

Minutes of the Tenth Meeting of the ER P28 Joint GCRP and DCRP Working Group

9th June 2016

Held at the ENA, Dean Bradley House, 52 Horseferry Road, London, SW1P 2AF

1. Welcome, Introductions

GE welcomed everybody to the tenth meeting of the ER P28 Joint GCRP and DCRP Working Group (WG) to review the case and proposed scope of review of ENA Engineering Recommendation P28 Issue 1 Planning Limits for Voltage Fluctuations caused by Industrial, Commercial and Domestic Equipment in the UK (P28).

Attendance, apologies and absences were noted (see Appendix B for Attendance List including member initials).

GE welcomed Richard Newman UKPN who was standing in for Steve Mould.

2. Address by the Chair

GE thanked the WG members for their contributions and presented the agenda (see Appendix C for Agenda)

[Document reference: P28 WG_Paper_10_1_Agenda_P28 WG_Meeting 10_09.06.16_v0.1

[Document reference: Presentation_P28 WG_Meeting 10_09.06.16_v1]

[Document reference: COMPETITION ACT COMPLIANCE.docx]

In addition to the standard agenda items the purpose of the meeting was to review the sub-WGs progress and to give feedback on their proposals.

The WG members were respectfully reminded of ENA requirements to adhere to The Competition Act Compliance - ENA Meetings – Best Practice Guidelines document which was attached to the agenda for this meeting.

There were no comments.

3. Update/Actions from Last Meeting

It was agreed the draft minutes were a fair and accurate account of the previous meeting and could be published in the public area of the DCode website without amendment.

[Document Reference:

P28 WG_Paper_10_2_P28 Meeting Minutes and Actions_21 04 16_v0.1_Issued]

ACTION 10.1: Publish the approved P28 minutes meeting no. 9 21.04.16 on the DCode website (GE)

GE presented an update on the actions from the last meeting.

[Document Reference: P28 WG_Paper_10_3_Update_P28 Meeting Minutes and Actions]

GE noted the actions marked 'Complete' in the 'Due by' column had been completed and, where applicable, the number of the Paper was referenced.

With reference to Action 9.2 GE reported that Mike Kay had responded and believed the summary of the impacts of the EU Network Codes on P28 was correct. Mike Kay advised

implementation guidelines will be published for consultation in autumn 2016. The main technical rules and requirements concerning voltage apply to stability of generation, particularly under through fault conditions. There are no particular references to voltage fluctuation or flicker so there is no material impact on P28. There is also no reference to EMC, IEC 61000 or power quality requirements.

[Document Reference: P28 WG_Paper 10_4 Action 9.2_Impact of EU Network Codes]

Action 9.8 The WG members present recommended that the step voltage change limit should be expressed as a percentage of nominal system voltage - it was agreed to proceed with a limit of 3% for voltage step change (DV/SSc).

Action 9.15 GE also asked Bernard Pentecost Chair of the Transformer Assessment Panel for their comments on how magnetic inrush is impacted by new transformer designs. GE reported no response received back yet.

Action 9.17 AH expressed concern that if charging requirements for EVs were relaxed it could potentially remove manufacturers' incentives for soft starts, however as long as the requirements of BS EN 61000-3-3 are met this should not be a problem (KL). Perhaps a more generic statement could be used to ensure manufacturers stay engaged (AH/JD). To keep P28 Issue 2 concise it was suggested that guidance on the application of soft starts should be part of the accompanying Technical Report (GE).

Action 9.18 GE reported limited response from Network Operators on compiling background flicker data due to:

- lack of power quality monitors
- lack of comms - data is written over where fixed power quality monitors are fitted
- power quality measurements only tend to be taken when background levels are requested by connectees or in the event of a complaint - hence no historic data

The WG discussed the need for more historical data measurements to determine trends and draw conclusions. Several members offered to pursue this again and report back. To date UKPN and ENW had provided information.

[Document reference: Presentation_P28 WG_Meeting 10_09.06.16_v1 slides 9-11]

[Document Reference: P28 WG_Paper_10_13_UKPN Flicker Data]

[Document Reference: P28 WG_Paper_10_14_ENW Flicker values]

Historically no central database has been maintained for logging background flicker so available data is limited with potentially misleading interpretation of results. DV suggested it would be useful to analyse the number of flicker complaints and the change in rate of those complaints. Although there was no evidence of problems with the current procedures it is important that the WG investigates whether the P28 is effective in preventing unacceptable voltage fluctuations to other customers connected to the system concerned.

