

**Oliver Stewart**  
**RAIB Recommendation Handling Manager**



24 August 2023

Mr Andy Lewis  
Deputy Chief Inspector of Rail Accidents

Dear Andy,

**RAIB Report: Landslip and derailment at Loch Eilt, north-west Scotland on 22 January 2018**

I write to provide an update<sup>1</sup> on the action taken in respect of recommendation 1 addressed to ORR in the above report, published on 7 August 2018.

The annex to this letter provides details of actions taken in response to the recommendation and the status decided by ORR. The status of recommendation 1 is **'Closed'**.

We do not propose to take any further action in respect of the recommendation, unless we become aware that any of the information provided has become inaccurate, in which case I will write to you again.

We will publish this response on the ORR website on 25 August 2023.

Yours sincerely,

Oliver Stewart

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

## Recommendation 1

*The intent of this recommendation is to promote development of methods to evaluate the risk presented by snowmelt and ground thaw.*

Network Rail should complete its evaluation of the means by which snowmelt can be incorporated in adverse weather processes applicable to earthworks. It should also carry out a similar evaluation for risk due to ground thaw. If justified by these evaluations, Network Rail should include improvements in monitoring these effects for the next generation of its weather information tools, such that the true level of risk associated with such a combination of weather conditions is accounted for in its management of landslip risk.

## ORR decision

1. The RAIB investigation found that Network Rail's processes for managing landslip risk did not take account of the hazard caused by rapid melting snow. In the closure statement, Network Rail describe the risk associated with rapid snow melt and its relative rarity.
2. The closure statement outlines the following actions taken in response to the recommendation:
  - Network Rail have incorporated snowmelt into adverse weather processes applicable to earthworks, by revising standard NR/L2/OPS/021;
  - introducing NR/L3/OPS/021 Issue 1 and NR/L3/OPS/021/08 Issue 1, which require consideration of rapid snowmelt and ground thaw; and
  - Issue 8 of NR/L2/OPS/021 now includes the Integrated Weather Management Plan (IWMP)
3. ORR is satisfied that this demonstrates the completion of the evaluation.
4. As an additional measure, Scotland Route Control now employing Weather Operations Delivery Managers (WODMs), whose role includes consideration of snowmelt and ground thaw. Further improvements are proposed in the form of Rail Operations Weather System (ROWS), which will improve Network Rail's handling of all weather data.
5. 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
  - has taken action to close it

**Status: Closed.**

**Previously reported to RAIB**

6. On 10 June 2019 ORR reported the following:

The recommendation states that Network Rail should complete its evaluation of the means by which snowmelt can be incorporated in adverse weather processes applicable to earthworks. It is not clear from the response that the evaluation has been completed, what the outputs were from it and if the Future Weather Service Development Programme (FWSDP) process was part of the outcome. We have asked Network Rail to explain the output/conclusion of the evaluation and details of how this will be incorporated in a revised process.

In addition, we are aware Network Rail are developing a new internal standard: NR/L2/CIV/086 Module 03 – Geohazard Assessment, in direct response to the Loch Eilt landslip.

### **Update**

7. On 19 April 2023 Network Rail provided the following closure statement:



[N212-07] Loch Eilt  
Rec 1 Closure.docx

## Previously reported to RAIB

### Initial consideration by ORR

1. The recommendation was addressed to ORR when the report was published on 7 August 2018.
2. After considering the recommendations ORR passed the recommendation to Network Rail 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 the recommendation to the attention of other infrastructure managers (HS1 and HS2) as it was concluded that that there are equally important lessons for them. ORR did not ask these organisations to provide a reply.
4. This annex identifies the correspondence with end implementers on which ORR's decision has been based.

### Recommendation 1

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### ORR decision

5. The recommendation states that Network Rail should complete its evaluation of the means by which snowmelt can be incorporated in adverse weather processes applicable to earthworks. It is not clear from the response that the evaluation has been completed, what the outputs were from it and if the Future Weather Service Development Programme (FWSDP) process was part of the outcome. We have asked Network Rail to explain the output/conclusion of the evaluation and details of how this will be incorporated in a revised process.
6. In addition, we are aware Network Rail are developing a new internal standard: NR/L2/CIV/086 Module 03 – Geohazard Assessment, in direct response to the Loch Eilt landslip.
7. 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, but have not yet fully explained to us the works they are undertaking or the timescale for completion.

**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**

8. On 29 April 2019, Network Rail provided the following initial response:

*Network Rail are currently looking to develop a solar radiation/temperature/cloud cover map or list of high risk locations to identify the likelihood of snow melt as part of the specification of the Future Weather Service Development Programme (FWSDP) owned by the Operation Weather Resilience Manager or nominated deputy.*

*Once the solar radiation/temperature/cloud cover map or list of high risk locations has been developed this will provide the capability for the routes through their geotechnical teams to carry out a detailed assessment and to examine the risks at these sites. The tool will be detailed in NR/L3/OPS/021 Module 4; the implementation of this process shall be audited.*

*Also included within the specification we will request a method by which ground thaw can be forecast.*

*The FWSDP will commence in late April 2019 and will work on developing a specification by end December 2019. The Future Weather Service is due for implementation in August 2020 and this element of the project is due for completion in December 2020.*