

RAILTRACK

*Safety & Standards***SAFETY JUSTIFICATION****ISSUE: I****PART 1 - DOCUMENT INFORMATION**

Document Title:	Mitigation of DC Stray Current Effects		
Document No:	GL/RT1253	Issue:	One
Primary Subject Committee:	Electrification		
Other Subject Committee input/ involvement:	Train Control & Communications		
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PART 2 - EXECUTIVE SUMMARY

This is a new document, which amends and supersedes GM/RT1018. The changes that are proposed to GL/RT1253 take into account the requirements for high speed and tilting trains which in the context of this standard are related to the introduction of a new form of traction power supply system onto Railtrack controlled infrastructure. The primary objective of the redraft of the document was to make it generic and therefore applicable to any sort of traction power supply system. A number of other amendments have also been made to clarify existing requirements.

PART 3 - BACKGROUND**Need for change**

- GM/RT1018 was reviewed against the background of higher speed (in excess of 125mile/h); tilting operations and the introduction of a new traction power supply system.

Proposed changes

- Withdrawal of GM/RT1018 Issue One – DC Traction – Stray Current and Cathodic Protection – Control of their Undesirable Effects;
- Introduction of GL/RT1253 Issue One – Mitigation of DC Stray Current Effects.

The standard has been re-categorised to reflect its application to multi-disciplinary infrastructure activities and re titled to reflect its scope more accurately. The new standard mandates requirements to mitigate against the risk caused by the import of DC stray currents and closer compatibility with EN50122-2 has been achieved. The following aspects have been considered in the drafting of this standard:

- The need to make a clear distinction between this standard, which deals with the need to mitigate against the risks created by imported DC stray currents and GL/RT1254 which deals with the control of the export of DC stray current;
- The need to consider dual electrified lines and adjacent traction power supply systems;

- The need for testing to assess the effectiveness of DC stray current control measures;
- The need to maintain the effectiveness of the control measures;
- Inclusion of a requirement on the Infrastructure Controller to co-operate with third parties to mitigate DC stray current effects;
- Changes to align the definitions and principles with EN 50122-2.

Controls and their function

Measures to control the risk created by DC stray currents can be implemented in two ways namely the control of the generation i.e. the export of stray current and control of the effect i.e. the import of stray current. This standard deals with the latter case. It requires that the Infrastructure Controller identifies those infrastructure elements, which may be adversely effected by stray currents including those created by cathodic protection systems. It requires that the implementation of any DC stray current measure, new or modified cathodic protection scheme, or remedial action following testing is not commenced until the acceptability of the measure is confirmed by the Infrastructure Controller and all relevant parties. The standard clarifies that the measures to prevent electric shock contained within GL/RT1254 take precedence over the measures to mitigate the risk of DC stray current.

Part 4 - COSTS AND BENEFITS

The requirements will ensure that the risk that DC currents pose to the safe operation of infrastructure systems is properly assessed and all effected parties agree the mitigation measures. These requirements are not expected to introduce further costs as they generally clarify and reinforce the existing measures.

Part 5 - CONCLUSION

The proposals are necessary to control the risk posed by stray currents and limit the scope of the standard to the mitigation of the effect of the stray current on infrastructure equipment.

Part 6 – REFERENCES

GL/RT1254
EN 50122-2