence Nuclear Safety Committee (DNCS) and a summary will be submitted to Ministers.

### Aim

2. The aim of this report is to provide:
- a) comment, from a regulatory viewpoint, on NWP strategic issues;
  - b) a summary of assurance gained about safety performance in the NWP<sup>1</sup>;
  - c) a brief account of the activities of the NWR team;
  - d) presentation of issues, regulatory risk and controls / strategies in DESB format.

### Recommendations

3. The issues raised in this report, the impact and risk they present and strategies/controls are tabulated in the Annex and summarised below with a note about current action status.

- a) [redacted]  
(para 5 – action in hand)
- b) [redacted]  
(para 9 – action now urgent)
- c) [redacted]  
(para 10 – action in hand)
- d) [redacted]  
(para 18 – action in hand)
- e) [redacted]  
(para 22 – action in hand)
- f) [redacted]  
(paras 24 & 28 – action needs to be expedited)
- g) [redacted]  
(para 26 – action needs to be expedited)
- h) [redacted]  
(para 29 – action in hand)

### Nuclear Weapons Programme - Strategic Issues

#### **Capability Sustainment**

4. Significant steps have been taken to sustain the UK nuclear weapons capability to be able both to maintain the current Trident system and to respond to any requirement for a future system. This requires considerably increased investment at AWE with uprated programmes and new or refurbished

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<sup>1</sup> Progress in implementing recommendations made in 2003-4 NWR Report will be summarised in footnotes. Commentary is also provided on progress with DNCS recommendations from their 2002-3 Report.

facilities planned. It is encouraging to note a positive engagement at this early stage by both NWIPT and AWE plc on safety issues and with relevant regulators, particularly the HSE/NII with whom NWR is working closely. Embryonic customer arrangements are also recognising safety regulatory requirements and building in the appropriate visibility and influence.

### **Regulation Framework and Safety Culture**

5. Consultation with stakeholders over the emerging text of JSP538 (see para 31) and engagement over real regulatory issues has provided an insight into the understanding and acceptance of the regulation framework for the NWP as articulated by the Chairman, DNSB in March 2003. [redacted]
6. This has contributed to the successful outcome of the review of the implementation of regulation which returned a broad endorsement of the framework in February. Requested by 2<sup>nd</sup> PUS and CSA in October 2003, the review was conducted by Chairman, DNSB and DG Strategic Technologies and their staffs through wide consultation with stakeholders inside and outside the Department.
7. Together with CNNRP, NWR has monitored the emergence of the DG Nuclear organisation planned to succeed the Warship Support Agency. [redacted]

### **Safety Performance in the Nuclear Weapons Programme**

8. [redacted]

### **Cross-programme Aspects**

9. A system for immediate notification to Ministers of incidents in both defence nuclear programmes, to a set of criteria consistent with civil practice, was introduced in November 2004. There have been no NWP incidents meeting the criteria [redacted].
10. [redacted]
11. [redacted]
12. The Radiation Emergencies (Preparedness & Public Information) Regulations (REPPiR) have been in force for over three years, and a resubmission of Reports of Assessment of Hazard Identification & Risk Evaluation was required in February from AWE and Clyde. For the latter in particular, this had to be underpinned by information on the weapon from the Approving / Design Authorities. [redacted]

### **Approving and Design Authorities<sup>2</sup>**

13. [redacted]
14. [redacted] Work has begun on establishing compliance with regulatory requirements, and while no firm programme has emerged, it is understood that the target for offering arrangements for audit is Autumn 2006.
15. The most important work in improving confidence in the ADA arrangements was a review of the processes for surveillance of stockpile safety conducted by the NWR Inspector with a small team. The review looked separately at arrangements within the NW IPT and within AWE making a number of observations about each. [redacted]. Complementary processes in Strat Sys IPT will be reviewed in the coming year.

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<sup>2</sup> ADA - Strat Sys & NW IPTs (Approving Authorities) incorporating AWE (Design Authority).

16. The review also provided an essential backdrop to regulatory oversight of the compilation of NW TL's annual statement on the health of the stockpile. [redacted]

### **Atomic Weapons Establishment**

17. Interaction with AWE has continued under shadow arrangements with no formal regulatory sanctions available (they would not, in any case, have been needed). AWE has provided access to all facilities and information on request. Tripartite meetings (with NW IPT) have been held to steer the modification of AWE arrangements to accommodate MoD regulation jointly with NII. With the confirmation of the aim to authorise AWE plc (in the 2<sup>nd</sup> PUS / CSA review – see para 6) and a significant revision (for other purposes) of the AWE M&O contract, the shadow period (and its constraints) will conclude in April 2005<sup>3</sup>. AWE has indicated that authorisation can be addressed with a relatively simple adjustment / addition to their documentation; a revised programme is not yet available.

18. There has been a considerable increase in the tempo of AWE infrastructure programmes during the year. Adopting the methodology of multi-stakeholder working which has proved successful for the facilities at Devonport, the NW IPT and AWE have engaged productively, particularly with the regulatory community. NWR strongly endorses this approach, as the only way to manage what will be highly complex programme with significant safety issues, and is involved at all appropriate levels. As part of this process, the NII (with NWR input) are producing regulatory strategies (encompassing hold-points) for major elements of the work (eg. hydrodynamic research and assembly / disassembly facilities).

19. Regulatory reviews have been conducted to assess safety case documentation previously provided to NII to support future joint assessments and programme outputs through the year. These NWR assessments have been shared with NII as contributions towards their response to AWE. At NII invitation, the NWR Inspector participated as a full member of an audit of AWE's Review Learn and Improve (RLI) arrangements; [redacted].

