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Mr Andrew Hall
Deputy Chief Inspector of Rail Accidents
Cullen House
Berkshire Copse Rd
Aldershot
Hampshire GU11 2HP

Dear Andrew,

RAIB Report: Collision at London Waterloo on 15 August 2017

I write to report¹ on the consideration given and action taken in respect of the recommendations addressed to ORR in the above report, published on 19 November 2018.

The annex to this letter provides details of actions taken in response to the recommendations and the status decided by ORR. The status of recommendation 1 is 'implementation on-going' and the status of recommendations 2 and 3 is 'progressing'.

ORR will advise RAIB when further information is available regarding actions being taken to address these recommendations.

We will publish this response on the ORR website on 16 October 2019.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'Oliver Stewart', is written over a horizontal line.

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

Oliver Stewart

Initial consideration by ORR

1. All 3 recommendations were addressed to ORR when the report was published on 19 November 2018.
2. After considering the recommendations ORR passed recommendation 1 to Network Rail, recommendation 2 to OSL Rail Ltd and recommendation 3 to Mott MacDonald asking them to consider and where appropriate act upon them and advise ORR of its conclusions. The consideration given to each recommendation is included below.
3. ORR also brought recommendation 2 and learning point 3 to the attention of the Rail Industry Association as it was concluded that that there are important lessons for the wider supplier industry.

Recommendation 1

The intent of this recommendation is to ensure that the competence of signalling staff includes the attitudes and depth of understanding that is needed to properly appreciate the importance of applying all the relevant design, installation and testing processes. It is expected that effective implementation by Network Rail will necessitate input from the Institution of Railway Signal Engineers, signalling contractors and other infrastructure managers.

Network Rail should take steps to reinforce the attitudes and depth of understanding needed for signal designers, installers and testers to safely apply their technical skills and knowledge. These steps should include:

- the education of existing staff and their managers, and future recruits, to promote a better understanding of industry processes, and an improved understanding of how the lessons learnt from previous accidents have shaped today's good practice;
- the enhancement of processes for the assessment, development and ongoing monitoring of the non-technical skills of signal designers, installers and testers; and
- measures to monitor and encourage compliance with process, and safe behaviours on projects

ORR decision

4. Network Rail have put together a time bound plan covering a number of work streams being undertaken to address this recommendation. We particularly welcome the review of the IRSE license application requirements.
5. Network Rail have not referred to arrangements for monitoring and reviewing the outcome of the work, nor how they will go about encouraging compliance. We will address these points with Network Rail through our usual liaison meetings.

6. After reviewing the information provided ORR has concluded that, in accordance with the Railways (Accident Investigation and Reporting) Regulations 2005, Network Rail has:

- taken the recommendation into consideration; and
- is taking action to implement it by 31 December 2021.

Status: Implementation ongoing. ORR will advise RAIB when actions to address this recommendation have been completed.

Information in support of ORR decision

7. On 7 May 2019 Network Rail provided the following initial response:

Action Plan

Network Rail plans to reinforce attitudes and understanding of signalling designers, installers and testers by: -

- 1. Cascading a tailored interactive briefing to leaders of signal engineering teams and staff, which includes leadership interventions and their impact, appropriate escalation practices, levels of self-awareness, levels of personal responsibility and a reminder of established good practice. A commitment of behaviour change will be included.*
- 2. Cascade of a cross discipline briefing on the process and responsibilities for securing of points for infrastructure change projects. Particularly identifying transfer of responsibility through demonstration by scenario.*
- 3. Creation of E-learning describing the origins of process that support a safety culture and consider inclusion in the staff induction material.*
- 4. Review the effectiveness of industry forums used to improve industry awareness of the consequences of actions, including sharing of incidents and near misses, sharing of disciplinary outcomes (consequence of not following established practice), sharing of video media used to develop positive safety culture impact.*
- 5. Review the process for cascade brief of material from industry forums.*
- 6. Review of competence requirements for non-technical skills for signal engineering staff, and the creation or improvement of performance criteria and training to change behaviours.*
- 7. Review of the IRSE licence application requirements, particularly whether the complaints process is being used effectively, the management of staff under mentorship and the appropriate level of mentorship for safety tasks and review of mentorship capability.*

8. *Review of the surveillance, aimed to improve assurance of safe delivery of signalling engineering tasks.*
9. *Review of the management of records availability for project work and the contracts and processes that impacts the timeliness of records returns by projects and suppliers.*

Review actions are stage 1 activities, change actions are stage 2 activities.

