ISG111/03

Meeting name	Imbalance Settlement Group (ISG)
Date of meeting	27 April 2010
Paper title	Change Proposal Progression
Purpose of paper	For Decision
Synopsis	This paper provides: • CP1324 and CP1326 for your consideration and agreement on their progression; and • a summary of all Open Change Proposals (CPs) and Draft Change Proposals (DCPs).

1 Introduction

1.1 This paper presents an update on CP1324[1] which was deferred, pending further clarification, at the last ISG meeting. We will ask you to make a decision on the progression of CP1324 following our clarification.

1.2 In addition we will present CP1326[2] for you to make a decision on its progression.

2 Change Proposals for Decision

2.1 CP1324 'Access Requirements for Offshore Metering Installations at 132kV or Above' update

2.1.1 At ISG110 in March you deferred a decision on CP1324 and requested that we add some examples (using explanations and diagrams) to the proposed changes to the Metering Codes of Practice (CoPs 1&2), in order to clarify the implications of the changes to these documents.

2.1.2 The examples that we propose to add to the CoPs describe two possible communication arrangements for Offshore Metering Systems. These are intended as illustrative examples to help participants to understand what the new CoP requirements mean in practice. The examples consider arrangements using fibre optic lines, but the implications of the examples are applicable to arrangements using other communications media (e.g. satellite, radio).

2.1.3 In addition to the above, you also requested that we ask DONG Energy to review the examples and report their views, and any consequent changes to the additional examples. DONG Energy was specified because you believed it would be useful to obtain views from an organisation that was not directly involved during the formulation of the solution and because DONG Energy has the technical knowledge required to assess the recommended changes to Offshore requirements.

2.1.4 DONG Energy have reviewed our suggested additions to the CoP 1 and 2 changes, and confirmed to us that they consider the new drafting of the CoPs to be sufficiently clear and agree with the suggested examples (Please refer to Attachments G and H).

[1] 'Access Requirements for Offshore Metering Installations at 132kV or Above'
[2] 'Update to BSCP128 from lessons learnt exercise carried out with LDSOs'

2.1.5 Note that the examples are just to clarify the original solution that CP1324 aimed to introduce, and therefore do not constitute a material change to CP1324. We therefore believe that it is not necessary to issue an updated version of CP1324 for further impact assessment. The Offshore Transmission arrangements are due to go live in June 2010, so the aim is to implement CP1324 in the June Release, to align with Offshore go live. This can be achieved if approval is granted before the end of April.

2.1.6 We recommend, based on your previous agreement with the rest of CP1324 and approval of ELEXON's recommended changes[3] to the redlining, our belief that the examples added to the CoPs provide the required clarification, and Dong Energy's support of the new examples, that you:

- **AGREE** our suggested amendments to the Code of Practice documents;
- **APPROVE** CP1324, including the examples to be added to the CoPs, for implementation in the June Release.

2.2 CP1326 'Update to BSCP128 from lessons learnt exercise carried out with LDSOs'

2.2.1 We raised CP1326 on 24 February 2010 and subsequently issued it for impact assessment (via CPC00676) in February 2010.

2.2.2 BSCP128[4] (introduced in 2009) brought in a new audit process for the Line Loss Factors (LLFs). ELEXON has just completed the audit process for the first time and, together with the LDSOs, we identified a number of process improvements.

2.2.3 CP1326 proposes to amend BSCP128 and four of its appendices to make the audit process more efficient for LDSOs and ELEXON.

2.2.4 We received 11 responses; of these 9 agreed and 2 were neutral. Parties did not highlight any adverse affects associated with this change.

2.2.5 We recommend, based on CP1326 improving on the current process by ensuring that overlapping processes and identified inefficiencies are removed and majority industry support, that you:

- **AGREE** our suggested amendments to the redline text; and
- **APPROVE** CP1326 for implementation in the June 2010 Release.

3 Summary of Recommendations

3.1 We invite you to:

a) **AGREE** our suggested amendments to the redline text for CP1324;

b) **APPROVE** CP1324 for implementation in the June 2010 Release;

c) **AGREE** our suggested amendments to the redline text for CP1326; and

d) **APPROVE** CP1326 for implementation in the June 2010 Release.

[3] Please refer to the ISG109 Minutes for the discussions relating to the redline changes.
[4] BSCP128 – 'Production, Submission, Audit and Approval of Line Loss Factors'

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List of Appendices:

Appendix 1 – Detailed Analysis of CP1326
Appendix 2 – New Change Proposals
Appendix 3 – Summary of Open Change Proposals
Appendix 4 – BSC Releases

List of Attachments:

Attachment A – CP1326 v1.0
Attachment B – CP1326 BSCP128 redlined
Attachment C – CP1326 BSCP128 Appendix 1 redlined
Attachment D – CP1326 BSCP128 Appendix 2 redlined
Attachment E – CP1326 BSCP128 Appendix 3 redlined
Attachment F – CP1326 BSCP128 Appendix 4 redlined
Attachment G – CP1324 Examples added into CoP1
Attachment H – CP1324 Examples added into CoP2

Appendix 1 – Detailed Analysis of CP1326 - Update to BSCP128 from lessons learnt exercise carried out with LDSOs

1 Why Change?

1.1 Background

1.1.1 We raised CP1326 on 24 February 2010 and subsequently issued it for impact assessment (via CPC00676) in February 2010.

1.1.2 BSCP128 was introduced on 20 April 2009 as a result of Modification P216 'Audit of LLFs'. It replaced the existing processes for the submission and approval of Line Loss Factors (LLFs).

1.1.3 BSCP128 brought in a new audit process for the LLFs submitted by Licensed Distribution System Operators (LDSOs). This audit process is undertaken by ELEXON.

1.2 The Problem

1.2.1 We have completed the audit process for the first time and, together with the LDSOs, we have identified a number of potential improvements e.g. overlapping processes for the Host and Embedded LDSOs have resulted in unnecessary costs to the Embedded LDSOs and this can be resolved by changing the timing of the submission.

1.2.2 We held a workshop with LDSOs on the 27 January 2010 to review these improvements. Broad agreement was reached at this workshop and we subsequently received agreement from all LDSOs prior to raising CP1326.

1.2.3 The aim is to implement these changes in the June 2010 release so they can be implemented prior to the next audit process commencing in September 2010.

2 Solution

2.1 In order to put into effect the above improvements, we recommended that the following BSCPs be amended:

2.1.1 BSCP128 'Production, Submission, Audit and Approval of Line Loss Factors'

- 1.7 Reference to ELEXON Helpdesk changed to BSC Service Desk;
- 1.8.2 Definitions updated to add further clarity;
- References to P216 and year 1 operation have been removed;
- 2.3 Host LDSO LLF Submission/Audit process times have been amended. There are no significant changes in the timing for Host LDSOs. The new process timings set the absolute backstop date to 10 December for re-submissions, it was previously 31 December;
- 2.4 Embedded LDSO LLF Submission/Audit process times have been amended. The major change is to delay the mirrored submission until a compliant set of LLFs are ready. With the current process Embedded LDSOs must submit 1 month after the Host submission when the LLF audits have not been completed. If one LDSO has a non-compliant LLF value all Embedded LDSOs have to re-create and re-submit the LLFs. By delaying the Embedded submission we remove the need for an unnecessary submission.
- 3.1 Methodology principles. The date range for Settlement Data used in the Generic LLF calculation has been fixed as the BSC Year and at R3 or greater. Using the latest BSC Year with R2 data would only allow a month for LDSOs to perform the LLF calculations.

2.1.2 **BSCP128 Appendix 1 'Methodology Self Assessment Document (MSAD) for Host LDSOs and Embedded LDSOs that do not Mirror'**

- The double signature requirement has been removed from all appendices. The forms will require a Category X BSC Signatory only.
- 3 questions have been added to the document for principles 14, 15 and 16 to ensure that the principles are included in the LDSO methodology statement.

2.1.3 **BSCP128 Appendix 2 'Methodology Self Assessment Document for Embedded LDSOs (MSAD) for Embedded LDSOs that Mirror'**

- The double signature requirement has been removed from all appendices. The forms will require a Category X BSC Signatory only.
- The MSAD for Embedded LDSOs now includes a data request. This is requested with the MSAD as the CSAD submission has been delayed so that it no longer overlaps the Host LDSO audit process. The data request will enable the sampling of Metering Systems to be performed prior to the CSAD submission.

2.1.4 **BSCP128 Appendix 3 'Calculation Self Assessment Document (CSAD) for Host LDSOs and Embedded LDSOs that do not Mirror'**

- The double signature requirement has been removed from all appendices. The forms will require a Category X BSC Signatory only.
- The Host LDSO CSAD data request tables have been updated. The submission will now include the LLFs by Seasonal Time of Day (STOD) period to make comparison checks quicker. Some Embedded LDSOs also use this format in the production of their LLF submissions.

2.1.5 **BSCP128 Appendix 4 'Line Loss Factor Calculation Self Assessment Document (CSAD) for Embedded LDSOs that Mirror'**

- The double signature requirement has been removed from all appendices. The forms will require a Category X BSC Signatory only.
- A question has been added to confirm if the LLFs have been re-calculated with the last 2 years.
- The Embedded LDSO CSAD data request tables have been updated. The submission will now include the LLFs by STOD period to make comparison checks quicker.

3 Intended Benefits

3.1 We believe that the process improvements will make the audit process more efficient for LDSOs and ELEXON.

3.2 In particular, this change introduces a more efficient process for those Embedded LDSOs whose Line Loss Factors mirror those of the Host LDSO.

4 Industry Views

4.1 We received 11 responses; of these 9 agreed and 2 were neutral. Parties did not highlight any adverse impacts associated with this change.

4.2 Some Parties raised minor comments on the redline changes; these comments together with our responses are detailed within table 3 below.

5 Impacts and Costs

Market Participant	Cost/Impact	Implementation time needed
ELEXON (Implementation)	11 days, equivalent to £2,640	June 2010 Release suitable
Suppliers	Suppliers have not highlighted any significant process or systems related changes.	June 2010 Release suitable
LDSO	The majority of LDSOs have indicated that this change will only require minimal process or system related changes.	June 2010 Release suitable
Party Agents	Party Agents have not highlighted any significant process or systems changes.	June 2010 Release suitable

6 Implementation Approach

6.1 The aim is to implement these changes in the June 2010 release so they can be implemented prior to the next audit process commencing in September 2010.

6.2 A respondent highlighted that they would require 180 days in order to implement the suggested changes. The respondent suggested that this change would necessitate various documentation and process related changes.

6.3 We contacted the respondent to discuss the impact of CP1326 being approved in June. The respondent stressed that they would require some time in order to implement these changes, however, they believed that they would not be adversely impacted by a June approval date. In addition the respondent reaffirmed their support for the change.

7 Conclusion

7.1 We raised CP1326 in order to introduce improvements which were identified during the previous audit. Parties have been extremely supportive of the change and have not highlighted any adverse impacts of the change.

8 Recommendation

8.1 We recommend, based on CP1326 improving on the current process by ensuring that overlapping activities and recognised inefficiencies are removed and together with majority industry support, that you:

- **AGREE** our suggested amendments to the redline text; and
- **APPROVE** CP1326 for implementation in the June 2010 Release.

Stuart Holmes

ELEXON Change Assessment

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Table 1: Industry Impact Assessment Summary for CP1326 - Update to BSCP128 from lessons learnt exercise carried out with LDSOs

IA History CPC number	CPC00667	Impacts	BSCP128, BSCP128 Appendix 1, 2, 3 and 4.

Organisation	Capacity in which Organisation operates in	Agree?	Days to Implement
Gemserv	MRASCo Ltd	Yes	0
Independent Power Networks Limited	LDSO, UMSO, SMRA	Yes	0
British Energy Direct Limited	Supplier	Neutral	0
Western Power Distribution	Distributor, MOA	Yes	30
Central Networks		Yes	0
SAIC on behalf of: ScottishPower Energy Management Ltd. ScottishPower Generation Ltd. ScottishPower Energy Retail Ltd. SP Manweb plc. SP Transmission Ltd. SP Distribution Ltd	Supplier, LDSO, HHDA, NHHDA, HHDC, NHHDC, HHMOA, NHHMOA	Yes	180
Scottish & Southern Energy	Supplier/ Generator/ Trader/ Party Agent/ Distributor	Yes	3 months
Electricity North West Ltd	LDSO	Yes	0
NPower Limited	Supplier/Supplier Agents	Yes	0
E.ON UK Energy Services Limited	NHHDC-DA MOA	Neutral	0
Stark Software Int Ltd	HHDC HHDA NHHDC NHHDA	Yes	60

Table 2: Impact Assessment Responses[5]

Organisation	Agree?	Comments	Impacted?	ELEXON Response
Gemserv	Yes	**Please provide any comments:** Makes the audit process less onerous and more efficient. **Would implementation in the proposed Release have an adverse impact on your organisation?** No **Please provide details of the associated costs on your organisation to implement the change.** None	No	-
IPNL	Yes	**For which role is your organisation impacted?** LDSO **Please state what the impact is:** Change in LLF Submission and audit process times and inclusion of data request in the MSAD for embedded LDSOs. **How much notice would you need to implement this change, if they were approved?** We believe this data to be readily available and therefore do not require any implementation/development time. **Would implementation in the proposed Release have an adverse impact on your organisation?** No	Yes	-
British Energy Direct Limited	Neutral	**Would implementation in the proposed Release have an adverse impact on your organisation?** No	No	-
Western Power Distribution	Yes	**Would implementation in the proposed Release have an adverse impact on your organisation?** No **Associated costs:** No real extra costs. The work will be absorbed within normal workload	Yes	-

[5] Please note that we have only included responses in this table where the respondent provided additional information.

Organisation	Agree?	Comments	Impacted?	ELEXON Response
Central Networks	Yes	**Do you agree with the change?** See Question 7, yes we agree but a few things still need to be addressed. **If yes, then for which role is your organisation impacted?** DNO **Please state what the impact is:** Nothing significant, just slight change to practices. **How much notice would you need to implement this change?** We'll start work nearer the time, no prior notice required. **Would implementation in the proposed Release have an adverse impact on your organisation?** No	Yes	Please refer to the points 2 -6 within the table 3 below.
SAIC on behalf of: ScottishPower Energy Management Ltd. ScottishPower Generation Ltd. ScottishPower Energy Retail Ltd. SP Manweb plc. SP Transmission Ltd. SP Distribution Ltd	Yes	**For which role is your organisation impacted?** LDSO **Please state what the impact is?** Documentation / Manual Processes / LLF production	Yes	-
Scottish and Southern Energy	Yes	**For which role is your organisation impacted?** Supplier/ Distributor **Please state what the impact is?** Minimal changes to processes and training procedures. **Would implementation in the proposed Release have an adverse impact on your organisation?** No **Associated costs:** Minimal costs	Yes	-
Electricity North West Ltd	Yes	**Would implementation in the proposed Release have an adverse impact on your organisation?** No	No	-

Organisation	Agree?	Comments	Impacted?	ELEXON Response
NPower Limited	Yes	**Please state what the impact is?** Currently we do not envisage any impacts on Systems or Processes **Would implementation in the proposed Release have an adverse impact on your organisation?** No impacts currently identified. **Associated costs:** No costs currently identified.	No	-
E.ON UK Energy Services Ltd	Neutral	-	No	-

Table 3: Comments on the redline text

No.	Organisation	Document name	Location	Severity Code[6]	Comments	ELEXON Recommendation
1	Gemserv	Not stated	Footer		The documents have "ELEXON Limited 2009" in the footer. Shouldn't this read "ELEXON Limited 2010"?	We contacted the respondent and highlighted that the references to **"ELEXON Limited 2009"** will be updated to **"ELEXON Limited 2010"** as part of the implementation of CP1326.
2	Central Networks	CSAD	Table 2.1	M	Do you mean circuit name or do you mean site name / site reference?	The second column within Table 2.1 currently states **'circuit name'** we agree with the respondent, it should say **'site name'** We do not believe that this is a material change and recommend that it is amended.
3	Central Networks	CSAD	Table 2.1	M	Do we have to provide the MVA if it is not used in our calculations?	We believe that the MVA will need to be changed to **'Agreed Capacity'** and that a foot note should be added to state '**Agreed Capacity must be provided if used in the calculation of LLFs'** The respondent was happy with this response. We do not believe that this is a material change and recommend that it is amended.

[6] High, Medium or Low

No.	Organisation	Document name	Location	Severity Code[6]	Comments	ELEXON Recommendation
4	Central Networks	CSAD	Table 2.1	M	Do you mean last annual submission? What if a mid-year update was done?	We believe that the reference to last **'annual submission'** should be changed in order to address this issue. We recommend that this be changed to last **'approved submission'**. We do not believe that this is a material change and recommend that it is amended.
5	Central Networks	MSAD	1.3 / 11	M	We still do not have a definition of "robust error detection" – last year this term was used to justify a level of scrutiny that we did not think was warranted, so we would like this to be defined.	A definition of 'robust error detection' will not be included in the BSCP. We will included a description in the guidance note and provide relevant examples of 'robust error detection' considering current industry practice. The auditor is responsible for using an appropriate level of scrutiny and if the customer feels that the approach is inappropriate this should be raised with the lead auditor. If the issue cannot be resolved it should be raised with the audit manager who will be available by phone.
6	Central Networks	BSCP128	1.8.2	H	Definition of EHV – the license no longer defines EHV.	We recommend that the definition of EHV be changed in order to future proof the solution. We suggest the definition be changed to: **'Extra High Voltage (EHV)** - **As defined in the Standard Conditions of a distribution licence granted pursuant to section 6(1)(c) of the Electricity Act 1989'.**
7	SAIC on behalf of . . .	BSCP128	Page 25, REF. 2.4.64	L	2.4.4 Being amended to 2.4.6 but the 4 does not have line through it to indicate it will be deleted – highlighted to ensure it is not missed.	We agree with the respondent and will ensure that this is addressed as part of CP1326. We do not believe that this is a material

No.	Organisation	Document name	Location	Severity Code[6]	Comments	ELEXON Recommendation
						change and recommend that it is amended.
8	SAIC on behalf of . . .	BSCP128 Appendix 1	Entire document	H	References and page numbers are inconsistent throughout entire document. A few sample examples are listed below: Page 4, 1.1 Introduction Page 6, 1. Introduction Page 4, 1.1 Introduction Page 4, 1.2 General Information Page 7, 1.1 General Information	We agree with the respondent and will ensure that this is addressed as part of CP1326. We do not believe that this is a material change and recommend that it is amended.
9	SAIC on behalf of . . .	BSCP128 Appendix 2	All page numbers following page 5	H	There are 4 instances of 'Page 7 of 8' all of which are wrong. Page 7 of 8 is actually page 6 of 9 Page 7 of 8 is actually page 7 of 9 Page 7 of 8 is actually page 8 of 9 Page 7 of 8 is actually page 9 of 9	We agree with the respondent and will ensure that this is addressed as part of CP1326. We do not believe that this is a material change and recommend that it is amended.
10	SAIC on behalf of . . .	BSCP128 Appendix 3	Page 11 Section 1.3 No.6	M	Consider removing (Y/N) option for consistency with No.5.	We agree with the respondent and suggest that the reference to (Y/N) be removed in order to be consistent with the other changes. We do not believe that this is a material change and recommend that it is amended.
11	SAIC on behalf of . . .	BSCP128 Appendix 3	Page 11 Section 1.3 No.8	M	Consider removing (Y/N) option for consistency with No.5.	Please see comments within point 10 above.
12	SAIC on behalf of . . .	BSCP128 Appendix 3	Page 12 Section 1.3 No.9a	M	Consider removing (Y/N) option for consistency with No.5.	Please see comments within point 10 above.
13	SAIC on behalf of . . .	BSCP128 Appendix 3	Page 12 Section 1.3 No.9b	M	Consider removing (Y/N) option for consistency with No.5.	Please see comments within point 10 above.

No.	Organisation	Document name	Location	Severity Code[6]	Comments	ELEXON Recommendation
14	SAIC on behalf of . . .	BSCP128 Appendix 4	Page 4 Contents 2.1	M	Title on Contents page inconsistent with title of section 2.1 on page 18. Page 4: 'Site Specific supporting information for both CVA and SVA (if applicable)' Page 18: 'Site Specific and EHV generic supporting information for both CVA and SVA (if applicable)'.	We contacted the respondent and highlighted that the reason the contents page had not changed was because the redline changes would only appear once the changes had been accepted within the document. We stressed that the title of section 2.1 on page 18 and the contents page on page 4 should say **'Site Specific and EHV generic supporting information for both CVA and SVA (if applicable)'** We do not believe that this is a material change and recommend that it is amended.
15	SAIC on behalf of . . .	BSCP128 Appendix 4	Page 13 Section 1.3 No.8		Consider removing (Y/N) option for consistency with No.5 and No.6.	We agree with the respondent and suggest that the reference to (Y/N) be removed in order to be consistent with the other changes. We do not believe that this is a material change and recommend that it is amended.
16	SAIC on behalf of . . .	BSCP128 Appendix 4	Page 13 Section 1.3 No.9a		Consider removing (Y/N) option for consistency with No.5 and No.6.	Please see comments within point 15 above.
17	SAIC on behalf of . . .	BSCP128 Appendix 4	Page 13 Section 1.3 No.9b		Consider removing (Y/N) option for consistency with No.5 and No.6.	Please see comments within point 15 above.

Appendix 2 – New Change Proposals

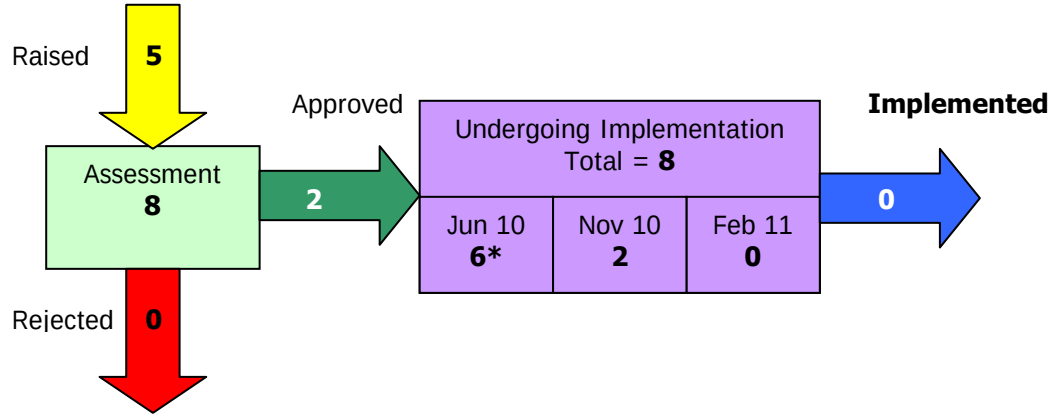
CP	CVA / SVA	Title	Description	Raised
CP1327	SVA	Inclusion of a new MDD Entity 27 (Clock Interval) form in BSCP509	MDD entity forms provide a view of what data items needs to be amended or included for a particular version of MDD. There are presently 62 entity forms listed in BSCP509. Presently the entity 27 form is not included in the list of forms in this BSCP. To allow participants make submissions related to this change, a historic spreadsheet form was created to allow participants fill in the relevant information for the change. In recent MDD publishes there have been a number of entity 27 changes and there is a possibility that the numbers will increase as Suppliers trial Smart Metering. As a result, this change proposes to include an 'entity 27' form within BSCP509 to allow for a more consistent approach for participants to submit their data items.	11 April 2010
CP1328	SVA and CVA	Changes to the ECVAA Web Service (EWS) request process	This change looks at removing the BSCP71/12 ECVAA Web Service Request Form from BSCP71. Details of the EWS would be provided to parties at the same time as sending out information for XSec version 3 and parties would choose whether to use the service if they wish. The BSC Agent Communications team would create individual account areas within the relevant central services servers and the EWS server at the same time following completion of CVA Qualification testing. The BSC Service Desk would continue to provide parties with technical support if it is required but parties would not be delayed in using the service by needing to submit the BSCP71/12 form and waiting for the Logica Second Line support team to create individual account areas within the EWS Server. The ECVAA Web Service information sheet would also be updated to reflect the new process.	11 April 2010
CP1329	SVA and	Amendment to the administration of the CVA Qualification process	This CP proposes to streamline the CVA Qualification process by reducing ELEXON's involvement in this process. As the CRA holds both the relevant data and expertise required to manage the CVA Qualification process, a more efficient solution would	11 April 2010

CP	CVA / SVA	Title	Description	Raised
	CVA		be to give the responsibility for executing and administering the process to the CRA. This change would therefore: • Enable Parties to communicate directly with the CRA throughout the CVA Qualification process. This would provide a more streamlined, efficient and expert service to our customers. • Support ELEXON in our drive to transfer responsibility for services to our BSC Agents where ELEXON are not adding value. • Reduce management overhead for the BSC Agent as a result of process improvement.	
CP1330	SVA and CVA	Streamlining ELEXON's role in the delivery of the Registration Processes	This CP aims to streamline the registration process. ELEXON believes that the registration processes can be delivered more efficiently by the CRA, by removing steps in the processes which: • Place obligations on ELEXON which are not established by the BSC; • Are internal steps that are of no benefit; or • Could be construed as micromanagement of a BSC Agent. • We aim to do this by excluding non added value actions carried out by ELEXON such as: • Duplication of receipt of BSCP forms; • Duplication of forms acknowledgement from CRA and ELEXON to Parties; • Unnecessary email authorisation of forms to CRA from ELEXON; and Dual liaison with National Grid by both ELEXON and CRA.	11 April 2010
CP1331	SVA and CVA	Streamlining the Party & CVA Party Agent Registration Processes within BSCP65 and BSCP71	This change proposes to amend BSCP65 & BSCP71 to direct the BSCP65/01 & BSCP71/05 forms to the CRA. The CRA would validate the forms in accordance with BSCP38 and check with ELEXON that a Party wishing to register its details in CRA via	11 April 2010

CP	CVA / SVA	Title	Description	Raised
			BSCP65/01 has completed the accession process and is a Party to the BSC. The CRA will be informed by an email from the BSC Service desk when a Party/CVA Party agent has completed CVA Qualification testing in accordance with BSCP70 and will process the BSCP65/01 & BSCP71/05 forms to register in the roles it has applied for within CRA. The CRA would be required to send notification of any new registration to ELEXON who will inform the industry via Newscast.	

Appendix 3 - Summary of Open Change Proposals

There are currently **15** open CPs, the ISG and SVG co-own **9** CPs, and the SVG own the remaining **6** CPs. **5** new CPs have been raised since the last ISG meeting.



Please note:

- The numbers in the boxes indicate current number of CPs in a given phase.
- The numbers in arrows show the variance in the past month.

** Changes to BSCP504 as a result of the CP1311 solution will be implemented in the June 10 Release. All other changes resulting from CP1311 were implemented in the February 10 Release.*

There are currently no open DCPs.

Appendix 4 –BSC Releases

Change Proposals and Modification Proposals in **BLACK** text represents SVA changes, **RED** text represents CVA changes and **BLUE** text represents changes which impact both the SVA and CVA arrangements.

Key

P = Modification Proposal number

Pro✓/Pro× - Indicates that the Panel's recommendation to the Authority was to Approve/Reject the proposed Modification

Alt✓/Alt× - Indicates that the Panel's recommendation to the Authority was to Approve/Reject the Alternative Modification

	Pending CPs and Modifications	Approved CPs and Modifications	Updates
February 2010 Scope (Imp. Date 25 Feb 10)		1295, **1296, 1297**, 1298, 1299, **1301**, 1302, 1303, 1304, 1306, 1307, 1308, 1310, 1311*, 1312, **1313, 1314, 1321** P246 Pro✓	The software solution for P246 is complete. Code Subsidiary Documents amended for P246 and P248 have been approved by the relevant Panel committees and will become effective on 31 March 2010. We estimate that the Release will complete at approximately 1% under budget; demand led costs at 3% under due to no use of the contingency budget and the operational costs at 2% over budget due to extra release management effort.
June 2010 Scope (Imp. Date 24 Jun 10)	**1324, 1326** P249 Pro✓, P251 Pro×/Alt×, P252 Pro×/Alt×	1309, 1311*, 1316, 1317, **1318, 1323**	The scope of the June 2010 Release currently includes six approved CPs (1309, 1311, 1316, 1317, 1318 and 1323) which only impact Category 1 Code Subsidiary Documents. No changes to Central Systems are scheduled for this release. There are no Modifications currently approved for inclusion in this release.
Nov 2010 Scope (Imp. Date 4 Nov 10)	1325, 1327, **1328, 1329, 1330, 1331**	1267, **1315** P243 Alt✓, P244 Alt✓	P243 'Publication of Generator Forward Availability by Fuel Type' and P244 'Provision of BritNed Data to BMRS' were both approved on 21 January 2010 for inclusion in the November 2010 Release. Two additional CPs have been added to the scope of the Release. The project is currently in the planning phase
Standalone Releases	P247 Alt✓, P229 Pro×/Alt× P250 Pro×/Alt×	**1322**, P245 Alt✓	CP1322 was approved by the Panel on 11/03/2010, with a 5WD implementation date (18 March 2010). The Authority approved P245 Alternative Modification with an Implementation date of 31 March 2010

Draft CP Scope of the June 2010 Release

CP	Title	Impacts	BSC Agent (Demand Led)	ELEXON Operational		Total
				Man Days	Cost	
CP1309	Include reference to D0303 in BSCP514 and circumstances in which its use is mandatory.	BSCP514, SVA Data Catalogue Volume 1	£0	3	£660	£660
CP1316	Removal from BSCP536 of obligation to attach a copy of Form 536/01 to BSCCo Bill	BSCP536	£0	1	£220	£220
CP1317	Removal of Requirement for NHH MOAs to notify NHH DCs of metering work before the event	BSCP514	£0	1.25	£225	£225
CP1318	Minor changes to BSCP601	BSCP601	£0	1.75	£295	£295
CP1323	Review of the Qualification Self Assessment Document	BSCP537 Appendix 1	£0	5.25	£1,260	£1,260
		Total[7]	**£0**	**12.25**	**£2,660**	**£2,660**

Draft CP Scope of the November 2010 Release

CP	Title	Impacts	BSC Agent (Demand Led)	ELEXON Operational		Total
				Man Days	Cost	
CP1267	Registration of UMSO's and MA's in SMRS	BSCP501, BSCP520	£0	3	660	£660
CP1315	Maintenance of Outstation Types as part of Compliance and protocol approval	BSCP601	£0	1	£220	£220
		Total[8]	**£0**	**4**	**£880**	**£880**

[7] A Tolerance of 20% applies for both Demand Led costs and ELEXON Operational Costs
[8] A Tolerance of 20% applies for both Demand Led costs and ELEXON Operational Costs

Change Proposal – BSCP40/02	CP No: 1326 *Version No: v1.0* *(mandatory by BSCCo)*

Title *(mandatory by originator)*

Update to BSCP128 from lessons learnt exercise carried out with LDSOs

Description of Problem/Issue *(mandatory by originator)*

Background:

BSCP128 was introduced on 20 April 2009 as a result of Modification P216 'Audit of LLFs'. It replaced the existing processes for the submission and approval of Line Loss Factors (LLFs).

