CP1505 'Allowing 'off site' Commissioning of Current Transformers (CTs) preinstalled in cut outs or switchgear at manufacture for use in Low Voltage (LV) installations'

This CP Consultation was issued on 9 April 2019 as part of CPC00786, with responses invited by 4 May 2018.

Consultation Respondents

Respondent	No. of Parties/Non-Parties Represented	Role(s) Represented
Western Power Distribution	1	Distributor
ESP Electricity Ltd	1	Distributor
Imserv Europe Ltd	1	Supplier Agent: HHMOP NHHMOP
SP Distribution SP Manweb	1	Distributor
Southern Electric Power Distribution plc Scottish Hydro Electric Power Distribution plc	1	Distributor
ScottishPower	2	Supplier, Supplier Agent: CVA MOA, SVA HH MOA
TMA Data Management Ltd	1	Supplier Agenet: HHDC, HHDA,NHHDC and NHHDA
SSE Energy Supply Ltd SSE Electricity Ltd	2	Supplier, Supplier Agent: NHH MO
Npower	6	Generator, Supplier, Non Physical trader, Supplier Agent: HHDA
Siemens Managed Services	1	Supplier Agent: HHMOA
Association of Meter Operators	1	Trade association representing Meter Operators

Summary of Consultation Responses

Respondent	Agree?	Impacted?	Costs?	Impl. Date?
Western Power Distribution	✓	✗	✗	✓
ESP Electricity Ltd	✓	✓	✗	✓
Imserv Europe Ltd	✓	✗	✗	✓
SP Distribution SP Manweb	✓	✓	✗	✓
Southern Electric Power Distribution plc Scottish Hydro Electric Power Distribution plc	✓	✓	✓	✓
ScottishPower	✓	✗	✗	✓
TMA Data Management Ltd	✓	✗	✗	✓
SSE Energy Supply Ltd SSE Electricity Ltd	✗	✓	✓	✗
Npower	✗	✓	-	✗
Siemens Managed Services	-	-	-	✗
Association of Meter Operators	✓	✗	-	✓
Northern Powergrid	✓	✗	✗	✓

Question 1: Do you agree with the CP1505 proposed solution?

Summary

Yes	No	Neutral/No Comment	Other
8	2	1	1

Responses

Respondent	Response	Rationale
Western Power Distribution	**Yes**	WPD agrees with the principle of the proposed solution but disagrees with some of the detail, as follows: (i) The inclusion of the phrase "at manufacture" (ii) The restriction solely to current transformers (iii) The restriction solely to low voltage installations COP4 Section 5.5.2 requires all commissioning tests to be carried out 'on-site'. It is not always practical or convenient for some of the tests to be completed 'on site', and more importantly, there is often negligible risk to settlement if some of the tests were carried out 'off-site', and fewer safety hazards for commissioning staff. Currently WPD carries out certain tests in our depots. These tests meet the CoP4 requirements (other than the requirement that the Commissioning be performed on site). We disagree with the inclusion of the phrase "at manufacture" because it is unnecessarily restrictive and would rule out our current practices. We disagree with the restriction to current transformers and LV installations as there are other tests that can be carried out 'off-site' with negligible risk to settlement. The overriding criteria should be whether connections are likely to be disturbed following 'off-site' testing (e.g. during dispatch to site and erection on site). There is negligible risk where equipment remains fully assembled.
ESP Electricity Ltd	**Yes**	Currently the Metering Code of Practice – COP4 – has a requirement to commission current transformers (CTs) "on site". CTs that have been pre-installed in distributors' cut-outs have been commissioned and certified at manufacture. As a pre-sealed unit, any tampering would make the manufacturer's certification null and void. The

