Chris O'Doherty
RAIB Relationship and Recommendation Handling Manager
Telephone: 020 7282 3752
E-mail: chris.o'doherty@orr.gsi.gov.uk

1 August 2014

Ms Carolyn Griffiths
Chief Inspector of Rail Accidents
Cullen House
Berkshire Copse Rd
Aldershot
Hampshire GU11 2HP

Dear Carolyn,

RAIB Report: Collision of a road-rail vehicle with a buffer stop at Bradford Interchange station, 25 March 2012

I write to provide an update[1] on the action taken in respect of recommendations 1 and 2 addressed to ORR in the above report, published on 24 July 2013.

The annex to this letter provides details of the action taken. The status of each recommendation is now 'Implemented'.

We will publish this response on the ORR website on 22 August 2014.

Yours Sincerely,

Chris O'Doherty

[1] In accordance with Regulation 12(2)(b) of the Railways (Accident Investigation and Reporting) Regulations 2005

Recommendation 1

The intention of this recommendation is for Quattro Plant Limited to better control the design and modification of safety critical equipment by using appropriate measures of engineering safety management.

Quattro should review, and amend, its procedure for the management of modifications to on-track plant, such that any future modifications which could affect the safety of RRVs follow the principles of engineering change management, whether the work is done by third parties or in-house.

As a minimum, the review should identify and action the changes required to existing procedures to ensure that:

a. modifications that have the potential to affect the safety of operation are risk assessed, and any residual risk or newly introduced risk is suitably mitigated by design measures or inclusion within inspection, testing and maintenance procedures;

b. safety critical design work on RRVs is checked and subject to independent verification;

c. safety critical design work on RRVs is fully and accurately documented;

d. systems that are critical to safe operation are formally tested to a documented specification during the initial commissioning, or subsequent modification, to verify that they are operating correctly in all modes of operation, including checking the protection against all credible faults; and

e. the access to safety critical systems, such as the rail axle interlocking circuit and its override, are reviewed and suitable restrictions are applied.

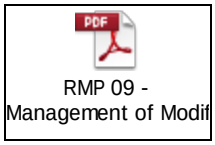
Brief Summary on what was previously reported to RAIB on 29 January 2014

1. Quattro procedure RMP09 ’Control of Modifications to On Track Plant’ was in the process of being reviewed.

Update

2. On 19 May 2014, Quattro provided ORR with a copy of its documents titled:

- *Formal Response to specific Recommendations Specified in: Rail Accident Report: Collision of a road-rail vehicle with a buffer stops at Bradford, Interchange station, 25 March 2012; and*
- *Rail Management Procedure No. RMP 09: Management of Modifications to On Track Plant*



3. Extracts from the formal response:

Quattro understands and accepts the importance of ensuring our machines adhere to both the Safe Use of Plant RIS-1700-PLT and Standard for Engineering Acceptance RIS-1530-PLT regulations. When purchasing new equipment these are confirmed as being in place by the engineering company from whom the purchase is made. Similarly modifications undertaken are subject to Engineering Acceptance prior to any asset being returned to work.

Quattro Company Procedure RMP 09 *"Management of modification to Road rail vehicles"* Is designed to adhere with GMRT 2000 "*Engineering Acceptance of Rail Vehicles"* and design aspects in line with RIS 1530 "*Rail Industry Standard for Engineering Acceptance of On-Track Plant and Associated Equipment."*

Quattro Company Procedure RMP 09 "Management of modification to Road rail vehicles" has recently been reviewed to address the recommendations within the report (paragraph 4.1.2).

As part of the process for authorising any modification an approved RSSB VAB will be consulted with to ascertain if any such modification will impact on any currant Engineering Acceptance certificate and associated maintenance and or operational documentation etc.

Part a

Refer to Quattro Company Procedure RMP 09 "Management of modification to Road rail vehicles" Paragraph 4.2.2.

Paragraph 4.3 of RMP 09 covers "VAB Approval of Modification and Amendment of Maintenance Documentation", and so provides more specific detail on how an accredited VAB is involved in confirming that appropriate safety standards are adhered to.

Part b

Quattro Company Procedure RMP 09 *"Management of modification to Road rail vehicles"* states throughout the document that an approved RSSB VAB will be involved in all modification design and approval stages.

Part c

Refer to Quattro Company Procedure RMP 09 "Management of Modification to Road rail vehicles" Paragraph 4.2.2 and 4.3.7.

The approved RSSB VAB will also keep a technical file to record its compliance to all approved design aspects required for the Engineering Acceptance process.