BSCP128 brought in a new audit process for the LLFs submitted by Licensed Distribution System Operators (LDSOs). This audit process is undertaken by ELEXON.

Defining the problem:

We have completed the audit process for the first time and, together with the LDSOs, we have identified a number of potential improvements e.g. overlapping processes for the Host and Embedded LDSOs have resulted in unnecessary costs to the Embedded LDSOs and this can be resolved by changing the timing of the submission.

We held a workshop with LDSOs on the 27 January 2010 to review these improvements. Broad agreement was reached at this workshop and we subsequently received agreement from all LDSOs prior to raising CP1326.

The aim is to implement these changes in the **June 2010** release so they can be implemented prior to the next audit process commencing in September 2010.

Proposed Solution ***(****mandatory by originator)*

The following BSCP's will be amended in order to implement this change:

BSCP128 'Production, Submission, Audit and Approval of Line Loss Factors'

- 1.7 Reference to ELEXON Helpdesk changed to BSC Service Desk;
- 1.8.2 Definitions updated to add further clarity;
- References to P216 and year 1 operation have been removed;
- 2.3 Host LDSO LLF Submission/Audit process times have been amended. There are no significant changes in the timing for Host LDSOs. The new process timings set the absolute backstop date to 10 December for re-submissions, it was previously 31 December;
- 2.4 Embedded LDSO LLF Submission/Audit process times have been amended. The major change is to delay the mirrored submission until a compliant set of LLFs are ready. With the current process Embedded LDSOs must submit 1 month after the Host submission when the LLF audits have not been completed. If one LDSO has a non-compliant LLF value all Embedded LDSOs have to re-create and re-submit the LLFs. By delaying the Embedded submission we remove the need for an unnecessary submission.

- 3.1 Methodology principles. The date range for Settlement Data used in the Generic LLF calculation has been fixed as the BSC Year and at R3 or greater. Using the latest BSC Year with R2 data would only allow a month for LDSOs to perform the LLF calculations.

BSCP128 Appendix 1 'Methodology Self Assessment Document (MSAD) for Host LDSOs and Embedded LDSOs that do not Mirror'

- The double signature requirement has been removed from all appendices. The forms will require a Category X BSC Signatory only.
- 3 questions have been added to the document for principles 14, 15 and 16 to ensure that the principles are included in the LDSO methodology statement.

BSCP128 Appendix 2 'Methodology Self Assessment Document for Embedded LDSOs (MSAD) for Embedded LDSOs that Mirror'

- The double signature requirement has been removed from all appendices. The forms will require a Category X BSC Signatory only.
- The MSAD for Embedded LDSOs now includes a data request. This is requested with the MSAD as the CSAD submission has been delayed so that it no longer overlaps the Host LDSO audit process. The data request will enable the sampling of Metering Systems to be performed prior to the CSAD submission.

BSCP128 Appendix 3 'Calculation Self Assessment Document (CSAD) for Host LDSOs and Embedded LDSOs that do not Mirror'

- The double signature requirement has been removed from all appendices. The forms will require a Category X BSC Signatory only.
- The Host LDSO CSAD data request tables have been updated. The submission will now include the LLFs by Seasonal Time of Day (STOD) period to make comparison checks quicker. Some Embedded LDSOs also use this format in the production of their LLF submissions.

BSCP128 Appendix 4 'Line Loss Factor Calculation Self Assessment Document (CSAD) for Embedded LDSOs that Mirror'

- The double signature requirement has been removed from all appendices. The forms will require a Category X BSC Signatory only.
- A question has been added to confirm if the LLFs have been re-calculated with the last 2 years.
- The Embedded LDSO CSAD data request tables have been updated. The submission will now include the LLFs by STOD period to make comparison checks quicker.

Justification for Change *(mandatory by originator)*

The process improvements will make the audit process more efficient for LDSOs and ELEXON.

In particular, this change introduces a more efficient process for those Embedded LDSOs whose Line Loss Factors mirror those of the Host LDSO.

To which section of the Code does the CP relate, and does the CP facilitate the current provisions of the Code? *(mandatory by originator)*

Section K 'Classification and Registration of Metering Systems and BM Units'

The changes proposed as part of CP1326 will improve on the current process by ensuring that overlapping processes and identified inefficiencies are removed.

Estimated Implementation Costs *(mandatory by BSCCo)*

ELEXON man days/costs: 11days, equivalent to £2,640.

Configurable Items Affected by Proposed Solution(s) *(mandatory by originator)*

BSCP128 'Production, Submission, Audit and Approval of Line Loss Factors' v1.0
BSCP128 'Appendix 1 Methodology Self Assessment Document (MSAD) for Host LDSOs and Embedded LDSOs that do not Mirror' v1.0
BSCP128 'Appendix 2 Methodology Self Assessment Document for Embedded LDSOs (MSAD) for Embedded LDSOs that Mirror' v1.0
BSCP128 'Appendix 3 Calculation Self Assessment Document (CSAD) for Host LDSOs and Embedded LDSOs that do not Mirror' v1.0
BSCP128 'Appendix 4 Line Loss Factor Calculation Self Assessment Document (CSAD) for Embedded LDSOs that Mirror' v1.0

Impact on Core Industry Documents or System Operator-Transmission Owner Code *(mandatory by originator)*

None

Related Changes and/or Projects *(mandatory by BSCCo)*

None

Requested Implementation Date ***(mandatory by originator)***

June 2010

Reason:

The aim is to implement these changes in the **June 2010** release so they can be implemented prior to the next audit process commencing in September 2010.

Version History ***(mandatory by BSCCo)***

This is version 1.0 of the CP for impact assessment. This CP has not been issued previously as a DCP.

Originator's Details:

BCA Name……..Stuart Holmes

Organisation……..…ELEXON

Email Address……stuart.holmes@elexon.co.uk.

Telephone Number……0207 380 4135.

Date……24 February 2009

Attachments: Y

Attachment A: Proposed redline changes to BSCP 128 – Production, Submission, Audit and Approval of Line Loss Factors (37 Pages)
Attachment B: Proposed redline changes to BSCP128 Appendix 1 – Methodology Self Assessment Document (MSAD) for Host LDSOs and Embedded LDSOs that do not Mirror (6 Pages).
Attachment C: Proposed redline changes to BSCP128 Appendix 2 – Methodology Self Assessment Document for Embedded LDSOs (MSAD) for Embedded LDSOs that Mirror (9 Pages).
Attachment D: Proposed redline changes to BSCP128 Appendix 3 – Calculation Self Assessment Document (CSAD) for Host LDSOs and Embedded LDSOs that do not Mirror (19 Pages).
Attachment E: Proposed redline changes to BSCP128 Appendix 4 – Line Loss Factor Calculation Self Assessment Document (CSAD) for Embedded LDSOs that Mirror (20 Pages).

Balancing and Settlement Code

BSC Procedure

Production, Submission, Audit and Approval of Line Loss Factors

BSCP128

Version 1.0

Effective Date: 20 April 2009

BSC Procedure 128

Production, Submission, Audit and Approval of Line Loss Factors

1. Reference is made to the Balancing and Settlement Code (the Code) for the Electricity Industry in Great Britain and, in particular, to the definition of "BSC Procedure".

2. This is BSCP128 Version 1.0, relating to Production, Submission, Audit and Approval of Line Loss Factors.

3. This BSC Procedure is effective from 20 April 2009.

4. This BSC Procedure has been approved by the Panel.

AMENDMENT RECORD

Version	Date	Description of Changes	CRs Included	Mods Panel Ref
1.0	20/04/2009	First Published	P216	153/04

CONTENTS

CP1326 will have no impact on sections 1.1 to section 1.6.

1.7 Assistance with using the Procedure

Where assistance is required in the use of this BSCP the user should, in the first instance, contact their BSC Change Administrator (BCA). Where queries cannot be answered by the BCA, contact should be made with the ~~BSCCo Helpdesk~~BSC Service Desk.

1.8 Acronyms and Definitions

1.8.1 Acronyms

BCA	Balancing and Settlement Code Change Administrator
BSCCo	BSC Company
BSCP	Balancing and Settlement Code Procedure
CMRS	Central Meter Registration Service
Code	Balancing and Settlement Code
CDCA	Central Data Collection Agency
CVA	Central Volume Allocation
CVA LLF(s)	CVA Line Loss Factor(s)
EFD	Effective From Date
GSP	Grid Supply Point
GSPG	Grid Supply Point Group
HHDA(s)	Half Hourly Data Aggregator(s)
Id	Identifier
LDSO	Licensed Distribution System Operator[1]
LLF	Line Loss Factor
LLFC Id(s)	Line Loss Factor Class Identifier(s)
LLFC(s)	Line Loss Factor Class (es)
MDD	Market Domain Data
MSID	Metering System Identifier
SMRS	Supplier Meter Registration Service

[1] This includes both Host LDSOs and Embedded LDSOs.

SVA	Supplier Volume Allocation
SVA LLF(s)	SVA Line Loss Factor(s)
SVAA	Supplier Volume Allocation Agent
WD	Working Day

1.8.2 Definitions

Full definitions of the above acronyms are, where appropriate, included in the Balancing and Settlement Code.

Extra High Voltage (EHV)	As defined in the Special Conditions of a distribution licence granted pursuant to section 6(1)(c) of the Electricity Act 1989.
Embedded LDSO	A LDSO operating an independent distribution network connected to a Host LDSO's distribution network[2]. e.g. This includes both independent LDSOs; and Host LDSOs that are operating outside their geographical area.
~~**Generic:**~~ **Day** **(Generic)**	As defined in each Distribution System Operator's Methodology Statement.
Generic~~:~~ LLF	The adjustment factor applied to the readings from a (group of) metering system(s) to adjust for losses on the distribution network and calculate the associated amount of energy at the GSP. ~~Where the Line Loss Factor is calculated for a group of Metering Systems and the Line Loss Factor represents the average value of distribution losses for those Metering Systems.~~
~~**Generic:**~~ **LLFC Group** **(Generic)**	A group of Line Loss Factor Classes that share the same generic set of Line Loss Factors.
~~**Generic:**~~ **Night** **(Generic)**	~~As defined in each Distribution System Operator's Methodology Statement.~~Hours of the Settlement Day not covered by Generic Day.
Host LDSO	A LDSO operating a distribution network that is directly connected to the Transmission System in their own distribution licence area.
High Voltage (HV)	As defined in the Special Conditions of a distribution licence granted pursuant to section 6(1)(c) of the Electricity Act 1989.
Low Voltage (LV)	As defined in the Special Conditions of a distribution licence granted pursuant to section 6(1)(c) of the Electricity Act 1989.
Manifest error: Retrospective changes	An unambiguous error in the application of the approved methodology, in the calculation input data or corruption of the LLF values in the submission process in such a way that there is a material impact on Settlement or a material impact to the advantage or detriment of the customer.~~An error in the calculation or submission of Line Loss Factors that has a material impact on Settlement as determined by the Panel~~.
Material impact: Retrospective changes	An impact or estimated impact that has a value or estimated value of over £500.
Mirror/Mirroring	Where the Embedded LDSO replicates the Generic Line Loss Factors of the relevant Host LDSO for their own specified LLFCs for the GSP Group.

[2] An Embedded LDSO may also operate an independent distribution network that is connected to Host LDSO's distribution network via another Embedded LDSO's network (known as a nested network). Furthermore, an Embedded LDSO may also operate an independent distribution network that is connected to Transmission System within a Host LDSO's geographic distribution area.

Non-Technical Losses	Losses other than Technical Losses.
Registrant	See BSC Annex X-1
Site Specific LLF	Where the Line Loss Factor is calculated for an individual Metering System and represents distribution losses specific to Metered Volumes measured by that Metering System.
Site Specific: Material Change	A Material Change (that occurs mid year) to the physical plant, apparatus, or distribution network that causes a significant change to the Technical Losses specific to the Metered Volumes measured by the Metering System as determined by the Panel.
Site Specific: Relevant Change	A significant change to the physical plant, apparatus, distribution network, or capacity that causes a change to the Line Loss Factors. This is used to determine whether Site Specific LLFs shall be recalculated for the annual LLF submission.
Technical Losses	Technical Losses are losses caused by the intrinsic electrical characteristics internal to the power system and consist mainly of power dissipation in electrical system components such as transmission lines, power transformers and measurement systems.

2. INTERFACE AND TIMETABLE INFORMATION

2.1 Methodology Review for Host LDSOs and Embedded LDSOs that do not Mirror

~~To effectively review the high number of methodologies submitted in the first year this BSCP (i.e. 2009) will take effect, the timescales for submitting and reviewing the LLF methodology will differ from subsequent years. These differences are highlighted in the timetable below using footnotes 1 to 5. Submission dates and timescales for the first and subsequent years are summarised in Section 3.6.~~

REF.	WHEN	ACTION	FROM	TO	INFORMATION REQUIRED	METHOD
2.1.1	By 1 August[3] prior to the relevant BSC year	Submit proposed methodology and MSAD, or MSAD only where there has been no change since the methodology was last approved.	LDSO	BSCCo	MSAD and methodology or MSAD confirming continued use of approved methodology in accordance with Appendix 1.	Email or other electronic means
2.1.2	Within 2 WD of 2.1.1	Acknowledge receipt of methodology and MSAD, or confirmation that there has been no change since the methodology was last approved. If the methodology has not changed, proceed to Ref (2.1.6) below. Or if incomplete information has been received from LDSO contact LDSO to advise of any further information required; or advise LDSO that no	BSCCo	LDSO	Confirmation of receipt and notification of any initial concerns; or notification of failure to submit methodology.	Email, telephone or other electronic means

[3] ~~For the first methodology review following the implementation of Modification P216 on 20 April 2009, LLF methodologies will be submitted by 1 May 2009.~~

REF.	WHEN	ACTION	FROM	TO	INFORMATION REQUIRED	METHOD
		methodology has been submitted.				
2.1.3	Within 5WD of 2.1.1[4]	Review methodology for compliance with the LLF Methodology Principles in accordance with Section 3.1 and provide draft report highlighting any non-compliance(s); ~~or advise LDSO that no methodology~~ or confirmation of continued use of approved methodology has been submitted.	BSCCo	LDSO	Methodology, MSAD, draft LDSO report, any non-compliances ~~or failure to submit methodology~~ or confirmation of continued use of approved methodology.	Email or other electronic means
2.1.4	Within 5WD of 2.1.3[5]	Resolve any identified non-compliance(s) and submit updated methodology and MSAD; or submit methodology and MSAD if not submitted by deadline; or submit MSAD confirming continued use of existing approved methodology.	LDSO	BSCCo	MSAD, updated methodology, evidence of resolved non-compliance(s), methodology or MSAD confirming continued use of approved methodology.	Email, telephone or other electronic means
2.1.5	Within 15WD of 2.1.1[6]	If non-compliance(s) have been identified, review submission in Ref (2.1.4).	BSCCo	LDSO	LDSO report.	Email, telephone or other electronic means

~~[4] For the first methodology review following the implementation of Modification P216 on 20 April 2009, BSCCo will have 20WD to provide a draft report.~~

~~[5] For the first methodology review following the implementation of Modification P216 on 20 April 2009, each LDSO will have 20WD to resolve non-compliances.~~

~~[6] For the first methodology review following the implementation of Modification P216 on 20 April 2009, BSCCo will have 55WD to provide the final report.~~

REF.	WHEN	ACTION	FROM	TO	INFORMATION REQUIRED	METHOD
		Provide report with confirmation of compliance or non-compliance.				
2.1.6	To meet Panel requirements	Submit a final report to Panel stating: a) Recommendations for the approval of each methodology with no non-compliance(s) or corrected non-compliance(s); or b) Any continued non-compliance(s); or c) Any failures to submit methodology or confirmation of continued use of approved methodology.	BSCCo	Panel	Final report.	Email or other electronic means
2.1.7	Within 1 WD of 2.1.6	Review report submitted in Ref (2.1.6) and: Approve methodologies with no outstanding non-compliance(s); and Note any non-compliance(s); and Note any failures to submit a methodology or confirmation of continued use of existing approved methodology.	Panel	BSCCo	Final report and Panel decision.	-

REF.	WHEN	ACTION	FROM	TO	INFORMATION REQUIRED	METHOD
2.1.8	Within 5 WD of 2.1.7	~~Provide a report for~~Notify each LDSO stating whether the Panel: Approved the methodology; or Noted any non-compliance(s); or Noted the failure to submit a methodology; or Noted the failure to submit confirmation of continued use of existing approved methodology.	BSCCo	LDSO	~~Report~~ Notification detailing the Panel's decision.	Email or other electronic means
2.1.9	To meet PAB requirements	Provide report detailing non-compliance(s) or failures to submit a methodology or failure to confirm continued use of existing approved methodology.	BSCCo	PAB	Report detailing non-compliance(s) and failures.	Email or other electronic means

2.2 Methodology Review – Embedded LDSOs that Mirror

REF.	WHEN	ACTION	FROM	TO	INFORMATION REQUIRED	METHOD
2.2.1	By 1 August [7] prior to relevant BSC year	If Embedded LDSO Mirrors Host or Embedded LDSO LLFs, submit details of methodology (or methodologies) to Mirror.	Embedded LDSO	BSCCo	Confirmation of Mirroring Host or Embedded LDSO methodology and MSAD ~~(tailored for Embedded LDSOs that Mirror)~~, in accordance with Appendix 2.	Email or other electronic means
2.2.2	Within 2 WD of 2.2.1	Acknowledge receipt of notification to Mirror. Or where incomplete information received from Embedded LDSO contact Embedded LDSO to advise of any further information required.	BSCCo	Embedded LDSO	Confirmation of receipt and notification of any initial concerns.	Email, telephone or other electronic means
2.2.3	To meet Panel requirements	Submit a Panel paper stating: a) The Embedded LDSO shall Mirror Host or Embedded LDSO methodology (or methodologies). b) Any failures to submit notification to Mirror Host or Embedded LDSO methodology.	BSCCo	Panel	Report.	Email or other electronic means

[7] ~~For the first methodology review following the implementation of Modification P216 on 20 April 2009, notification to Mirror Host LDSO LLFs (or LLFs submitted by Embedded LDSOs that do not Mirror) will be submitted by 1 May 2009.~~

REF.	WHEN	ACTION	FROM	TO	INFORMATION REQUIRED	METHOD
2.2.4	Within 1 WD of 2.2.3	Review report submitted in Ref (2.2.3) and: Note any interaction with Host or Embedded LDSO Methodologies reviewed in 2.1.7 and any non-compliance(s); and Note any failures to notify BSCCo that the Embedded LDSO will Mirror Host or Embedded LDSO methodology (or methodologies).	Panel	BSCCo	Report detailing Panel decision.	

2.3 Annual Submission and Audit of Line Loss Factors (CVA and SVA) – Host LDSOs and Embedded LDSOs that do not Mirror

REF.	WHEN[8]	ACTION	FROM	TO	INFORMATION REQUIRED	METHOD
2.3.1	By 1 September	If LLF methodology has been approved, propose dates to conduct a site visit[9]. If LLF methodology has not been approved, agree site visit dates as soon as any outstanding non-compliance(s) have been resolved.	BSCCo	LDSO	Dates for site visit.	Email, telephone or other electronic means
2.3.2	By 10 September	Agree date for site visit as required. Where a date has not been agreed by this time BSCCo shall determine a suitable date for the site visit.	LDSO	BSCCo	Dates for site visit.	Email, telephone or other electronic means
2.3.3	By 30 September	Submit calculated LLFs[10] in accordance with the approved methodology and completed CSAD[11]signed by an authorised signatory. Additionally, if there has been a change to a Line Loss Factor Class (LLFC) for an SVA submission then submit appropriate changes in accordance with BSCP509.	LDSO	BSCCo	CSAD (Appendix 3) signed by an authorised person in accordance with BSCP38 and: a) If CVA Submission: CVA Long or Short Format data files, in accordance with Appendix 5; and/or b) If SVA Submission: SVA Format data file (D0265) in accordance with Appendix 6 and information in accordance with BSCP509 if MDD changes are required.	Email or other electronic means

[8] Changes to the timescales set out below can be made at the discretion of BSCCo when CVA LLF approval is necessary in less than 40 WD before the Effective Date to carry out BM Unit Registrations and Registration transfers from SMRS to CMRS.

[9] A site visit may not be required if no LLFs have been re-calculated. Where a site visit is required the calculation audit will be conducted between 1 October and 30 November.

[10] Separate Site Specific LLFs for Import and Export Metering Systems may be applied in accordance with BSCP75.

[11] Please note that the CSAD covers both CVA and SVA LLFs.

REF.	WHEN[8]	ACTION	FROM	TO	INFORMATION REQUIRED	METHOD
2.3.4	Within 2 WD of 2.3.3	Acknowledge receipt of CSAD and LLFs and confirm authorised signature.	BSCCo	LDSO	Confirmation of receipt and authorised signature.	Email, telephone or other electronic means
2.3.5	Within ~~5~~10 WD of 2.3.3[12]	Provide SVA LLF summary report to Host LDSOs and/or Embedded LDSOs that do not Mirror.	BSCCo	LDSO	Summary Report for SVA LLFs in accordance with Appendix 7.	Email or other electronic means
2.3.6	Within ~~7~~10 WD of 2.3.3	Publish submitted LLFs on the BSC website with a status of 'pending'.	BSCCo		SVA LLF Summary Report and: a) If CVA Submission: CDCA-I022 data files; and/or b) If SVA Submission: D0265 data files.	BSC Website
2.3.7	Between 1 October and 20~~30~~ November on date agreed in Ref (2.3.2) above	Conduct calculation audit in accordance with Section 3.5.[13,14] If LLFs have been re-calculated conduct audit on LDSO site including spot checks on MSIDs.[15]	BSCCo		CSAD and: a) If CVA Submission: CDCA-I022 data file; and/or b) If SVA Submission: D0265 data file.	CSAD review, LLF validation system, site visits
2.3.8	Within 5 WD of calculation audit[16]	Provide draft audit report highlighting any identified non-compliance(s).	BSCCo	LDSO	Draft LDSO report.	Email or other electronic means
2.3.9	Within ~~10~~15 WD of calculation audit~~2.3.8~~	Resolve any non-compliance(s) identified in Ref (2.3.8) and notify BSCCo.	LDSO	BSCCo	Any further information required and evidence of resolved non-compliance(s).	Email, telephone or other electronic means

[12] If Host LDSO LLFs (or LLFs submitted by Embedded LDSOs that do not Mirror) have not been submitted by 30 September, provide summary report of LLFs after 5WD from the date of Host LDSO LLF submission (or LLF submission by Embedded LDSOs that do not Mirror).

[13] The calculation audit may involve further exchange of information between BSCCo and the LDSO to clarify, correct and re-audit any non-compliance(s). The LDSO shall use reasonable endeavours to provide any information requested by BSCCo. BSCCo will feed back to the LDSO the results of the review of the CSAD and the validation of the LLFs prior to site visit to enable the LDSO to address and identified non-compliances at an early stage. As part of the site visit BSCCo may also wish to target certain areas of the LDSO systems and processes to seek evidence on whether the LDSO has addressed these non-compliance(s).

[14] Where revised LLF values for existing sites have been submitted mid-year prior to commencement of the current submission cycle and are awaiting approval by the Panel, BSCCo shall include the LLF values in the calculation audit.

[15] Where LLFs have not been re-calculated, BSCCo may conduct a site visit when required.

[16] Where no site visit is required the calculation audit will be limited in scope.

REF.	WHEN[8]	ACTION	FROM	TO	INFORMATION REQUIRED	METHOD
2.3.10~~1~~ ~~1~~	By ~~31~~10 December	Submit any revised LLFs to address any outstanding non-compliance(s).	LDSO	BSCCo	Any revised LLFs as required and final CSAD with evidence of resolved non-compliance(s). Final CSAD signed by an authorised person in accordance with BSCP38 and: a) If CVA re-submission: CVA Long or Short Format data files in accordance with Appendix 5; and/or b) If SVA re-submission: SVA Format data file (D0265) in accordance with Appendix 6 and information in accordance with BSCP509 if MDD changes are required.	Email or other electronic means
2.3.11	By 31 December	Conduct calculation audit on revised submission.	BSCCo	-	CSAD and: a) If CVA Submission: CDCA-I022 data file; and/or b) If SVA Submission: D0265 data file.	CSAD review, LLF validation system
2.3.12 ~~2.3.10~~	By 31 December ~~Within 20 WD of 2.3.7~~	Provide final audit report and confirmation of compliance or non-compliance.	BSCCo	LDSO	Final LDSO report.	Email, telephone or other electronic means.
2.3.13 ~~2.3.12~~	By 31 December ~~Within 5 WD of 2.3.11~~	Publish revised LLFs on the BSC website with a status of 'pending'.	BSCCo		SVA LLF Summary Report and: a) If CVA Submission: CDCA-I022 data files; and/or b) If SVA Submission: D0265 data files.	BSC Website
~~2.3.13~~	~~Within 5~~15 ~~WD of 2.3.10~~11	~~Conduct calculation audit on revised submission.~~	~~BSCCo~~	~~-~~	~~-~~	~~-~~

REF.	WHEN[8]	ACTION	FROM	TO	INFORMATION REQUIRED	METHOD
~~2.3.14~~	~~Within 5WD of 2.3.12~~	~~Provide audit report with confirmation of compliance/non-compliance.~~	~~BSCCo~~	~~LDSO~~	~~LDSO report.~~	~~Email or other electronic means~~
2.3.14 ~~2.3.15~~	To meet Panel Requirements	Submit a final report specifying the LLFs for which the audit did not identify non-compliance(s) (including resolved non-compliance(s)) and the LLFs for which the audit identified non-compliance(s) including any default values requiring approval[17]. Where MDD changes have been identified submit notice in accordance with BSCP509 that there has been (or is due to be) a change to MDD for Panel approval.	BSCCo	Panel	Final report, any default values and any MDD changes.	Email or other electronic means
2.3.15 ~~2.3.16~~	To meet Panel Requirements	Approve LLFs with no identified non-compliance(s) and note any non-compliant LLFs in Ref (2.3.15) above. Approve default values for any non-compliant LLFs.	Panel	BSCCo	LLFs, Final report and any default values.	-
2.3.16 ~~2.3.17~~	Within 1 WD of 2.3.15~~2.3.16~~	Notify Panel decision.	Panel	BSCCo	Panel decision.	-
2.3.17 ~~2.3.18~~	To meet PAB requirements	Provide a copy of the final report in Ref (2.3.15) giving details of any non-compliance(s).	BSCCo	PAB	Final report in Ref (2.3.15) with details of any non-compliance(s).	

[17] Where no methodology has been approved, default LLFs shall be presented to the Panel for approval.

REF.	WHEN[8]	ACTION	FROM	TO	INFORMATION REQUIRED	METHOD
2.3.18 ~~2.3.19~~	Within 2 WD of 2.3.16 ~~2.3.17~~	Provide a final report for the LDSO stating whether the Panel: Approved LLFs with no outstanding non-compliance(s); or Noted any continued non-compliance(s) and approved default values.	BSCCo	LDSO	Final report detailing Panel approval of LLFs, ~~and~~ any default values and any continued non-compliance(s).	Email or other electronic means
2.3.19 ~~2.3.20~~	As agreed between BSCCo and the LDSO	If the Panel has noted any non-compliance(s), liaise with BSCCo to correct and re-submit LLFs.[18]	LDSO	BSCCo	Any revised LLFs as required and final CSAD with evidence of resolved non-compliance(s).	Email or other electronic means
2.3.20 ~~2.3.21~~	Within 2 WD of 2.3.16~~2.3.17~~	Notify Parties of LLFs approved by the Panel.	BSCCo	Parties	LLFs approved by the Panel (including any default LLFs).	Email or other electronic means
2.3.21 ~~2.3.22~~	Within 2 WD of 2.3.16~~2.3.17~~	Update LLFs on BSC Website to be utilised in Settlement, when either: a) The Panel has approved the submission, update LLFs and EFD; or b) If the Panel has approved default values, update LLFs to default values to be used in Settlement and EFD. If SVA submission only proceed to Ref (2.3.27). If both CVA and SVA submission then proceed from Ref (2.3.23) onwards.	BSCCo	-	Confirmation of Panel decision, LLFs and default values for non-approved LLFs.	Electronic means
2.3.22	Within 5 WD of 2.3.21	Obtain LLFs for the LLFCs from BSC Website.	-	HHDAs/ Suppliers	D0265 data files.	BSC Website
2.3.23	Within 10 WD of 2.3.22	HHDAs and Suppliers implement into systems.	HHDAs/ Suppliers	-	D0265 data files.	-

[18] As appropriate, BSCCo shall present the corrected LLFs to Panel for approval and inform PAB of the Panel outcome.

