

Prescot Grid fault level mitigation

Reinforce without flexibility



Prescot 132/33kV grid substation is supplied from within the Rainhill 132kV GSP group via 2 x 60MVA Grid Transformers (GTs) and is operated split with the 33kV bus section run as a normal open point. The 'A' board supplies the Bold/Prescot/Widnes 33kV grid group, which supplies ca. 47,000 customers. The 'B' board supplies the Gateacre/Huyton/Kirkby/Prescot 33kV grid group, which supplies ca. 68,000 customers.

Constraint

FAULT LEVEL
The 'B' board currently experiences fault level exceedances under both normal and abnormal running arrangements of the upstream Rainhill 132kV substation, both make and break duties are in exceedance of the legacy switchgear ratings under abnormal running arrangements. The fault duty exceedances are operationally managed. This fault level constraint presents a barrier to low-cost timely connection of additional generation in the grid group in the RIIO-ED2 price control period and beyond.

Decision

Reinforce without flexibility
The proposed solution is to connect a new 60MVA, 6% impedance series reactor into the Prescot GT1A 33kV cable tails feeding the 'B' board; this will reduce the fault both the make and break fault level duties to within the switchgear rating, under normal and abnormal running arrangements of Rainhill 132kV substation.

Justification for decision

Due to the predicted increase in fault levels, operational management is not an enduring solution. Procurement of flexibility would not reduce fault level.

Flexibility product

N/A

Constraint season(s)

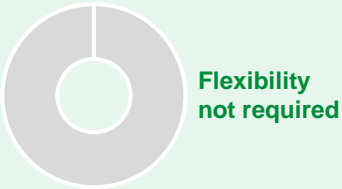
Year round

Flexibility guide price

N/A

Reinforcement timescale

2027/28



Flexibility
Tendering

Closed

Flexibility would not relieve fault level constraints.

Technical Appraisal

More detailed technical information on the nature of the constraint, network impacts, solutions considered and selected intervention are available in this scheme's [Engineering Justification Paper](#)

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Feedback can be emailed to: systemdesignteam@spenergynetworks.co.uk

Flexibility position at March 2024	2023/24	2024/25	2025/26	2026/27	2027/28
Risk duration (hours)					
Peak flexibility required (MW)					
Flexibility procured (MW)					
Flexible MW capacity met (%)					