ACTION 10.2: Check whether NIE has historical background flicker data measurements to determine trends and draw conclusions (PJ)

ACTION 10.3: Check whether ENW has historical data measurements for no. of complaints relating to flicker to determine trends and draw conclusions (PTw)

ACTION 10.4: Check whether SPEN has historical background flicker data measurements to determine trends and draw conclusions (KL)

ACTION 10.5: Ask FG if NG has historical background flicker data measurements to determine trends and draw conclusions (GE)

Action 9.20 JD checked Paper 9_8 against IEC 61400-21 edition 2 “Measurement and assessment of power quality characteristics of grid connected wind turbines”. The standard specifies methods but not limits. It identifies two distinct types of voltage fluctuation caused by wind turbines:

- Voltage fluctuations in continuous operation - stated as the 99th percentile of the calculated flicker coefficient values at 4 different network impedance angles and four different wind speed distributions – $\alpha = 2$
- Voltage fluctuations caused by the following switching operations – $\alpha = 3.2$ which is unlikely

ACTION 10.6: Amend Paper 9.8 to incorporate comments from JD (GE)

IEC 61400-21 Parts 1 and 2 are currently being amended and should be completed by January 2017 (DC). It was not clear what type of review was being undertaken but it is understood that FG is participating in the review. It would be useful to know whether the changes will impact on the work being done by the WG.

ACTION 10.7: Advise update on changes to the revision to IEC 61400-21 (FG)

4. Terms of Reference (ToR)

[Document Reference: ER P28 WG_ToR_v2.2_Issued]

GE stated there had been no changes to the ToR. No comments were received from the WG.

5. Status of Phase 3 Revision

GE briefly highlighted the status of the Phase 3 Revision noting the current stage deadline to submit the 1st Draft by the beginning of June had been ambitious but it was nearing completion. However it was decided to revise the program with 6-8 weeks delay.

[Document Reference: Slide 16 in Presentation_P28 WG_Meeting 10_09.06.16_v1]

ACTION 10.7a: Update project plan timescale with 6-8 weeks delay (GE)

GE had reviewed the Phase 2 report and was satisfied the issues raised were being addressed in Phase 3.

AH stated the chosen method of apportioning flicker for Stage 3 could potentially affect the timeline. It was noted that FG had previously reported that an allocation method was not deemed necessary. No evidence or rationale for change had been found by the WG. However it was agreed Transmission Systems Operators should be given an opportunity to have their say. WPD may wish to review their original response (AH). GE agreed to review previous discussions and issue a proposal clearly stating the claim, argument and evidence for using an apportionment method.

ACTION 10.8: Issue a proposal advocating apportionment method using a claim, argument and evidence approach for AE, KL and AH to assess (GE)

6. Reports from sub-WGs

6.1 Flicker Assessment & Limits sub-WG

DV presented an update on the progress made by the Flicker Assessment & Limits

sub-WG

[Document Reference: P28 WG_Paper_10_16_Flicker sub-WG MoM]

[Document Reference: P28 WG_Paper_10_17_Flicker sub-WG_Presentation]

[Document Reference: Presentation_P28 WG_Meeting 10_09.06.16_v1 slides 18-21]

The salient points are captured in slides 18 to 21 of the above presentation.

A summary of the issues raised by the sub-WG and discussion in the meeting were as follows:

- The sub-WG concluded there was no justification in changing to an allocation methodology
- Although the IEC methodology contains different planning levels to P28 it would be possible to align them using transfer coefficients. It is recommended that such calculations should be part of the accompanying Technical Report
- Looking at the flow diagram on slide 20 of the presentation it was agreed to highlight the options available should the fluctuating installation fail the criteria at any stage. For example: if not compliant with Stage 1, then proceed to Stage 2 etc.
- The WG discussed the generic statement previously issued by SSc for the EMC assessment route in IEC 61000-3-14 which is self-certifying with evidence of meeting certain requirements. It was agreed this could be problematical and it might be better to acknowledge the options but not to necessarily to follow them. DV suggested Stage 2 options should either be to meet the EMC requirements or to proceed to a technical file route (Stage 3)