Timescales: Stage 1 – March 2020, Stage 2 – Dec 2021

8. At the Infrastructure Projects liaison meeting on 13 August 2019 Network Rail provided the following update:

Actions completed to date

Prior to the RAIB Waterloo being published in November 2018 several initiatives were started:

- *A review into maintenance testing activities focussing on why technicians errors occur*
- *An ongoing review of signalling works testing processes and standards*
- *An industry-wide stand-down aimed at project and design engineers to re-enforce the importance of project and requirement stability in preventing design errors*
- *A programme of automated checking for latent errors in digital interlockings*
- *The issue of notices raising awareness of technical/behavioural issues and lessons learned*
- *An emphasis on the importance of licensing and management effort to increase license compliance*
- *Re-introduced maintenance testing practical assessment for technicians*
- *An industry-wide education and awareness programme in December 2018 to mark the 30th anniversary of the Clapham disaster, emphasizing the importance of engineering processes developed since that time and the need to follow those processes to maintain safety.*
- *Standards updates to emphasize and strengthen the requirements for the securing of points not in operational use (relating directly to Cardiff and Waterloo incidents).*

Plan to address the recommendation industry-wide

ELT have been asked for their support so it 'comes from the top', they accepted,

1. *Cascading a tailored interactive briefing to leaders of signal engineering teams and staff, which includes leadership interventions and their impact, appropriate escalation practices, levels of self-awareness, levels of personal responsibility and a reminder of established good practice. A commitment of behaviour change will be included. Start September 19 – duration 12 months*
2. *Cascade of a cross-discipline briefing on the process and responsibilities for securing of points for infrastructure change projects. Particularly identifying transfer of responsibility through demonstration by scenario. Started - completion March 2020*

3. *Creation of E-learning describing the origins of process that support a safety culture and consider inclusion in the staff induction material. From Jan 2020 - duration 12 months*
4. *Review the effectiveness of industry forums used to improve industry awareness of the consequences of actions, including sharing of incidents and near misses, sharing of disciplinary outcomes (consequence of not following established practice), sharing of video media used to develop positive safety culture impact. Started - review completion March 2020.*
5. *Review the process for cascade brief of material from industry forums. Started - review completion March 2020.*
6. *Review of competence requirements for non-technical skills for signal engineering staff, and the creation or improvement of performance criteria and training to change behaviours. Started – review completion March 2020.*
7. *Review of the IRSE licence application requirements, particularly whether the complaints process is being used effectively, the management of staff under mentorship and the appropriate level of mentorship for safety tasks and review of mentorship capability. Started – review completion March 2020.*
8. *Review of the surveillance aimed to improve assurance of safe delivery of signalling engineering tasks. Started – review completion March 2020*
9. *Review of the management of records availability for project work and the contracts and processes that impacts the timeliness of records returns by projects and suppliers. Started – review completion December 2019.*
10. *Feedback and major review of findings and continuation/development of action items. April 2020.*

Recommendation 2

The intent of this recommendation is for OSL to implement actions already started (paragraphs 197 and 198) in respect of non-technical skills relevant to its staff in advance of any relevant actions triggered by implementation of Recommendation 1.

OSL Rail Ltd should enhance its existing processes for the assessment, development and ongoing monitoring of those staff who undertake signalling works so as to ensure that they have the depth of understanding, attitudes and non-technical skills that are needed to deliver work safely. Areas of enhancement should include the skills needed for effective communication and safe decision making in complex project environments.

ORR decision

9. We support the approach OSL Rail Ltd are taking to address the recommendation and have arranged to meet them in October to discuss in greater detail the action taken and progress to date.

10. After reviewing the information provided ORR has concluded that, in accordance with the Railways (Accident Investigation and Reporting) Regulations 2005, OSL Rail Ltd has:

- taken the recommendation into consideration; and

- is taking action to implement it

Status: Progressing. ORR will advise RAIB when further information is available regarding actions being taken to address this recommendation.

Information in support of ORR decision

11. On 30 March 2019 OSL Rail Ltd provided the following initial response:

To enhance the immediate actions taken (as stated in paragraphs 197 and 198 of published report) OSL Rail conducted a full review of the business operating model. This review, along with a desire to develop the business into a tier 1 supplier, lead to a change to the management structure recruiting key people in the senior management team. Those recruited were hand picked from within the industry for their knowledge, experience and drive to take the business forward.

These appointments have enhanced Health and Safety, Competency, Training and Human Resources along with various discipline specific roles.