Respondent	Response	Rationale
		sealed design of pre-installed cut outs removes the risk of tampering between leaving the manufacturer's site and prior to installing the cut out on site. This CP streamlines the process for commissioning, and removes the requirement for 'on site' attendance by the distributor, making for a more efficient use of resource.
Imserv Europe Ltd	**Yes**	n/a
SP Distribution SP Manweb	**Yes**	We believe that this a pragmatic way forward to manage the process.
Southern Electric Power Distribution plc Scottish Hydro Electric Power Distribution plc	**Yes**	We are fully supportive of the proposed solution. Commissioning of meter equipment off-site is a cost effective solution with no detriment to Settlements.
ScottishPower	**Yes**	n/a
TMA Data Management Ltd	**Yes**	n/a
SSE Energy Supply Ltd SSE Electricity Ltd	**No**	We do not agree with the CP1505 proposed solution because the changes may increase ambiguity of meaning around Commissioning requirements described in CoP4, which in turn could lead to misinterpretation of requirements and therefore increase risk to Settlement. As per the Supplier Hub principle, Suppliers are ultimately responsible for ensuring that all Metering System installations are fully Commissioned. We take the view that to allow 'off site' Commissioning testing by manufacturers would introduce unnecessary risks of discrepancies in the testing process. Since the 'on site' Commissioning requirement would still apply for other metering systems such as HV, Extra HV and large LV, so it also should still apply for LV. To further clarify our rationale, we have included the following additional commentary: We propose that the justifications for the change, as provided in the CP1505 consultation document under 'What is the Issue'?' and 'Proposer's rationale' sections of the document, do not provide enough evidence of the benefits that would be brought by the change, or of how the additional risk that would be introduced would be negated. The redlinings to CoP4 also do not address these. The term LV, though referenced in the consultation document as

Respondent	Response	Rationale
		defined in The Electricity Supply and Continuity Regulations 2002, could be misinterpreted due to the term's general application within the metering industry to other installations, i.e. where a remote meter panel is installed on large LV supplies. The statement regarding CTs being 'delivered in sealed units' requires further definition to remove ambiguity of meaning, i.e. whether it is a complete Metering System or only a part of a Metering System. The suggestions that 'on site' Commissioning testing is not always 'practical', 'possible' or 'cost efficient' should not be applied specifically to LV to justify this change, as the commissioning requirement would still apply for other Metering Systems, i.e. HV, Extra HV and large LV. Additionally, where dual ratio CTs are employed, i.e. 600/400/200/5, the 'off site' testing cannot ensure to final selected CT ratio is accurately configured for the circuit being metered until installed 'on site', therefore requiring 'on site' alteration to small wiring. The statement that Commissioning testing for some LV CTs 'may not be physically possible' suggests that the design is restrictive, which may impact on the requirement of phase rotation at the meter terminals. In the process of reviewing this change, it has also come to our attention that the details of Commissioning in CoP4 are incongruous with BSCP514. There is no process in BSCP514 to describe when a DNO is required to commission a measurement transformer (CT or VT) that is replaced due to a fault under CoP4. It would be worth addressing this in order to minimise the risk of confusion or potential risk to Settlement.
Npower	**No**	We believe at this stage, further clarity is required around this solution before it is viable for the industry. Please see the questions we have around this solution below: • We are unsure that if the metering is to be commissioned "off-site", are we sure that there will be no changes to the work carried out on site, therefore rendering the previous commissioning redundant? • From a HHMOP SVA perspective and for LV installations, how are we going to receive the commissioning documents from the LDSO/DNO in regards to P283? We know that there is a change scheduled to be implemented for November in the