ACTION 10.9: Ask SSc about the Stage 2 non-compliant route options (AH)

ACTION 10.10: Review proposed flowchart in Paper 10_17 Flicker sub-WG_Presentation (slide 3) by 23.06.16 (All)

- No strong case found to change the $P_{st} = 0.5$ which is applicable to Stage 2 assessments – if it was lower it could increase the no. of Stage 3 assessments or if it was higher it could increase flicker
- P28 is a standalone planning document with a set of requirements. It should be a sleek “process describing” document providing simplified assessment methodologies, with examples of application written into appendices or into the accompanying Technical Report along with relevant data. It is deemed necessary to reference other standards documents without need of duplicating them in full.

It was agreed the accompanying Technical Report should not be too onerous to prepare. The Phase 2 Report which is concise in its approach is a good basis for the preparation of the Technical Report. It was agreed that GE would prepare the purpose, scope and objectives of the Technical Report for WG approval.

The current P28 document uses extensive engineering language mixing up planning, emissions and compatibility levels and assumes a level of competency and knowledge. The aim of P28 Issue 2 is to set out a clear concise middle ground approach (MH).

ACTION 10.11: Propose the purpose, scope and objectives for the P28 accompanying Technical Report (GE)

It was agreed the Drafting Team will write the requirements with technical input provided by the Flicker Assessment & Limits sub-WG.

6.2 Voltage Step Change sub-WG

RB presented an update on the progress made by the Voltage Step Change sub-WG
[Document Reference: P28 WG_Paper_10_15_Step Voltage Change Sub-WG_Meeting 10 Presentation]
[Document Reference: Presentation_P28 WG_Meeting 10_09.06.16_v1 slides 22-28]

A summary of the issues raised by the sub-WG and discussion in the meeting were as follows:

- Propose to use nominal voltage as opposed to initial voltage for %change given this is in line with IEC
- Propose to use time based steady state condition rather than voltage gradient based
 - 5 seconds after the event (in line with Distribution code), assuming all major events such as planned switching, AVC, static VAR compensator action, transients that cause step voltage change completes within 5 seconds time window
 - Voltage gradient based is in line with RVC definition within P28
- P28 should define steady state condition
 - Discussion around whether VSC and RVC should be combined (DV) with GE stating they are different. RVC is a window in time with reference to where you started whereas steady state condition is about the nominal voltage.
 - Nominal voltage does not capture the impact on the rest of the network. Solar farms look at all possibilities (MH)

6.3 Rapid Voltage Change sub-WG

On behalf of FG, GE presented the progress made by the Rapid Voltage Change sub-WG which shows tabulated limits for RVC
[Document Reference: RVC Limits-1-1]
[Document Reference: P28 WG_Paper_10_7_Voltage Swell Considerations]
[Document Reference: Presentation_P28 WG_Meeting 10_09.06.16_v1 slides 34-37]

A summary of the issues raised by the sub-WG and discussion in the meeting were as follows:

- Action 9.13 referred to the development of a voltage swell envelope. For a summary of responses see Paper 10-7
- The causes of voltage swells is listed in slide 35 of the group presentation with two more identified in the meeting – battery storage and long a.c. cables

ACTION 10.12: Update voltage swell causes (see slide 35 of ppt) with

- **Battery storage including fast frequency response and switching in of long length a.c. cables (GE)**
- PTh questioned whether using voltage rise would be more appropriate than voltage swell. DC suggested checking the definition in BS EN 50160 for clarity

ACTION 10.13: Check definition of swell in BS EN 50160 (GE)

- GE had circulated ETR 129 Rise of Earth Potential Report (Action 9.14) to identify insulation requirements at higher than nominal voltages. DV also suggested IEC/TR 60664-2-1:2011 Insulation Coordination for equipment within low voltage systems could be a useful reference noting that P28 refers to normal operating conditions (i.e. controlled) which was an important point to remember