REF.	WHEN[8]	ACTION	FROM	TO	INFORMATION REQUIRED	METHOD
2.3.24 ~~2.3.23~~	~~Within 2 WD of 2.3.17~~By 10 March	Provide CDCA with CVA LLFs for use in Settlement: a) If the Panel has approved the CVA LLF submission, provide CVA LLFs and EFD; or b) If the Panel has approved default values, provide default CVA LLF values and EFD.	BSCCo	CDCA	Confirmation of approval of CVA LLFs and EFD contained in CDCA-I022 data files; or CVA Metering System ID, CDCA-I022 data files and EFD.	Email or other electronic means
2.3.25 ~~2.3.24~~	Within 1~~2~~ WD of 2.3.24~~2.3.23~~	Acknowledge receipt of CVA LLFs and notify BSCCo of any exceptions via the CDCA-I023 data file.	CDCA	BSCCo	CDCA-I023 data file.	Email or other electronic means
2.3.26 ~~2.3.25~~	Within a timescale agreed between CDCA and BSCCo	Implement approved CVA LLFs in accordance with CDCA-I022 data files supplied in Ref (2.3.24 ~~3~~) above into CDCA systems.	CDCA	-	CDCA-I022 data files.	-
2.3.27 ~~2.3.26~~	Within 1 WD of 2.3.26~~2.3.25~~	Notify BSCCo of successful CDCA-I022 load.	CDCA	BSCCo	-	Email or other electronic means
2.3.28 ~~2.3.27~~	~~Within 2 WD of 2.3.17~~By 10 March	Provide SVAA with SVA LLFs for use in Settlement: a) If the Panel has approved the SVA LLF submission, provide SVA LLFs and EFD; or b) If the Panel has approved default values, provide default SVA LLF values and EFD.	BSCCo	SVAA	Confirmation of approval of SVA LLFs and EFD contained in D0265 data files; or D0265 data files, default values and EFD.	Email or other electronic means
2.3.29 ~~2.3.28~~	Within 1~~2~~ WD of 2.3.28~~2.4.27~~	Acknowledge receipt of SVA LLFs.	SVAA	BSCCo	-	Email or other electronic means

REF.	WHEN[8]	ACTION	FROM	TO	INFORMATION REQUIRED	METHOD
2.3.30 ~~2.3.29~~	Within a timescale agreed between SVAA and BSCCo	Implement approved SVA LLFs in accordance with D0265 data files supplied in Ref (2.3.2~~8~~7) above into SVAA systems.	SVAA		D0265 data files.	Email or other electronic means
2.3.31 ~~2.3.30~~	Within 1 WD of 2.3.30~~2.3.29~~	Notify BSCCo of successful D0265 data file load.	SVAA	BSCCo	-	Email or other electronic means
~~2.3.31~~	~~Within 6 WD of 2.3.30~~	~~Obtain LLFs for the LLFCs from BSC Website.~~	~~-~~	~~HHDAs/ Suppliers~~	~~D0265 data files.~~	~~BSC Website~~
~~2.3.32~~	~~Within 5 WD of 2.3.31~~	~~HHDAs and Suppliers implement into systems.~~	~~HHDAs/ Suppliers~~	~~-~~	~~D0265 data files.~~	~~-~~

2.4 Annual Submission and Audit of LLFs – Embedded LDSOs that Mirror ~~Host or Embedded LDSOs that do not Mirror~~

REF.	WHEN	ACTION	FROM	TO	INFORMATION REQUIRED	METHOD
2.4.1	By 1 September	If LLF methodology has been approved, propose suitable dates to conduct site visit[19]~~[20]~~. If LLF methodology has not been approved, agree site visit dates as soon as any outstanding non-compliance(s) have been resolved.	BSCCo	Embedded LDSO	Dates for site visit.	Email, telephone or other electronic means
2.4.2	By 10 September	Agree date for site visit as required. Where a date has not been agreed by this time BSCCo shall determine a suitable date for the site visit.	Embedded LDSO	BSCCo	Dates for site visit.	Email, telephone or other electronic means
2.4.3	Between ~~1 November~~10 September and 30 November on date agreed in Ref (2.4.2) above.	Check a representative sample of Metering Systems are assigned to the correct LLFC.	BSCCo	-	MSAD	Site visit

[19] A representative sample of Metering Systems will be checked for the correct LLFC on the Embedded LDSO site visit.

~~[20] A site visit may not be required if no LLFs have been re-calculated. Where a site visit is required the calculation audit will be conducted between 1 October and 30 November.~~

REF.	WHEN	ACTION	FROM	TO	INFORMATION REQUIRED	METHOD
2.4.4	Within 5WD of 2.4.3	Provide Metering System sample report highlighting any non-compliance(s).	BSCCo	Embedded LDSO	Metering System sample report.	Email or other electronic means
2.4.5	By 31 December	Resolve any identified non-compliance(s) in Ref (2.4.4) and notify BSCCo.	Embedded LDSO	BSCCo	Any further information required and evidence of resolved non-compliance(s).	Email, telephone or other electronic means
~~2.4.3~~	~~By 30 September + 7 WD~~	~~Obtain LLFs submitted by the relevant Host LDSO(s) or Embedded LDSOs that do not Mirror.~~	~~Embedded LDSO~~		~~LDSO's submitted LLFs.~~	~~BSC Website or Host LDSO or Embedded LDSO that does not Mirror~~
2.4.6~~4~~	By 31 December + 10WD ~~31 October~~	Obtain LLFs submitted by the relevant Host LDSO(s) or Embedded LDSOs that do not Mirror; and ~~S~~submit LLFs[21] and CSAD in accordance with approved Host LDSO or Embedded LDSO methodology.	Embedded LDSO	BSCCo	LDSO's submitted LLFs; and CSAD for Embedded LDSOs that Mirror in accordance with Appendix 4, signed by an authorised person in accordance with BSCP38; and a) If CVA Submission: CVA Long or Short Format data files in accordance with Appendix 5; and/or b) If SVA Submission: SVA Format data file (D0265) in accordance with Appendix 6 and information in accordance with BSCP509 if MDD changes are required.	BSC Website or Host LDSO or Embedded LDSO that does not Mirror Email or other electronic means

[21] Separate Site Specific LLFs for Import and Export Metering Systems may be applied in accordance with BSCP75.

REF.	WHEN	ACTION	FROM	TO	INFORMATION REQUIRED	METHOD
2.4.7~~5~~	Within 2 WD of 2.4.6~~2.4.4~~	Acknowledge receipt of CSAD and LLFs and confirm authorised signature.	BSCCo	Embedded LDSO	Confirmation of receipt and authorised signature.	-
~~2.4.6~~	~~Between 1 November and 30 November on date agreed in Ref (2.4.2) above.~~	~~Conduct calculation audit[22].~~ ~~If LLFs have been re-calculated conduct audit on LDSO site including spot checks on MSIDs.~~	~~BSCCo~~	~~-~~	~~CSAD and:~~ ~~(a) If CVA submission: CVA Long or Short Format data files; and/or~~ ~~(b) If SVA submission: D0265 data files.~~	~~LLF validation system, site visits~~
2.4.8	Within 4WD of 2.4.6	Conduct LLF Calculation Audit[23]	BSCCo	-	CSAD and: (a) If CVA submission: CVA Long or Short Format data files or other format agreed with BSCCo; and/or (b) If SVA submission: D0265 data files or other format agreed with BSCCo.	LLF Validation System, Host LDSO LLF submissions
2.4.9~~2.4.7~~	Within 6WD of 2.4.6~~calculation audit~~[24]	Provide draft audit report highlighting any non-compliance(s).	BSCCo	Embedded LDSO	Draft LDSO report.	Email or other electronic means

~~[22] This calculation audit will be dependent on the results of the Host LDSO's calculation audit (or calculation audit for Embedded LDSOs that do not Mirror). BSCCo will feed back to the LDSO the results of the review of the CSAD and the validation of the LLFs prior to site visit to enable the LDSO to address and identified non-compliances at an early stage. As part of the site visit BSCCo may also wish to target certain areas of the LDSO systems and processes to seek evidence on whether the LDSO has addressed these non-compliances.~~

~~[23] Where no site visit is required the calculation audit will be limited in scope.~~

~~[24] Where no site visit is required the calculation audit will be limited in scope.~~

REF.	WHEN	ACTION	FROM	TO	INFORMATION REQUIRED	METHOD
2.4.10~~2.4.8~~	Within 10~~5~~WD of 2.4.9~~2.4.7~~	Resolve any identified non-compliance(s) in Ref (2.4.9~~7~~) and notify BSCCo.	Embedded LDSO	BSCCo	Any further information required and evidence of resolved non-compliance(s).	Email, telephone or other electronic means
~~2.4.8~~	~~Within 5WD of 2.4.8~~	~~Produce final audit report and confirmation of compliance or non-compliance.~~	~~BSCCo~~	~~Embedded LDSO~~	~~Final LDSO report.~~	~~Email or other electronic means~~
~~2.4.9~~	~~By 31 December + 5WD~~	~~Notify Embedded LDSO that revised LLFs have been submitted by the relevant Host or Embedded LDSOs that do not Mirror.~~	~~BSCCo~~	~~Embedded LDSO~~	~~Notification of revised values received~~	~~Email or other electronic means~~
~~2.4.10~~	~~Within 5WD of 2.4.10~~	~~Obtain LLFs submitted by the relevant Host LDSO(s) or Embedded LDSO(s) that do not Mirror.~~	~~Embedded LDSO~~		~~LDSO's revised LLFs.~~	~~BSC Website or Host LDSO or Embedded LDSO that does not Mirror~~

REF.	WHEN	ACTION	FROM	TO	INFORMATION REQUIRED	METHOD
2.4.11	~~Within 5WD of 2.4.11~~ At same time as 2.4.10	Submit any revised LLFs to address any outstanding non-compliance(s).	Embedded LDSO	BSCCo	Any revised LLFs as required and final CSAD with evidence of resolved non-compliance(s). Final CSAD signed by an authorised person in accordance with BSCP38 and: a) If CVA re-submission: CVA Long or Short Format data files in accordance with Appendix 5; and/or b) If SVA re-submission: SVA Format data file (D0265) and information in accordance with BSCP509 if MDD changes are required.	Email or other electronic means
2.4.12	Within 45 ~~5~~WD of ~~2.4.12~~2.4.10	Conduct calculation audit on revised submission. ~~Proceed to Section 2.3 of this BSCP and continue onwards from Ref (2.3.12) to complete the submission and audit process.~~	BSCCo	-	-	CSAD review, LLF validation system~~, site visits~~

REF.	WHEN	ACTION	FROM	TO	INFORMATION REQUIRED	METHOD
2.4.13	Within 6WD of 2.4.10	Produce final audit report and confirmation of compliance or non-compliance. Proceed to Section 2.3 of this BSCP and continue onwards from Ref (2.3.14~~2.3.12~~) to complete the submission and audit process.	BSCCo	Embedded LDSO	Final LDSO report.	Email or other electronic means

2.5 Mid-year submission of new and revised LLFs[25]

REF.	WHEN[26]	ACTION	FROM	TO	INFORMATION REQUIRED	METHOD
2.5.1	>= EFD-50 WD if mid-year submission for new site; or >=EFD-40 WD if mid-year submission of revised LLFs for an existing site	Submit calculated LLFs in accordance with the approved methodology and completed CSAD[27] signed by an authorised signatory.	LDSO	BSCCo	CSAD signed by an authorised person in accordance with BSCP38; and a) If CVA Submission: CVA Long or Short Format data files in accordance with Appendix 5; and/or b) If SVA Submission: SVA Format data file (D0265) and information in accordance with BSCP509 if MDD changes are required	Email or other electronic means
2.5.2	Within 2 WD of 2.5.1	Acknowledge receipt of CSAD and LLFs and confirm authorised signature.	BSCCo	LDSO	Confirmation of receipt and authorised signature.	Email or telephone
2.5.3	Within 5 WD of 2.5.1	Conduct calculation audit.[28,29]	BSCCo		CSAD and a) If CVA submission: CVA Long or Short Format data files; and/or b) If SVA submission: D0265 data files.	LLF validation system, site visits

[25] Mid year submission of revised LLFs are subject to the criteria defined in the LLF Methodology Principles 14, 15 and 16, see Appendix 3.1.

[26] Changes to the timescales set out below can be made at the discretion of BSCCo when CVA LLF approval is necessary in less than 40 WD before the Effective Date to carry out BM Unit Registrations and Registration transfers from SMRS to CMRS.

[27] Please note that the CSAD covers both CVA and SVA LLFs.

[28] The calculation audit may involve further exchange of information between BSCCo and the LDSO to clarify, correct and re-audit any non-compliances. The LDSO shall use reasonable endeavours to provide any information requested by BSCCo. BSCCo will feedback to the LDSO the results of the review of the CSAD and the validation of the LLFs prior to site visit to enable the LDSO to address and identified non-compliances at an early stage. As part of the site visit BSCCo may also wish to target certain areas of the LDSO systems and processes to seek evidence on whether the LDSO has addressed these non-compliances.

[29] Where no site visit is required the calculation audit will be limited in scope.

REF.	WHEN[26]	ACTION	FROM	TO	INFORMATION REQUIRED	METHOD
2.5.4	Within 5 WD of 2.5.3	Produce final report and confirmation of compliance or non-compliance. Proceed to Ref (2.3.15).	BSCCo	LDSO	Final Report.	Email or other electronic means

3. SUPPORTING INFORMATION

3.1 LLF Methodology Principles

All LLF methodologies are required to comply with the Principles described below:

1. LLFs shall be calculated using a generic (non Site Specific) method except for:

   (a) Sites that are connected at Extra High Voltage (EHV); or

   (b) Where the customer has requested a Site Specific LLF, and the LDSO is in agreement.

2. All LLFs shall be calculated to at least 3 decimal places and submitted to 3 decimal places.

3. All Site Specific LLFs shall account for Technical Losses only.

4. All Generic LLFs shall account for all losses (Technical and Non Technical).

5. Site Specific ~~LLF values~~losses and the total Grid Supply Point Group (GSPG) losses shall be considered in the calculation of Generic LLFs.[30]

6. Non-EHV Generic LLFs ~~values~~ for Import and Export at the same site where the voltage level is the same shall have the same values.

7. There shall be no more than 2 Low Voltage (LV) and 2 High Voltage (HV) Generic LLFC Groups, in each GSPG, and at least 1 Generic EHV LLFC Group.

8. As a minimum, Generic LLFs shall be calculated separately for D~~d~~ay and ~~n~~Night.

9. LDSOs shall utilise Settlement data from a Settlement Run at R3~~2~~ or greater and from a complete 12-month period, for calculating Generic LLFs. The 12-month period to be used shall be ~~determined by the Panel after the first year~~the BSC Year[31] 3 years prior to the BSC Year for which the LLFs are being calculated.

10. Adjustments to calculation or application of LLFs, to take into account historic market wide issues noted in the BSC Auditor's latest Report, can only be made if agreed to be appropriate by the Panel.

11. Robust error detection and correction processes shall be in place throughout the calculation and submission of LLFs.

12. All Generic LLFs shall be re-calculated at least every 2 years.

13. All Site Specific LLFs shall be re-calculated when there has been a relevant change to the site or network, and at least every 5 years.[32]

[30] ~~For the avoidance of doubt t~~This principle allows Site Specific Losses to be calculated individually or in aggregate and then used in the calculation of Generic LLFs.

[31] ~~For the avoidance of doubt, t~~This principle only applies to the calculation of Generic LLFs. The BSC Year is 1 April to 31 March, LLFs for use in the BSC Year commencing 1 April 2011 should be calculated using the Settlement Data from the 2008 BSC Year, 1 April 2008 to 31 March 2009.

[32] Appendix 3.4 provides clarification on how this should be implemented.

14. No changes shall be made to approved Generic ~~LLFCs~~ LLFs~~s values~~ mid year. Annual updates will have an effective from date of 1 April. Where default LLFs have been applied due to an audit failure, these may be updated to the approved LLFs on a prospective basis as determined when the LLFs resubmitted by the LDSO have been approved by the Panel.

15. No retrospective changes shall be made to approved Site Specific or Generic LLFs other than to correct material manifest errors.

16. Changes shall only be made to approved Site Specific LLFs mid year if there has been a material change affecting the site; and the revised LLFs have been approved by the Panel. Annual updates will have an effective from date of 1 April. Where default LLFs have been applied due to an audit failure, these may be updated to the approved LLFs on a prospective basis as determined from time to time by the Panel.

~~(a)There has been a material change affecting the site; and~~

~~(b)The revised LLFs have been approved by the Panel~~.

~~Annual updates will have an effective from date of 1 April. Where default LLFs have been applied due to an audit failure, these may be updated to the approved LLFs on a prospective basis as determined from time to time by the Panel.~~

3.2 Guidelines for the approval of LLF Values

The BSCCo will employ the following guidelines in its submission of LLFs to the Panel for approval:

(a) The methodology employed by the LDSO has been approved;

(b) The LLF values have been calculated in accordance with the approved methodology;

(c) The LLF values have been audited and any outstanding non-compliance(s) have been resolved; and

(d) Where appropriate, default LLF values are provided in accordance with Section 3.3 below.

LLF values that fail any part of the audit shall not be approved.

3.3 Use of Default Values

For all non-approved Site Specific LLFs and Generic LLFs~~C Groups~~ default values shall be applied in the order of precedence below~~as follows~~:

(a) ~~For all non-approved LLFs, t~~The ~~default~~ values shall be the last approved LLFs ~~values~~;

(b) Where there are no previously approved Site Specific LLFs, the default values shall be ~~from~~ the approved Generic LLFC Group LLFs for the equivalent voltage level;

(c) Where there are no previously approved Generic LLFs, the default values shall be set to 1.000 (unity);

~~(d)~~Default values shall continue to apply until such time as the LDSO submits a set of LLFs which are approved by the Panel, whereupon the new approved LLFs shall be applied on a prospective basis only;

~~(e)~~For existing Site Specific LLFs or a Generic LLFC Group the previously approved LLFs shall continue to apply until such time as the LDSO submits a new set of LLFs which are approved by the Panel, whereupon the new approved LLFs shall be applied on a prospective basis only.

The default LLFs are applied on an equivalent day for day basis, for example, the previously approved LLFs for 1st January will be the default LLFs for the next 1st January. Where default LLFs have to be applied to 29th February, the previously approved LLFs for 28th February will be used;

~~(f)~~On occasions when winter/summer or summer/winter clock changes become involved:

(i) If the day on which default LLFs are to be applied is a clock change day, the set of LLFs approved for the corresponding clock change day in previous year shall be used; or

(ii) If, when attempting to apply a default value, the corresponding day in the previous year is found to be a clock change day, the LLFs approved for the day immediately after that clock change day shall be used;

~~(g)~~If, after attempting to apply the rules in (b) to (c), there is no data available from the corresponding Settlement Period in the previous year, a default LLF of 1.000 shall be applied.

In each instance, the default LLFs shall only be replaced by approved LLFs notified in accordance with Section 2.3.21.

3.4 Recalculation of LLFs

The LDSO shall employ the following guidelines when recalculating LLFs:

(a) Site Specific LLFs which have been recalculated in the last 5 years, will only need to be recalculated when this 5 years is complete, even if the last recalculation was completed before ~~the implementation of Modification P216 on~~ 20 April 2009;

(b) Site Specific LLFs which have not been recalculated in the last 5 years prior to ~~the implementation of Modification P216 on~~ 20 April 2009, will need to be recalculated for the second LLF submission following this date;

(c) New Site Specific LLFs (for new sites, or sites that have moved to Site Specific LLFs as a result of Principle 1) must be calculated for the first LLF submission following ~~the implementation of Modification P216 on~~ 20 April 2009; and

~~(d) Generic LLFs must be recalculated for the first LLF submission, following the implementation of Modification P216 on 20 April 2009.~~

3.5 LLF Calculation Audit Scope

The LLF Calculation audit[33] covers the checks outlined below:

1. Confirm all LLFs submitted have effective from dates of 1 April;

2. Confirm that CVA and SVA LLFs were submitted by a Category X Signatory;

3. Confirm all LLFs submitted are calculated to at least 3 decimal places and submitted to 3 decimal places (as per Principle 2);

4. Confirm data files are in the correct formats:

   (a) For CVA LLFs, confirm that the long and/or short format files are in accordance with the format defined in Appendix 5;~~.~~

   (b) For SVA LLFs, confirm that the D0265 file is in accordance with the format defined in the Data Transfer Catalogue (DTC) in Appendix 6~~;~~.

5. Confirm that the number of Settlement Periods for each Settlement Date matches the number of LLFs submitted for that date;

6. Confirm that all SVA LLFC IDs submitted are entered in MDD or an application has been made to do so and that LLFs have been submitted for all LLFCs contained in MDD;

7. Conduct a validation check, which will pick out[34]:

   (a) All SVA LLFs which are <0.750~~000~~ or >1.250.~~;~~

   (b) All CVA LLFs which are <0.750~~000~~ or >1.250~~999;~~.

   (c) All revised SVA LLFs which are outside a range specified as:

   {last year's LLF minus 20% of last year's loss[35]} to {last year's LLF plus 20% of last year's loss};

   Examples:

   i) if last year's LLF was 1.050, the valid range for this year would be 1.040 – 1.060; and

   ii) if last year's LLF was 0.950, the valid range for this year would be 0.940 – 0.960.~~;~~

   (d) All revised CVA LLFs which are outside a range specified as:

   {last year's LLF minus 50% of last year's loss[36]} to {last year's LLF plus100% of last year's loss};

[33] BSCCo will use a LLF validation system to conduct a number of the validation checks as outlined in this section.
[34] For checks 7(a) to 7(e) BSCCo shall compare the value submitted by the LDSO with a previous factor for a similar time period.
[35] The loss refers to the proportion of energy lost as a result of electricity flowing through the Distribution System.

Examples:

i) if last year's LLF was 1.050, the valid range for this year would be 1.025 – 1.100; and

ii) if last year's LLF was 0.950, the valid range for this year would be 0.900 – 0.975.

(e) All sites with new CVA or SVA Site Specific LLFs (that were not included in last year's submission).

8. Check a representative sample of LLFs to confirm that they have been calculated in accordance with the audited methodology. This check will be performed at the LDSO's offices[37], and will include discussions with the LDSO and consideration of the audit trail.

9. Check a representative sample of Metering Systems to confirm that the correct LLFC has been applied. This check will be performed at the LDSO's offices. For clarity, this check will look at the application of an LLFC to Metering Systems during the last year.

~~**3.6 Submission and Methodology Review timetable for the first year following Modification P216 implementation**~~

~~Differences in submission dates and timescales for the first year are summarised in the table below:~~

~~**Date (First Year)**~~	~~**Date (Subsequent Years)**~~	~~**Action**~~
~~By 1 May 2009~~	~~By 1 August~~	~~Submit methodologies and MSADs to BSCCo.~~
~~By 1 August 2009~~	~~By 1 September~~	~~Complete methodology review.~~
~~20 WD~~	~~5 WD~~	~~Provide draft LDSO reports.~~
~~20 WD~~	~~5 WD~~	~~Resolve any identified non-compliance(s).~~
~~15 WD~~	~~5 WD~~	~~Provide final LDSO reports.~~

[36] The loss refers to the proportion of energy lost as a result of electricity flowing through the Distribution System.

[37] An Embedded LDSO that mirrors LLFs calculated by the relevant Host LDSO will not require a site visit as no calculation has been performed. The calculation audit for Embedded LDSOs that Mirror LLFs will check a representative sample of LLFs to confirm that the LLFs have been Mirrored correctly.

~~3.7~~3.6 Appendices

Methodology Self Assessment Documents

Appendix 1: Methodology Self-Assessment Document (MSAD) for Host LDSOs and Embedded LDSOs that do not Mirror.

Appendix 2: Methodology Self-Assessment Document (MSAD) for Embedded LDSOs that Mirror.

Calculation Self Assessment Documents

Appendix 3: Calculation Self-Assessment Document (CSAD) for Host LDSOs and Embedded LDSOs that do not Mirror.

Appendix 4: Calculation Self-Assessment Document (CSAD) for Embedded LDSOs that Mirror.

LLF Submission forms

Appendix 5: CVA Long and Short Format data files.

Appendix 6: SVA Format data file (D0265).

SVA LLF Summary Report

Appendix 7: SVA Summary Report.

Balancing and Settlement Code

BSC Procedure

BSCP128 - Appendix 1

Methodology Self Assessment Document (MSAD) for Host LDSOs and Embedded LDSOs that do not Mirror

Version 0.1

Effective Date: 20 April 2009

BSCP128 - Appendix 1

Relating to

Methodology Self Assessment Document (MSAD) for Host LDSOs and Embedded LDSOs that do not Mirror

1. Reference is made to the Balancing and Settlement Code (the Code) for the Electricity Industry in Great Britain and, in particular, to the definition of "BSC Procedure".

2. This is BSCP128 Appendix 1, Version 0.11.0 relating to the Methodology Self Assessment Document (MSAD) for Host LDSOs and Embedded LDSOs that do not Mirror.

3. This BSC Procedure Appendix is effective from 20 April 2009.

4. This BSC Procedure has been approved by the Panel.

AMENDMENT RECORD

Version	Date	Description of Changes	CRs Included	Mods Panel Ref
1.0	20/04/09	First Published	P216	153/04

CONTENTS

1.Line loss factor Methodology Self assessment document (MSAD) for Host LDSOS and Embedded LDSOS that do not mirror

NAME OF APPLICANT:

Authorised Person:

Having made appropriate enquiries of other directors and officials of the organisation, we confirm that

- **the Line Loss Factor Methodology Self-Assessment Document (MSAD) is true, complete and accu of any omission or ambiguity or for any other reason; and**
- **in our opinion, the arrangements as documented are adequate and appropriate for that service.**

Approved by		
Print Name	**Signature**	**Position**

Note: The MSAD should be signed off by a Person of relevant Authority for and on behalf of their company in respect of the submission of the Line Loss Factor Methodology.

~~1.1~~1. INTRODUCTION

Objectives of the MSAD

The Audit of Line Loss Factors seeks to provide additional transparency and consistency regarding the calculation and application of Line Loss Factors (LLFs) used in Settlement by creating a set of high level principles, which all LLF methodologies (created by Licensed Distribution System Operators (LDSOs)) must adhere to. The principles are detailed in BSCP128 'Production, Submission, Audit and Approval of Line Loss Factors'.

Licensed Distribution System Operators require a review of the methodologies used to calculate LLFs to ensure that they are consistent with the principles. This Methodology Self Assessment Document (MSAD) is designed to gather factual information about the LLF Methodology and the Principles (as detailed in section 3.1 of BSCP128) that it complies with.

For any defined terms see BSCP128. All defined terms are initially capitalised. Any other terms please refer to the Balancing Settlement Code.

Guidance for completing the MSAD

The MSAD has been split into three sections as follows:

1.1 ~~Introduction~~

~~1.2~~ General Information

This section should be completed in full in respect of all questions.

1.~~3~~2 Methodology Applicability Section.

LDSOs should provide information to which GSP Groups the Methodology applies to.

1.~~4~~3 Principles Assessment Section.

This section contains a series of questions, for each of which guidance is provided in order to either provide clarification or to set out the areas the response should address. It is only required to be completed where a new methodology is submitted or there has been a change to an existing methodology.

The LDSO should also indicate what evidence is available to support the responses given. This evidence will need to be available to BSCCo for the review take place.

References to 'systems' within the MSAD do not relate solely to the functionality of computer hardware and software, but extend to the supporting business and operational processes (including manual processes). The term 'development' in relation to a system refers to either the development of a new system or to any significant changes or upgrades in respect of an existing system.

The final question in this section is not mandatory and is provided so that Applicants can provide any additional information that they consider to be relevant to their methodology and MSAD submission.

~~1.2~~1.1 General Information	
Distribution Company Name	
We confirm that: • the Line Loss Factor Methodology Self-Assessment Document (MSAD) is true, complete and accurate and not misleading because of any omission or ambiguity or for any other reason; and • in our opinion, the arrangements as documented are adequate and appropriate for the provisions under the Balancing and Settlement Code Section K and BSCP128 'Production, Submission, Audit and Approval of Line Loss Factors.	
Authorised Signature	
Name of Authorised Signatory **(Category X as per BSCP38 'Authorisations')**	
Password	
Date	
VERIFICATION OF DETAILS ***To be completed by BSCCo*** DATE RECEIVED _____ NAME AND PASSWORD/SIGNATURE VALID (Y/N) _____	

~~1.3~~1.2 Methodology Applicability	
Please attach a copy of the methodology statement and provide the following details: Methodology Statement Name Publication Date Version No.	
Distribution Area(s) (GSP Group(s)) to which methodology is applicable to:	
Has the methodology changed from the previous submission? If yes please provide a description of the change.	
In the remainder of this document the methodology detailed above will be referred to as 'the methodology'.	

~~1.4~~1.3 Principles Review			
Question	Guidance	LDSO Response: Y/N	Reference to supporting evidence in methodology
1a. Sites that are connected at EHV shall have Site Specific LLFs. How does the methodology comply with this principle?	EHV – Extra High Voltage and Site Specific are defined in BSCP128 please refer to the defined terms. Evidence should include how the LDSO determines sites to be connected at EHV.		
1b. where the customer has requested Site Specific LLFs and the LDSO is in agreement with this request the LDSO shall calculate and assign a Site Specific LLF. How does the methodology comply with this principle?	Evidence will be required to detail correspondence between the customer and the LDSO. The relevant MSIDs shall also be provided.		
2. All LLFs must be calculated and submitted to 3.d.p. How does the methodology comply with this principle?	Evidence shall be provided to clearly state that the LLFs will be calculated to 3 decimal places.		
3. All Site Specific LLFs shall account for Technical Losses only. How does the methodology comply with this principle?	'Technical Losses' is defined in BSCP128 please refer to the defined terms. The LDSO should include a high level description of the calculation method and model used to calculate Site Specific LLFs.		

~~1.4~~1.3 Principles Review			
Question	Guidance	LDSO Response: Y/N	Reference to supporting evidence in methodology
4. Generic LLFs shall account for all Losses (Technical and Non Technical) in the distribution area. How does the methodology comply with this principle?	'Technical' and 'Non Technical losses' are defined in BSCP128 please refer to the defined terms. The LDSO should include a high level description of the calculation method and model used to calculate Generic LLFs.		
5. Site Specific ~~LLF values~~losses and the total GSP Group losses shall be considered in the calculation of Generic LLFs. How does the methodology comply with this principle?	Evidence shall be provided on how the calculation uses both losses associated with MSIDs with Site Specific LLFs and Settlement Data of the relevant GSP Group losses.		
6. Non-EHV Generic LLFCs for Import and Export at the same site where the voltage level is the same shall have the same values. How does the methodology comply with this principle?	Examples of evidence can include MSIDs for sites with Import and Export at the same voltage.		
7a. There shall be no more than 2 Low Voltage (LV) LLFC Groups, in each GSP Group. How does the methodology comply with this principle?	Low Voltage is defined in BSCP128, please refer to the defined terms. Evidence should include the LLFC Groups used.		