Respondent	Response	Rationale
		form of DTC CP 3522 and 3523 however will the LDSO send this information out once commissioned "off-site" or once installed? If they send it when the "off-site" work is carried out then the date will differ from the install date, is this covered? • In regards to a CVA standpoint will the documentation be updated in the CVA BSC? Because of the above points, we feel that further work is required at this time alongside the answers to the above questions before this CP can be accepted.
Siemens Managed Services	**Neutral**	We are unable to agree with the proposed solution because we believe that it does not fully encompass all the realities of CT installations. Some makes of CT Chambers are installed by DNOs are also sourced directly by IDNO and BNOs. Therefore it would be difficult to distinguish between an "off site" tested unit and a non tested unit. We have concerns that we have been unable to find in the proposal any reference to any method to give the DNO and MOA confidence that the CTs have not been tampered with when they have installed into Cabinets prior to delivery to site and that they have been 'off-site tested' on behalf of the DNO. To overcome this CTs to be security tagged or marked with a security seal that is traceable when pre-installed in a Cabinet which in turn would also need a unique identifier and traceable. The CT serial numbers and CT Chamber serial would need to be recorded by DNO and the CT Chamber as part of any "site testing" and recorded against the MPAN by DNO as part of the new DTC flows.
Association of Meter Operators	**Yes subject to comments**	The proposed text covers the off-site commissioning, but it still requires something to ensure that the responsible party transports and installs the equipment correctly in accordance with the manufacturers' instructions – so that there are volts at the TTB, the phases and volts are aligned, etc. Testing off-site still means it must be installed and connected correctly The off site commissioned equipment will be labelled in a generic way. At site, the phase rotation may actually be non-standard. So, the preinstalled equipment labelling is misleading but can be

Respondent	Response	Rationale
		corrected by the Meter Operator in the wiring between the TTB & the Meter. To resolve this, I think the 'MOCOPA label' should be used by the installing Distributor to highlight a non-standard phase rotation. This may require amendment to the MOCOPA label design. However, the proposed change could include a some text like… "The Distributor should indicate on the MOCOPA label where the standard terminal labelling does not correctly reflect actual incoming phase rotation."
Northern Powergrid	**Yes**	As per the answers to questions 3 and 6 this proposal has a positive impact on both settlement risk and customer service.

Question 2: Do you agree that the draft redlining delivers the CP1505 proposed solution?

Summary

Yes	No	Neutral/No Comment	Other
6	4	1	1

Responses

A summary of the specific responses on the draft redlining can be found at the end of this document.

Respondent	Response	Rationale
Western Power Distribution	**No**	WPD disagrees with some of the detail as explained in our response to Question 1 above. See 'CP Redlined Text' section below for suggested re-wording. The redlining for 5.5.2 and 6.2: • Includes an obligation to carry out "Additional" commissioning tests, but these tests are not specified. • Includes an obligation to "confirm…secure connections". CoP4 currently does not include an obligation to perform this check when commissioning is carried out on site. • Refers to "connections from the Meter up to and including the Testing Facilities" whereas it should refer to connections from the measurement transformers up to and including the Testing Facilities. See 'CP Redlined Text' section below for suggested re-wording. The redlining for 5.5.4: • Refers to the "third party Commissioning agent". The testing may be carried out by a BSC Party off-site. • Requires "contact details" to be provided. WPD is of the view that this is inappropriate as contact details do not have to be provided in any other circumstance. This information is also unnecessary as the BSC Party is responsible for organising any site audit. • Refers to auditing "a manufacturer

Respondent	Response	Rationale
		completing offsite Commissioning". The testing may be carried out by a BSC Party off-site.
ESP Electricity Ltd	**Yes**	n/a
Imserv Europe Ltd	**No**	Statement - Any such damage would be identified by the MOA. This would be ensured through the MOA's additional site testing which is still required under CoP4. Please clarify what additional site testing MOA's will complete. Meter Operators are obligated to commission the metering equipment in line with COP4. It doesn't address the issue of inaccessible CT's/VT's in a BNO system
SP Distribution SP Manweb	**Yes**	n/a
Southern Electric Power Distribution plc Scottish Hydro Electric Power Distribution plc	**Yes**	n/a
ScottishPower	**Yes**	Part 1 of the commissioning of current Transformers are performed 'Off site', however the Burden / load will still require to be measured 'On site' where the metering equipment is remote from the CT panel to ensure are within the correct limits.
TMA Data Management Ltd	**Yes**	n/a
SSE Energy Supply Ltd SSE Electricity Ltd	**No**	As we do not agree with the proposed solution in principle, we also do not agree with the proposed redlining.
Npower	**Yes**	n/a
Siemens Managed Services	n/a	n/a
Association of Meter Operators	**No – subject to comments**	There is ambiguity about additional tests, as it was discussed with ELEXON that there are no extra tests, just what the MO will already do. So suggest this sentence is removed: Current Transformers preinstalled in LV cut outs or switchgear off site and delivered to site for

