Code of Practice for the Metering of Electricity Transfers between The National Grid Company plc and Generating Companies using the National Interim Metering Scheme

Superseded

CODE OF PRACTICE FOR THE METERING OF ELECTRICITY TRANSFERS BETWEEN THE NATIONAL GRID COMPANY plc AND GENERATING COMPANIES USING THE NATIONAL INTERIM METERING SCHEME (IMS)

CONTENTS PAGE

Superseded

Superseded

Superseded

CODE OF PRACTICE FOR THE METERING OF ELECTRICITY TRANSFERS BETWEEN THE NATIONAL GRID COMPANY plc AND GENERATING COMPANIES USING THE NATIONAL INTERIM METERING SCHEME (IMS)

FOREWORD

This document is one of a suite of Codes of Practice which supersedes Engineering Recommendation M24 "Code of Practice for the Metering of Supplies from the Central Electricity Generating Board" issued in April 1973.

Details of the National Interim Metering Scheme are provided in a Functional Description issued by CEGB Transmission in November 1988.

NGC Settlements Limited as Settlement System Administrator (as such term is defined in the Pooling and Settlement Agreement (the "PSA")) shall retain copies of, inter alia, all Codes of Practice in this suite, together with copies of documents referred to in them, in accordance with the provisions of the PSA.

1 SCOPE

This Code of Practice for the National Interim Metering System determines the practices that shall be employed, and the facilities that shall be provided, for the measurement of supplies between NGC and the generating companies and for recording measured quantities for Settlement. It also applies to generation embedded in PES networks. It applies to the successor generating companies of the CEGB and will be rescinded upon implementation of the Final Metering Scheme.

1.1 It complements and expands on the metering section of the PSA to which reference should be made.

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

Superseded

1.3 In particular, this Code complements Clause 56 of the PSA (in respect of the provisions relating to accuracy of measurement) and the corresponding Metering Equipment Performance Specifications set out in Schedule 15 to the PSA.

1.4 It should also be read in conjunction with the relevant Agreed Procedures for, inter alia, operation of the data collection systems as specified in Schedule 16 to the PSA.

2 REFERENCES

The following documents may be referred to in the text:-

British Standard BS 3938: 1973	Current Transformers
British Standard BS 3941: 1975	Voltage Transformers
CEGB Standard 993908 (TPS 9/14) 1983	Test Facilities for Current and Voltage Transformer Secondary Circuits
CEGB Specification EM21 (1982)	Electricity Meters, Induction Type
CEGB Specification EM27 (1986)	Static Energy Meters
CEGB PTS 261	The technical content of Primary Transmission Scheme 261, which sets out the Interim Metering Scheme
CEGB PTS 271	The technical content of Primary Transmission Scheme 271, which sets out the Final Metering Scheme

NOTE : All references to standards given in the text are to current versions. Where equipment is in use which was designed and built to earlier versions of these standards there is no implied requirement to update this equipment.

Superseded

3 DEFINITIONS

Except where otherwise specified herein the definitions in British Standards 205, 1991 and 4727 Part 1, and British Standards for equipment, shall apply as appropriate. The following definitions which also apply, and are included for the purposes of clarification to complement or expand upon definitions contained within the PSA.

3.1 Electricity

Active Energy and/or Reactive Energy.

3.2 Active Energy

Active Energy is that part of the electricity supply capable of performing work. Unless otherwise stated it includes energy flows in both directions.

3.3 Reactive Energy

Reactive Energy is that part of the electricity supply which cannot perform work (the reactive voltampere hours). Unless otherwise stated it includes reactive energy flows in both directions.

3.4 Active Power

Active Power is the rate at which Active Energy is supplied.

3.5 Reactive Power

Reactive Power is the rate at which Reactive Energy is supplied.

3.6 Demand Period/Integrating Period

The period over which Active Energy and Reactive Energy are integrated to produce Demand Values. For settlement purposes at the Effective Date the Demand period is 30 minutes.