~~1.4~~1.3 Principles Review			
Question	Guidance	LDSO Response: Y/N	Reference to supporting evidence in methodology
7b. There shall be no more than 2 High Voltage (HV) LLFC Groups, in each GSP Group. How does the methodology comply with this principle?	High Voltage is defined in BSCP128, please refer to the defined terms. Evidence should include the LLFC Groups used.		
7c. There shall be at least 1 Generic EHV LLFC Group in each GSP Group. How does the methodology comply with this principle?	EHV – Extra High Voltage is defined in BSCP128, please refer to the defined terms. Evidence should include the LLFC Group(s) used.		
8. As a minimum, Generic LLFs shall be calculated separately for Day and Night. How does the methodology comply with this principle?	'Day and Night' is defined in BSCP128 please refer to the defined terms. The methodology statement will be required to define 'Day and Night', LDSOs may also have greater granularity above 'Day and Night'. Evidence will require a specific statement from the methodology and its location.		

~~1.4~~1.3 Principles Review			
Question	Guidance	LDSO Response: Y/N	Reference to supporting evidence in methodology
9. LDSOs shall utilise Settlement data from a Settlement Run at R3 or greater and from a complete 12-month period, for calculating Generic LLFs. The 12-month period to be used shall be the BSC Year1 3 years prior to the BSC Year for which the LLFs are being calculated. ~~LDSOs shall utilise Settlement data from a Settlement Run at R2 or greater and from a complete 12-month period, for calculating LLFs.~~ How does the methodology comply with this principle?	Evidence shall be provided on what data the methodology specifies the calculation to use		
10. Adjustments to LLFs, to take into account historic market wide issues noted in the BSC Auditor's latest Report, can only be made if agreed to be appropriate by the Panel. How does the methodology comply with this principle?	Evidence shall be provided on how the methodology takes into account any Panel decisions with regards to market issues and the calculation of LLFs.		
11. Robust error detection and correction processes shall be in place throughout the calculation and submission of LLFs. How does the methodology comply with this principle?	Evidence shall be provided on what quality management systems and control techniques the methodology describes in the calculation of LLFs		

[1] This principle only applies to the calculation of Generic LLFs. The BSC Year is 1 April to 31 March, for LLFs applying in April 2011 the Settlement Data will cover the 2008 BSC Year, 1 April 2008 to 31 March 2009.

~~1.4~~1.3 Principles Review			
Question	Guidance	LDSO Response: Y/N	Reference to supporting evidence in methodology
12. All Generic LLFs shall be re-calculated at least every 2 years? How does the methodology comply with this principle?	Evidence shall be provided on the frequency of re-calculation or criteria used to determine how often the Generic LLFs are calculated.		
13. All Site Specific LLFs shall be re-calculated when there has been a relevant change to the site or network, and at least every 5 years? How does the methodology comply with this principle?	Evidence shall be provided on the frequency of re-calculation or criteria used to determine how often Site Specific LLFs are calculated.		
14. No changes shall be made to approved Generic LLFs mid year. Annual updates will have an effective from date of 1 April. Where default LLFs have been applied due to an audit failure, these may be updated to the approved LLFs on a prospective basis as determined when the LLFs resubmitted by the LDSO have been approved by the Panel. How does the methodology comply with this principle?	The principle must be included in the methodology statement.		
15. No retrospective changes shall be made to approved Site Specific LLFs or Generic LLFs. How does the methodology comply with this principle?	The principle must be included in the methodology statement.		

~~1.4~~1.3 Principles Review			
Question	Guidance	LDSO Response: Y/N	Reference to supporting evidence in methodology
16. Changes shall only be made to approved Site Specific LLFs mid year if there has been a material change affecting the site; and the revised LLFs have been approved by the Panel. How does the methodology comply with this principle?	The principle must be included in the methodology statement.		
Is there any additional detail you would like to add to your response?	Additional information that supports the review of the Methodology Statement can be added here or appended to the document.		

Balancing and Settlement Code

BSC Procedure

BSCP128 - Appendix 2

Methodology Self Assessment Document (MSAD) for Embedded LDSOs that Mirror

Version 1.0

Effective Date: 20 April 2009

BSCP128 - Appendix 2

Relating to

Methodology Self Assessment Document (MSAD) for Embedded LDSOs that Mirror

1. Reference is made to the Balancing and Settlement Code (the Code) for the Electricity Industry in Great Britain and, in particular, to the definition of "BSC Procedure".

2. This is BSCP128 Appendix 2, Version 1.0 relating to the Methodology Self Assessment Document (MSAD) for Embedded LDSOs that Mirror.

3. This BSC Procedure Appendix is effective from 20 April 2009.

4. This BSC Procedure has been approved by the Panel.

AMENDMENT RECORD

Version	Date	Description of Changes	CRs Included	Mods Panel Ref
1.0	20/04/09	First Published	P216	153/04

CONTENTS

~~1.~~

~~NAME OF APPLICANT:~~

~~Authorised Person:~~

~~Having made appropriate enquiries of other directors and officials of the organisation, we confirm that~~

- ~~the Line Loss Factor Methodology Self-Assessment Document (MSAD) is true, complete and accur~~ ~~any omission or ambiguity or for any other reason; and~~
- ~~in our opinion, the arrangements as documented are adequate and appropriate for that service.~~

~~Approved by~~

~~Print Name~~ ~~Signature~~ ~~Position~~

~~Note: The MSAD should be signed off by a Person of relevant Authority for and on behalf of their company in respect of the submission of the Line Loss Factor Methodology.~~

~~1.1~~1. INTRODUCTION

Objectives of the MSAD

The Audit of Line Loss Factors seeks to provide additional transparency and consistency regarding the calculation and application of Line Loss Factors (LLFs) used in Settlement by creating a set of high level principles, which all LLF methodologies (created by Licensed Distribution System Operators (LDSOs)) must adhere to. The principles are detailed in BSCP128 'Production, Submission, Audit and Approval of Line Loss Factors'.

Licensed Distribution System Operators require a review of the methodologies used to calculate LLFs to ensure that they are consistent with the principles. This Methodology Self Assessment Document (MSAD) is for Embedded LDSOs that **Mirror the HOST LDSO's methodology (or another Embedded LDSO that has its own methodology**. It is designed to gather factual information about the GSP Groups and therefore which LLF Methodology(ies) the Embedded LDSO is Mirroring.

Guidance for completing the MSAD

The MSAD has been split into two sections as follows:

1.1 General Information

This section should be completed in full in respect of all questions.

1.2 Methodology Applicability Section.

LDSOs should provide information for each GSP Group in which it operates and the methodology it is Mirroring for the relevant GSP Group. Where the Embedded LDSO does not operate in a GSP Group, the Host LDSO field should be marked as N/A and other fields for that GSP Group left blank.

1.3 Generic Supporting Information

LDSOs should provide the information requested in the table for each GSP Group in which it operates.

~~1.2~~1.1 General Information	
Distribution Company Name	
We confirm that: • the Line Loss Factor Methodology Self-Assessment Document (MSAD) is true, complete and accurate and not misleading because of any omission or ambiguity or for any other reason; and • in our opinion, the arrangements as documented are adequate and appropriate for the provisions under the Balancing and Settlement Code Section K and BSCP128 'Production, Submission, Audit and Approval of Line Loss Factors.	
Authorised Signature	
Name of Authorised Signatory **(Category X as per BSCP38 'Authorisations')**	
Password	
Date	
VERIFICATION OF DETAILS ***To be completed by BSCCo*** DATE RECEIVED _____ NAME AND PASSWORD/SIGNATURE VALID (Y/N) _____	

1.2 Methodology Applicability by GSP Group			
GSP Group	**Do you have any ~~sites~~Metering Systems within this GSP Group?~~Host LDSO~~**	**Will you Mirror the Host LDSO LLFs?~~Methodology Statement Version No.~~**	**If you are not Mirroring the Host LDSO LLFs please provide an explanation of your LLF calculation**
_A Eastern	Yes/No	Yes/No	
_B East Midlands	Yes/No	Yes/No	
_C London	Yes/No	Yes/No	
_D Merseyside and North Wales	Yes/No	Yes/No	
_E Midlands	Yes/No	Yes/No	
_F Northern	Yes/No	Yes/No	
_G North Western	Yes/No	Yes/No	
_H Southern	Yes/No	Yes/No	
_J South Eastern	Yes/No	Yes/No	
_K South Wales	Yes/No	Yes/No	
_L South Western	Yes/No	Yes/No	
_M Yorkshire	Yes/No	Yes/No	

_N South Scotland	Yes/No	Yes/No	
_P North Scotland	Yes/No	Yes/No	

Note: Where an Embedded LDSO proposes to use their own methodology to calculate any LLFs the MSAD document 'MSAD for Host LDSOs and Embedded LDSOs that do not Mirror' (BSCP128 Appendix 1 to BSCP128) should be completed.

1.3 Generic supporting information

GSP Group	LLFC Group Description	Voltage (EHV/HV/LV)	Applicable LLFCs	No. of Metering Point Identification Numbers (MPANs)[1]

[1] Approximate numbers are acceptable at date of submission.

Balancing and Settlement Code

BSC Procedure

BSCP128 - Appendix 3

Calculation Self Assessment Document (CSAD) for Host LDSOs and Embedded LDSOs that do not Mirror

Version 1.0

Effective Date: 20 April 2009

BSCP128 - Appendix 3

Relating to

Calculation Assessment Document (CSAD) for Host LDSOs and Embedded LDSOs that do not Mirror

1. Reference is made to the Balancing and Settlement Code (the Code) for the Electricity Industry in Great Britain and, in particular, to the definition of "BSC Procedure".

2. This is BSCP128 Appendix 3, Version 1.0 relating to the Calculation Self Assessment Document (CSAD) for Host LDSOs and Embedded LDSOs that do not Mirror.

3. This BSC Procedure Appendix is effective from20 April 2009.

4. This BSC Procedure has been approved by the Panel.

AMENDMENT RECORD

Version	Date	Description of Changes	CRs Included	Mods Panel Ref
1.0	20/04/09	First Published	P216	153/04

CONTENTS

1.calculation assessment document (cSAD) for Host LDSOS and Embedded LDSOS that do not mirror

NAME OF APPLICANT:

Authorised Person:

Having made appropriate enquiries of other directors and officials of the organisation, we confirm that:

- the Line Loss Factor Calculation Self-Assessment Document (CSAD) is true, complete and accurate and not misleading because of any omission or ambiguity or for any other reason; and
- in our opinion, the arrangements as documented are adequate and appropriate for the provisions under the Balancing and Settlement Code Section K and BSCP128 'Production, Submission, Audit and Approval of Line Loss Factors.

Approved by			
Print Name	Signature	Position	Date

Note: The CSAD should be signed off by a Person of relevant Authority for and on behalf of their company in respect of the submission of the Line Loss Factor Methodology.

~~1.1~~1. INTRODUCTION

Objectives of the CSAD

The Audit of Line Loss Factors seeks to provide additional transparency and consistency regarding the calculation and application of Line Loss Factors (LLFs) used in Settlement by creating a set of high level principles, which all LLF methodologies (created by Licensed Distribution System Operators (LDSOs)) must adhere to. The principles are detailed in BSCP128 'Production, Submission, Audit and Approval of Line Loss Factors'. The LDSO must then calculate the LLFs according to their approved methodology statement. An audit of the LLF calculations is required to ensure that they are consistent with the approved methodology.

This Calculation Self Assessment Document (CSAD) is designed to gather factual information about the compliance of the LLF Calculations and the methodology it applies to.

For any defined terms see BSCP128. All defined terms are initially capitalised. Any other terms please refer to the Balancing Settlement Code.

Guidance for completing the CSAD

The CSAD has been split into three sections as follows:

~~1.1 Introduction~~

1.~~2~~1 General Information

This section should be completed in full in respect of all questions.

1.~~2~~3 Calculation Applicability Section.

LDSOs should provide information to which GSP Groups and Methodology the calculation applies to.

1.~~3~~4 Calculations Assessment Section.

This section contains a series of questions, for each of which guidance is provided in order to either provide clarification or to set out the areas the response should address.

The LDSO should also indicate what evidence is available to support the responses given. This evidence will need to be available to BSCCo for the audit to review take place.

References to 'systems' within the CSAD do not relate solely to the functionality of computer hardware and software, but extend to the supporting business and operational processes (including manual processes). The term 'development' in relation to a system refers to either the development of a new system or to any significant changes or upgrades in respect of an existing system.

The final question in this section is not mandatory and is provided so that Applicants can provide any additional information that they consider to be relevant to their application.

~~1.2~~1.1 General Information	
Distribution Company Name:	
We confirm that: • the Line Loss Factor Calculation Self-Assessment Document (CSAD) is true, complete and accurate and not misleading because of any omission or ambiguity or for any other reason; and • in our opinion, the arrangements as documented are adequate and appropriate for the provisions under the Balancing and Settlement Code Section K and BSCP128 'Production, Submission, Audit and Approval of Line Loss Factors.	
Authorised Signature:	
Name of Authorised Signatory: **(Category X as per BSCP38 'Authorisations')**	
Password:	
Date:	
VERIFICATION OF DETAILS ***To be completed by BSCCo*** DATE RECEIVED: _____ NAME AND PASSWORD/SIGNATURE VALID (Y/N): _____	

~~1.3~~1.2 Calculation Applicability	Details:
Please provide details of the relevant methodology statement that the calculations comply to:	
Methodology Statement Name: Publication Date: Version No.:	
Distribution Area(s) (GSP Group(s)) to which methodology is applicable to:	
Are the LLFs ~~are~~ calculated in accordance with the methodology statement detailed above? (Yes/No)	
Have you re-calculated ~~any~~ LLFs ~~since the last~~for this annual submission? If so please provide details.~~Has the methodology changed since last year's submission? If so please provide details.~~	

~~1.4~~1.3 Calculations Assessment				
No.	**Question**	**Guidance**	**Response**	**Evidence**
1a	**Please provide details of the calculation method for Site Specific LLFs.**	Please give a description of the calculation method used. This should include a reference to the location in the methodology statement. The LDSO may wish to include an illustrative example as evidence.		
1b	**Please provide details of the process steps for your calculation of Site Specific LLFs.**	Please give a description of the end to end process for calculating Site Specific LLFs. The LDSO may wish to include high level flow diagram of the process or internal working instructions that detail the process.		
2a	**Please provide details of the calculation method for Generic LLFs.**	Please give a description of the calculation method used. This should include a reference to the location in the methodology statement.		
2b	**Please provide details of the process steps for your calculation of Generic LLFs.**	Please give a description of the end to end process for calculating Generic LLFs. LDSO may wish to include high level flow diagram of the process or internal working instructions that detail the process.		

~~1.4~~1.3 Calculations Assessment				
No.	**Question**	**Guidance**	**Response**	**Evidence**
3	**Please complete the table of information for all Site Specific and Generic LLFs as detailed in section 2.**	Data can be submitted in Excel file format with your CSAD submission. Section 2 is for supporting information for Site Specific and Generic data information submission. This information is used to aid the validation of the LLF data submission. LDSOs may choose to submit the information in Excel format as an attachment to the CSAD.		
4	**Have all changes or new SVA LLFC IDs been submitted into the Market Domain Data (MDD) change process (as per BSCP509)? If so please give details.**	Any changes or new LLFC IDs must be submitted through the MDD change process. The correct LLFC Ids (and supporting information) are required to be approved in MDD prior to submission of the SVA LLFs. LDSOs should confirm that the MDD Change Request Form(s) (with CR References) have been submitted (see BSCP509 for further details).		
5	**Have all SVA LLFs been submitted in the D0265 file format? ~~(Y/N)~~**	The file format for SVA LLF submission is detailed in Appendix 6 of BSCP128 or in the Data Transfer Catalogue.		

~~1.4~~1.3 Calculations Assessment				
No.	**Question**	**Guidance**	**Response**	**Evidence**
6	**Have CVA LLFs been submitted in the specified long or short file format? ~~(Y/N)~~**	The file format for CVA LLF submission is detailed in Appendix 5 of BSCP128. There are two formats that can be used, a long format detailing every Settlement Day and Settlement Period LLF and a short format detailing the LLF to be used for specified date ranges. The file requires a checksum, further information on calculating the checksum is detailed in section Appendix 5 of BSCP128.		
7	**Are all LLFs submitted for start date 01 April (and start Settlement Period 1)? If not please give details,**	The annual submission of LLFs covers the period 01 April to 31 March. Confirmation is required that all LLFs in the submission start from Settlement Period 1 on 01 April. Evidence will detail how this had been checked.		
8	**Are all LLFs calculated to at least 3 decimal places and submitted to 3 decimal places? (Y/N)**	LLFs are required to be calculated to three decimal places. Please confirm that all LLFs are calculated to 3.d.p in all files submitted. Evidence should include details of how		

~~1.4~~1.3 Calculations Assessment				
No.	**Question**	**Guidance**	**Response**	**Evidence**
		this validation has been carried out.		
9a	**Are all SVA LLFs ≥ 0.750~~000~~ and ≤1.250? (Y/N)**	Please confirm that all SVA LLFs are calculated within the range specified. Evidence should include details of how this validation has been carried out.		
9b	**Are all CVA LLFs ≥0.750~~000~~ and ≤1.250~~999~~? (Y/N)**	Please confirm that all CVA LLFs are calculated within the range specified. Evidence should include details of how this validation has been carried out.		
9c	**Are there any SVA LLFs that have significantly changed from the last submission of LLFs? BSCCo would therefore expect evidence to be provided for all LLFs which are expected to breach this tolerance.**	BSCCo will be validating the SVA submission in accordance with BSCP128 Section 3.5 point 7 c)~~.~~. BSCCo will identify any LLF values that are outside of the~~a~~ range specified. ~~(+/- 20% change from the last LLF submission). Any values that fall outside of this range,~~ BSCCo will request from the LDSO evidence for any values that fall outside of this range and supporting rationale to justify this change. Evidence should include details of how this validation has been carried out and supporting rationale for the change in LLF Values.		

~~1.4~~1.3 Calculations Assessment				
No.	**Question**	**Guidance**	**Response**	**Evidence**
9d	**Are there any CVA LLFs that have significantly changed from the last submission of LLFs? BSCCo would therefore expect evidence to be provided for all LLFs which are expected to breach this tolerance.**	BSCCo will be validating the CVA submission in accordance with BSCP128 Section 3.5 point 7 d~~e~~). ~~.~~ BSCCo will identify any LLF values that are outside the~~a~~ range specified. ~~(+100% and -50% change from the last LLF submission). Any values that fall outside of this range~~, BSCCo will request from the LDSO evidence for any values that fall outside of this range and supporting rationale to justify this change. Evidence should include details of how this validation has been carried out and supporting rationale for the change in LLF Values.		
9e	**Are there any new Site Specific sites that were not included in last year's submission? If so, please give details.**	Please provide information in 2.1 for any new Site Specific sites.		
10	**Have any sites undergone a Relevant Change? If so please provide details.**	Relevant Changes are defined in BSCP128 as 'A significant change to the physical plant, apparatus, distribution network, or capacity which causes a change to the Line Loss Factors'.		

~~1.4~~1.3 Calculations Assessment				
No.	**Question**	**Guidance**	**Response**	**Evidence**
		Information and supporting evidence should be detailed in the response. MSIDs should be flagged with the relevant information as in 2.1.		
11	**Please provide details of the error checking processes carried out when calculating LLFs.**	LDSOs are required to have robust error detection and correction processes in place throughout the calculation of LLFs. LDSOs may wish to provide references in to their working instructions and/or process maps, including details on the error checking processes used in the calculation process.		
12	**Have all Site Specific LLFs been calculated within the last 5 years? (Y/N).**	Site Specific LLFs must be calculated at least every 5 years. The cut off for the 5 year period is 30 September. Any failure to do so will lead to a non-compliance. For example, the annual LLFs for 1 April 201~~6~~1, with calculations submission date of 1 October 201~~5~~0, any Site Specific LLFs calculated up to and including 30 September 20~~10~~05 must have been re-calculated. ~~The 5 year requirement will be operational from submissions for the~~		

~~1.4~~1.3 Calculations Assessment				
No.	**Question**	**Guidance**	**Response**	**Evidence**
		~~2011 annual re-load. Therefore any Site Specific LLFs calculated up to 30 September 2005 will need to be re-calculated for the 1 October 2010 submission.~~		
13	**Have all Generic LLFs been calculated within the last 2 years? (Y/N)**	Generic LLFs must be calculated at least every 2 years. The cut off for the 2 year period is 30 September. Any failure to do so will lead to a non-compliance. For example, the annual LLFs for 1 April 201~~6~~1, with calculations submission date of 1 October 201~~5~~0, any ~~Site Specific~~ LLFs calculated up to and including 30 September 2008~~13~~ must have been re-calculated. ~~The submission for April 2010 annual re-load will require all Generic LLFs to be re-calculated.~~		
14	**Does the calculation involve third parties? If so please provide details**	Where aspects of the calculation are sub-contracted to a third party the activity should be detailed in the response field (description of process, process maps, quality checks, etc). The LDSO is still responsible for any elements that it has contracted out.		

~~1.4~~1.3 Calculations Assessment				
No.	**Question**	**Guidance**	**Response**	**Evidence**
		For example, a LDSO may utilise a third Party to generate the Site Specific LLFs for a particular site.		
15	**Is there any additional detail you would like to add to your response?**	Additional information that supports the Audit of the Calculations can be added here or appended to the document.		

2. APPENDICES

2.1 Site Specific and EHV generic supporting information for both CVA and SVA (if applicable)

MSID/ LLFC	Circuit Name	Connection Voltage (kV)	Voltage of circuit to which the Meter is connected (primary voltage) (kV)	STOD 1[1] LLF/ [STOD name][2]	STOD 2 LLF/ [STOD name]~~Maximum Export capability of connected Total System circuit (MVA)~~	STOD 3 LLF/ [STOD name]~~Maximum Import capability of connected Total System circuit (MVA)~~	STOD 4 LLF/ [STOD name]~~Maximum capacity of connection to the system (MVA)~~	STOD 5 LLF/ [STOD name]~~Expected Import / Export volume behaviour~~	Import / Export and MVA	When were the LLFs last calculated for the MSID?	Are the LLFs Site Specific?	Was the site included in the previous annual submission?	Have any of the MSIDs undergone a relevant change since the previous annual submission?[3]
										Date	Yes / No	Yes / No	Yes / No
										Date	Yes / No	Yes / No	Yes / No
										Date	Yes / No	Yes / No	Yes / No
										Date	Yes / No	Yes / No	Yes / No
										Date	Yes / No	Yes / No	Yes / No
										Date	Yes / No	Yes / No	Yes / No

[1] The number of Seasonal Time of Day (STOD) Periods may be greater than or less than 5, please amend the table accordingly for your submission.

[2] For example Day or Other.

[3] If yes, please enclose a brief explanation as an attachment when submitting the Line Loss Factors to BSCCo for approval. This should explain, for each applicable MSID, why the values have changed from those previously in Settlement.

2.2 Generic supporting information

~~Generic Sites~~			
~~LLFC Group~~	~~Voltage (EHV/HV/LV)~~	~~Applicable LLFCs~~	~~Last calculation date~~

LLFC Group Name	Voltage (EHV/HV/LV)	Applicable LLFCs	STOD 1 LLF[4]/ [STOD name] [5]	STOD 2 LLF/ [STOD name]	STOD 3 LLF/ [STOD name]	STOD 4 LLF/ [STOD name]	STOD 5 LLF/ [STOD name]	Last calculation date	No. of MPANs[6]

[4] The number of Seasonal Time of Day (STOD) Periods may be greater than or less than 5, please amend the table accordingly for your submission.

[5] For example Day or Other.

[6] Approximate numbers are acceptable at the date of submission.

Balancing and Settlement Code

BSC Procedure

BSCP128 - Appendix 4

Line Loss Factor Calculation Self Assessment Document (CSAD) for Embedded LDSOs that Mirror

Version 1.0

Effective Date: 20 April 2009

BSCP128 - Appendix 4

Relating to

Line Loss Factor Calculation Self Assessment Document (CSAD) for Embedded LDSOs that Mirror

1. Reference is made to the Balancing and Settlement Code (the Code) for the Electricity Industry in Great Britain and, in particular, to the definition of "BSC Procedure".

2. This is BSCP128 Appendix 4, Version 1.0 relating to the Calculation Self Assessment Document (CSAD) for Embedded LDSOs that Mirror.

3. This BSC Procedure Appendix is effective from 20 April 2009.

4. This BSC Procedure has been approved by the Panel.

AMENDMENT RECORD

Version	Date	Description of Changes	CRs Included	Mods Panel Ref
1.0	20/04/09	First Published	P216	153/04

CONTENTS

1.calculation assessment document (cSAD)for embedded lDSOS that mirror

NAME OF APPLICANT:

Authorised Person:

Having made appropriate enquiries of other directors and officials of the organisation, we confirm that:

- the Line Loss Factor Calculation Self-Assessment Document (CSAD) is true, complete and accurate and not m ambiguity or for any other reason; and
- in our opinion, the arrangements as documented are adequate and appropriate for the provisions under the Balanci BSCP128 'Production, Submission, Audit and Approval of Line Loss Factors.

Approved by		
Print Name	**Signature**	**Position**

Note: The CSAD should be signed off by a Person of relevant Authority for and on behalf of their company in respect of the submission of the Line Loss Factor Methodology.

~~1.1~~1. INTRODUCTION

Objectives of the CSAD

The Audit of Line Loss Factors seeks to provide additional transparency and consistency regarding the calculation and application of Line Loss Factors (LLFs) used in Settlement by creating a set of high level principles, which all LLF methodologies (created by Licensed Distribution System Operators (LDSOs)) must adhere to. The principles are detailed in BSCP128 'Production, Submission, Audit and Approval of Line Loss Factors'. For Embedded LDSOs that Mirror another LDSO's methodology, they must obtain the LLFs (either from that LDSO or from the BSC Website), process the LLF data in accordance with their own valid Line Loss Factor Groups and Classes and submit them to BSCCo (the LLFs must be in accordance with the methodology approved by the Panel). An audit of the Embedded LDSO's LLF calculations/processing is required to ensure that the LLFs are consistent requirements of the BSC Section K and BSCP128 (and in accordance with the approved methodology).

This Calculation Self Assessment Document for Embedded LDSOs who Mirror (CSAD) is designed to gather factual information about the compliance of the LLF calculations/processing and the methodology it applies to.

For any defined terms see BSCP128. All defined terms are initially capitalised. Any other terms please refer to the Balancing Settlement Code.

Guidance for completing the CSAD

The CSAD has been split into three sections as follows:

~~1.1 Introduction~~

1.~~2~~1 General Information

This section should be completed in full in respect of all questions.

1.~~3~~2 Calculation/Processing Applicability Section.

Embedded LDSOs should provide information to which GSP Groups and LDSOs' methodologies the calculation/processing applies to.

1.~~4~~3 Calculations/Processing Assessment Section.

This section contains a series of questions, for each of which guidance is provided in order to either provide clarification or to set out the areas the response should address.

The Embedded LDSO should also indicate what evidence is available to support the responses given. This evidence will need to be available to BSCCo for the audit to review take place. References to 'systems' within the CSAD do not relate solely to the functionality of computer hardware and software, but extend to the supporting business and operational processes (including manual processes). The term 'development' in relation to a system refers to either the development of a new system or to any significant changes or upgrades in respect of an existing system.

The final question in this section is not mandatory and is provided so that Embedded LDSOs can provide any additional information that they consider to be relevant to their LLF and CSAD submission.

~~1.~~21.1 **General Information**	
Distribution Company Name:	
We confirm that: • the Line Loss Factor Calculation Self-Assessment Document (CSAD) is true, complete and accurate and not misleading because of any omission or ambiguity or for any other reason; and • in our opinion, the arrangements as documented are adequate and appropriate for the provisions under the Balancing and Settlement Code Section K and BSCP128 'Production, Submission, Audit and Approval of Line Loss Factors.	
Authorised Signature:	
Name of Authorised Signatory: **(Category X as per BSCP38 'Authorisations')**	
Password:	
Date:	
VERIFICATION OF DETAILS ***To be completed by BSCCo*** DATE RECEIVED: _____ NAME AND PASSWORD/SIGNATURE VALID (Y/N): _____	

~~1.3~~1.2 Calculation/Processing Applicability		~~Details:~~	
Please give details of the relevant GSP Groups, as an Embedded LDSO, you are operating in:		~~Please state the LDSO's methodology that the Mirrored LLFs comply with.~~	
GSP Group	**Operating in this GSP Group?**	~~Host LDSO Name~~	~~Methodology statement version & date~~
_A Eastern	Yes/No~~Y/N~~		
_B East Midlands	Yes/No~~Y/N~~		
_C London	Yes/No~~Y/N~~		
_D Merseyside and North Wales	Yes/No~~Y/N~~		
_E Midlands	Yes/No~~Y/N~~		
_F Northern	Yes/No~~Y/N~~		
_G North Western	Yes/No~~Y/N~~		
_H Southern	Yes/No~~Y/N~~		
_J South Eastern	Yes/No~~Y/N~~		
_K South Wales	Yes/No~~Y/N~~		
_L South Western	Yes/No~~Y/N~~		
_M Yorkshire	Yes/No~~Y/N~~		
_N South Scotland	Yes/No~~Y/N~~		
_P North Scotland	Yes/No~~Y/N~~		

~~1.3~~1.2 Calculation/Processing Applicability	~~Details:~~
Are the LLFs for each GSP Group you are operating in obtained from the LDSO or the BSCCo Website? Please provide details on how you have obtained the LLFs by GSP Group.	
~~Have you re-calculated~~Do you have any Site Specific sites/LLFs? ~~since the last annual submission?~~ If so please provide details.	