- DV explained various categories of RVC – frequent events, infrequent events and very infrequent events with application examples for each category
- Frequent events Figure 1
 - Formula was derived from Figure 4 in P28
 - Possibility of commissioning some tests – what about old equipment - 50 years old?
 - SSc looking at LV test house and insulation standards
 - IEC 60664 LV Insulation – insulation damage not thought to be a problem (DV)
 - ITIC curve limits – it states 120% for up to 0.5 seconds
 - Swell limited to 0.8 seconds due to G59 Stage 1 over voltage protection
 - RVC sub-WG is satisfied with voltage swell limits
- Infrequent events Figure 2
 - Not to scale
 - Pre-event voltage: dip -10%, swell +6% in 0.8 seconds
 - Focussed on Stage 1 only
 - V_0 -10% is close to G59 under voltage protection (KL)
- JD highlighted the need for P28 Issue 2 to stress recommendation that G59 Protection (Embedded Generator Regulations) is not affected. Should be part of the accompanying Technical Report – in addition to diagrams stating G59 limits
- Assistance is required from the Drafting sub-WG with the wording around this proposal. WG members were asked to critically appraise this report

ACTION 10.14: Critically review & comment on FG report RVC Limits-1-1 by 30.06.16 GE to allocate a Paper no. for it (All)

ACTION 10.15: Send current working version of P28 report to DV (GE)

6.4 Measurements & Specific Applications sub-WG

PTh presented an update on wind turbine flicker data
[Document Reference: P28 WG_Paper_10_6 Update on WT Flicker Data]

A summary of the issues raised by the sub-WG and discussion in the meeting were as follows:

- PTh highlighted three more records:
 - 9 DFIG @ 33kV, 6 DFIG @ 38kV and 1 DFIG @ 11kV
 - 6 DFIG @ 38kV shows P_{st} disturbance for 0.5 seconds
 - 1 DFIG @ 11kV taken at a sewerage works shows no direct correlation between power and this type of flicker from a wind turbine
 - Shows voltage and current - step voltage change
 - Raw data is available if required
- More data is required from solar farms (MH)

A round the table discussion led to members volunteering to obtain data if it was available. It was suggested that Primrose Solar, Lightsource (member of STA), Solar Century and Lark Energy were possible sources of information and data.

ACTION 10.16: Provide RES data from UK solar site that has a flicker meter (JD)

ACTION 10.17: Ask Nicola Waters Primrose Solar for data from solar sites showing changes in background flicker under cloud cover changes (GE)

ACTION 10.18: Ask SSc to obtain data on flicker measurements under cloud cover changes (AH)

ACTION 10.19: Provide comparisons for mag inrush for 3 different transformer types (PTh)

6.5 Drafting sub-WG

GJE presented a summary of progress made by the Drafting sub-WG
[Document Reference: Presentation_P28 WG_Meeting 10_09.06.16_v1 slide 39]

- Progress continues to be made with general non-technical aspects
 - Section 3 Terms & Definitions being developed
 - Incorporating comments received since last meeting
- Technical aspects
 - Section 5 'Compatibility & Planning Levels' – general requirements being developed
 - Section 6 'Assessment' – Operating conditions for assessments being drafted
 - Some work being carried out on Measurements and Specific Applications with respect to including aspects from existing P28

The WG had no particular comments.

7. Review Papers and Proposals from WG

Responses to Action 9.22 (Paper 10-10)

GE presented Paper 10-10 whether P28 should reference P2 and, if not, how security of supply standards should be addressed with conclusions and recommendations.
[Document Reference: Slide 41-44 in Presentation_P28 WG_Meeting 10_09.06.16_v1]
[Document Reference: P28 WG_Paper_10_10_Reference to P2]

It was agreed that P28 Issue 2 should provide guidance using high level principles and criteria to follow thereby removing the existing ambiguity. A summary of the salient points discussed is captured below:

- P28 does not reference ER P2 or explicitly security of supply
- BS EN 61000-3-7 defines normal operating conditions and what is excluded
- P28 does not give guidance on defining time periods
- In practice DNOs define operating conditions. It would be useful to have Network Operators operating consistently using a set of principles based on normal conditions and typical fault levels (MH/JD)
- Scope for an exchange of information between the utility and the connectee (DV)

Responses Paper 10-12

GE presented a graphical presentation on behalf of SSc showing data from three 33kV PV parks
[Document Reference: Slide 45-48 in Presentation_P28 WG_Meeting 10_09.06.16_v1]
[Document Reference: P28 WG_Paper_10_12_33 kV PV Data WPD]

It was agreed an interpretation of the graphs would be useful.