Superseded

3.7 Demand Values

Average values of Active Power and Reactive Power over a Demand Period. The Demand Values are half hour demands and these are identified by the time of the end of the Demand Period.

3.8 Meter Demand

A demand registered by a single Meter.

3.9 Total Demand

A demand derived either from the Summation of one or more Meter Demands of similar quantities or from other total demands.

3.10 Import

An Electricity flow to plant or apparatus of a generating company from the plant or apparatus of NGC or a PES system. The verb "Import" and its respective tenses shall be construed accordingly.

3.11 Export

An Electricity flow from plant or apparatus of a generating company to the plant or apparatus of NGC or a PES system. The verb "Export" and its respective tenses shall be construed accordingly.

3.12 Summation

Summation means the algebraic addition of two or more flows of Electricity, either simultaneously, or for impulse Summation, within the minimum number of impulses for correct operation.

For the purpose of addition, Import flows are termed negative and Export flows are termed positive.

Superseded

3.13 Commercial Interface

For the purposes of this Code of Practice, the relevant physical locations at which commercial interfaces occur are at the higher voltage side of main generator and station transformers.

3.14 Meter

A device for measuring Electricity.

3.15 Metering Point

The physical location on the electrical system at which primary measurements for metering are made.

3.16 Register

A device, normally associated with a Meter or summator, from which it is possible to obtain the amount of Active Energy, or the amount of Reactive Energy that has been supplied in a circuit or circuits.

3.17 Raw Data

Demand Values collected from the Outstations and which have not been altered by either manual or automatic means.

3.18 Processed Data

Demand Values which have been amended by basic mathematical processes according to agreed algorithms.

3.19 Verified Data

Demand Values which, having been automatically checked, are considered satisfactory for commercial use.

Superseded

3.20 Modified Data

Demand Values which are edited or substituted values where the Raw Data has been established as incorrect or missing.

3.21 Validated Data

Demand Values which are ultimately regarded as being correct on the basis of aligning with the Meter dial advances.

3.22 Outstation

The site equipment which receives and stores pulses from the individual Meters, may perform some processing of the data and transmits the metering data to the Collector Station on request.

3.23 Collector Station

The computer based equipment located at a few selected sites which collects data from the Outstations. Normally, this is carried out automatically each night but manual interrogation during the day is also possible.

3.24 Central Data Collection Systems ("CDCS")

The computer system located at a central point which contains a national data base which is regularly updated from the Collector Stations to which it has dedicated communications links.

3.25 Bulk Supply Point ("BSP")

A Metering Point normally at 66kV or below which formed the boundary between CEGB and Area Electricity Boards prior to the handover of 132kV assets.

Superseded

3.26 Grid Supply Point ("GSP")

The usual interface between the 400/275kV Grid System and the distribution system of a PES.

3.27 Interrogation Unit ("IU")

A hand held unit which can extract information from the Outstation and store this for later retrieval.

3.28 PSTN/CTN

The Public Switched Telephone Network/The appropriate Corporate Telephone Network.

3.29 The National Interim Metering Scheme ("IMS")

The National Metering Scheme as set out in PTS 261, which comes into effect from the Effective Date (as defined in the PSA) and shall subsist until the commissioning of The National Final Metering Scheme.

3.30 The National Final Metering Scheme ("FMS")

The National Metering Scheme as set out in PTS 271, which comes into effect on the FMS Date (as defined in the PSA).

3.31 The National Settlement System

The system for reconciliation of all pooling arrangements between PES(s), Generators and other Pool Members.

3.32 PArh Meter

A phase advanced reactive Meter used instead of Import or Export reactive Meters (VArh). Reactive Power/Reactive Energy is

Superseded

calculated in accordance with the following formula:-

$$VAr - (\sqrt{3} \times Watts - 2\ PAr)$$

PArh Meters are not referred to in this Code.

3.33 Reconciled Data

Demand values upon which monthly Settlements will be made, and which will include Validated Data where Meter reading is carried out monthly (or as otherwise agreed).