Part d

The approved VAB carries out this task on all first of type modifications as part of achieving Engineering acceptance Change. All second of type testing can be done by the operating company at the VAB's discretion. Normally this involves providing written and or photographic evidence of any required testing that is kept within the technical file the VAB holds. However, Quattro also carries out a final test & inspection before the OTP is released back into service.

Refer to Quattro Company Procedure RMP 09 "Management of modification to Road rail vehicles" Paragraph 4.4.1.

Part e

Quattro accepts the principle that access to all safety critical systems should be restricted to properly qualified engineers to avoid unauthorised use.

Quattro also accepts that the provision of an approved modification allowing such safety systems to be overridden should only be made where fully justified by circumstances in which the safety system restricts the safe use of the machine and that access to such override systems should be strictly controlled.

Quattro has reviewed access to safety systems and is satisfied that the only such system on our machines capable of being overridden is the axle interlocking system. With regard to the axle interlocking override facility Quattro has made improvements to the system by;

i) Introducing a key switch in place of the rocker switch in place at the time of the incident.

ii) Introducing a key safe system and appropriate procedure restricting access to the key except when authorised as necessary by approved personnel.

Quattro Company Procedure RMP 12 "Control of OTP Axle Interlock Override keys" has been issued in response to the recommendations to restrict unauthorised personnel accessing the override system. This will become a generic process if, in future, further key based override systems are introduced as we would fit key safes to protect any such system that was introduced.

Quattro does not currently envisage any such requirement for key based systems. With regard to RCI systems we note that all current versions of such systems are password protected.

The switch itself is protected by an anti-tamper proof sticker.

ORR Decision

4. After reviewing information received ORR has concluded that, in accordance with the Railways (Accident Investigation and Reporting) Regulations 2005, Quattro Plant Ltd has:

- taken the recommendation into consideration and
- has taken action to implement it.

Status: *Implemented.* *ORR will write to RAIB if it becomes aware that the information above becomes inaccurate.*

Recommendation 2

The intention of this recommendation is for Quattro Plant Limited to better manage the competence of its personnel and the provision of information to them.

Quattro should review and improve its existing systems for the management of staff that are engaged in the maintenance, inspection and operation of road-rail vehicles and as a minimum the review should identify the most effective means of:

a. creating sufficient working documents for installation, test, inspection, maintenance and operation of safety critical systems on Quattro's RRVs;

b. providing appropriate warning labels informing staff of the precautions to take when overriding safety critical systems on RRVs;

c. improving management systems to ensure that:

- all technical staff and machine operators are fully trained in the specific operations of safety critical systems on each type of RRV that they inspect, maintain and/or operate, and the safety measures to take when it is necessary to override them;
- controls are in place to ensure that only competent persons are able to override safety critical systems;
- depot staff and operators have access to information for the installation, test, inspection and maintenance tasks they are undertaking on safety critical systems; and
- any unexpected behaviour of an RRV is reported and results in an investigation by a person competent to do so to fully discover the cause of the fault and that it is rectified appropriately before use.

d. establishing monitoring systems to check that staff are correctly applying the inspection and maintenance procedures, and are competent to do so, including:

- enhanced surveillance and regular audits; and
- checks that staff are familiar with, and have access to, documentation that is relevant to the safety critical tasks they are undertaking.

e. checking that the RRVs supplied for use on rail are fully operational and compliant with Quattro's own maintenance documents (these should include physical equipment checks at their depots and on worksites).

Brief Summary on what was previously reported to RAIB on 29 January 2014

5. Quattro *was reviewing its Maintenance arrangements to ensure they are robust and provide suitable and sufficient instruction to maintenance personnel.*

Update

6. On 19 May 2014, Quattro provided ORR with a copy of its documents titled:

- *Formal Response to specific Recommendations Specified in: Rail Accident Report: Collision of a road-rail vehicle with a buffer stops at Bradford, Interchange station, 25 March 2012; and*
- *Rail Management Procedure No. RMP 09: Management of Modifications to On Track Plant*

Part a

Quattro accepts the principle of managing the competence of its personnel to the highest achievable standard and that there should be a regular review to monitor that standard.

Specifically with regard to the creation of sufficient working documents, Quattro Company Procedure RMP 09 "Management of modification to Road rail vehicles" has been clarified to address recommendations. Refer to paragraphs: 4.2.2, 4.3.2 and 4.3.3.