~~1.4~~1.3 LLF Calculations/Processing Assessment

No.	Question	Guidance	Response	Evidence
1a	**Please provide details of the calculation method for Site Specific LLFs.**	Please give a description of the calculation method used. This should include a reference to the location in the methodology statement. The LDSO may wish to include an illustrative example as evidence. If you have no Site Specific LLFs please indicate as N/A.		
1b	**Please provide details of the process steps for your calculation of Site Specific LLFs.**	Please give a description of the end to end process for calculating Site Specific LLFs. The LDSO may wish to include high level flow diagram of the process or internal working instructions that detail the process. If you have no Site specific LLFs please indicate as N/A.		
2a	**Please provide details of how you have obtained the Host LDSO's Generic LLFs. Split by Host LDSO and identify which GSP Group (s) the LLFs are applicable for.**	Please give a description of the method used to obtain the Host LDSO's Generic LLFs. This should include a reference to the location on either the BSCCo's website or how obtained from the Host LDSO's website if applicable. Split by GSP Group and Host LDSO		

~~1.4~~1.3 LLF Calculations/Processing Assessment

No.	Question	Guidance	Response	Evidence
2b	**Please provide details of the process steps for your manipulation of a Host LDSO's Generic LLFs. If different by Host LDSO please give specific details.**	Please give a description of the end to end process for the manipulation of the Host LDSO LLFs so as to construct you Generic LLFs submission by GSP Group. LDSO may wish to include high level flow diagram of the process or internal working instructions that detail the process.		
3	**Please complete the table of information for all Site Specific and Generic LLFs as detailed in section 2.**	Data can be submitted in Excel file format with your CSAD submission. Section 2 is for supporting information for Site Specific and Generic data information submission. This information is used to aid the validation of the LLF data submission. LDSOs may choose to submit the information in Excel format as an attachment to the CSAD.		
4	**Have all changes or new SVA LLFC IDs been submitted into the Market Domain Data (MDD) change process (as per BSCP509)? If so please give details.**	Any changes or new LLFC IDs must be submitted through the MDD change process. The correct LLFC Ids (and supporting information) are required to be approved in MDD prior to submission of the SVA LLFs. LDSOs should confirm that the MDD Change		

~~1.4~~1.3 LLF Calculations/Processing Assessment				
No.	**Question**	**Guidance**	**Response**	**Evidence**
		Request Form(s) (with CR References) have been submitted (see BSCP509 for further details).		
5	**Have all SVA LLFs been submitted in the D0265 file format? ~~(Y/N)~~**	The file format for SVA LLF submission is detailed in Appendix 6 of BSCP128 or in the Data Transfer Catalogue.		
6	**Have CVA LLFs been submitted in the specified long or short file format? ~~(Y/N)~~**	The file format for CVA LLF submission is detailed in Appendix 5 of BSCP128. There are two formats that can be used, a long format detailing every Settlement Day and Settlement Period LLF and a short format detailing the LLF to be used for specified date ranges. The file requires a checksum, further information on calculating the checksum is detailed in section Appendix 5 of BSCP128. If CVA LLFs please indicate as N/A.		
7	**Are all LLFs submitted for start date 01 April (and start**	The annual submission of LLFs covers the period 01 April to 31 March.		

~~1.4~~1.3 LLF Calculations/Processing Assessment				
No.	**Question**	**Guidance**	**Response**	**Evidence**
	Settlement Period 1)? If not please give details,	Confirmation is required that all LLFs in the submission start from Settlement Period 1 on 01 April. Evidence will detail how this had been checked.		
8	**Are all LLFs calculated to at least 3 decimal places and submitted to 3 decimal places? (Y/N)**	LLFs are required to be calculated to three decimal places. Please confirm that all LLFs are calculated to 3.d.p in all files submitted. Evidence should include details of how this validation has been carried out.		
9a	**Are all SVA LLFs ≥ 0.750~~000~~ and ≤1.250? (Y/N)**	Please confirm that all SVA LLFs are calculated within the range specified. Evidence should include details of how this validation has been carried out.		
9b	**Are all CVA LLFs ≥0.750~~000~~ and ≤1.250~~999~~? (Y/N)**	Please confirm that all CVA LLFs are calculated within the range specified. Evidence should include details of how this validation has been carried out.		
9c	**Are there any SVA Site Specific LLFs that have significantly changed from the last submission of LLFs? BSCCo would therefore expect evidence**	BSCCo will be validating the SVA submission in accordance with BSCP128 Section 3.5 point 7 c). BSCCo will identify any LLF values that are outside of ~~a~~the range specified.		

~~1.4~~1.3 LLF Calculations/Processing Assessment				
No.	**Question**	**Guidance**	**Response**	**Evidence**
	to be provided for all LLFs which are expected to breach this tolerance.	~~(+/- 20% change from the last LLF submission)~~. ~~Any values that fall outside of this range~~, BSCCo will request from the LDSO evidence for any values that fall outside of this range and supporting rationale to justify this change. ~~Evidence should include details of how this validation has been carried out and supporting rationale for the change in LLF Values.~~		
9d	**Are there any CVA LLFs that have significantly changed from the last submission of LLFs? BSCCo would therefore expect evidence to be provided for all LLFs which are expected to breach this tolerance.**	BSCCo will be validating the CVA submission in accordance with BSCP128 Section 3.5 point 7 ~~c~~d). BSCCo will identify any LLF values that are outside of the ~~a~~ range specified. ~~(+100% and -50% change from the last LLF submission)~~. ~~Any values that fall outside of this range~~, BSCCo will request from the LDSO evidence for any values that fall outside of this range and supporting rationale to justify this change. ~~Evidence should include details of how this validation has been carried out and supporting rationale for the change in~~		

~~1.4~~1.3 LLF Calculations/Processing Assessment				
No.	**Question**	**Guidance**	**Response**	**Evidence**
		~~LLF Values.~~		
9e	**Are there any new Site Specific sites that were not included in last year's submission? If so, please give details.**	Please provide information in 2. 1 for any new Site Specific sites. If you have no Site Specific sites please indicate as N/A.		
10	**Have any sites undergone a Relevant Change? If so please provide details.**	Relevant Changes are defined in BSCP128 as 'A significant change to the physical plant, apparatus, distribution network, or capacity which causes a change to the Line Loss Factors'. Information and supporting evidence should be detailed in the response. MSIDs should be flagged with the relevant information as in 2.1.		
11	**Please ~~give~~ provide details of the error checking processes carried out when calculating/ manipulating LLFs.**	LDSOs are required to have robust error detection and correction processes in place throughout the calculation of LLFs. LDSOs may wish to provide references to their working instructions and/or process maps, including details on the error checking processes used in the calculation/manipulation process.		

~~1.4~~1.3 LLF Calculations/Processing Assessment				
No.	**Question**	**Guidance**	**Response**	**Evidence**
12	**Have all Site Specific LLFs been calculated within the last 5 years? (Y/N).**	Site Specific LLFs must be calculated at least every 5 years. The cut off for the 5 year period is 30 September. Any failure to do so will lead to a non-compliance. For example, the annual LLFs for 1 April 201~~1~~6, with calculations submission date of 1 October 201~~0~~5, any Site Specific LLFs calculated up to up to and including 30 September 200~~5~~10 must have been re-calculated. ~~The 5 year requirement will be operational from submissions for the 2011 annual re-load. Therefore any Site Specific LLFs calculated up to 30 September 2005 will need to be re-calculated for the 1 October 2010 submission.~~ If you have no Site specific LLFs please indicate as N/A.		
13	**Have all Generic LLFs been calculated within the last 2 years? (Y/N)**	Generic LLFs must be calculated at least every 2 years. The cut off for the 2 year period is 30 September. Any failure to do so will lead to a non-compliance. For example, the annual LLFs for 1		

~~1.4~~1.3 LLF Calculations/Processing Assessment				
No.	**Question**	**Guidance**	**Response**	**Evidence**
		April 2011, with calculations submission date of 1 October 2010, any LLFs calculated up to 30 September 2008 must be re-calculated.		
14~~13~~	**Does the calculation/manipulation involve third parties? If so please provide details**	Where aspects of the calculation/manipulation are sub-contracted to a third party the activity should be detailed in the response field (description of process, process maps, quality checks, etc). The LDSO is still responsible for any elements that it has contracted out. For example, a LDSO may utilise a third Party to generate the Site Specific LLFs for a particular site.		
15~~14~~	**Is there any additional detail you would like to add to your response?**	Additional information that supports the audit of the process can be added here or appended to the document.		

2. APPENDICES

2.1 Site Specific and EHV generic supporting information for both CVA and SVA (if applicable)

MSID / LLFC	Circuit Name	Connection Voltage (kV)	STOD 1[1] LLF ~~Voltage of circuit to which the Meter is connected (primary voltage) (kV)~~	STOD 2 LLF ~~Maximum Export capability of connected Total System circuit (MVA)~~	STOD 3 LLF ~~Maximum Import capability of connected Total System circuit (MVA)~~	STOD 4 LLF	STOD 5 LLF ~~Maximum capacity of connection to the system (MVA)~~	~~Expected~~ Import / Export ~~volume behaviour~~	When were the LLFs last calculated for the MSID?	Are the LLFs Site Specific?	Was the site included in the previous submission?	Have any of the MSIDs undergone a relevant change since the previous submission?
			[Enter text description for STOD][2]	Enter text description for STOD]	Enter text description for STOD]	Enter text description for STOD]	Enter text description for STOD]					
									Date	Yes / No	Yes / No	Yes / No
									Date	Yes / No	Yes / No	Yes / No
									Date	Yes / No	Yes / No	Yes / No
									Date	Yes / No	Yes / No	Yes / No
									Date	Yes / No	Yes / No	Yes / No
									Date	Yes / No	Yes / No	Yes / No

[1] The number of Seasonal Time of Day (STOD) Periods may be greater than or less than 5, please amend the table accordingly for your submission.

[2] For example Day or Other.

2.2 Generic supporting information

Please complete a separate table for each GSP Group (these tables can the submitted in spreadsheet form).

~~Generic Sites~~ ~~GSP Group: __~~				
~~LLFC Group~~	~~Voltage (EHV/HV/LV)~~	~~Applicable LLFCs~~	~~Last calculation date~~	~~No. of Metering Point Identification Numbers (MPANs)~~[3]

Generic Sites	
GSP Group:	

[3] ~~Approximate numbers are acceptable at date of submission.~~

LLFC Group	Voltage (EHV/HV/LV)	Applicable LLFCs	STOD 1[4] LLF	STOD 2 LLF	STOD 3 LLF	STOD 4 LLF	STOD 5 LLF	No. of Metering Point Identification Numbers (MPANs)[5]
			[Enter text description for STOD][6]	Enter text description for STOD]	Enter text description for STOD]	Enter text description for STOD]	Enter text description for STOD]	

[4] The number of Seasonal Time of Day (STOD) Periods may be greater than or less than 5, please amend the table accordingly for your submission.

[5] Approximate numbers are acceptable at date of submission.

[6] For example Day or Other.

Balancing and Settlement Code

Code of Practice One

CODE OF PRACTICE FOR THE METERING OF CIRCUITS WITH A RATED CAPACITY EXCEEDING 100MVA FOR SETTLEMENT PURPOSES

Issue 2

Version 7.0

DATE: 26 November 2009

Code of Practice One

CODE OF PRACTICE FOR THE METERING OF CIRCUITS WITH A RATED CAPACITY EXCEEDING 100MVA FOR SETTLEMENT PURPOSES.

1. Reference is made to the Balancing and Settlement Code for the Electricity Industry in Great Britain, and in particular, to the definition of "Code of Practice" in Annex X-1 thereof.

2. This is Code of Practice One, Issue 2, Version 7.0.

3. This Code of Practice shall apply to Metering Systems comprising Metering Equipment that are subject to the requirements of Section L of the Balancing and Settlement Code.

4. This Code of Practice is effective from 26 November 2009.

5. This Code of Practice has been approved by the Panel.

AMENDMENT RECORD

Issue	Date	Version	Description of Changes	Changes Included	Mods/ Panel/ Committee Refs
Draft	18/3/93	0.10	Recommended to PEC; MSC		
1	15/4/93	1.0	Endorsed by PEC; CoP WG		
1	Code Effective Date[1]	1.0	Re-badging of Code of Practice One for the implementation of the Balancing and Settlement Code; BSCCo		Panel 16/11/00 (Paper 07/003)
1	BETTA Effective Date	2.0	Rebadging changes for the CVA Feb 05 Release; BSCCo	BETTA 6.3	
2	23/02/06	3.0	February 06 Release; BSCCo	CP1051	ISG55/002
2	06/11/08	4.0	November 08 Release; BSCCo	CP1238	ISG8801 SVG88/02
2	25/06/09	5.0	June 09 Release; BSCCo	CP1264	ISG94/01 SVG94/02
2	20/11/09	6.0	P238 Modification; BSCCo	P238	Panel 160/05
2	26/11/09	7.0	P230 Modification; BSCCo	P230	Panel

[1] "Code Effective Date" means the date of the Framework Agreement.

CODE OF PRACTICE FOR THE METERING OF CIRCUITS WITH A RATED CAPACITY EXCEEDING 100MVA FOR SETTLEMENT PURPOSES.

CONTENTS

FOREWORD

This Code of Practice defines the minimum requirements for the Metering Equipment required for the measurement and recording of electricity transfers at Defined Metering Points where the rated circuit capacity exceeds 100MVA.

For the purpose of this Code of Practice the rated circuit capacity in MVA shall be determined by the lowest rated primary plant (eg transformer rating, line rating, etc) of the circuit. The Metering Equipment provision and accuracy requirements shall anticipate any future up-rating consistent with the installed primary plant. The primary plant maximum continuous ratings shall be used in this assessment.

For the purpose of this Code of Practice, the use of summation current transformers shall not be permitted. The use of interposing current transformers is permitted providing the overall Metering System accuracy is maintained.

Where a material change to a Metering System takes place, then this Metering System must be modified to comply with the most up to date version of this Code of Practice. Changes to a Metering System are considered to be material where they constitute a change to:

i. Switchgear containing measurement transformers; and/or

ii. The primary plant associated with the Metering System i.e. measurement transformers.

Where a Metering Dispensation applies and where the Actual Metering Point is not at the Defined Metering Point, a material change affecting the Defined Metering Point may not affect the Metering System at the Actual Metering Point.

BSCCo shall retain copies of, inter alia, this Code of Practice together with copies of all documents referred to in it, in accordance with the provisions of the Balancing and Settlement Code ("the Code").

1. SCOPE

This Code of Practice states the practices that shall be employed, and the facilities that shall be provided for the measurement and recording of the quantities required for Settlement purposes on each circuit where the rated capacity exceeds 100MVA.

It derives force from the Code, and in particular the metering provisions (Section L), to which reference should be made. It should also be read in conjunction with any relevant BSC Procedures.

Metering Equipment that meets the requirements of this Code of Practice is also applicable where the Registrant is required by its Supply Licence (and as referenced in Section L 3.2.6) to install Metering Equipment that is capable of providing measured electricity consumption data for multiple periods (at least half hourly) and providing the Registrant with remote access to such data.

This Code of Practice does not contain the calibration, testing and commissioning requirements for Metering Equipment used for Settlement purposes. These requirements are detailed in Code of Practice Four – "Code of Practice for Calibration, Testing and Commissioning Requirements for Metering Equipment for Settlement Purposes".

Metering Dispensations from the requirements of this Code of Practice may be sought in accordance with the Code and BSCP32.

Meters and Outstations referred to in this Code of Practice shall only achieve successful compliance in respect of any testing detailed in this Code of Practice if the requirements set out in accordance with BSCP601 are also observed and successfully completed or the Registrant has been granted a valid Metering Dispensation covering any departure from the requirements as detailed in this Code of Practice.

In the event of an inconsistency between the provisions of this Code of Practice and the Code, the provisions of the Code shall prevail.

2. REFERENCES

The following documents are referred to in the text:-

BS EN 62053-22	Electricity metering equipment (a.c.). Particular requirements. Static meters for active energy (classes 0.2 S and 0.5 S)
BS EN 62053-23	Electricity metering equipment (a.c.). Particular requirements. Static meters for reactive energy (classes 2 and 3)
BS EN 62056-21	Electricity Metering. Data exchange for meter reading, tariff and load control. Direct local data exchange
BS EN 60044-3	Instrument transformers. Combined transformers
IEC 60044-1	Instrument transformers. Current transformers
IEC 60044-2	Instrument transformers. Inductive voltage transformers
Balancing and Settlement Code	Section X; Annex X-1 and Section L and BSC Procedures
Code of Practice Four	Code of Practice for Calibration, Testing and Commissioning Requirements for Metering Equipment for Settlement Purposes
BSC Procedures	BSCP06, BSCP32, BSCP601
Electricity Act 1989	Schedule 7 as amended by Schedule 1 to the Competition and Services (Utilities) Act 1992.

3. DEFINITIONS AND INTERPRETATIONS

Save as otherwise expressly provided herein, words and expressions used in this Code of Practice shall have the meanings attributed to them in the Code and are included for the purpose of clarification.

Note: * indicates definitions in the Code.

Note: † indicates definitions which supplement or complement those in the Code.

Note: ‡ indicates definitions specific to this Code of Practice

3.1 Active Energy *

Active Energy means the electrical energy produced, flowing or supplied by an electrical circuit during a time interval, and being the integral with respect to time of the instantaneous Active Power, measured in units of watt-hours or standard multiples thereof.

3.2 Active Power *

Active Power means the product of voltage and the in-phase component of alternating current measured in units of watts and standard multiples thereof, that is:-

1,000 Watts = 1 kW

1,000 kW = 1 MW

3.3 Actual Metering Point ‡

Actual Metering Point means the physical location at which electricity is metered.

3.4 Apparent Energy ‡

Apparent Energy means the integral with respect to time of the Apparent Power.

3.5 Apparent Power ‡

Apparent Power means the product of voltage and current measured in units of voltamperes and standard multiples thereof, that is:-

1,000 VA = 1 kVA

1,000 kVA = 1 MVA

3.6 Central Data Collection Agent (CDCA) *

Central Data Collection Agent means the BSC Agent for Central Data Collection in accordance with Section E of the Code.

[CP1324]3.7 Communication Line

Communication Line means a line or link whose components are dedicated to a single Outstation System. A Communication Line shall be identified by a unique number, e.g. CTN line number 123, PSTN line number 321 or IP address 555. Communication Lines may be physical cables or any other such as a radio link. They may be multi addessable in which case each address constitues a Communication Line.

[CP1324]3.~~7~~8 CTN ‡

CTN means the Electricity Supply Industry (ESI) corporate telephone network.

[CP1324]3.~~8~~9 CVA ‡

CVA means "Central Volume Allocation"

[CP1324]3.~~9~~10 CVA Customer †

CVA Customer means any customer, receiving electricity directly from the Transmission System, irrespective of from whom it is supplied.

[CP1324]3.~~10~~11 Defined Metering Point ‡

Defined Metering Point means the physical location at which the overall accuracy requirement as stated in this Code of Practice are to be met. The Defined Metering Points are identified in Appendix A and relate to Boundary Points and System Connection Points.

[CP1324]3.~~11~~12 Demand Period ‡

Demand Period means the period over which Active Energy, Reactive Energy or Apparent Energy are integrated to produce Demand Values. For Settlement purposes, each Demand Period shall be of 30 minutes duration, one of which shall finish at 24:00 hours.

[CP1324]3.~~12~~13 Demand Values ‡

Demand Values means, expressed in MW, Mvar or MVA, twice the value of MWh, Mvarh or MVAh recorded during any Demand Period[2]. The Demand Values are half hour demands and these are identified by the time of the end of the Demand Period.

[CP1324]3.~~13~~14 electricity *

"electricity" means Active Energy and Reactive Energy.

[CP1324]3.~~14~~15 Export †

Export means, for the purposes of this Code of Practice, an electricity flow as indicated in Figure 1 of Appendix B.

[CP1324]3.~~15~~16 Import †

[2] Please note that these Demand Values are for use with CVA Metering Systems. SVA Metering Systems shall use units a factor of 10^3 smaller than CVA e.g. kW rather than MW.

Import means, for the purposes of this Code of Practice, an electricity flow as indicated in Figure 1 of Appendix B.

[CP1324]3.~~16~~17 Interrogation Unit ‡

Interrogation Unit means a Hand Held Unit "HHU" (also known as Local Interrogation Unit "LIU") or portable computer which can enter Metering Equipment parameters and extract information from the Metering Equipment and store this for later retrieval.

[CP1324]3.~~17~~18 Meter *

Meter means a device for measuring Active Energy and/or Reactive Energy.

[CP1324]3.~~18~~19 Metering Equipment *

Metering Equipment means Meters, measurement transformers (voltage, current and combination units), metering protection equipment including alarms, circuitry, associated Communications Equipment and Outstation and wiring.

[CP1324]3.~~19~~20 Meter Register ‡

Meter Register means a device, normally associated with a Meter, from which it is possible to obtain a reading of the amount of Active Energy, or the amount of Reactive Energy that has been supplied by a circuit.

[CP1324]3.~~20~~21 Offshore Platform

Has the meaning given to that term in the Grid Code.

[CP1324]3.~~21~~22 Offshore Power Park Module

Has the meaning given to that term in the Grid Code.

[CP1324]3.~~22~~23 Outstation *

Outstation means equipment which receives and stores data from a Meter(s) for the purpose, inter-alia, of transfer of that metering data to the Central Data Collection Agent (CDCA) or a Data Collector as the case may be and which may perform some processing before such transfer and may be in one or more separate units or may be integral with the Meter.

[CP1324]3.~~23~~24 Outstation System ‡

Outstation System means one or more Outstations linked to a single ~~e~~Communication ~~l~~Line~~., except in the case of offshore Metering Systems where an Outstation System means one or more Outstations linked to two communication lines.~~

[CP1324]3.~~24~~25 PSTN ‡

PSTN means the public switched telephone network.

[CP1324]3.~~25~~26 Password ‡

For Meters with integral Outstations: 'Password' means a string of characters of length no less than six characters and no more than twelve characters, where each character is a case insensitive or sensitive alpha character (A to Z) or a digit (0 to 9) or the underscore character (_). Passwords must have a minimum of 2,000,000 combinations, for example six characters if composed of any alphanumeric characters or eight characters if composed only of hexadecimal characters (0 to F). The characters of a hexadecimal password must be in upper case.

For separate Outstations: a Password may be described as above for integral Outstations or a single password of any format[3].

[CP1324]3.~~26~~27 Rated Measuring Current ‡

Rated Measuring Current means the rated primary current of the current transformers in primary plant used for the purposes of measurement.

[CP1324]3.~~27~~28 Reactive Energy *

Reactive Energy means the integral with respect to time of the Reactive Power.

[CP1324]3.~~28~~29 Reactive Power *

Reactive Power means the product of voltage and current and the sine of the phase angle between them, measured in units of voltamperes reactive and standard multiples thereof;

[CP1324]3.~~29~~30 Registrant *

means, in relation to a Metering System, the person for the time being registered in CMRS or (as the case may be) SMRS in respect of that Metering System pursuant to Section K of the Balancing and Settlement Code.

[CP1324]3.~~30~~31 Settlement Instation ‡

Settlement Instation means a computer based system which collects or receives data on a routine basis from selected Outstation by the Central Data Collection Agent or (as the case may be) a relevant Data Collector.

[CP1324]3.~~31~~32 SVA ‡

SVA means "Supplier Volume Allocation".

[CP1324]3.~~32~~33 SVA Customer *

means a person to whom electrical power is provided, whether or not that person is the provider of that electrical power; and where that electrical power is measured by a SVA Metering System.

[3] Meters separate from their Outstation and capable of external communications should have the same password requirements as for separate Outstations.

4. MEASUREMENT CRITERIA

4.1 Measured Quantities and Demand Values

The following measured quantities and Demand Values are for use with CVA Metering Systems. SVA Metering Systems shall use units a factor of 10^3 smaller than CVA e.g. kWh rather than MWh.

4.1.1 Measured Quantities

For each separate circuit the following energy measurements are required for Settlement purposes:-

(i) Import MWh

(ii) Export MWh

(iii) Import Mvarh

(iv) Export Mvarh

4.1.2 Demand Values

For each Demand Period for each circuit the following Demand Values shall be provided:-

(i) Import MW

(ii) Export MW

(iii) Import Mvar

(iv) Export Mvar

4.2 Accuracy Requirements

4.2.1 Overall Accuracy

The overall accuracy of the energy measurements at or referred to the Defined Metering Point shall at all times be within the limits of error as shown:-

(i) Active Energy

CONDITION	LIMIT OF ERRORS AT STATED SYSTEM POWER FACTOR	
Current expressed as a percentage of Rated Measuring Current	Power Factor	Limits of Error
120% to 10% inclusive	1	± 0.5%
Below 10% to 5%	1	± 0.7%
Below 5% to 1%	1	± 1.5%
120% to 10% inclusive	0.5 lag and 0.8 lead	± 1.0%

(ii) Reactive Energy

CONDITION	LIMIT OF ERRORS AT STATED SYSTEM POWER FACTOR	
Current expressed as a percentage of Rated Measuring Current	Power Factor	Limits of Error
120% to 10% inclusive	Zero	± 4.0%
120% to 20% inclusive	0.866 lag and 0.866 lead	± 5.0%

These limits of error for both (i) and (ii) above shall apply at the Reference Conditions defined in the appropriate Meter specification.

Evidence to verify that these overall accuracy requirements are met shall be available for inspection by the Panel or Technical Assurance Agent.

4.2.2 Compensation for Measurement Transformer Error

To achieve the overall accuracy requirements it may be necessary to compensate Meters for the error of the measurement transformers and the associated leads to the Meters. Values of the compensation shall be recorded and evidence to justify the

compensation criteria, including wherever possible test certificates, shall be available for inspection by the Panel or Technical Assurance Agent.

4.2.3 Compensation for Power Transformer and Line Losses

Subject to Appendix A paragraph 5(ii) where the Actual Metering Point and the Defined Metering Point do not coincide then a Metering Dispensation shall be applied for and, where necessary, accuracy compensation for power transformer and/or line losses shall be provided to meet the overall accuracy at the Defined Metering Point. Where Appendix A paragraph 5(ii) applies a Metering Dispensation shall not be required and accuracy compensation for power transformer and/or line losses (for the purpose of Section K1.1.6 of the Code) shall be provided or applied to meet the overall accuracy required at the Defined Metering Point.

The accuracy compensation may be achieved either within the Metering Equipment or within the Data Collector's software.

Where accuracy compensation is provided or applied the values used shall be recorded and supporting evidence to justify the accuracy compensation criteria shall be available for inspection by the Panel or Technical Assurance Agent.

5. METERING EQUIPMENT CRITERIA

Although for clarity this Code of Practice identifies separate items of equipment, nothing in it prevents such items being combined to perform the same task provided the requirements of this Code of Practice are met.

Metering Equipment other than outdoor measurement transformers, shall be accommodated in a clean and dry environment.

5.1 Measurement Transformers

All measurement transformers shall be of a wound construction.

For each circuit current transformers (CT) and voltage transformers (VT) shall meet the requirements set out in clauses 5.1.1 and 5.1.2.

Additionally, where a combined unit measurement transformer (VT & CT) is provided the 'Tests for Accuracy' as covered in clause 8 of BS EN 60044-3 covering mutual influence effects shall be met.

For Metering Systems that represent low burdens on measurement transformers, consideration shall be given as to whether that operating burden is within the operating range of the measurement transformers. In such cases it may be necessary to add additional burden.

Guidance for the use of multi core cables is provided in Appendix E.

5.1.1 Current Transformers

Two sets of current transformers in accordance with IEC 60044-1 and with a minimum standard of accuracy class 0.2S (irrespective of the secondary current rating of the current transformers) shall be provided.

The current transformers supplying the main Meters shall be dedicated to that purpose.

The current transformers supplying the check Meters may be used for other purposes provided the overall accuracy requirements in paragraph 4.2.1 are met and evidence of the value of the additional burden is available for inspection by the Panel or Technical Assurance Agent. The additional burden shall not be modified without prior notification to the Panel, and the evidence of the value of the modified additional burden shall be available for inspection by the Panel or Technical Assurance Agent.

CT test certificates showing errors at the overall working burden or at burdens which enable the working burden errors to be calculated shall be available for inspection by the Panel or Technical Assurance Agent.

The total burden on each current transformer shall not exceed the rated burden of such CT.

5.1.2 Voltage Transformers

Two voltage transformers or one voltage transformer with two or more secondary winding sets in accordance with IEC 60044-2 and with a mininum standard of accuracy class 0.2 shall be provided.

The VT secondary winding supplying the main Meters shall be dedicated to that purpose.

The VT secondary winding supplying the check Meters may be used for other purposes provided the overall accuracy requirements in clause 4.2.1 are met and evidence of the value of the additional burden is available for inspection by the Panel or Technical Assurance Agent. The additional burden shall not be modified without prior notification to the Panel, and evidence of the value of the modified additional burden shall be available for inspection by the Panel or Technical Assurance Agent.

A VT test certificate(s) showing errors at the overall working burden(s) or at burdens which enable the working burden errors to be calculated shall be available for inspection by the Panel or Technical Assurance Agent.

The total burden on each secondary winding of a VT shall not exceed the rated burden of such secondary winding.

Separately fused VT supplies shall be provided for each of the following:-

(a) the main Meter

(b) the check Meter

(c) any additional burden

Such fuses shall be located as close as practicable to the VT.

5.1.3 Monitoring of Voltage Transformers

Where a common mode fault, such as a VT fuse failure, could cause incorrect voltages on both the main and check Meters, Meters combining integral Outstations shall provide for the data to be identified with an alarm indicating phase failure.

For separate Outstations, an alarm may be used which shall incorporate a time-delay feature so as to avoid spurious operation. This alarm shall provide notification of a phase failure by the next Working Day at a point which is normally manned.

A spare channel on the Outstation or any other available means may be used to transmit the alarm.

5.1.4 Measurement Transformers Installed on Existing Circuits

Where circuits, other than those newly installed, are to be metered to this Code of Practice and where the installed measurement transformers do not comply fully with clauses 5.1.1 & 5.1.2, then such measurement transformers may be used providing the requirements in clauses 4.2.1 and 5.1.3 are met.

5.2 Testing Facilities

Separate test terminal blocks or equivalent facilities shall be provided for the main Meters and for the check Meters of each circuit. The test facilities shall be nearby the Meters involved.

5.3 Meters

The quantities defined in clause 4.1.1 shall be measured by both main and check Meters.

Active Energy Meters shall meet the requirements of BS EN 62053-22 Class 0.2S.

All Meters shall be set to the actual primary and secondary ratings of the measurement transformers and the actual ratios displayed on the display or nameplate of the Meter.

