### Minutes of the 6<sup>th</sup> Meeting of the ER P24 Task Group

### 6<sup>th</sup> December 2016

Held at the Holiday Inn (next to National Grid Offices), Warwick.

Attendees:

Name	Initials	Company
Gavin Baxter	GBa	NPg
Graham Brewster	GBr	WPD
Ben Gomersall	BG	National Grid (NGrid)
Roger Pateman	RPn	National Grid (NGrid)
Stuart Stone	SS	SSEN
Pavel Januska	PJ	SSEN
Richard Parke	RPe	Threepwood Consulting Ltd (TCL)

#### Apologies:

Dave Hewings	NR
Razvan Pabat-Stroe	SPEN

## 1. Welcome, Introductions

GBa welcomed everybody to the sixth meeting of the ER P24 Task Group.

Attendance, apologies and absences were noted.

## 2. Minutes and Actions from previous meeting (17.10.16)

RP presented the previous minutes and actions for review. Those outstanding actions were noted and RP reminded relevant persons to follow-up as soon as possible.

### 3. General

The Group discussed the latest working draft of the document.

BG advised the Group that NR are conducting tests at Didcot over the Christmas holidays. It is envisaged that NR may reach a conclusion on the harmonic resonance, following the tests.

The Group agreed that a revision of ER G38 should be recommended to ENA.

### ACTION: RPe to advise ENA of the need to revise ER G38.

The Group identified key parts of the working draft (v0.6) which require review.

The Group agreed that a full draft of the document should be prepared by end of January 2017.

# ACTION: RPe to prepare a summary of the key areas for review and circulate the latest working draft.

## Summary of Actions to be completed by 27/01/16

## A. All Task Group Members

Clause	Action
All	Complete a technical review of the document.

### B. Network Rail Actions (DH)

Clause	Action
3	Review definitions
4.1	Review and simplify the overview of Railway Systems.
4.2	Review and simplify the overview of train characteristics.
	Please note that Clause 8 will include a 'potted history' of traction technology.
4.3	Provide a brief description of Regenerative braking
5.3.5.2	Provide description of the 'voltage profile analysis' undertaken during return
	current path design.
6.4	Confirm relevance of the 'Timescale' described in this clause.
8.1	Provide a 'potted history' of traction technology development, over the years.
8.2	Provide brief description of a modern traction load current pattern.
12.1.7	Confirm agreement with new clause for the neutral reactor winding.
13	Provide photo of the isolatable link, on the return current busbar
13	For single point bonding – confirm which end of 25 kV feeder the cable is
	bonded; assume this is switchgear end?
14.5.2	Confirm that an unearthed neutral connection remains valid and relevant.
14.7	Review and confirm that the overview of NR protection policy is correct.
A.2.2	Provide brief description of a 'Voltage boost/SVC' system.

## C. National Grid Actions (BG and RPn)

Clause	Action
10 and	Disturbance estimation: Review the existing guidance on disturbance
Annex D	estimation. Confirm whether any part of Annex D remain relevant.
12.6	Site Access: Provide functional description of the dual access arrangements
	at the Patfield Bridge site.
14.6	Protection: Review the descriptions in Clauses 14.5.1, 14.5.2 and 14.5.3 and
	confirm their relevance for 2x25 KV transformer connections.
A.1	Scott transformer: provide description of the Scott transformer and the
	potential short falls of using it.

# D. NPG Actions (GBa)

Clause	Action
12.7	Provide any available details of the metering arrangements for existing NR
	supply connections.
Annex B	Review Annex B and provide any additional information to aid description of
	SFC connections.

## E. WPD Actions (GBr)

Clause	Action
5.3.6.2	Confirm agreement with the description of AC auxiliary supply earthing.
12.7	Provide any available details of the metering arrangements for existing NR
	supply connections.
13	Confirm review by ENA ECG has been completed.