All reissue or new amendments to maintenance and or operational documentation, following the approved method of asset modification is communicated to all relevant staff in compliance with Quattro Company Procedure IMP 08 "Internal & External Communication."

Please also refer to Quattro's response to recommendation 2C to further satisfy our response to 2A. Response to 2C highlights Quattro's competence management procedure RMP 005. Quattro's company procedure IMP 03 "Control of records" should also be referenced to further demonstrate the company's control systems to the recommendation.

Part b

Quattro accepts that warning labels should be present where there is potential of incorrect operation of safety critical systems.

As mentioned earlier the only safety critical system capable of being overridden on our machines is the axle interlocking system on 15 machines. An appropriate warning label has been applied to all 15 machines.

Note: A large portion of these machines will be upgraded to direct rail wheel braking in the very near future or disposed of out of the fleet.

Part c

Quattro accepts the recommendation and has procedures in place to ensure compliance to the principles set out.

Refer to Quattro Company Procedure RMP 05 "Competence Management" paragraphs: 4.3.1, 4.3.2, 4.4.1, 4.4.2 and 4.4.3.

All safety critical staff has a Quattro Company authority to work permit, this permit specifies asset type, model etc. which staff have to sign to confirm they have experience and are competent to operate the machinery stated on the permit indicating so.

Quattro Company Procedure RMP 12 "Control of OTP Axle Interlock Override keys" has been issued in response to the recommendations to restrict unauthorised personnel accessing the override system.

This will become a generic process if, in future, further key based override systems are introduced as we would fit key safes to protect any such system that was introduced.

Quattro does not currently envisage any such requirement for key based systems. With regard to RCI systems we note that all current versions of such systems are password protected.

As detailed in the Sentinel training and assessment material operators are trained to know that all relevant and approved operational documentation is on the machine at all times. If the documentation is not available on the machine then this must be recorded as a defect on the pre-start operator check list and reported to a line manager.

As detailed in the RPA fitter assessment material, fitters are questioned in module 1 on compulsory documentation to be found on the machine. This includes;

- *EAC, maintenance and operational documentation as detailed on the EAC,*
- *Duty charts if a lifting machine under LOLER regulations*
- *12 monthly LOLER thorough examinations for machine*
- *Separate 6 monthly for any lifting accessory's kept on the machine*
- *Log book/defect book*

Should any be missing from the machine; this is to be defected and rectified immediately.

Quattro is also investing in an information portal which will hyperlink all company documentation and machine manuals etc. for easy reference. All relevant staff to be trained once live. In the interim the company will advise and brief relevant depot staff and operators on how to locate documentation within the shared company drive found on the network available in all locations.

Quattro Company "Depot Internal Audit Protocol" IMP/032 section 3.0 details this as an item to inspect and confirm information is present and available on

the premises.

Quattro Company Procedure RMP 07 "Safety Performance Monitoring and Defect Reporting" details the company process for dealing with defect reporting.

In essence this procedure includes the following protocols;

i) Safety Critical Defect Recording
ii) Safety Critical Component Monitoring
iii) Control & Notification of Safety Critical Non-conformity
iv) Analysis of incoming Safety Critical Defect Alerts and Notices

Recent Quattro Company Safety Alert No.299 has been issued to remind all safety critical staff the importance of reporting defects. This will be reissued every six months from now to ensure all staff is regularly reminded.

Part d

Quattro Company Procedure IMP 05 "Internal Audit" and company form IMP/032 "Depot Audit Protocol" Details all company measures for monitoring internal compliance with its integrated management systems covering items in the recommendations above.

Part e

Quattro Company Instruction "Tracked RRV Service & Maintenance Instructions - Issue 01.4 " and Quattro Company Instruction "Wheeled RRV Service & Maintenance Instructions - Issue 01.4" Details all maintenance and inspection protocols for all rail plant.

Note: All procedures and protocols have all been scrutinised recently by Achilles and Network Rail as part of the Link Up protocol and Plant operating licence audits. Quattro was recently audited by Achilles in Feb 2014 from which the company received a positive report. All company procedures, forms and protocols amended to address the recommendations will be communicated to all relevant staff via Quattro Company Procedure IMP 08 "Internal & External Communication".

ORR Decision

7. After reviewing information received ORR has concluded that, in accordance with the Railways (Accident Investigation and Reporting) Regulations 2005, Quattro Plant Ltd has:

- taken the recommendation into consideration and
- has taken action to implement it.

Status: *Implemented.* *ORR will write to RAIB if it becomes aware that the information above becomes inaccurate.*