Active Energy Meters shall be configured such that the number of measuring elements is equal to or one less than the number of primary system conductors. These include the neutral conductor, and/or the earth conductor where system configurations enable the flow of zero sequence energy.

Reactive Energy Meters shall meet the Class 2.0 requirements of BS EN 62053-23.

All Meters shall be labelled or otherwise be readily identifiable in accordance with Appendix B.

All Meters shall include a non-volatile Meter Register of cumulative energy for each measured quantity. The Meter Register(s) shall not roll-over more than once within the normal Meter reading cycle.

Meters which provide data to separate Outstations shall for this purpose provide two outputs per measured quantity.

For Meters using electronic displays due account shall be taken of the obligations of the Central Data Collection Agent (CDCA) or other Data Collectors to obtain Meter readings.

Fusing shall be placed as close as practicable to the VT. In addition, means of isolation shall be provided locally for each Meter, any additional burden, and their associated test facilities in accordance with Appendix C.

5.4 Displays and Facilities for Registrant Information

5.4.1 Displays

The Metering Equipment shall display the following primary information (not necessarily simultaneously):

(i) Mandatory Displays:

a) Measured quantities as per clause 4.1.1;

b) Current time ("UTC") and date;

c) Measurement transformer ratios (see clause 5.3); and

d) Any compensation factor which has been applied for measurement transformer errors and/or system losses, where this is a constant factor[4] applied at security level 3 (i.e. where the Meter is combined with the display and/or Outstation).

Metering Equipment shall be capable of enabling the display of the following, as specified by the Registrant:

(ii) Display capabilities:

a) Maximum Demand (MD) for kW or MW as appropriate per programmable charging period i.e. monthly or statistical [Housekeeping]review period;

b) Maximum Demand (MD) for kVA or MVA as appropriate per programmable charging period i.e. monthly or statistical review period;

c) Twice the kWh advance or MWh advance as appropriate since the commencement of a current Demand Period (i.e. kW or MW rising demand);

d) Cumulative MD;

e) Number of MD resets; and

f) Multi-rate display sequence as specified by the Registrant with a minimum of 8 rates selectable over the calendar year.

MD shall be resettable at midnight of the last day of the charging period and for part chargeable period demands. If a manual reset button is provided then this shall be sealable.

[4] N.B. This excludes cases where a dynamic range of compensation factors have been applied.

5.4.2 Facilities

The Metering Equipment shall be capable of providing the following information locally to the Customer or Registrant configured to their requirements taking account of the measured quantities (see clause 4.1.1)[5]:

(i) For active energy in MWh or kWh as appropriate (Import and Export), reactive energy in Mvarh or [Housekeeping]~~kVArh~~kvarh as appropriate (Import and Export) – if volt-free contacts are used, then these should use a pulse rate at full load of at least 1000 per Settlement Period with a nominal duration of 80ms per pulse; and

(ii) A 30 minute reset pulse, and if volt-free contacts are used then this pulse should be within a tolerance of ±0.1% of the Demand Period from the volt-free contacts with a minimum duration of 80ms.

5.5 Outstation

Duplicate Outstation Systems shall be provided which can be interrogated by **[CP1324]**Settlement Instations using independent ~~e~~Communication ~~l~~Lines.

Where separate Outstations are provided these shall each store main and check Meter data for one or more circuits and where practicable shall be configured identically. Separate Outstations storing data from different circuits may be cascaded on to one **[CP1324]**~~e~~Communication ~~l~~Line.

Metering Systems comprising Meters with integral Outstations need not store data from the associated main or check Meter providing that each Outstation has separate ~~e~~Communication Lines.

[CP1324]For Metering Systems located Offshore at Offshore Power Park Modules duplicate Outstation Systems with separate Communication Lines shall be provided. Main and check data shall be accessible by either of the separate Communication Lines. A single point of failure shall not prevent access to both main and check metering data. Appendix F shows some examples of communication arrangements for Offshore Power Park Modules.

The Outstation data shall be to a format and protocol approved by the Panel in accordance with BSCP601.

The Outstation shall have the ability to allow the metering data to be read by instations other than the Settlement Instation provided the requirements of Section 7 of this Code of Practice are satisfied.

Facilities shall be provided to select a relevant demand period from one of the following values:-

30, 20, 15, 10 and 5 minutes with in each case one demand period ending on the hour.

[5] The requirements may be jointly met by the main and check Meters.

Normally metering data will be collected by the Settlement Instations by a daily interrogation, but repeat collections of metering data shall be possible throughout the Outstation data storage period.

Outstations shall be fitted with an auxiliary terminal that provides for the Outstation's energisation for remote interrogation purposes. The supply to the auxiliary terminal shall be free of switches and secure, and may be provided from the measurement VT as long as it is separate from the potential measurement circuits.

Where a separate modem associated with the Outstation System is used, then it shall be provided with a secure supply separately fused. Alternatively, line or battery powered modem types may be used.

The Outstations shall provide an alarm output signal at a manned point in the event of a supply failure.

5.5.1 Data storage

Data storage facilities for metering data shall be provided as follows:-

(i) A storage capacity of 48 periods per day for a minimum of 10 days for all Demand Values

(ii) The stored Demand values shall be integer values of kW/MW or kvar/Mvar as appropriate, or pulse counts, and have a resolution of better than +0.1% (at full load);

(iii) The accuracy of the energy values derived from Demand Values shall be within +0.1% (at full load) of the amount of energy measured by the associated Meter;

(iv) The value of any energy measured in a Demand Period but not stored in that Demand Period shall be carried forward to the next Demand Period;

(v) Where a separate Outstation is used, cumulative register values shall be provided in the Outstation which can be set to match and increment with the Meter Registers;

(vi) In the event of an Outstation supply failure, the Outstation shall protect all data stored up to the time of the failure, and maintain the time accuracy in accordance with clause 5.5.2;

(vii) Partial Demand Values, those in which an Outstation supply failure and/or restoration occurs, and zero Demand Values associated with an Outstation supply failure, shall be marked so that the Settlement Instation can identify them;

(viii) To cater for continuous supply failures, the clock, calendar and all data shall be supported for a period of 10 days without an external supply connected;

(ix) Any "read" operation shall not delete or alter any stored metered data; and

(x) An Outstation shall provide any portion of the data stored upon request by an Instation.

5.5.2 Time Keeping

(i) The Outstation time shall be set to the Universal Time Clock (UTC) also known as Greenwich Mean Time (GMT). No switching between UTC and British Summer Time (BST) shall occur.

(ii) Time synchronisation of the Outstation shall only be performed by communication with the Settlement Instation.

(iii) The overall limits of error for the time keeping allowing for a failure to communicate with the Outstation for an extended period of 10 days shall be:-

a) the completion of each Demand Period shall be at a time which is within ± 10 seconds of UTC; and

b) the duration of each Demand period shall be within ± 0.1%, except where time synchronisation has occurred in a Demand Period.

5.5.3 Monitoring Facilities

Monitoring facilities shall be provided for each of the following conditions and shall be reported, tagged wherever possible to the relevant Demand Period(s), via the local interrogation facility:-

(i) Error in Outstation functionality;

(ii) Battery monitoring (where battery fitted); and

(iii) Interrogation port access which changes data.

In addition all of the above conditions shall be reported as, at minimum, a common alarm indication via the remote interrogation facility.

5.6 Communications

For integral Outstations: Outstation(s) shall accommodate both local and remote interrogation facilities, from separate ports.

To prevent unauthorised access to the data in the Metering Equipment a security scheme, as defined below and in Appendix D, shall be incorporated for both local and remote access. Separate security levels shall be provided for the following activities:

(i) Level 1 Password for:

Read-only access to the following metering data, which shall be transferrable on request during the interrogation process:

a) Outstation ID;

b) Demand Values as defined in clause 4.1.2;

c) Cumulative measured quantities as defined in clause 4.1.1;

d) Maximum Demand (MD) for kW/MW or kVA/MVA as appropriate per programmable charging period i.e. monthly or statistical review period;

e) Multi-rate cumulative Active Energy as specified by the Registrant;

f) Measurement transformer ratios, where appropriate (see clause 5.3);

g) Measurement transformer error correction factor and/or system loss factor where this is a constant factor applied to the entire dynamic range of the Meter and the Meter is combined with the display and/or Outstation;

h) Alarm indications; and

i) Outstation time and date.

(ii) Level 2 Password for:

a) Corrections to the time and/or date; and

b) Resetting of the MD.

(iii) Level 3 Password for:

Programming of:

a) Displays and facilities as defined in clause 5.4;

b) Measurement transformer ratios, as appropriate (see clause 5.3);

c) Measurement transformer error correction and/or system loss factor where this is a constant factor applied to the entire dynamic range of the Meter and the Meter is combined with the display and/or Outstation; and

d) Passwords for levels 1, 2 and 3.

In addition it shall be possible to read additional information within the Metering Equipment to enable the programmed information to be confirmed.

(iv) Level 4 Password for[6]:

a) Calibration of the Metering Equipment;

b) Setting the measurement transformer ratios, where appropriate (see clause 5.3);

[6] These may be facilitated by the breaking of a seal.

c) Setting the transformer error correction and/or system loss factors where this is other than a single factor; and

d) Programming the level 3 Password and the level 4 Password if appropriate.

In addition to the functions specified for each level it shall be feasible to undertake the functions at the preceeding level(s). E.g. at level 3 it shall also be possible to carry out the functions specified at levels 1 and 2. This need not apply at level 4 when access is obtained via removing the cover. Different Passwords shall be utilised for each level, which shall only be circulated in accordance with the relevant BSC Procedure.

For separate Outstations: A Password shall be required to read or change any data.

5.6.1 Local Interrogation

An interrogation port shall be provided for each Outstation which preferably shall be an opto port to BS EN 62056-21, and with a serial protocol such as BS EN 62056-21, for the following purposes:-

(i) Commissioning, maintenance and fault finding;

(ii) Transfer of metering data and alarms; and

(iii) Time setting.

5.6.2 Remote Interrogation

Remote interrogation shall be provided with error checking of the communications between the Outstation System and the Settlement Instation.

Interrogation of an Outstation shall be possible using one of the following media:-

(i) Switched telephone networks e.g. PSTN or CTN;

(ii) Public data networks e.g. PSN;

(iii) Radio data networks e.g. Paknet or any equivalent;

(iv) Customer's own network;

(v) Mains signalling / power line carrier;

(vi) Low power radio;

(vii) Satellite; or

(viii) Cable TV.

In addition any further media may be used as approved by the Panel.

The actual media employed shall be in accordance with the requirements of the CDCA for CVA Metering Systems and the Supplier for SVA Metering Systems.

The data shall be to a format and protocol approved by the Panel in accordance with BSCP601.

5.7 Sealing

All Metering Equipment shall be capable of being sealed in accordance with BSCP06.

6. ASSOCIATED FACILITIES

6.1 Interrogation Unit

The Operator may interrogate the Outstations using an Interrogation Unit (IU). The Interrogation Unit may be used for commissioning, maintenance/fault finding and when necessary the retrieval of stored metering data. The data retrieved by the Interrogation Unit shall be compatible with the Settlement Instation.

6.2 Additional Features

Additional features may be incorporated within or associated with the Metering Equipment provided but these shall not interfere with or endanger the operation of the Settlement process.

7. ACCESS TO DATA

Access to metering data shall be in accordance with the provisions of the Code and the BSC Procedures referred to therein. Such access must not interfere with or endanger the security of the data or the collection process for Settlement purposes.

Access to stored metering data in Outstations shall also be the right of the Registrant and any party who has the permission of the Registrant.

APPENDIX A DEFINED METERING POINTS

For transfers of electricity between the following parties the Defined Metering Point (DMP) shall be at one of the following locations:-

1. For transfers between a Transmission System operator and a single Licensed Distribution System Operator where no other Party(s) are connected to the busbar, the DMP shall be at the lower voltage side of the supergrid connected transformer.

2. For transfers between a Transmission System operator and a single Licensed Distribution System Operator where other Party(s) are connected to the busbar, the DMP shall be at the circuit connections to that Licensed Distribution System Operator.

3. For transfers between a Transmission System operator and more than one Licensed Distribution System Operator connected to the same busbar, the DMP shall be at the circuit connections of each Licensed Distribution System Operator to such busbar.

4. For transfers between Licensed Distribution System Operators not including a connection to a Transmission System, the DMP shall be at the point of connection of the two Licensed Distribution System Operators.

5. For transfers between a Transmission System operator and:-

   (i) Generating Plant, the DMP shall be at the high voltage side of the generator transformers and station transformer(s).

   (ii) An Offshore Power Park Module(s) comprising a single BM Unit, the DMP shall be at the point(s) of connection of the Offshore Power Park Module to the Transmission System. A Party may install Metering Equipment at either:

   - the DMP; or
   - a point or points on the Offshore Platform, other than the DMP. Such point or points shall be the Actual Metering Point for the purposes of this Code of Practice.

6. For transfers between a Licensed Distribution System Operator and Generating Plant, the DMP shall be at the point(s) of connection of the generating station to the Licensed Distribution System Operator.

7. For transfers between a Licensed Distribution System Operator and a Customer, the DMP shall be at the point of connection to the Distribution System of the Licensed Distribution System Operator.

8. For transfers between a Transmission System operator and a Customer, the DMP shall be at the point of connection to the Transmission System operator.

9. For transfers between a Transmission System operator and an External System the DMP shall be as follows:-

   (i) For the EdF link the busbar side of the busbar disconnectors at the Sellindge 400 kV Substation.

   (ii) For the Moyle Interconnector, the Convertor Station side of the L15 circuit breaker on the Coylton feeder at Auchencrosh Substation.

APPENDIX B LABELLING OF METERS FOR IMPORT AND EXPORT

A standard method of labelling Meters, test blocks, etc is necessary and based on the definitions for Import and Export the required labelling shall be as follows.

1 ACTIVE ENERGY

Meters or Meter Registers shall be labelled "Import" or "Export" according to the diagram "Figure 1".

2 REACTIVE ENERGY

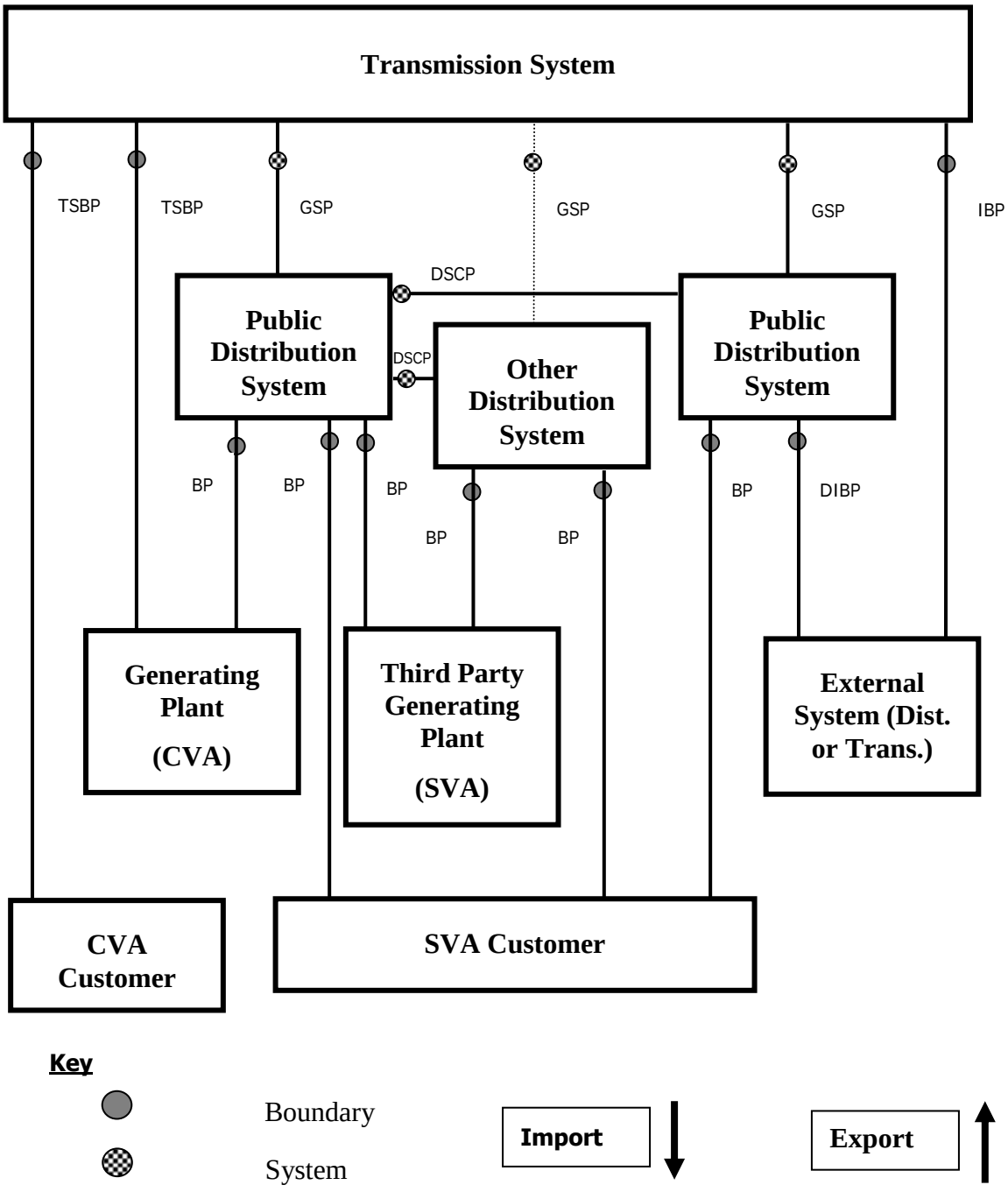
Within the context of this code the relationship between Active Energy and Reactive Energy can best be established by means of the power factor. The following table gives the relationship:-

Flow of Active Energy	Power Factor	Flow of Reactive Energy
Import	Lagging	Import
Import	Leading	Export
Import	Unity	Zero
Export	Lagging	Export
Export	Leading	Import
Export	Unity	Zero

Meters or Meter Registers for registering Import Reactive Energy should be labelled "Import" and those for registering Export Reactive Energy should be labelled "Export".

APPENDIX B continued

FIGURE 1 IMPORT AND EXPORT ACTIVE ENERGY FLOWS CONVENTION



Import / Export Energy Flow Convention for the labelling of Meters
Import metering measures energy flows away from the Transmission System.
Export metering measures energy flows towards the Transmission System.
Energy flows between Distribution Systems is by bilateral agreement.

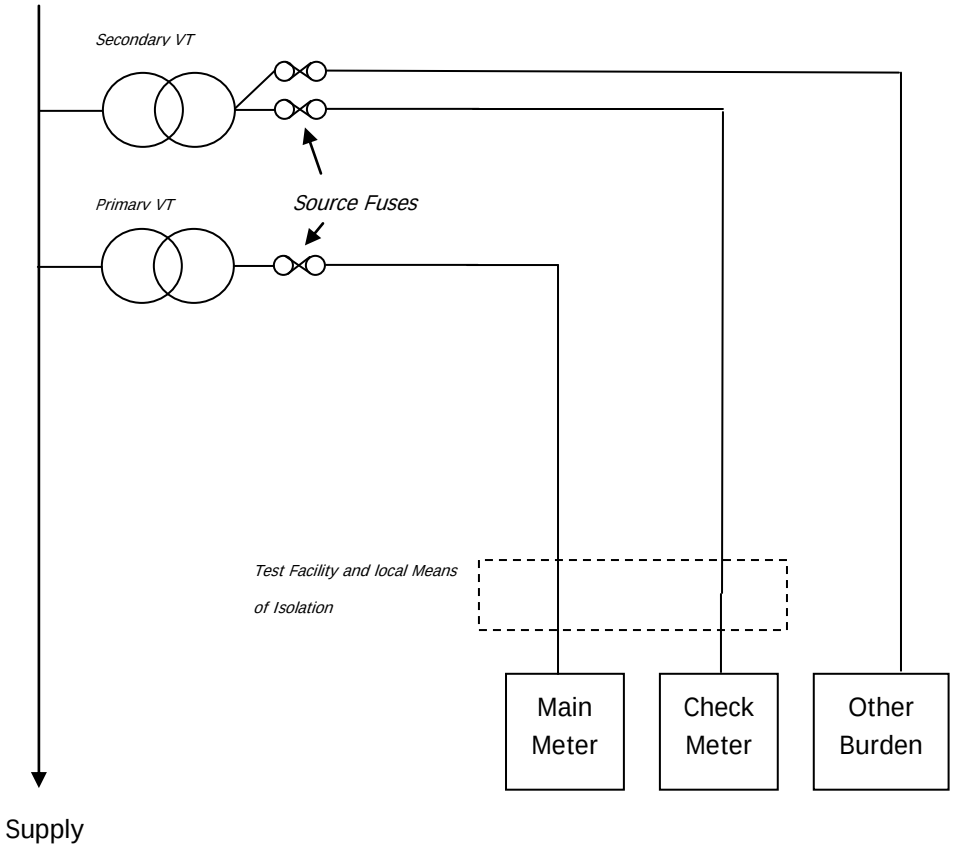
Key to abbreviations used in Import / Export Diagram

◯	Metering Point
BP	Boundary Point
DIBP	Distribution Interconnector Boundary Point
DSCP	Distribution System Connection Point
GSP	Grid Supply Point
IBP	Interconnector Boundary Point
SCP	System Connection Point
TSBP	Transmission System Boundary Point

APPENDIX C FUSING

The following diagram shows a typical arrangement for the fusing requirements of this Code of Practice. The diagram is non-exhaustive and is provided for reference only.

Figure 1: Fusing arrangements[7] [8].



Note:

The boundary between Meter Operator Equipment and the Transmission/Distribution System Operator is between the local means of isolation and the testing facilities.

[7] Check Meters and other burden may be supplied via an additional secondary winding of the primary VT.

[8] Isolation may be provided by the use of solid links or fuses and may be located either side of the test terminal block. Where fuses are to be used, the additional burden shall be accounted for.

APPENDIX D PASSWORDS

The Passwords specified in clause 5.6 shall be subject to the following additional requirements:

i. The communications protocol employed shall ensure that the Password offered determines the level of access to the data within the Metering Equipment.

ii. A counter to log the number of illegal attempts (i.e. Password comparison failures) to access Metering Equipment via the local and remote ports shall be incorporated into the log-on process. This counter shall reset to zero at every hour change (i.e. 0100, 0200 etc).

iii. If the counter reaches 7, then access is prohibited at all levels until the counter resets at the next hour change.

APPENDIX E GUIDANCE FOR THE USE OF MULTI CORE METERING CABLES

Multi core cables are predominantly used to provide CT and VT signals to the Meter. However, such arrangements may cause additional errors that are not readily apparent to the Metering System designer. This guidance provides information that should be considered when using multi core cables for metering, particularly if used over long cable runs.

Consideration shall be given to the cross sectional area of the conductors of multi core cables:

i. In CT circuits the cabling resistance is likely to represent an appreciable component of the CT burden and care should be taken to ensure that the CT overall burden is not exceeded;

ii. For the VT circuits, cabling and fuses introduce high volt drop errors. Fuses with a low current rating tend to have a relatively high resistance value and are variable from fuse to fuse. Careful selection of fuses, fuse holders and the doubling of cores can be used to mitigate these effects.

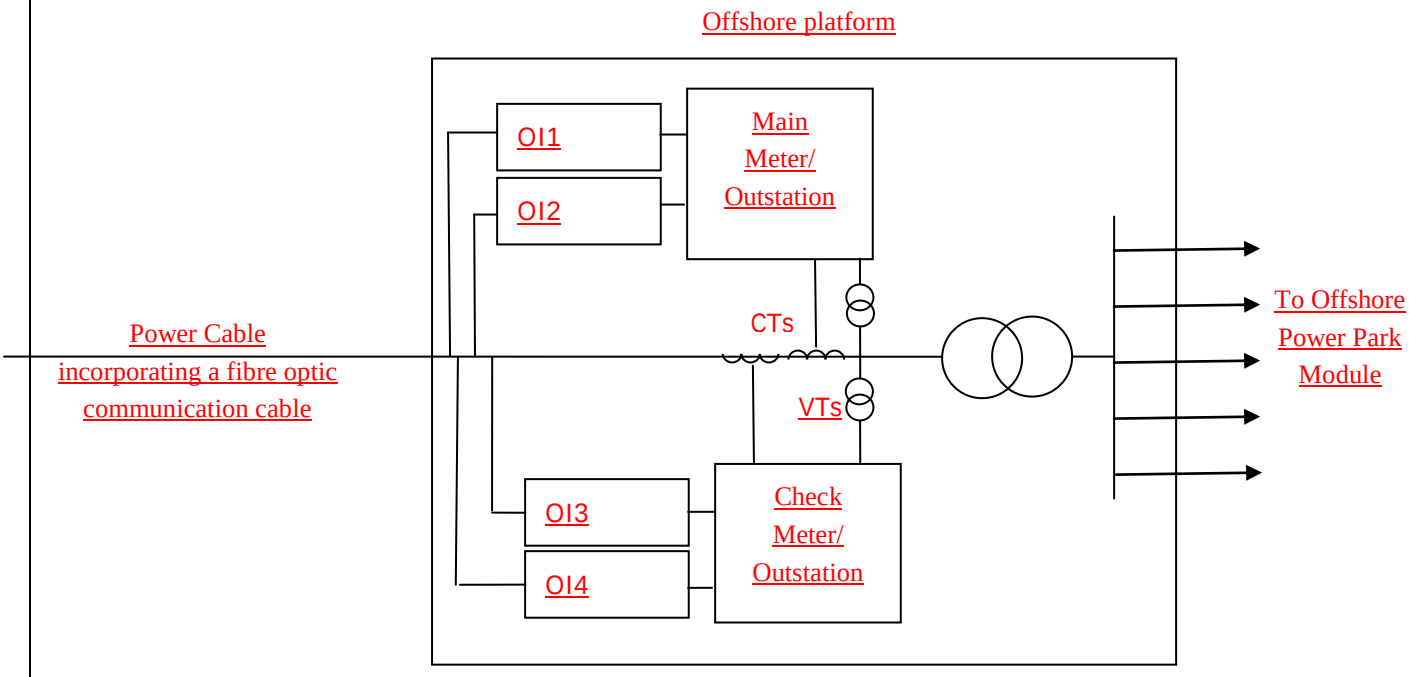
The proximity of CT and VT signals in multi core cables can cause errors due to capacitive coupling from the voltage to the current curcuits. The effect of this coupling is more prevalent at low loads with long cable runs, in particular with 1 amp rated CTs. One possible symptom of this condition is that the Meters may advance under no load conditions (circuit energised but with no load current). This coupling effect may be eliminated by careful allocation of cable core to function, or by running CT and VT signals in separate cables.

APPENDIX F GUIDANCE FOR THE COMMUNICATION ARRANGMENTS FOR METERING SYSTEMS LOCATED OFFSHORE AT OFFSHORE POWER PARK MODULES

In this Code of Practice it is a minimum requirement for Metering Systems installed Offshore, for the purposes of measuring Exports and Imports associated with Offshore Power Park Modules, that the communications equipment incorporates dual redundancy. It should be noted that it is also a requirement that any single failure shall not prevent access to both main and check metering data however this extends to Settlement Metering Equipment only (e.g. modems, interface equipment and Outstation communication ports etc) and does not apply to a communications system provider's equipment.

It is the communication address which identifies the Communication Line and in the case of multiple addressing technology such as Internet Protocol (IP) addressing through fibre optics there may be a single fibre optic strand utilised where each Meter is associated with a unique address. The following examples show some possible arrangements for guidance, using a single optical fibre however more than one optical fibre may be used if required:

Example 1 Meters with integral Outstations using optical fibre communications



In this example a single optical fibre is used to provide communications from the Settlement Instation to the Outstations which are located on the offshore platform.

There is a single power cable connecting the Offshore Power Park Module to the mainland which incorporates a fibre optic communication cable.

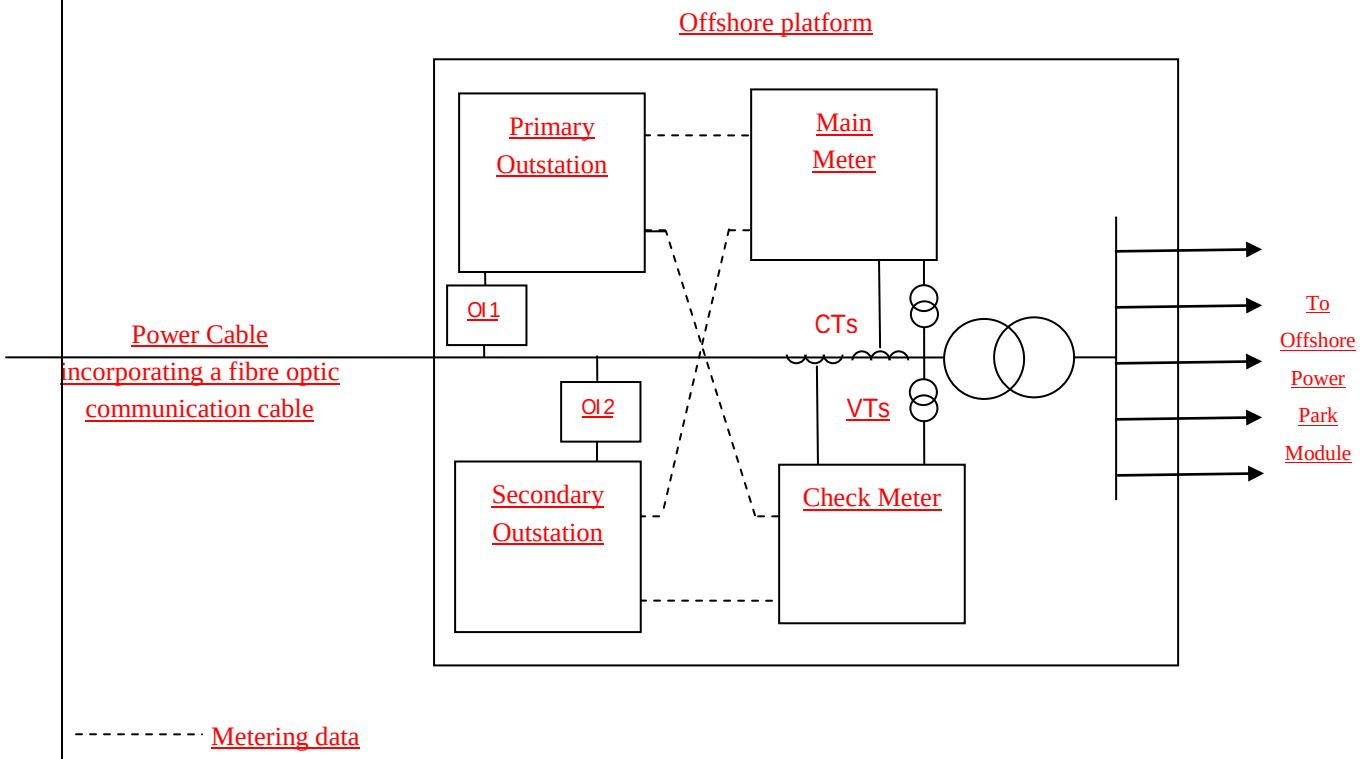
The Meters have integral Outstations each storing main and check data separately. If each Outstation stored data from both main and check Meters then only two Communication Lines would be necessary (OI1 and OI3 or OI2 and OI4) as the failure of either one would not

prevent access to both main and check metering data (as in Example 2). However in this example this is not the case therefore additional Communication Lines are required. Each Meter has two optical interfaces (OI1, OI2 and OI3, OI4) and each has a unique IP address.