Respondent	Response	Rationale
		connection may be Commissioned off site provided this is done in accordance with Section 5.5.2 of CoP4 other than the requirement that the Commissioning be performed on site. ~~Additional Commissioning tests will be required on site by the MOA to complete a full Commissioning test in line with CoP4 obligations and confirm correct and secure connections from the Meter up to and including the Testing Facilities~~. Where the current transformers are not owned by a BSC Party then the Registrant of the Metering System, via its appointed MOA, shall be responsible for ensuring these requirements are met.
Northern Powergrid	**No**	We agree with the principle of the change but think the red line text could be significantly reduced to still achieve the required change. The section allocated provides our suggested text and the reasons why.

Question 3: Will CP1505 impact your organisation?

Summary

Yes	No	Neutral/No Comment	Other
6	5	1	0

Responses

Respondent	Response	Rationale
Western Power Distribution	**No**	This CP simply endorses our current working practices.
ESP Electricity Ltd	**Yes**	For cut-outs that have CTs pre-installed, and the accuracy of the CTs has been certified at manufacture, obliging a distributor to be 'on site' for commissioning is not cost effective or an efficient use of resource.
Imserv Europe Ltd	**No**	We would be unsure of the impact to processes (certainly for the Field) until the parameters for additional testing are defined.
SP Distribution SP Manweb	**Yes**	Implementation of this process will require closer contact with the relevant manufacturers with a requirement to ensure that they audit the quality and accuracy of the CT under their own quality management systems that also meet our quality requirements. In addition we will also require to put in place a process to ensure that the manufacturer test certificates are received in a timely manner.
Southern Electric Power Distribution plc Scottish Hydro Electric Power Distribution plc	**Yes**	CP1505 will have a positive impact on our organisation by reducing unnecessary site visits. This equates to a more effective use of resources. This change will require changes to processes and documentation but these are minimal.
ScottishPower	**No**	No significant impact. We can incorporate to our way of working.
TMA Data Management Ltd	**No**	n/a
SSE Energy Supply Ltd SSE Electricity Ltd	**Yes**	Potentially this change would require changes to MOA testing equipment and therefore additional MOA training.
Npower	**Yes**	If this change is accepted there will be a required change to MOP as well as Field Processes which will

Respondent	Response	Rationale
		have an impact on our business.
Siemens Managed Services	**n/a**	n/a
Association of Meter Operators	**No**	n/a
Northern Powergrid	**Yes**	This will have a positive impact on NPg as we are one of a number of LDSOs who use integrated metering CT panels for standard LV installations. As these are standard CT ratio units it reduces the risk of CT/meter mismatch and therefore has a positive effect on settlement risk. In addition, as these units are commissioned in a controlled factory environment we consider the risk of commission error is reduced as they can be commissioned with injected load rather than rely solely on prevailing load on site which may be the only other option.

Question 4: Will your organisation incur any costs in implementing CP1505?