3.34 Interfacing Unit

A unit which interfaces between the Meter output and the Outstation to provide two (or more) outputs (e.g. to provide an additional output from a Meter with only one set of output contacts).

3.35 Limits of Error

"Limits of Error" wherever applied within this document shall be interpreted to read "Equal to but not greater than" i.e. "less than or equal to:" the value(s) quoted in percentage terms and should be read as $\geq$ +/- x.yz%".

Superseded

4.2 Accuracy

4.2.1 Overall Accuracy of Equipment Meters have been calibrated to attain overall accuracies within the limits defined for Metering Equipment as set out below. Calibration of meters may be adjusted for losses due to measuring transformer errors (see 4.4) and if required Primary Transformer Losses (see 4.5).

4.2.2 Accuracy of Meters Meters shall register amounts of Active Energy or Reactive Energy within the following limits of error, after making allowance for adjustments as detailed in 4.2.1 above.

(i) Energy Metering overall accuracy:

(a) Generators between 125% and 20% of rated current and unity power factor 100 ± 1.0%

(b) Station transformers
Unit transformers
Auxiliary Gas Turbines

between 125% and 20% of rated current and unity power factor 100 ±2.5%

(ii) Reactive Energy Metering overall accuracy:

between 125% and 5% of rated current at zero power factor 100 ±5.0%

The above errors on the metering system are formed from a compilation of Meter, VT, CT, and compensation inaccuracies. All inaccuracy except the Meter is included in "worst case" conditions. The Meter performance and therefore system performance will degrade outside of the above current ranges and power factors.

Superseded

(iii) Active Energy Meters

(a) Generators

Condition of Test	Limits of Error at Stated Power Factor	
Current expressed as a percentage of the rated measuring current	Power Factor	Limits of Error
125% to 20% inclusive	1.0	±0.5%
Below 20% to 10% inclusive	1.0	±1.0%
Below 10% to 5% inclusive	1.0	±1.3%
125% to 20% inclusive	0.5 lag and lead	±1.0%
Below 20% to 10% inclusive	0.5 lag and lead	±1.5%

(b) Station transformers, unit transformers, auxiliary gas turbines:

Condition of Test	Limits of Error at Stated Power Factor	
Current expressed as a percentage of the rated measuring current	Power Factor	Limits of Error
125% to 20%	1.0	±2.0%
10%	0.5 lag	±2.5%
125% to 20%	0.5 lag	±2.0%

(iv) Reactive Energy Meters

Condition of Test	Limits of Error at Stated Power Factor under primary system balance conditions	
Current expressed as a percentage of the rated measuring current	Power Factor	Limits of Error
125% to 5% inclusive	Zero	±2.0%
125% to 20% inclusive	0.866 lag & lead	±2.0%
Below 20% to 10% inclusive	0.866 lag & lead	±2.5%

(Note

The total system inaccuracy for station transformers, unit transformers and auxiliary gas turbines is high because the meters fitted are class 2.0. However in most cases commercial grade meters are fitted which have been calibrated in the past by the NGC to give an overall system inaccuracy no worse than ± 1.5%.)

Superseded

4 MEASUREMENT CRITERIA

4.1 Quantities to be Measured

The outputs from current and voltage transformers shall provide for:-

(1) generating units and auxiliary gas turbines:

(i) Export MWh

(ii) Import MWh

(iii) Import MVArh

(iv) Export MVArh

In certain cases (iii) and (iv) may be omitted.

Only in certain cases is (ii) fitted.

(2) unit and station transformers:

(i) Import MWh

(ii) Export MWh

In certain cases (ii) may be omitted.

In addition, timing of the measured values over the demand period shall provide for each circuit the following or multiples thereof:

(a) average value of kW

(b) average value of kVAr

Superseded

4.2.3 Accuracy of Records The amount of Active Energy or Reactive Energy supplied during each declared demand period obtained from recorded readings shall generally be within ±1% (at full load) of the amount obtained by reading the appropriate register or registers at the beginning and end of the demand period.