There are two Outstation Systems and four Communication Lines.

This example shows a single optical fibre being used but would equally apply to multiple fibres or any other communications media such as satellite communications or PSTN.

Example 2 Fibre optic communications using Meters with seperate Outstations



In this example a single optical fibre is used to provide communications from the Settlement Instation to the Outstations which are located on the Offshore platform.

There is a single power cable connecting the Offshore Power Park Module to the mainland which incorporates a fibre optic communication cable.

The Meters transfer readings to both the separate Outstations and each Outstation has one optical interfaces (OI1 and OI2). Each optical interface has a unique IP address.

There are two Outstation Systems and two Communication Lines.

This example shows a single optical fibre being used but would equally apply to multiple fibres or any other communications media such as satellite communications or PSTN.

Balancing and Settlement Code

Code of Practice Two

CODE OF PRACTICE FOR THE METERING OF CIRCUITS WITH A RATED CAPACITY NOT EXCEEDING 100 MVA FOR SETTLEMENT PURPOSES.

Issue 4

Version 6.0

DATE: 5 November 2009

Code of Practice Two

CODE OF PRACTICE FOR THE METERING OF CIRCUITS WITH A RATED CAPACITY NOT EXCEEDING 100 MVA FOR SETTLEMENT PURPOSES.

1. Reference is made to the Balancing and Settlement Code for the Electricity Industry in Great Britain and, in particular, to the definition of "Code of Practice" in Annex X-1 thereof.

2. This is Code of Practice Two, Issue 4, Version 6.0

3. This Code of Practice shall apply to Metering Systems comprising Metering Equipment that are subject to the requirements of Section L of the Balancing and Settlement Code.

4. This Code of Practice is effective from 5 November 2009

5. This Code of Practice has been approved by the Panel.

AMENDMENT RECORD

ISSUE	DATE	VERSION	CHANGES	AUTHOR	APPROVED
Draft	18/3/93	0.03	Recommended to PEC	MSC	
1	15/4/93	1.00	Endorsed by PEC	CoP WG	
2	01/5/97	1.03	Amendments for 100kW Take-on	1998 Programme	
3	1998 Operational Date	1.05	Amended following review by Expert Group and internally.	1998 Programme (C A Team)	
3	Code Effective Date[1]	1.05	Re-badging of Code of Practice Two for the implementation of the Balancing and Settlement Code	BSCCo (Elexon Limited)	Panel 16/11/00 (Paper 07/003)
3	BETTA Effective Date	2.0	BETTA 6.3 Rebadging changes for the CVA Feb 05 Release	BSCCo	
4	23 February 2006	3.0	CP1051 changes for the February 06 Release	BSCCo	ISG/55/002
4	6 November 2008	4.0	CP1232 and CP1238 for the November 08 Release	BSCCo	ISG88/01 SVG88/02
4	25 June 2009	5.0	CP1264 for the June 09 Release	BSCCo	ISG94/01 SVG94/02
4	5 November 2009	6.0	CP1289	BSCCo	ISG101/01

[1] "Code Effective Date" means the date of the Framework Agreement.

CODE OF PRACTICE FOR THE METERING OF CIRCUITS WITH A RATED CAPACITY NOT EXCEEDING 100MVA FOR SETTLEMENT PURPOSES.

FOREWORD

This Code of Practice defines the minimum requirements for the Metering Equipment required for the measurement and recording of electricity transfers at Defined Metering Points where the rated circuit capacity does not exceed 100MVA.

For the purpose of this Code of Practice the rated circuit capacity in MVA shall be determined by the lowest rated primary plant (e.g. transformer rating, line rating, etc) of the circuit. The Metering Equipment provision and accuracy requirements shall anticipate any future up-rating consistent with the installed primary plant. The primary plant maximum continuous ratings shall be used in this assessment.

For the purpose of this Code of Practice, the use of summation current transformers shall not be permitted. The use of interposing current transformers is permitted provided the overall Metering System accuracy is maintained.

Where a material change to a Metering System takes place, then this Metering System must be modified to comply with the most recent version of this Code of Practice. Changes to a Metering System are considered to be material where they constitute a change to:

i. Swithchgear containing measurement transformers; and/or

ii. The primary plant associated with the Metering System i.e. the measurement transformers.

Where a Metering Dispensation applies, and where the Actual Metering Point is not at the Defined Metering Point, a material change affecting the Defined Metering Point may not affect the Metering System at the Actual Metering Point.

BSCCo shall retain copies of, inter alia, the Code of Practice together with copies of all documents referred to in them, in accordance with the provisions of the Balancing and Settlement Code (the Code).

1. SCOPE

This Code of Practice states the practices that shall be employed, and the facilities that shall be provided for the measurement and recording of the quantities required for Settlement purposes on each circuit where the rated capacity does not exceed 100MVA.

It derives force from the Code, and in particular the metering provisions (Section L), to which reference should be made. It should also be read in conjunction with any relevant BSC Procedures.

This Code of Practice does not contain the calibration, testing and commissioning requirements for Metering Equipment used for Settlement purposes. These requirements are detailed in Code of Practice Four - "Code of Practice for Calibration, Testing and Commissioning Requirements for Metering Equipment for Settlement Purposes".

Metering Dispensations from the requirements of this Code of Practice may be sought in accordance with the Code and BSCP32.

Meters and Outstations referred to in this Code of Practice shall only achieve successful compliance in respect of any testing detailed in this Code of Practice if the requirements set out in accordance with BSCP601 are also observed and successfully completed or the Registrant has been granted a valid Metering Dispensation covering any departure from the requirements as detailed in this Code of Practice.

In the event of an inconsistency between the provisions of this Code of Practice and the Code, the provisions of the Code shall prevail.

2. REFERENCES

The following documents are referred to in the text:-

BS EN 60044-3	Instrument transformers. Combined transformers
BS EN 62053-11	Electricity metering equipment (a.c.). Particular requirements. Electromechanical meters for active energy (classes 0.5, 1 and 2)
BS EN 62053-22	Electricity metering equipment (a.c.). Particular requirements. Static meters for active energy (classes 0.2 S and 0.5 S)
BS EN 62053-23	Electricity metering equipment (a.c.). Particular requirements. Static meters for reactive energy (classes 2 and 3)
BS EN 62056-21	Electricity metering. Data exchange for meter reading, tariff and load control. Direct local data exchange
BS 5685 Part 4	Specification for Class 3 Var-Hour Meters
IEC 60044-1	Instrument transformers. Current transformers
IEC 60044-2	Instrument transformers. Inductive voltage transformers
Balancing and Settlement Code	Definitions, Section X; Annex X-1 and Section L and BSC Procedures
Code of Practice Four	Code of Practice for Calibration, Testing and Commissioning Requirements for Metering Equipment for Settlement Purposes
BSC Procedures	BSCP06, BSCP32, BSCP601
Electricity Act 1989	Schedule 7 as amended by Schedule 1 to the Competition and Services (Utilities) Act 1992.

3. DEFINITIONS AND INTERPRETATIONS

Save as otherwise expressly provided herein, words and expressions used in this Code of Practice shall have the meanings attributed to them in the Code and are included for the purpose of clarification.

Note: * indicates definitions in the Code.

Note: † indicates definitions which supplement or complement those in the Code.

Note: ‡ indicates definitions specific to this Code of Practice

3.1 Active Energy *

Active Energy means the electrical energy produced, flowing or supplied by an electrical circuit during a time interval, being the integral with respect to time of the instantaneous Active Power, measured in units of watt-hours or standard multiples thereof.

3.2 Active Power *

Active Power means the product of voltage and the in-phase component of alternating current measured in units of watts and standard multiples thereof, that is:-

1,000 Watts = 1 kW

1,000 kW = 1 MW

3.3 Actual Metering Point ‡

Actual Metering Point means the physical location at which electricity is metered.

3.4 Apparent Energy ‡

Apparent Energy means the integral with respect to time of the Apparent Power.

3.5 Apparent Power ‡

Apparent Power means the product of voltage and current measured in units of voltamperes and standard multiples thereof, that is:-

1,000 VA = 1 kVA

1,000 kVA = 1 MVA

3.6 CTN ‡

CTN means the Electricity Supply Industry (ESI) corporate telephone network.

3.7 Communication Line

Communication Line means a line or link whose components are dedicated to a single Outstation System. A Communication Line shall be identified by a unique number, e.g. CTN line number 123, PSTN line number 321 or IP address 555. Communication

Lines may be pysical cables or any other such as a radio link. They may be multi addessable in which case each address constitues a Communication Line.

3.87 CVA †

CVA means "Central Volume Allocation".

3.98 CVA Customer †

CVA Customer means any customer, receiving electricity directly from the Transmission System, irrespective of from whom it is supplied.

3.109 Defined Metering Point ‡

Defined Metering Point means the physical location at which the overall accuracy requirements as stated in this Code of Practice are to be met. The Defined Metering Points are identified in Appendix A.

3.110 Demand Period ‡

Demand Period means the period over which Active Energy, Reactive Energy or Apparent Energy are integrated to produce Demand Values. For Settlement purposes, each Demand Period shall be of 30 minutes duration, one of which shall finish at 24:00 hours.

3.121 Demand Values ‡

Demand Values means, expressed in MW, Mvar or MVA, twice the value of MWh, Mvarh or MVAh recorded during any Demand Period[2]. The Demand Values are half hour demands and these are identified by the time of the end of the Demand Period.

3.132 electricity *

"electricity" means Active Energy and Reactive Energy.

3.143 Export †

Export means, for the purposes of this Code of Practice, an electricity flow as indicated in Figure 1 of Appendix B.

3.154 Import †

Import means, for the purposes of this Code of Practice, an electricity flow as indicated in Figure 1 of Appendix B.

3.165 Interrogation Unit ‡

Interrogation Unit means a Hand Held Unit "HHU" (also known as Local Interrogation Unit "LIU") or portable computer which can enter Outstation parameters and extract information from the Outstation and store this for later retrieval.

[2] Please note that these Demand Values are for use with CVA Metering Systems. SVA Metering Systems shall use units a factor of 103 smaller than CVA e.g. kW rather than MW.

3.176 Maximum Aggregated Capacity ‡

The maximum aggregated capacity for multiple circuits shall be determined for:-

(i) Generator circuits, by the summation of the capacities of the lowest primary plant rating for each circuit.

(ii) Network or customer circuits all of equal rating, by multiplying the lowest primary plant rating of one circuit by one less than the number of circuits involved, e.g. number of circuits (n) = 3, factor = n - 1 = 2.

(iii) Network or customer circuits of different ratings, (all of which must be under 100 MVA) by summation of the lowest plant rating for each circuit ignoring the highest rated circuit e.g. 3 circuits rated at 45 MVA, 40 MVA, 35 MVA, rating = 75 MVA.

3.187 Meter *

Meter means a device for measuring Active Energy and/or Reactive Energy.

3.198 Metering Equipment *

Metering Equipment means Meters, measurement transformers (voltage, current and combination units), metering protection equipment including alarms, circuitry, their associated Communications Equipment and Outstations, and wiring.

3.2019 Meter Register ‡

Meter Register means a device, normally associated with a Meter, from which it is possible to obtain a reading of the amount of Active Energy, or the amount of Reactive Energy that has been supplied by a circuit.

3.210 Outstation *

Outstation means equipment which receives and stores data from a Meter(s), for the purposes, inter-alia, of transfer of that metering data the Central Data Collector Agent (CDCA) or Data Collector, as the case may be, and which may perform some processing before such transfer and may be in one or more separate units or may be integral with the Meter.

3.221 Outstation System ‡

Outstation System means one or more Outstations linked to a single communication line. ~~, except in the case of offshore Metering Systems where an Outstation System means one or more Outstations linked to two communication lines.~~

3.232 PARh Meter ‡

PARh Meter means a phase-advanced reactive hour (PARh) Meter which is used for obtaining Import and Export Reactive Energy from one integrating Meter. The Reactive Energy Demand values shall be calculated using a formula involving the PARh Meter and the associated Active Energy Meter Demand Values.

3.243 Password ‡

For Meters with integral Outstations: 'Password' means a string of characters of length no less than six characters and no more than twelve characters, where each character is a case insensitive or sensitive alpha character (A to Z) or a digit (0 to 9) or the underscore character (_). Passwords must have a minimum of 2,000,000 combinations, for example six characters if composed of any alphanumeric characters or eight characters if composed only of hexadecimal characters (0 to F). The characters of a hexadecimal password must be in upper case.

For separate Outstations: a Password may be described as above for integral Outstations or a single password of any format[3].

3.254 PSTN ‡

PSTN means the public switched telephone network.

3.265 Rated Measuring Current ‡

Rated Measuring Current means the rated primary current of the current transformers in primary plant used for the purposes of measurement.

3.276 Reactive Energy *

Reactive Energy means the integral with respect to time of the Reactive Power.

3.287 Reactive Power *

Reactive Power means the product of voltage and current and the sine of the phase angle between them measured in units of voltamperes reactive and standard multiples thereof.

3.298 Registrant *

Registrant means in relation to a Metering System, the person for the time being registered in CMRS or (as the case may be) SMRS in respect of that Metering System pursuant to Section K of the Balancing and Settlement Code.

3.3029 Settlement Instation ‡

Settlement Instation means a computer based system which collects or receives data on a routine basis from selected Outstation Systems by as Data Collector.

3.310 SVA †

SVA means "Supplier Volume Allocation".

3.321 SVA Customer *

SVA Customer means a person to whom electrical power is provided, whether or not that person is the provider of that electrical power; and where that electrical power is measured by a SVA Metering System.

[3] Meters separate from their Outstation and capable of external communications should have the same password requirements as for separate Outstations.

3.33 UTC *

UTC means Co-ordinated Universal Time which bears the same meaning as in the document Standard Frequency and Time Signal Emission, International Telecommunication Union - RTF.460 (ISBN92-61-05311-4) (colloquially referred to as Rugby Time).

4. MEASUREMENT CRITERIA

The following measured quantities and Demand Values are for use with CVA Metering Systems. SVA Metering Systems shall use units a factor of 10^3 smaller than CVA e.g. kWh rather than MWh.

4.1 Measured Quantities and Demand Values

4.1.1 Measured Quantities

For each separate circuit the following energy measurements are required for Settlement purposes:

(i) Import MWh *

(ii) Export MWh *

(iii) Import Mvarh

(iv) Export Mvarh

4.1.2 Demand Values

For each Demand Period for each circuit the following Demand Values shall be provided:

(i) Import MW *

(ii) Export MW *

(iii) Import Mvar

(iv) Export Mvar

* Import or Export metering need only be installed where a Party requires this measurement to meet system or plant conditions.

4.2 Accuracy Requirements

4.2.1 Overall Accuracy

The overall accuracy of the energy measurements at or referred to the Defined Metering Point shall at all times be within the limits of error as shown:-

(i) Active Energy

CONDITION	LIMIT OF ERRORS AT STATED SYSTEM POWER FACTOR	
Current expressed as a percentage of Rated Measuring Current	Power Factor	Limits of Error
120% to 10% inclusive	1	± 1.0%
Below 10% to 5%	1	± 1.5%
Below 5% to 1%	1	± 2.5%
120% to 10% inclusive	0.5 lag and 0.8 lead	± 2.0%

(ii) Reactive Energy

CONDITION	LIMIT OF ERRORS AT STATED SYSTEM POWER FACTOR	
Current expressed as a percentage of Rated Measuring Current	Power Factor	Limits of Error
120% to 10% inclusive	Zero	± 4.0%
120% to 20% inclusive	0.866 lag and 0.866 lead	± 5.0%

These limits of error for both (i) and (ii) above shall apply at the Reference Conditions defined in the appropriate Meter specification.

Evidence to verify that these overall accuracy requirements are met shall be available for inspection by either the Panel or the Technical Assurance Agent.

4.2.2 Compensation for Measurement Transformer Error

To achieve the overall accuracy requirements it may be necessary to compensate Meters for the errors of the measurement transformers and the associated leads to the Meters. Values of the compensation shall be recorded and evidence to justify the compensation criteria, including wherever possible test certificates, shall be available for inspection by either the Panel or the Technical Assurance Agent.

4.2.3 Compensation for Power Transformer and Line Losses

Where the Actual Metering Point and the Defined Metering Point do not coincide a Metering Dispensation shall be applied for and, where necessary, compensation for

power transformer and/or line losses shall be provided to meet the overall accuracy at the Defined Metering Point.

The compensation may be achieved in the Metering Equipment and in this event the applied values shall be recorded. Supporting evidence to justify the compensation criteria shall be available for inspection by either the Panel or the Technical Assurance Agent.

Alternatively, the compensation may be applied in the software of the relevant data aggregation system used for Settlement purposes. In this event the factors shall be passed to the appropriate agency and evidence to justify the compensation criteria shall be made available for inspection by either the Panel or the Technical Assurance Agent.

5. METERING EQUIPMENT CRITERIA

Although for clarity this Code of Practice identifies separate items of equipment, nothing in it prevents such items being combined to perform the same task provided the requirements of this Code of Practice are met.

Metering Equipment other than outdoor measurement transformers shall be accommodated in a clean and dry environment.

5.1 Measurement Transformers

For each circuit current transformers (CT) and voltage transformers (VT) shall meet the requirements set out in clauses 5.1.1 and 5.1.2.

Additionally, where a combined unit measurement transformer (VT & CT) is provided the 'Tests for Accuracy' as covered in BS EN 60044-3 covering mutual influence effects shall be met.

All measurement transformers shall be of a wound construction.

For Metering Systems that represent low burdens on measurement transformers, consideration shall be given as to whether that operating burden is within the operating range of the measurement transformers. In such cases, it may be necessary to add additional burden.

Guidance for the use of multi core cables is provided in Appendix E.

5.1.1 Current Transformers

A dedicated set of current transformers in accordance with IEC 60044-1 and with a minimum standard of accuracy to Class 0.2S (irrespective of the secondary current rating of the CTs) shall be provided solely for the Settlement Metering of each circuit. No other burden shall be connected to this dedicated set of current transformers. The main Meter shall always be connected to this dedicated set of current transformers. The check Meter may also be connected to this dedicated set of current transformers.

Alternatively the check Meter may be connected to another set of current transformers which shall be in accordance with IEC 60044-1 and with a minimum standard of accuracy to Class 0.2S. Other burdens may be connected to this other set of current

transformers provided that the Panel or Technical Assurance Agent is notified and that the overall accuracy requirements in clause 4.2.1 are met and evidence of the value of the additional burden shall be available for inspection by the Panel. The additional burden shall not be modified without prior notification to the Panel, and evidence of the value of the modified additional burden shall be available for inspection by either the Panel or Technical Assurance Agent.

CT test certificates showing errors at the overall working burden or at burdens which enable the working burden errors to be calculated shall be available for inspection by either the Panel or the Technical Assurance Agent.

The total burden on each current transformer shall not exceed the rated burden of such CT.

5.1.2 Voltage Transformers

Voltage transformer primary windings shall be connected to the circuit being measured for Settlement purposes and a dedicated secondary winding shall be provided for the main and check metering. The voltage transformer secondary winding shall be in accordance with IEC 60044-2 and with a minimum standard of accuracy to Class 0.5. Where a voltage transformer has other secondary windings these may be used for the check metering of that circuit and for other purposes provided the overall accuracy requirements in clause 4.2.1 are met and evidence of the value of the additional burden is available for inspection by either the Panel or the Technical Assurance Agent.

The additional burden shall not be modified without prior notification to the Panel, and evidence of the value of the modified additional burden shall be available for inspection by either the Panel or the Technical Assurance Agent.

A VT test certificate(s) showing errors at the overall working burden(s) or at burdens which enable the working burden errors to be calculated shall be available for inspection by either the Panel or the Technical Assurance Agent.

The total burden on each secondary winding of a VT shall not exceed the rated burden of such secondary winding.

5.1.3 Monitoring of Voltage Transformers

Where a common mode fault, such as a VT fuse failure, could cause incorrect voltages on both the main and check Meters, Meters combining integral Outstations shall provide for the data to be identified with an alarm indicating phase failure.

For separate Outstations, an alarm may be used which shall incorporate a time delay feature so as to avoid spurious operation. This alarm shall provide notification of a phase failure by the next Working Day at a point which is normally manned.

A spare channel on the Outstation or any other available means may be used to transmit the alarm.

5.1.4 Measurement Transformers Installed on Existing Circuits

Where circuits, other than those newly installed, are to be metered to this Code of Practice and where the installed measurement transformers do not comply fully with clauses 5.1.1 & 5.1.2, then such measurement transformers may be used providing the requirements in clauses 4.2.1 and 5.1.3 are met.

5.2 Testing Facilities

Separate testing facilities shall be provided for the main Meters and for the check Meters of each circuit, which enables such Meters to be routinely tested and/or changed safely with the circuit energised. The test facilities shall be nearby the Meters involved.

5.3 Meters

The Meters may be either static or induction disc types.

For each circuit main and check Active Energy Meters shall be supplied. These Meters shall meet the requirements of either BS EN 62053-22 Class 0.5S, or BS EN 62053-11 class 0.5 except where the overall accuracy as defined in Clause 4.2.1 is required in the range "Below 5% to 1%" of Rated Measuring Current. Subject to the agreement of the Panel or Registrant where system or plant conditions permit either the Import or Export Meters may be omitted.

All Meters shall be set to the actual primary and secondary ratings of the measurement transformers and the actual ratios displayed on the display or nameplate of the Meter.

Active Energy Meters provided for the metering of supplies to customers shall be in accordance with Schedule 7 of the Electricity Act 1989.

For each circuit only main Reactive Energy Meter(s) need be supplied. The Reactive Energy Meters shall meet the requirements of either BS EN 62053-23 Class 3.0 or BS 5685 Part 4.

For existing metering installations a Reactive Meter connected in a PARh Meter configuration may be retained.

Active Energy Meters shall be configured such that the number of measuring elements is equal to or one less than the number of primary system conductors. These include the neutral conductor, and/or the earth conductor where system configurations enable the flow of zero sequence energy.

All Meters shall be labelled or otherwise be readily identifiable in accordance with Appendix B.

All Meters shall include a non-volatile Meter Register of cumulative energy for each measured quantity. The Meter Register(s) shall not roll-over more than once within the normal Meter reading cycle.

Meters which provide data to separate Outstations shall for this purpose provide an output per measured quantity.

For Meters using electronic displays due account shall be given to the obligations of the Central Data Collection Agent (CDCA) or other Data Collectors to obtain Meter readings. For example, where a Metering System is employed on multiple circuits, a Voltage Selector Relay or other similar method should be used to maintain the Meter display in the event of a circuit being de-energised where this is reasonably practical.

Fusing shall be placed as close as practicable to the VT. In addition, means of isolation shall be provided locally for each Meter, any additional burden and their associated test facilities in accordance with Appendix C.

5.4 Displays and Facilities for Registrant or Supplier Information

5.4.1 Displays

The Metering Equipment shall display the following primary information (not necessarily simultaneously):

(i) Mandatory Displays

a) Measured quantities as per clause 4.1.1;

b) Current time ("UTC") and date;

c) Measurement transformer ratios (see clause 5.3); and

d) Any compensation factor which has been applied for measurement transformer errors and/or system losses, where this is a constant factor[4] applied at security level 3 (i.e. where the Meter is combined with the display and/or Outstation).

Metering Equipment shall also be capable of displaying the following information, as specified by the Registrant.

(ii) Display capabilities

a) Maximum Demand (MD) for kW or MW as appropriate per programmable charging period i.e. monthly or statistical review period;

b) Maximum Demand (MD) for kVA or MVA as appropriate per programmable charging period i.e. monthly or statistical review period;

c) Twice the kWh advance or MWh advance as appropriate since the commencement of a current Demand Period (i.e. kW or MW rising demand);

d) Twice the kVAh advance or MVAh advance as appropriate since the commencement of a current Demand Period (i.e. kVA or MVA riding demand);

e) Cumulative MD;

[4] N.B. This excludes cases where a dynamic range of compensation factors have been applied.

f) Number of resets; and

g) Multi-rate display sequence as specified by the Registrant with a minimum of 8 rates selectable over the calendar year

MD shall be resettable at midnight of the last day of the charging period and for part chargeable period demands. If a manual reset button is provided then this shall be sealable.

5.4.2 Facilities

The Metering Equipment shall be capable of providing the following information locally to the Customer or Registrant configured to their requirements taking account of the measured quantities (see clause 4.1.1):

(i) For Active energy in MWh or kWh as appropriate (Import and Export), reactive energy in Mvarh or kVArh as appropriate (Import and Export) – if volt-free contacts are used, then these should use a pulse rate at full load of at least 1000 per Settlement Period with a nominal duration of 80ms per pulse; and

(ii) A 30 minute reset pulse, and if volt-free contacts are used then this pulse should be within a tolerance of ±0.1% of the Demand Period from the volt-free contacts with a minimum duration of 80ms.

5.5 Outstation

One Outstation System shall be provided which can be interrogated by Settlement Instations. The Outstation system shall comprise either a single separate Outstation or the use of Meters with integral Outstations (i.e. a main or check Meter storing its own data).

Where one or more separate Outstations are provided each Outstation shall store the main and check Meter data for one or more circuits up to a Maximum Aggregated Capacity of 100 MVA. Separate Outstations storing data from a number of different circuits may be cascaded on to one ~~c~~Communication ~~l~~Line.

Metering Systems comprising Meters with integral Outstations need not store data from the associated main or check Meter providing that each Outstation has separate communications.

For Metering Systems located Offshore at Offshore Power Park Modules duplicate Outstation Systems with separate Communication Lines shall be provided. Main and check data shall be accessible by either of the separate Communication Lines. A single point of failure shall not prevent access to both main and check metering data. Appendix F shows some examples of communication arrangements for Offshore Power Park Modules.

The Outstation data shall be to a format and protocol approved by the Panel in accordance with BSCP601.

The Outstation shall have the ability to allow the metering data to be read by instations other than the Settlement Instation provided the requirements of Section 7 of this Code of Practice are satisfied.

Facilities shall be provided to select a relevant demand period from one of the following values:-

30, 20, 15, 10 and 5 minutes with in each case one demand period ending on the hour.

Normally metering data will be collected by the Settlement Instations by a daily interrogation, but repeat collections of metering data shall be possible throughout the Outstation data storage period.

Outstations, that are not exclusive to one circuit, shall be fitted with an auxiliary terminal that provides for the Outstation's energisation for remote interrogation purposes. The supply to the auxiliary terminal shall be free of switches and secure, and may be provided from the measurement VT as long as it is separate from the potential measurement circuits at source.

Where a separate modem associated with the Outstation System is used, then it shall be provided with a separately fused supply either from a secure supply or from a measurement VT. Alternatively, line or battery powered modem types may be used.

Where a measurement VT source is used and the Outstation System is storing data for more than one circuit, a VT selection relay scheme involving each circuit shall be provided.

Preferably the Outstation shall be able to continue all normal functions for a period of 120 hours after a supply failure. Outstations not providing this facility must in the event of a supply failure transmit an alarm signal to a manned point.

The Outstation shall not convert PARh metering data to vars.

5.5.1 Data Storage

Data storage facilities for metering data shall be provided as follows:-

(i) A storage capacity of 48 periods per day for a minimum of 10 days for all Demand Values.

(ii) The stored Demand Values shall be integer values of kW/MW or kvar/Mvar as appropriate, or pulse counts, and have a resolution of better than ±0.1% (at full load);

(iii) The accuracy of the energy values derived from Demand Values shall be within ±0.1% (at full load) of the amount of energy measured by the associated Meter;

(iv) The value of any energy measured in a Demand Period but not stored in that Demand Period shall be carried forward to the next Demand Period;

(v) Where a separate Outstation is used, cumulative register values shall be provided in the Outstation which can be set to match and increment with the Meter Registers;

(vi) In the event of an Outstation supply failure, the Outstation shall protect all data stored up to the time of the failure, and maintain the time accuracy in accordance with clause 5.5.2;

(vii) Partial Demand Values, those in which an Outstation supply failure and/or restoration occurs, and zero Demand Values associated with an Outstation supply failure, shall be marked so that the Settlement Instation can identify them;

(viii) To cater for continuous supply failures, the clock, calendar and all data shall be supported for a period of 10 days without an external supply connected;

(ix) Any "read" operation shall not delete or alter any stored metered data; and

(x) An Outstation shall provide all of the metered data stored from the commencement of any specified date upon request by the Settlement Instation.

5.5.2 Time Keeping

(i) The Outstation time shall be set to Co-ordinated Universal Time (UTC). No switching between UTC and British Summer Time (BST) shall occur for Settlements data storage requirements.

(ii) Time synchronisation of the Outstation shall only be performed by communication with the Settlement Instation.

(iii) The overall limits of error for the time keeping allowing for a failure to communicate with the Outstation for an extended period of 10 days shall be:-

a) the completion of each Demand Period shall be at a time which is within ± 10 seconds of UTC; and

b) the duration of each Demand Period shall be within ± 0.1%, except where time synchronisation has occurred in a Demand Period.