ACTION 10.20: Ask SSc for an interpretation of the graphs shown in Paper 10.12 (AH)

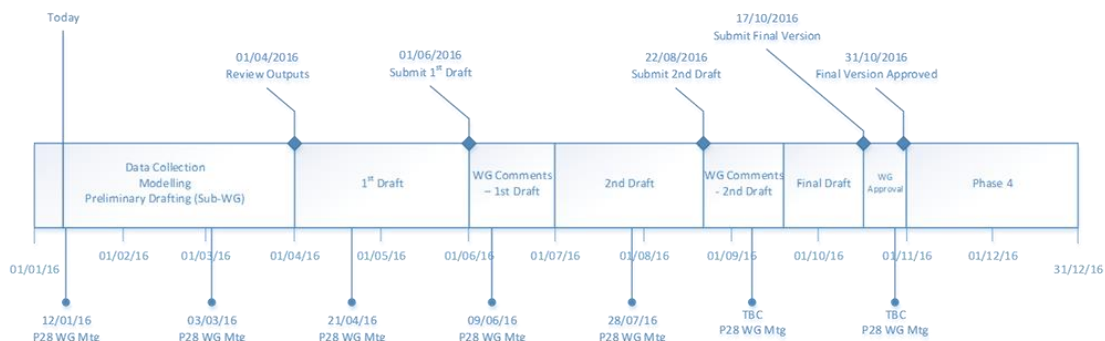
8. Project Plan

[Document Reference: Slide 16 in Presentation_P28 WG_Meeting 10_09.06.16_v1]

[Document Reference: P28 WG_Paper_7_6_ENA_EREC_P28_Ph3_Project Plan_v0.1]

See discussion in Section 5 Status of Phase 3 Revision

The deadline for the data collection, modelling and preliminary drafting of the sub-WG outputs was 1st April 2016 which has been delayed. It was decided to revise the program with 6-8 weeks delay (Action 10.8)



9. General Management/Administration

Arrangements for general management and administration had not changed since the previous meeting.

GE hoped to circulate a copy of the draft P28 Issue 2 with the papers for the next meeting.

DV requested access to reference documents quoted in the P28 Issue 1. However it was noted many had been superseded by other documents.

ACTION 10.21: Request a copy of specific documents referenced in P28 Issue 1 and DC/ENA will share them with the WG (DV)

10. AOB

Single phase welders is an area that needs addressing in terms of how to assess from a flicker perspective (DV)

ACTION 10.22: Add agenda item to next meeting to discuss how to assess single phase welders from a flicker perspective (GE)

No other business was raised by members of the WG.

11. Date and Venue for Future Meetings

The following dates have previously been agreed for future meetings:

- 28th July 2016
- 8th September 2016
- 26th October 2016

The venue for P28 WG meetings in 2016 is Energy Networks Association, 6th Floor Dean Bradley House, 52 Horseferry Road, London SW1P 2AF

Appendix A

ER P28 Joint GCRP & DCRP Working Group Meeting No.10

Summary of Actions from Current Meeting

Item	Action	Who	Due by
10.1	Publish the approved P28 minutes meeting no.9 21.04.16 on the DCode website	GE	
10.2	Check whether NIE has historical background flicker data measurements to determine trends and draw conclusions	PJ	
10.3	Check whether ENW has historical data measurements for no. of complaints relating to flicker to determine trends and draw conclusions	PTw	
10.4	Check whether SPEN has historical background flicker data measurements to determine trends and draw conclusions	KL	
10.5	Ask FG if NG has historical background flicker data measurements to determine trends and draw conclusions	GE	
10.6	Amend Paper 9.8 to incorporate comments from JD	GE	
10.7	Advise update on changes to the revision to IEC 61400-21	FG	
10.7a	Update project plan timescale with 6-8 weeks delay	GE	
10.8	Issue a proposal advocating apportionment method using a claim, argument and evidence approach for AE, KL and AH to assess (GE)	GE	
10.9	Ask SSc about the Stage 2 non-compliant route options	AH	
10.10	Review proposed flowchart in Paper 10_17 Flicker sub-WG_Presentation (slide 3) by 23.06.16	All	
10.11	Propose the purpose, scope and objectives for the P28 accompanying Technical Report	GE	
10.12	Update voltage swell causes (see slide 35 of ppt) with <ul style="list-style-type: none"> • battery storage including fast frequency response and • switching in of long length a.c. cables 	GE	
10.13	Check definition of swell in BS EN 50160	GE	
10.14	Critically review & comment on FG report RVC Limits-1-1 by 30.06.16 GE to allocate a Paper no. for it	All	
10.15	Send current working version of P28 report to DV	GE	
10.16	Provide RES data from UK solar site that has a flicker meter	JD	
10.17	Ask Nicola Waters for data from solar sites showing changes in background flicker under cloud cover changes	GE	
10.18	Ask SSc to obtain data on flicker measurements under cloud cover changes	AH	
10.19	Provide comparisons for mag inrush for 3 different transformer types	PTh	
10.20	Ask SSc for an interpretation of the graphs shown in Paper 10.12	AH	
10.21	Request a copy of specific documents referenced in P28 Issue 1 and DC/ENA will share them with the WG	DV	
10.22	Add agenda item to next meeting to discuss how to assess single phase welders from a flicker perspective	GE	