4.2.4 Accuracy of Time Keeping The long term time keeping accuracy shall be based upon the Outstation receiving a timing signal from the Collector Station which is synchronised to true time by using a Rugby (Warwickshire) Radio Clock.

The overall limits of error for the time keeping which must allow for failure to communicate with the Outstation for an extended period of 10 days shall be:-

4.2.4.1 The commencement of each Demand Period shall be at a time which is within +/- 10 seconds of the true time;

4.2.4.2 The duration of each Demand Period shall be within +/- 0.03% of the true duration.

4.3 Compensation for Measuring Transformer Errors

Compensation has been made for the errors of current and voltage transformers, if possible, by NGC in the Meter calibration. The record of the computed errors and compensation settings shall be available for inspection by the PES entitled to view it. Records of Meters calibrated post vesting will be held by the generating companies or their agents or servants and will be available for inspection by the appropriate PES.

Values of compensation criteria which have been recorded by NGC will be submitted to the Settlement System Administrator pursuant to the PSA when they have been received from NGC.

Superseded

4.4 Compensation for Primary Transformer Losses

Compensation has been made for losses if possible, by NGC in primary transformers. The record of the computed loss and the compensation settings shall be available for inspection by the PES entitled to view it. Records of Meters calibrated post vesting day will be held by the Generating Companies or their agents or servants and will be available for inspection by the appropriate PES.

Due to the nature of these adjustments there will be an uncertainty between adjusted and true values. This is not expected to widen the limits of error in the above table.

Values of compensation criteria which have been recorded by NGC will be submitted to the Settlement System Administrator pursuant to the PSA when they have been received from NGC.

Superseded

5 FACILITIES TO BE PROVIDED AT METERING POINTS

5.1 Meters

Meters as originally installed shall be in accordance with Specification CEGB-EM21 OR EM27 (or their predecessors) and the following generally shall be provided:-

Generator transformers (with metering point on transformer LV side for Active Energy and HV side for Reactive Energy):

(i) Main Energy Meter for Export

(ii) Check Energy Meter for Export

(iii) Reactive Energy Meter for Import

(iv) Reactive Energy Meter for Export

Station transformers (with Metering Point on LV side):

(i) Energy Meter for Import

(ii) Energy Meter for Export

Unit transformers (with Metering Point transformer HV side):

(i) Energy Meter for Import

(ii) Energy Meter for Export

(In certain cases (ii) is omitted.)

Auxiliary Gas Turbines (with Metering Point on generator connections):

Superseded

(i) Main Energy Meter for Export

(ii) Check Energy Meter for Export

(In most cases (ii) is omitted.)

5.2 Current Transformers

Current transformers for use with tariff metering shall preferably be to BS3938 (or its predecessor), Class 0.2 and have a rating of not less than 15 VA. Installations using existing instrument transformers may be retained.

5.3 Voltage Transformers

Voltage transformers for use with tariff metering shall preferably be to BS3941 (or its predecessor), Class 1.0 and have a rating of not less than 100 VA.

Capacitor voltage transformers only used for metering Reactive Energy will have a rating of not greater than 50 VA but it is expected that at the working burden it will remain inside its accuracy class.

Installations using existing transformers may be retained. Metering voltage transformers may be shared with other duties if the accuracy of metering quoted in 4.3.2 is adhered to.

5.4 Communication/Transmission Medium

Communications from Outstations to Collector Stations shall be via PSTN or such other communication means as the respective parties and the Settlement System Administrator might agree.

5.5 Ownership

Each Metering System (as defined in the PSA) shall have a Registrant and Operator appointed pursuant to the PSA.

Superseded

6 CALIBRATION AND TESTING OF EQUIPMENT

6.1 Meters

6.1.1 Initial Calibration

Meters will have been supplied and calibrated according to the requirements of CEGB Specification EM21 or EM27 as to accuracy, to the relevant requirements of that Specification, and with errors biased to take account of voltage and current transformer errors and, where applicable, primary transformer losses.