Summary

Yes	No	Neutral/No Comment	Other
2	7	3	0

Responses

Respondent	Response	Rationale
Western Power Distribution	**No**	This CP simply endorses our current working practices.
ESP Electricity Ltd	**No**	n/a
Imserv Europe Ltd	**No**	n/a
SP Distribution SP Manweb	**No**	No, we don't envisage any additional costs as we are currently liaising with manufactures to manage this process.
Southern Electric Power Distribution plc Scottish Hydro Electric Power Distribution plc	**Yes**	We will incur minimal one-off costs to implement the change.
ScottishPower	**No**	n/a
TMA Data Management Ltd	**No**	n/a
SSE Energy Supply Ltd SSE Electricity Ltd	**Yes**	It is not possible to provide specific costs at this time. However, this change could require one-off purchase of alternative test equipment, such as in the case of possible restriction on panel design.
Npower	**n/a**	We are not sure at this stage until the above questions have been answered.
Siemens Managed Services	**n/a**	n/a
Association of Meter Operators	**n/a**	n/a
Northern Powergrid	**No**	n/a

Question 5: Do you agree with the proposed implementation approach for CP1505?

Summary

Yes	No	Neutral/No Comment	Other
9	2	1	0

Responses

Respondent	Response	Rationale
Western Power Distribution	**Yes**	This CP simply endorses our current working practices and consequently we have no issues with an implementation date of 1 November 2018. We would be happy with a 28/06/2018 implementation date since there is nothing in the CP that compels a Party to do anything different if they do not wish to.
ESP Electricity Ltd	**Yes**	Implementation is proposed for 1st November 2018 – the next BSC release. As there are no system impacts for ESPE and ELEXON do not envisage a system impact or central.
Imserv Europe Ltd	**Yes**	It makes sense to have the CT's/VT's tested remote from site if that is the only feasible way of completing the test. It will save on time & cost.
SP Distribution SP Manweb	**Yes**	n/a
Southern Electric Power Distribution plc Scottish Hydro Electric Power Distribution plc	**Yes**	The implementation date is acceptable.
ScottishPower	**Yes**	n/a
TMA Data Management Ltd	**Yes**	n/a
SSE Energy Supply Ltd SSE Electricity Ltd	**No**	We do not agree that this change should be implemented, therefore we do not agree with the proposed approach.
Npower	**No**	Although we feel that the timescale is capable for implementing this change, we would still require a response to the above questions before accepting the implementation approach.

Respondent	Response	Rationale
Siemens Managed Services	n/a	n/a
Association of Meter Operators	**Yes**	n/a
Northern Powergrid	**Yes**	n/a

Question 6: Will your organisation accrue any procedural benefits or financial savings as a result of the implementation of CP1505?

Summary

Yes	No	Neutral/No Comment	Other
3	7	2	0

Responses

Respondent	Response	Rationale
Western Power Distribution	**No**	This CP simply endorses our current working practices.
ESP Electricity Ltd	**Yes**	ESP Electricity will have procedural and cost benefits as we will no longer be obliged to attend site for unnecessary 'on site' commissioning of CTs.
Imserv Europe Ltd	**No**	n/a
SP Distribution SP Manweb	**No**	While we agree this proposed solution is a pragmatic way forward, we do not fully agree with the argument that it is not practicable to test on site as this is something we have done in the past and could be required in the future.
Southern Electric Power Distribution plc Scottish Hydro Electric Power Distribution plc	**Yes**	Our organisation will be able to reduce costs around site visits for LV installations.
ScottishPower	**No**	Part 1 of the commissioning of current Transformers are performed 'Off site', however the Burden / load will still require to be measured 'On site' where the metering equipment is remote from the CT panel to ensure are within the correct limits.
TMA Data Management Ltd	**No**	n/a
SSE Energy Supply Ltd SSE Electricity Ltd	**No**	n/a
Npower	**n/a**	We are not sure at this stage.
Siemens Managed Services	**n/a**	n/a
Association of	**No**	n/a

Respondent	Response	Rationale
Meter Operators		
Northern Powergrid	**Yes**	The installation of the integrated CT metering units eliminates the need to install, wire and commission CTs on site therefore reducing the time spent on site. In addition, it means the operative installing the units does not require specific 'metering' skills to install the units so therefore allows for a much wider range of operatives who can install them. This gives us much more resource flexibility to facilitate customer demands and has a positive effect on customer service.