Summary of Outstanding Actions from Previous Meetings

Item	Action	Who	Due by
9.3	Arrange to carry out simultaneous flicker measurements over a period for a disturbing load at 275 kV in the South-West of England	FG/AH	In progress - awaiting NG monitors
9.10	Review ETR 125 for nominal voltages / pre event values / sensitivity to change and IEC Standard 61000-2-8	SVC sub-WG	TBA
9.15	Contact transformer manufacturers to clarify how magnetic inrush is impacted by new transformer designs	GE	Awaiting response from BEAMA - Email 05/06/16
9.17	Contact Jim Cardwell Northern Powergrid for a copy of LCNI smart grid presentation	GE	Awaiting response - Email 05/06/16 See Paper 10_11 from Roshan Bhattarai
9.19	Prepare paper to highlight the scenarios where an allocation approach could be considered for Stage 3 assessment at different voltage levels (GE)	GE	In progress
7.29	Measurement & Specific Applications sub-WG to consider problem with defining flicker & harmonics when not in generating conditions	PTh	In Progress
6.12	Find out the high level cost of Stage 3 Assessment	GE	In Progress
5.8	Ask ENA what the formal mechanism is for obtaining access to data that has been gathered	GE	In Progress
4.14	Ask person who responded to Briefing Paper 1 regarding possible relaxation of planning limits for 'weak' networks with "hydro connections" to provide clarification of technical issue and more detail on flicker/RVC caused by these connections	GE	In Progress

Summary of Completed Actions in Current Meeting

Item	Action	Who	Due by
9.1	Subject to amending wording before Action 8.18 publish the approved P28 minutes meeting no. 8 03.03.16 on the DCode website	GE	Complete
9.2	Obtain response from DCRP representative with respect to the perceived impacts of the EU Network Codes on P28 <i>see email 07/06/16 from Mike Kay</i>	GE	Complete
9.4	Follow up with DC what data can be obtained in relation to Action 8.10 <i>see email 07/06/16 from David Crawley</i>	GE	Complete
9.5	Send updated draft minutes of last meeting of Flicker sub-WG to GE for circulation <i>see Paper_10_16</i>	DV	Complete
9.6	Circulate latest P28 Issue 2 draft to Flicker sub-WG to assist with drafting section on Stage 1 assessment	GE	Complete