5.5.3 Monitoring Facilities

Monitoring facilities shall be provided for each of the following conditions and shall be reported, tagged wherever possible to the relevant Demand Period(s), via the local interrogation facility:-

(i) Error in Outstation functionality;

(ii) Battery monitoring (where battery fitted); and

(iii) Interrogation port access which changes data.

In addition all of the above conditions shall be reported as, at minimum, a common alarm indication via the remote interrogation facility.

5.6 Communications

For integral Outstations: Outstation(s) shall provide both local and remote interrogation facilities, from separate ports.

To prevent unauthorised access to the data in the Metering Equipment a security scheme, as defined below and in Appendix D, shall be incorporated for both local and remote access. Separate security levels shall be provided for the following activities:

(i) Level 1 Password for:

Read-only access to the following metering data, which shall be transferable on request during the interrogation process:

a) Outstation ID;

b) Demand Values as defined in clause 4.1.2;

c) Cumulative measured quantities as defined in clause 4.1.1;

d) Maximum Demand (MD) for kW/MW or kVA/MVA as appropriate (as defined by the Registrant) per programmable charging period i.e. monthly or statistical review period;

e) Multi-rate cumulative Active Energy as specified by the Registrant;

f) Measurement transformer ratios, where appropriate (see clause 5.3)

g) Measurement transformer error correction factor and/or system loss factor, where this is a constant factor applied to the entire dynamic range of the Meter and the Meter is combined with the display and/or Outstation;

h) Alarm indications; and

i) Outstation time and date.

(ii) Level 2 Password for:

a) Corrections to Outstation time and/or date; and

b) Resetting of the MD

(iii) Level 3 Password for:

Programming of:

a) The Displays and Facilities as defined in clause 5.4;

b) Measurement transformer ratios, as appropriate (see clause 5.3);

c) Measurement transformer error correction factor and/or system loss factor, where this is a constant factor applied to the entire dynamic range of the Meter and the Meter is combined with the display and/or Outstation; and

d) The Passwords for levels 1, 2 and 3;

In addition it shall be possible to read additional information within the Metering Equipment to enable the programmed information to be confirmed.

(iv) Level 4 Password for[5]:

a) Calibration of the Metering Equipment;

b) Setting the measurement transformer ratios, where appropriate (see clause 5.3);

c) Setting the measurement transformer error correction and/or system loss factors where this is other than a single factor; and

d) Programming the level 3 Password and the level 4 Password, if appropriate.

In addition to the functions specified for each level it shall be feasible to undertake functions at the preceding level(s). E.g. at level 3 it shall also be possible to carry out the functions specified at levels 1 and 2. This need not apply at level 4 when access is obtained via removing the cover. Different Passwords shall be utilised for each level, which shall only be circulated in accordance with the relevant BSC Procedure.

For separate Outstations: A Password shall be required to read or change any data.

5.6.1 Local Interrogation

An interrogation port shall be provided for each Outstation which preferably shall be an opto port to BS EN 62056-21, and with a serial protocol such as BS EN 62056-21, for the following purposes:-

(i) Commissioning, maintenance and fault finding;

(ii) Transfer of metering data and alarms; and

(iii) Time setting.

5.6.2 Remote Interrogation

Remote interrogation facilities shall be provided with error checking of the communications between the Outstation System and the Settlement Instation.

Interrogation of an Outstation shall be possible using one of the following media:

(i) Switched telephone networks e.g. PSTN or CTN;

[5] These may be facilitated by the breaking of a seal.

(ii) Public data networks e.g. PSN;

(iii) Radio data networks e.g. Paknet or any equivalent;

(iv) Customer own network;

(v) Mains signalling / power line carrier;

(vi) Low power radio;

(vii) Satellite; or

(viii) Cable TV.

In addition any further media may be used as approved by the Panel.

The actual media employed shall be in accordance with the requirements of the CDCA for CVA Metering Systems and the Supplier for SVA Metering Systems.

The data shall be to a format and protocol approved by the Panel in accordance with BSCP601.

5.7 Sealing

All SVA Metering Equipment shall be sealed in accordance with Appendix 8 and 9 of the Meter Operator Code of Practice Agreement[6].

All CVA Metering Equipment shall be capable of being sealed in accordance with BSCP06.

6. ASSOCIATED FACILITIES

6.1 Interrogation Unit

The Operator may interrogate the Outstations using an Interrogation Unit (IU). The Interrogation Unit may be used for programming, commissioning, maintenance/fault finding and when necessary the retrieval of stored metering data. The data retrieved by the Interrogation Unit shall be compatible with the Settlement Instation.

6.2 Additional Features

Additional features may be incorporated within or associated with the Metering Equipment provided but these shall not interfere with or endanger the operation of the Settlement process.

7. ACCESS TO DATA

Access to metering data shall be in accordance with the provisions of the Code and the BSC Procedures referred to therein. Such access must not interfere with or endanger the security of the data or the collection process for Settlement purposes.

Access to stored metering data in Outstations shall also be the right of the Registrant and any party who has the permission of the Registrant.

[6] The Meter Operator Code of Practice Agreement is a voluntary agreement between Public Distribution System Operators and Meter Operator Agents.

APPENDIX A DEFINED METERING POINTS

For transfers of electricity between the following parties the Defined Metering Point (DMP) shall be at one of the following locations:-

1. For transfers between a Transmission System operator and a single Licensed Distribution System Operator where no other Party(s) are connected to the busbar, the DMP shall be at the lower voltage side of the supergrid connected transformer.

2. For transfers between a Transmission System operator and a single Licensed Distribution System Operator where other Party(s) are connected to the busbar, the DMP shall be at the circuit connections to that Licensed Distribution System Operator.

3. For transfers between a Transmission System operator and more than one Licensed Distribution System Operator connected to the same busbar, the DMP shall be at the circuit connections of each Licensed Distribution System Operator to such busbar.

4. For transfers between Licensed Distribution System Operators not including a connection to the Transmission System, the DMP shall be at the point of connection of the two Licensed Distribution System Operators.

5. For transfers between a Transmission System operator and Generating Plant, the DMP shall be at the high voltage side of the generator transformers and station transformer(s).

6. For transfers between a Licensed Distribution System Operator and Generating Plant, the DMP shall be at the point(s) of connection of the generating station to the Licensed Distribution System Operator.

7. For transfers between a Licensed Distribution System Operator and a Customer, the DMP shall be at the point of connection to the Licensed Distribution System Operator.

8. For transfers between a Transmission System operator and a Customer, the DMP shall be at the point of connection to the Transmission System operator.

9. For transfers between a Transmission System and an External System the DMP shall be as follows:-

(i) For the EdF link the busbar side of the busbar disconnectors at the Sellindge 400 kV Substation.

(ii) For the Moyle Interconnector, the Convertor Station side of the L15 circuit breaker on the Coylton feeder at Auchencrosh Substation.

APPENDIX B LABELLING OF METERS FOR IMPORT AND EXPORT

1 A standard method of labelling Meters, test blocks, etc is necessary and based on the definitions for Import and Export the required labelling shall be as follows.

2 ACTIVE ENERGY

Meters or Meter Registers shall be labelled "Import" or "Export" according to the diagram "Figure 1".

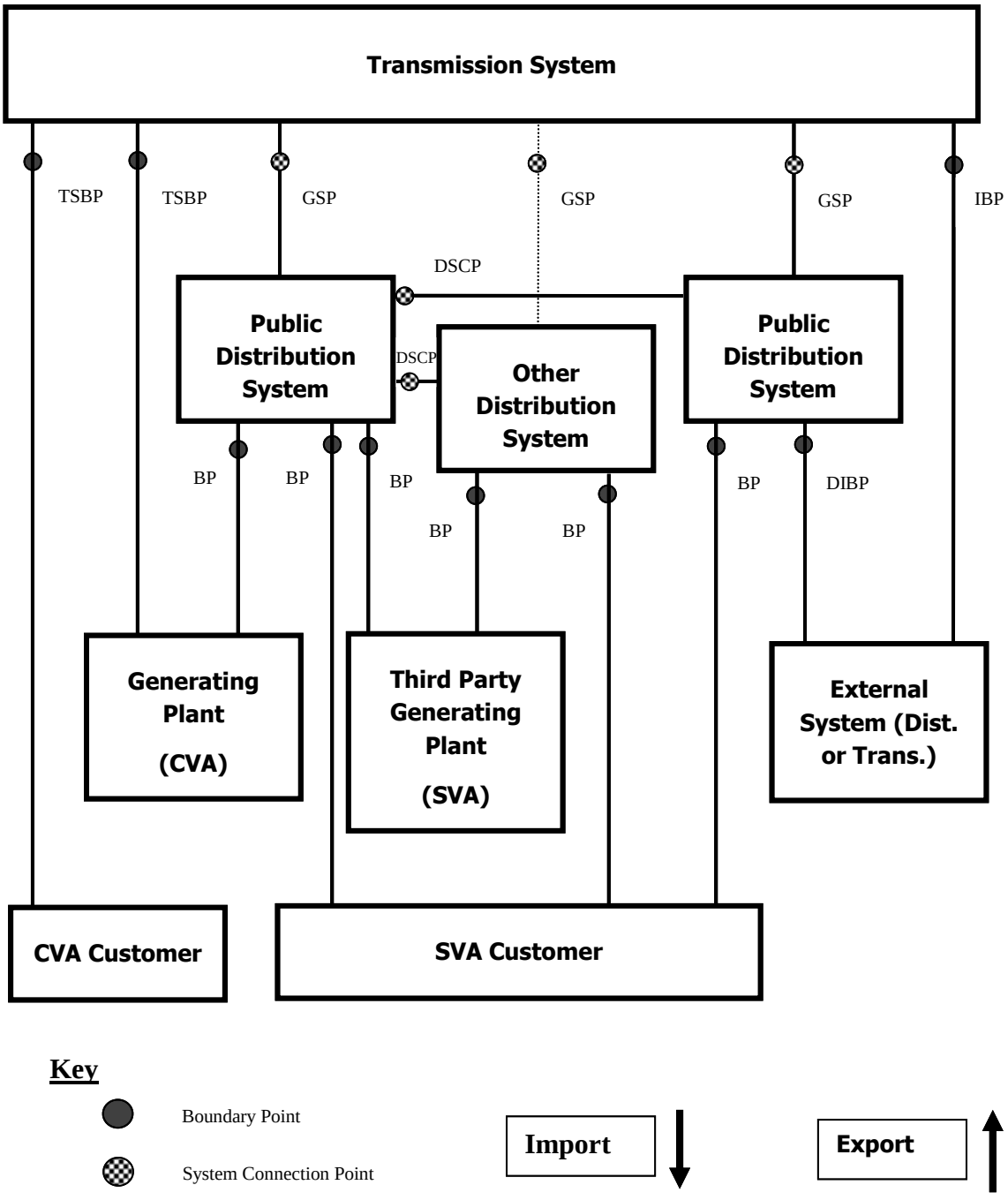
3 REACTIVE ENERGY

Within the context of this code the relationship between Active Energy and Reactive Energy can best be established by means of the power factor. The following table gives the relationship:-

Flow of Active Energy	Power Factor	Flow of Reactive Energy
Import	Lagging	Import
Import	Leading	Export
Import	Unity	Zero
Export	Lagging	Export
Export	Leading	Import
Export	Unity	Zero

Meters or Meter Registers for registering Import Reactive Energy should be labelled "Import" and those for registering Export Reactive Energy should be labelled "Export".

FIGURE 1 IMPORT AND EXPORT ACTIVE ENERGY FLOWS CONVENTION



Import / Export Energy Flow Convention for the labelling of Meters
Import metering measures energy flows away from the Transmission System.
Export metering measures energy flows towards the Transmission System.
Energy flows between Distribution Systems is by bilateral agreement.

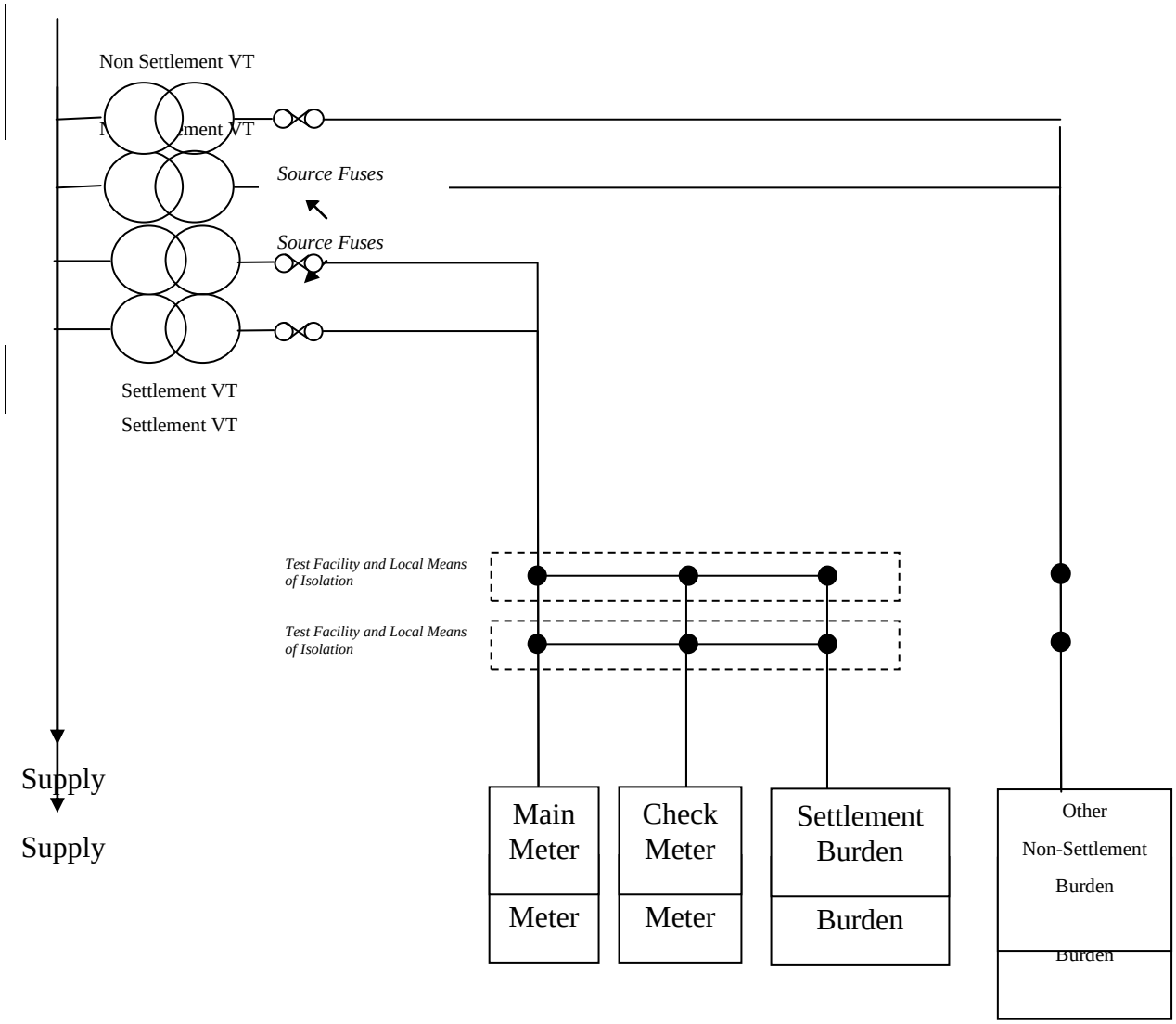
Key to abbreviations used in Import / Export Diagram

◯	Metering Point
BP	Boundary Point
DIBP	Distribution Interconnector Boundary Point
DSCP	Distribution System Connection Point
GSP	Grid Supply Point
IBP	Interconnector Boundary Point
SCP	System Connection Point
TSBP	Transmission System Boundary Point

APPENDIX C FUSING

The following diagrams show typical arrangements for the fusing requirements of this Code of Practice. The diagrams are non-exhaustive and are provided for reference only.

Figure 1: Fusing arrangements for cable runs of less than 30 metres distance between source fusing and local means of isolation[7] [8].



Note:

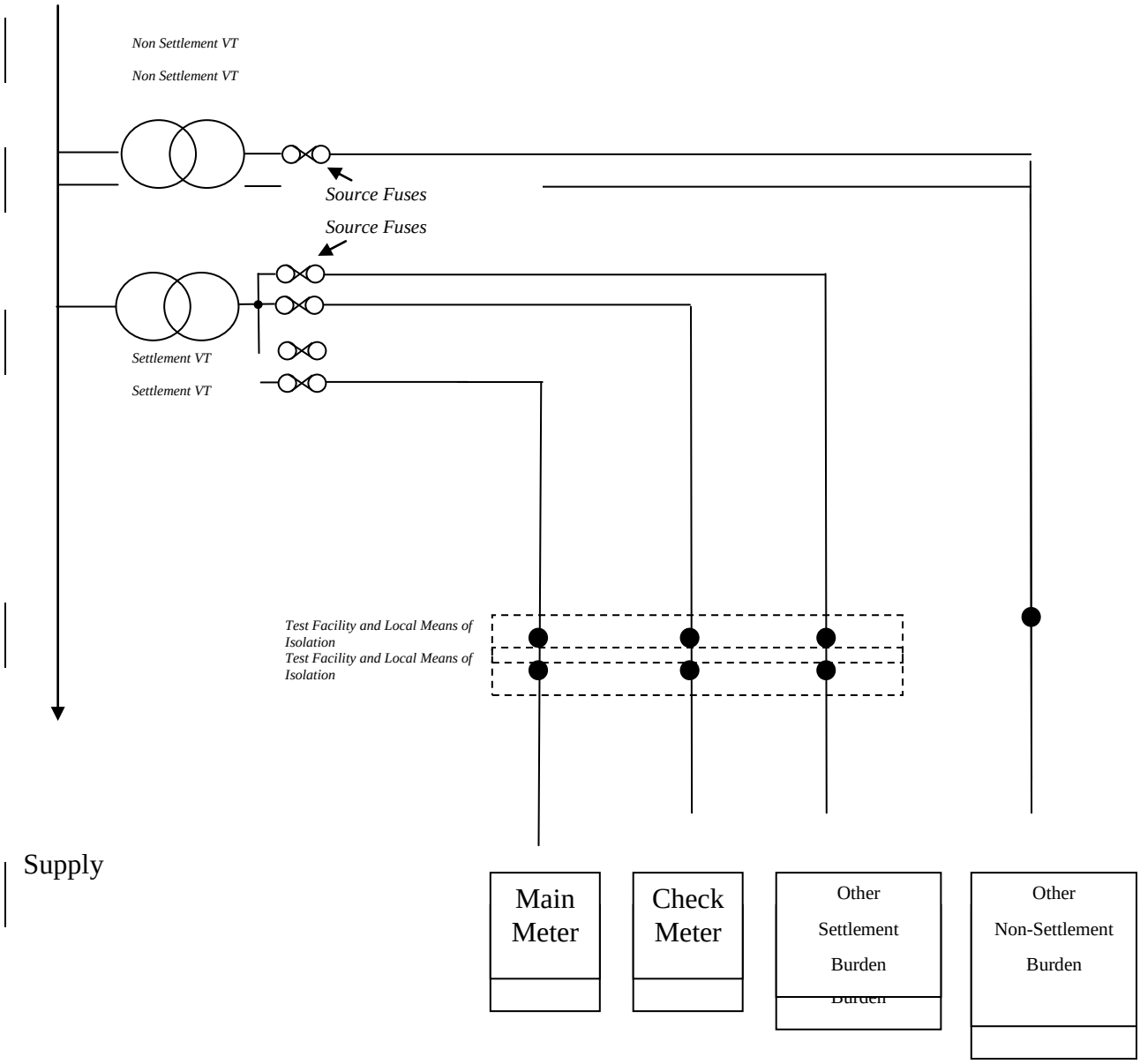
Source fusing and local means of isolation shall include the use of solid links in the potential return conductor.

The boundary between Meter Operator Equipment and the Transmission/Distribution System Operator is between the local means of isolation and the testing facilities.

[7] Isolation may be provided by the use of solid links or fuses and may be placed on either side of the test terminal block. Where fuses are to be used, the additional burden shall be accounted for.

[8] Check Meters and other burden may be supplied via an additional secondary winding of the VT

Figure 2: Fusing arrangements for cable runs of more than 30 metres distance between source fusing and local means of isolation[9] [10].



[9] Local isolation may be provided by the use of solid links or fuses and may be placed on either side of the test terminal block. Where fuses are to be used, the additional burden shall be accounted for.

[10] Check Meters and other burden may be supplied via an additional secondary winding of the VT.

APPENDIX D PASSWORDS

The Passwords specified in clause 5.6 shall be subject to the following additional requirements:

i. The communications protocol employed shall ensure that the Password offered determines the level of access to the data within the Metering Equipment.

ii. A counter to log the number of illegal attempts (i.e. Password comparison failures) to access Metering Equipment via the local and remote ports shall be incorporated into the log-on process. This counter shall reset to zero at every hour change (i.e. 0100, 0200, etc).

iii. If the counter reaches 7, then access is prohibited at all levels until the counter resets at the next hour change.

APPENDIX E GUIDANCE FOR THE USE OF MULTI CORE METERING CABLES

Multi core cables are predominantly used to provide CT and VT signals to the Meter. However such arrangements may cause additional errors that are not readily apparent to the Metering System designer. This guidance provides information that should be considered when using multi core cables for metering, particularly if used over long cable runs.

Consideration shall be given to the cross sectional area of the conductors of multi core cables:

i. In CT circuits the cabling resistance is likely to represent an appreciable component of the CT burden and care should be taken to ensure that the CT overall burden is not exceeded;

ii. For the VT circuits, cabling and fuses introduce volt drop errors. Fuses with a low current rating tend to have a relatively high resistance value and are variable from fuse to fuse. Careful selection of fuses, fuse holders and the doubling of cores can be used to mitigate these effects.

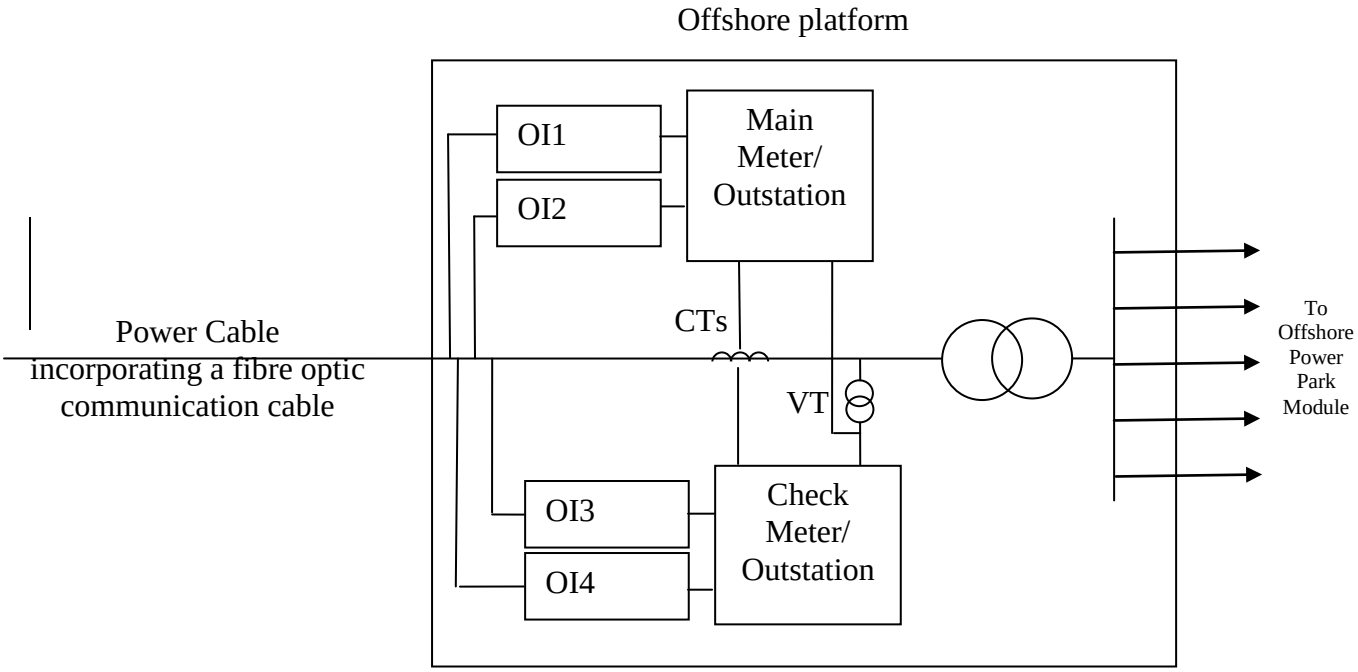
The proximity of CT and VT signals in multi-core cables can cause errors due to capacitive coupling from the voltage to the current circuits. The effect of this coupling is more prevalent at low loads and with long cable runs, in particular with 1 amp rated CTs. One possible symptom of this condition is that the Meters may advance under no load conditions (circuit energised but with no load current). This coupling effect may be eliminated by careful allocation of cable core to function, or by running CT and VT signals in separate cables.

APPENDIX F GUIDANCE FOR THE COMMUNICATION ARRANGMENTS FOR METERING SYSTEMS LOCATED OFFSHORE AT OFFSHORE POWER PARK MODULES

In this Code of Practice it is a minimum requirement for Metering Systems installed Offshore, for the purposes of measuring Exports and Imports associated with Offshore Power Park Modules, that the communications equipment incorporates dual redundancy. It should be noted that it is also a requirement that any single failure shall not prevent access to both main and check metering data however this extends to Settlement Metering Equipment only (e.g. modems, interface equipment and Outstation communication ports etc) and does not apply to a communications system provider's equipment.

It is the communication address which identifies the Communication Line and in the case of multiple addressing technology such as Internet Protocol (IP) addressing through fibre optics there may be a single fibre optic strand utilised where each Meter is associated with a unique address. The following examples show some possible arrangements for guidance, using a single optical fibre however more than one optical fibre may be used if required:

Example 1 Meters with integral Outstations using optical fibre communications



In this example a single optical fibre is used to provide communications from the Settlement Instation to the Outstations which are located on the offshore platform.

There is a single power cable connecting the Offshore Power Park Module to the mainland which incorporates a fibre optic communication cable.

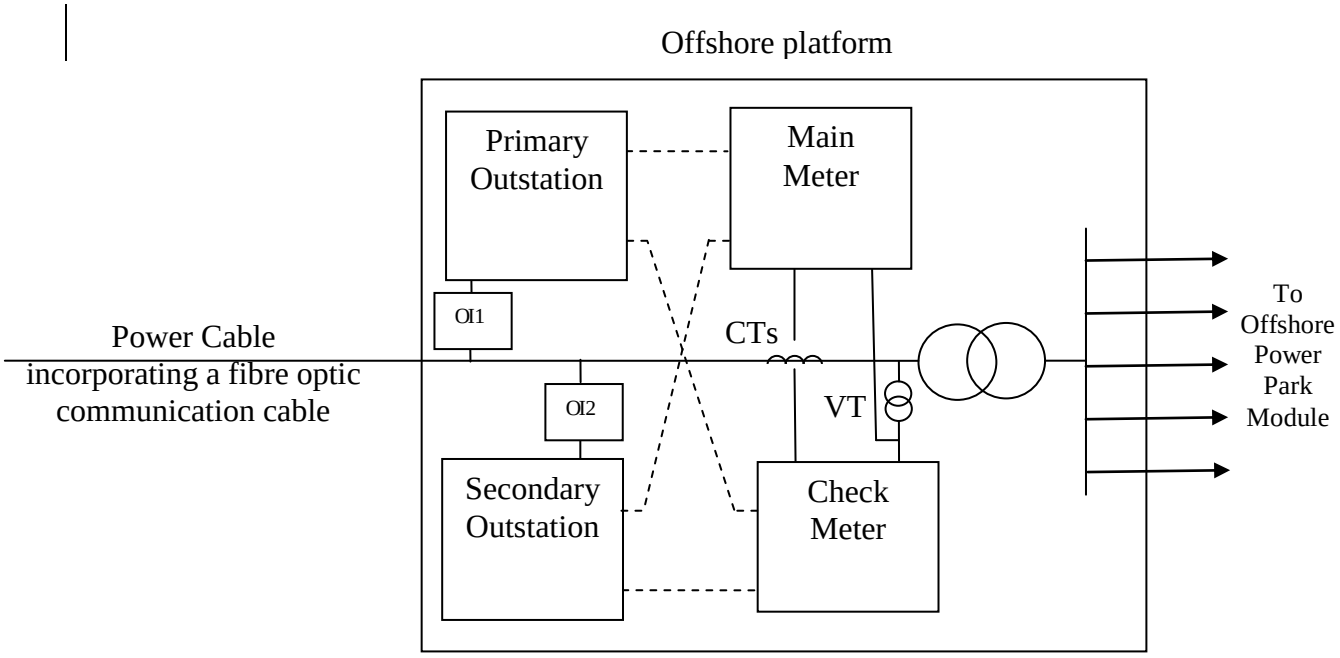
The Meters have integral Outstations each storing main and check data separately. If each Outstation stored data from both main and check Meters then only two Communication Lines would be necessary (OI1 and OI3 or OI2 and OI4) as the failure of either one would not

prevent access to both main and check metering data (as in Example 2). However in this example this is not the case therefore additional Communication Lines are required. Each Meter has two optical interfaces (OI1, OI2 and OI3, OI4) and each has a unique IP address.

There are two Outstation Systems and four Communication Lines.

This example shows a single optical fibre being used but would equally apply to multiple fibres or any other communications media such as satellite communications or PSTN.

Example 2 Meters with separate Outstations using optical fibre communications



---------- Metering data

In this example a single optical fibre is used to provide communications from the Settlement Instation to the Outstations which are located on the Offshore platform.

There is a single power cable connecting the Offshore Power Park Module to the mainland which incorporates a fibre optic communication cable.

The Meters transfer readings to both the separate Outstations and each Outstation has one optical interfaces (OI1 and OI2). Each optical interface has a unique IP address.

There are two Outstation Systems and two Communication Lines.

This example shows a single optical fibre being used but would equally apply to multiple fibres or any other communications media such as satellite communications or PSTN.