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Respondent	Location	Comment
Western Power Distribution	5.3.1	WPD suggests the proposed redline text for this section is changed as follows: For the avoidance of doubt where measurement ~~current~~ transformers ~~contained within a LV cut outs or switchgear~~ are Commissioned off site in line with section 5.5.2 (paragraph 3) the requirements detailed in sections 5.3.1 (Responsibility for Calibrations and Maintenance of Records) and 5.3.2 (Initial Calibrations) shall still endure and remain with the relevant BSC Party. The BSCCo (or any delegated 3rd party) shall have the right to audit any ~~manufacturers performing~~ Commissioning performed off site to ensure that this Commissioning is undertaken in line with CoP4 requirements. Any non-compliance found shall be the responsibility of the relevant BSC Party responsible for Commissioning.
Western Power Distribution	5.5.1	WPD suggests the proposed redline text for Note 7 to this section is changed as follows: '[7] or relevant network operator, as appropriate. Where measurement ~~current~~ transformers are Commissioned off site in line with paragraph 3 (section 5.5.2) then the BSC Party responsible for the Commissioning of measurement transformers shall ensure a traceable process exists and is followed for the periodic calibration of instruments used for Commissioning. '
Western Power Distribution	5.5.2	WPD suggests the proposed redline text for this section is changed as follows: 'Measurement ~~Current~~ Transformers preinstalled in an enclosure ~~LV cut outs or switchgear~~ off site and where subsequent access or alteration is not expected under normal circumstances, ~~delivered to site for connection~~ may be partially Commissioned off site provided this is done in accordance with Section 5.5.2 of CoP4 other than the requirement that the Commissioning be performed on site. ~~Additional~~ Commissioning tests will be required on site by the MOA[7] to complete the ~~a~~ full Commissioning tests in line with CoP4 obligations

Respondent	Location	Comment
		and confirm correct ~~and secure~~ connections from the measurement transformers ~~Meter~~ up to and including the Testing Facilities. Where the measurement ~~current~~ transformers are not owned by a BSC Party then the Registrant of the Metering System, via its appointed MOA, shall be responsible for ensuring these requirements are met.'
Western Power Distribution	5.5.4	WPD suggests the proposed redline text for this section is changed as follows: 'Where measurement transformer Commissioning has taken place off site, records shall include the identity of the offsite ~~third party~~ Commissioning agent along with the ~~contact details and~~ address at which the testing was performed. For the avoidance of doubt, where BSCCo intends to audit ~~a manufacturer completing~~ offsite Commissioning, BSCCo will contact the BSC Party responsible for ~~ensuring the requirements of COP4 Section 5.5 have been met~~ the Commissioning of measurement transformers. It is the responsibility of said Party to organise the site audit.'
Western Power Distribution	6.2	WPD suggests the proposed redline text for this section is changed as follows: 'Current Transformers preinstalled in an enclosure ~~LV cut outs or switchgear~~ off site and where subsequent access or alteration is not expected under normal circumstances, ~~delivered to site for connection~~ may be partially Commissioned off site provided this is done in accordance with Section 6.2 of CoP4 other than the requirement that the Commissioning be performed on site. ~~Additional~~ Commissioning tests will be required on site by the MOA[7] to complete the ~~a~~ full Commissioning tests in line with CoP4 obligations and confirm correct ~~and secure~~ connections from the current transformers ~~Meter~~ up to and including the Testing Facilities. Where the current transformers are not owned by a BSC Party then the Registrant of the Metering System, via its appointed MOA, shall be responsible for ensuring these requirements are met.'
ESP Electricity Ltd	5.3.1	A typographical error – there should be a space between 'and' and '5.3.2 (Initial Calibrations)'.

A typographical error – there should be a space between 'and' and '5.3.2 (Initial Calibrations)'.