9.7	Summarise the pros and cons of both options (time based and voltage gradient based) for defining step voltage change and to make a recommendation to the main WG see Paper_10_15	RB	Complete
9.8	Recommend whether step voltage change limit should be a percentage of nominal system voltage or pre-event voltage see Update/actions for Item 9.8 in presentation and Paper 10_8	RB	Complete
9.9	Establish why there is a 3% limit for step voltage change between steady state conditions - where does it come from and how does it align with Figure 4 of ER P28 Issue 1? 3% limit is a globally imposed limit and voltage regulations do not propose to change. Proceed with 3% limit	DV	Complete
9.11	Upload updated version of RVC sub-WG Paper 9_12 PowerPoint presentation (includes useful notes not contained in PDF version) onto P28 WG website	GE	Complete
9.12	Update WPD briefing paper on RVC in light of RVC sub-WG proposals	SSc	Withdrawn
9.13	Send voltage swell considerations to GE by 12.05.16 see Paper 10_7	All	Complete
9.14	Contact ENA Earthing Standards Group Coordinator for ETR 129 - Rise of Earth Potential Report see Paper 10_5	GE	Complete
9.16	Upload PTh spreadsheet of wind turbine flicker data and KL spreadsheet of Pst flicker background levels onto the P28 WG website and circulate additional papers received	GE	Complete
9.18	Network operators to compile background flicker data (Pst - 95th percentile) from sites with monitoring over the last few years to determine trends and draw conclusions Limited response due to issues with obtaining meaningful data. NIE, ENW, SPEN & NG to check again	NOs	Superseded see actions 10.2 – 10.5
9.20	Check Paper 9_8 against IEC 61400-21 see Paper 10_8	JD	Complete
9.21	Individual members to review and comment on Paper 9_16 (EirGrid Grid Code Changes) before the next WG meeting no responses received to date but paper was an interesting read	All	Complete
9.22	Consider whether it is appropriate P2 is referenced in P28 Issue 2 and, if not, how should security of supply standards be addressed? see Paper 10_10	GE	Complete
8.7	Advise what measurement data/analysis is required from Network Operators to support recommendations from Flicker sub-WG and email ENA PQ&EMC Group	DV/ GJE	Complete
8.10	PQ&EMC Group to advise what data/analysis can be provided by Network Operators in response to Item 8.7	DC	Complete
7.3	WG members to advise justifications why existing Stage 1 Assessment is not acceptable	All	Complete
7.18	Obtain the latest developments on connections by EV manufacturers See Action 9.17	PTh	Complete
7.28	Obtain information on the different allocation methodologies that other countries use and forward to DV/GE	All	Complete

Appendix B

ER P28 Joint GCRP & DCRP Working Group Meeting No.10

Attendance List

9th June 2016 ENA Office, London

Attendees:

Name	Initials	Company
Roshan Bhattarai	RB	Northern Powergrid
Adrian Ellis	AE	SSE
Andrew Hood	AH	WPD
Mark Horrocks	MH	HVMS
Peter Johnston	PJ	NIE
Ken Lennon	KL	SP Energy Networks
Richard Newman	RN	UKPN
Peter Twomey	PTw	ENW
Davor Vujatovic	DV	VandA Engineering Services
Peter Thomas	PTTh	Nordex
Mark Kilcullen	MK	Department of Energy & Climate Change
Joe Duddy	JD	RES Group
David Crawley	DC	ENA
Gary Eastwood	GE	Threepwood Consulting Ltd
Michelle Chambers	MJC	Threepwood Consulting Ltd

Apologies:

Steve Mould	SM	UKPN
Forooz Ghassemi	FG	National Grid
Nicola Waters	NW	Primrose Solar
Matthew Ball	MB	Ofgem
Tony Headley	THe	BEAMA
Sridhar Sahukari	SS	Energy UK

Absences: -

Additional Contributors not in attendance:

Simon Scarbro	SSc	WPD
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Appendix C

ER P28 Joint GCRP & DCRP Working Group Meeting No.10 Thursday 9th June 2016, 10:30 – 15:30

Agenda

1.	Welcome, introductions, Competition Act Compliance	GJE	10:30
2.	Address by the Chair	GJE	
3.	Update/actions from last meeting	GJE/ALL	
4.	Terms of Reference (ToR)	GJE/ALL	
5.	Status of Phase 3 Revision	GJE/ALL	
6.	Reports from sub-WGs <ul style="list-style-type: none">• Progress• Issues for discussion with Main WG	GJE/ALL	
7.	Review Papers and Proposals from WG	ALL	
8.	Project plan	GJE	
9.	General management/administration <ul style="list-style-type: none">• On-line repository requirements• Consultation process• Support requirements	GJE	
10.	AOB	ALL	
11.	Future meetings <ul style="list-style-type: none">• Dates• Agenda items		15:30

Lunch will be provided at 12:30

For location of venue and map visit:

<http://www.energynetworks.org/info/find-us/map.html>

Please advise any special access and/or dietary requirements as soon as possible to:

michelle.chambers@threepwoodconsulting.com