Actions taken:

OSL Rail has established quarterly staff business briefing days to share with all employees the business aspirations, performance and areas of concerns to drive an ethos of continuous improvement. These days are supported by other significant improvements with regards to internal communications with all industry alerts and updates cascade and managed via a single source, with further improvements including the recent introduction of an in-house employees' monthly newsletter.

Clearer, visual reporting dashboards with a focus on leading indicators rather than the traditional lagging indicators are being developed and a re-emphasis on the use of the companies "Employees Feedback" process which encourages employees and suppliers to raise any concerns, close calls or improvement ideas to the senior team.

Improvements on-going:

Although successfully passing various external audits from NQA, RISQS and Tier 1 suppliers, due to the significant enhancements and changes within discipline teams, all processes within the companies Integrated Management System are going through a complete review to ensure they are current, accurate and robust.

OSL Rail are investing to develop training capabilities including rail safety critical and IRSE technical training, mentorship and assessment in-house to ensure a consistent high-level quality for its staff of which more than 90% are directly fulltime employed. This ambitious plan will be implemented during 2019/20.

The recruitment process is one of the key procedures currently under review with an aim to ensure new employees are not just technically competent to fulfil their roles but also in respect to functional skills and non-technical skills to ensure those recruited exhibits the behaviours the business expects. The RSSB model for competence will be used for this purpose. This will be supported through mentorship, assessments, monitoring and personal development reviews.

Finally, a concerted focus has been maintained across the business, but specifically in relation to Signal Install and Test, to encourage open and honest dialogue between disciplines where teams and individuals are not afraid to challenge, and project leads are empowered and supported to make safe decisions. This is monitored through the establishment of a robust weekly, daily, hourly reporting mechanism as deemed appropriate for the work following internal weekly management reviews.

Recommendation 3

The intent of this recommendation is for Mott MacDonald Ltd to take action in respect of non-technical skills relevant to its staff in advance of any relevant actions triggered by implementation of Recommendation 1. It differs from Recommendation 2 by omitting explicit reference to communication because the RAIB Waterloo investigation did not link MML to communication issues. However, the recommendation covers all aspects of non-technical skills and implementation is expected to include consideration of communication issues.

Mott MacDonald Ltd should enhance its existing processes for the assessment, development and ongoing monitoring of those staff who undertake signalling works so as to ensure that they have the depth of understanding, attitudes and non-technical skills needed to deliver work safely. Areas of enhancement should include the skills needed for safe decision making in complex project environments.

ORR decision

12. We support the approach Mott MacDonald Ltd are taking to address the recommendation and have arranged to meet them in October to discuss in greater detail the action taken and progress to date.

13. After reviewing the information provided ORR has concluded that, in accordance with the Railways (Accident Investigation and Reporting) Regulations 2005, Mott MacDonald has:

- taken the recommendation into consideration; and
- is taking action to implement it

Status: Progressing. ORR will advise RAIB when further information is available regarding actions being taken to address this recommendation.

Information in support of ORR decision

14. On 15 April 2019 Mott MacDonald provided the following initial response:

- 1) *Mott MacDonald has reviewed the RAIB report recommendations and set up an internal working group comprising the Professional Head of Railways, the Professional Head of Signalling and the Training and Development Manager.*
- 2) *The WG has reviewed the current Mott MacDonald signalling competence process in the context of the RAIB recommendations.*
- 3) *The WG has reviewed the RSSB guidance on Non-Technical Skills (NTS).*

4) Mott MacDonald engaged RSSB to provide guidance and training on Non-Technical Skills. This was attended by the Professional Head of Signalling, the Training and Development Manager and the Head of Discipline – Signalling (who is the line manager for all signalling staff)

5) Mott MacDonald has determined that Non-Technical Skills will be incorporated in the competency management system and the level of NTS displayed by an individual will be determined by a mix of:

a. Psychometric profiling (16PF behavioural assessment maps well to RSSB NTS)

b. Self-assessment

c. Line manager assessment (observation and feedback)

6) This is being trialled on a cohort of CRE/CEM staff and will commence in April or May 2019. Feedback and experience will be used to shape the second cohort which is planned for May/June 2019.

7) The enhanced competency management process will be embedded in the Mott MacDonald UK Railway Instruction UKRI02 – Competence Management. This requires that there will be an annual determination of NTS and also will allow for determination of NTS when staff are appointed in the role of CEM/CRE.

In addition to the above, Mott MacDonald has engaged with IRSE and Network Rail to determine their proposed response to the RAIB recommendations to ensure that there is no duplication or omission in the planned implementation. Progress on this is slower than desired, hence Mott MacDonald is continuing with the above plans rather than wait for full alignment with IRSE and Network Rail.