20. The NWR Inspector was part of the regulatory teams for assessment of both Aldermaston's and Burghfield's annual emergency response exercises. [redacted] The triennial Level 2 emergency response exercise (ALDEX) was conducted in February. Principally focussed on local strategic-level actions, it required the NWTL, as the MoD Co-ordinating Authority, to lead the defence interaction (ie. including AWE) with civil emergency services, local and health authorities and other government department. [redacted]

### **Transport**

21. [redacted]

22. [redacted]

23. Exercises of the immediate response to aircraft crashes provided by teams from RAFs Lyneham, Brize Norton and Honington were assessed [redacted] Regulatory objectives have been agreed as part of the planning for Exercise SENATOR (scheduled for September 2005 and to be witnessed by a NATO-Russia delegation).

### **Clyde Naval Base**

24. [redacted]

25. [redacted]

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<sup>3</sup> [redacted]

26. Direct inspection and assessment by the NWR Inspector have focused on two areas: processing of the replacement tritium reservoir and neutron generators and shiplift dockings. [redacted]

27. [redacted] Planning for the Coulport demonstration exercise in May (a weapon scenario) is being observed<sup>4</sup>.

### Deployed "at sea" nuclear weapons

28. [redacted] The timescale to offer arrangements for compliance with Authorisation Conditions remains at 2007/8 [redacted].

29. A dialogue has been entered on the process for giving regulatory agreement for embarked warheads with the new tritium reservoir fitted.

### Nuclear Weapon Regulator

#### Staffing and Resources

30. Staffing of the small NWR team has been stable; all training requirements have been completed. Outturn for the year will be ~£890k slightly ahead of allocation; this trend may continue as investment in the NWP (particularly at AWE) increases, thus making greater demands on regulators. Working arrangements with colleagues in Serco Assurance and DRPS have matured, with significant advice provided on stockpile health, AWE safety case review and transport authorisation as well as opportunities being taken to improve knowledge through workshops led by senior Associates. Further developments, to make best use of the considerable expertise represented by the former Chief Scientist, AWE (a Serco Associate), are planned<sup>5</sup>.

#### Regulatory Requirements

31. The highest NWR priority has been given to the production of JSP538 "Regulation of the Nuclear Weapon Programme". The Nuclear Weapon Regulatory Forum met three times to conclude formal consultation with stakeholders on the draft text. The JSP has four chapters (Introduction, Requirements, Regulatory Processes and Guidance) and supporting annexes. It was endorsed for issue by Chairman DNSB on 7 March 2005, following a final DNSB consultation (ex-committee).

#### Working with other Regulators

32. Collocated with the Naval Nuclear Regulatory Panel in Abbey Wood, NWR continues a close relationship, sharing resources, administration and working practices where appropriate. Set up, as a result of the Nuclear Safety Study, to be a separate body from CNNRP, NWR has nevertheless recognised the benefit of an eventual merger with CNNRP – a further recommendation made on two separate occasions this year. NWR was also explicitly resourced from the Centre TLB (DGS&S); [redacted], reinforced the independence of the regulator and helped to establish his authority with the NII. [redacted]

33. The business agreement with CIE(MoD) has been refreshed into a Memorandum of Understanding. Joint regulatory strategies for waterfront facilities at Clyde are now being developed with CNNRP and the Naval Authority Explosives following confirmation that the latter will regulate explosive safety in the naval bases<sup>6</sup>.

34. At the earliest stage of consideration, NWR is providing the lead for a small group of MoD regulators who might be involved in future deterrent options.

<sup>4</sup> [redacted]

<sup>5</sup> [redacted]

<sup>6</sup> [redacted]



35. Co-operation with HSE/NII continues to develop (see paras 18 & 19); the first formal Regulatory Level 2 meeting was held during the year. Deep co-operation between NII and NWR, delivering joint regulation in a multi-stakeholder environment, is now considered essential by NII in meeting the demands of the updated programmes. NWR will contribute weapon technical expertise to the NII's determinations following the receipt of REPPIR submissions<sup>7</sup>.

36. Contact has been re-established with the Department for Transport; there is agreement in principle to re-work a 1982 Memorandum of Understanding to suit current legislation, arrangements and organisations.

[redacted]  
Nuclear Weapon Regulator

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<sup>7</sup> Reports of Assessment of Hazard Identification & Risk Evaluation – revised and submitted Feb 05

ISSUES AND REGULATORY RISKS

Issue	Impact & Regulatory Risk <sup>1</sup>	Strategies & Controls	Owner
A. [redacted]	[redacted]	[redacted]	All NWP implementers. Co-ordination role for DG Nuc
B. [redacted]	[redacted]	[redacted]	All NWP implementers. Lead with Strat Sys TL.
C. [redacted]	[redacted]	[redacted]	NW TL.
D. [redacted]	[redacted]	[redacted]	NW TL with AWE.
E. [redacted]	[redacted]	[redacted]	Director Nuclear Movements.
F. [redacted]	[redacted]	[redacted]	Director Nuclear Movements and NBC, Clyde.
G. [redacted]	[redacted]	[redacted]	NBC, Clyde.
H. [redacted]	[redacted]	[redacted]	CSSE and FLEET.

<sup>1</sup> Unless otherwise stated, Regulatory Risk is the chance of delays or increased costs within the programme or to a project due to regulatory action