Respondent	Location	Comment
Imserv Europe Ltd	n/a	n/a
SP Distribution SP Manweb	n/a	n/a
Southern Electric Power Distribution plc Scottish Hydro Electric Power Distribution plc	n/a	n/a
ScottishPower	n/a	n/a
TMA Data Management Ltd	n/a	n/a
SSE Energy Supply Ltd SSE Electricity Ltd	n/a	n/a
Npower	n/a	n/a
Siemens Managed Services	n/a	n/a
Association of Meter Operators	n/a	n/a
Northern Powergrid	5.3.1	~~'For the avoidance of doubt where current transformers contained within a LV cut outs or switchgear are Commissioned off site in line with section 5.5.2 (paragraph 3) the requirements detailed in sections 5.3.1 (Responsibility for Calibrations and Maintenance of Records) and5.3.2 (Initial Calibrations) shall still endure and remain with the relevant BSC Party.~~[1] The BSCCo (or any delegated 3rd party) shall have the right to audit any manufacturers performing Commissioning off site to ensure that the~~is~~ Commissioning is undertaken in line with CoP4 requirements. Any such audit will be facilitated by the BSC Party responsible for ensuring the requirements of 5.5 are performed on its Metering Equipment up to and including the Testing Facilities.[2] Any non-compliance found shall be the responsibility of the relevant BSC Party responsible for the Commissioning.' 1) It is not necessary to include this text in this section as the existing text still works for pre-

Respondent	Location	Comment
		commissioned units i.e. Regardless of how the CTs are commissioned it is still the BSC Party owning the equipment that is responsible for ensuring the requirements of 5.3 are met. 2) Added this into section 5.3.1 instead of 5.5.4 as I think it fits better here. Therefore, the proposed additional red-line text for section 5.3.1 is: 'The BSCCo (or any delegated 3rd party) shall have the right to audit any manufacturers performing Commissioning off site to ensure that the Commissioning is undertaken in line with CoP4 requirements. Any such audit will be facilitated by the BSC Party responsible for ensuring the requirements of 5.5 are performed on its Metering Equipment up to and including the Testing Facilities. Any non-compliance found shall be the responsibility of the relevant BSC Party responsible for the Commissioning.'
Northern Powergrid	5.5.2 – First sentence	'Commissioning tests ~~on site~~[1] shall be performed to confirm and record where appropriate the following:' 1) This section also includes off site commissioning in the proposal so "on site" should be removed.
Northern Powergrid	5.5.2 – proposed new words	'Commissioning tests shall be performed on site with the exception of where Current Transformers are ~~preinstalled~~ integrated[2] within ~~LV~~ low voltage[3] ~~cut outs or~~ switchgear[4] at manufacture. Providing there is no further alteration[5] to the Metering Equipment following Commission some elements[6] of the Commissioning tests ~~off site and delivered to site for connection~~ may be carried out ~~Commissioned~~ off site ~~provided this is done in accordance with Section 5.5.2 of CoP4 other than the requirement that the Commissioning be performed on site. Additional Commissioning tests will be required on site by the MOA to complete a full Commissioning test in line with CoP4 obligations and confirm correct and secure connections from the Meter up to and including the Testing Facilities. Where the current transformers are not owned by a BSC Party then the Registrant of the Metering System, via its appointed MOA, shall be responsible for ensuring these requirements are met.~~[7]' 2) think this is a better word than preinstalled

Respondent	Location	Comment
		3) LV is not defined within CoP4 so will need to be added to section 4 – definitions and interpretations – or just use the words 'low voltage'. 4) These are in ISUs too so I think the word 'Switchgear' covers all. 5) Included this as any alteration to any of the equipment will invalidate the factory commission. Also, LV ACB installations with a remote meter panel would still require some on-site commission. 6) Not all can be done off site. 7) I don't think any of this is required as paragraphs 1 and 2 of section 5.5 already cover this. The introduction of pre-commissioned units should not cause the MOA to carry out additional commissioning tests.