New Meters shall be supplied calibrated according to the requirements of CEGB Specification EM21 or EM27 as to accuracy, either directly to the requirements of the Specifications or with errors biased to take account of voltage and current transformer errors and, where applicable, primary transformer losses.

The results of routine tests carried out as per relevant sections of the CEGB Specification will be made available, in accordance with the provisions of clause 56.9.3 of the PSA.

6.1.2 Periodic Calibration and Test of Calibration

Historic records relating to these periodic checks or recalibrations shall be transferred by NGC to the Operator as defined in the PSA of the Metering System who will make them available to the Registrant and/or the Settlement System Administrator as required by the provisions of the PSA.

The frequency of test of calibration (accuracy checks) and recalibrations shall be based on a knowledge of the performance of a particular design of Meter see Appendix A.

Superseded

Historic records will indicate priorities in subsequent test of calibration and Meter recalibrations.

6.1.3 Tests following Disputes

Where site tests are required to settle a dispute, the methods as specified in Clause 56.15.2 of the PSA shall be adopted, where possible.

6.2 Measuring Transformers

6.2.1 Initial Calibration

The IMS will use existing measuring transformer equipment, which will have been supplied with known characteristics within the specifications of relevant British Standards to allow calibration of Meters.

6.2.2 Periodic Calibration

Calibration checks on measuring transformers within the anticipated time for which the IMS will be in operation are not considered necessary.

Recalibration will therefore only be carried out in those cases where no current calibration records exist and the record is required to carry out a test of calibration or a recalibration of the Meter.

6.3 Test Access to Metering Equipment

Where provided, test terminal blocks in accordance with CEGB Standard 993908 (TPS 9/14) shall be used to facilitate Meter testing and voltage and current transformer monitoring on site. Otherwise, existing arrangements will continue.

Superseded

6.4 Outstation Equipment

6.4.1 Initial Tests

These were carried out during the commissioning phase of the installation of the IMS. The data collectors were commissioned in accordance with "Acceptance Test Specification for Landis and Gyr Data Collection System Outstation Commissioning". This document is published by NGC and is available for inspection.

6.4.2 Periodic Tests/Maintenance

The need for periodic tests is not foreseen. Maintenance will be carried out and the Schedules used will be available for inspection.

7 DATA TRANSMISSION ROUTES AND PROCESSING

(Diagram 1 represents the system in block form)

7.1 Meter(s) to Site Outstations

Data from Meters will be fed continuously to the respective site outstation.

The data collected is stored in memory and remains stored on site after the interrogation by the Collector Stations. It may also be retrieved for a maximum of 10 days after data is initially received and stored, after which it may be overwritten.

7.2 Site Outstation to Collector Station

Data from Outstations will be collected by the Settlement System Collector Stations by daily dial up.

Automatic checking procedures are carried out on the data collected from Outstations and the results are reported at the Collector Station. Data is flagged and transferred to the CDCS.

Superseded

7.3 Collector Station to CDCS

Data from Collector Stations is transferred automatically each day. This data will normally relate to the previous day, but on occasion might cover two or more days in particular cases.

The CDCS holds data collected, and these are available for inspection by the relevant parties. The data are also passed to the National Settlements System and, after validation and processing to conform to the configuration required by the various contracts, form the basis of financial Settlements.

8 ACCESS TO ASPECTS OF DATA

8.1 Data

Access to data and physical access to Metering Points, Data Collection Stations and Central Data Collection Systems shall be in accordance with the provisions of the PSA and the Agreed Procedures referred to therein.

8.2 Access at Metering Points

The Operator may, at a Metering Point, interrogate the data collection Outstation using a portable computer, known as an Interrogation Unit (IU).

The IU can be used as a fault finding tool and, in exceptional circumstances when communications from the Collector Station fail for an extended period (e.g. a BT line fault), can be used to retrieve the stored data.

Only staff both nominated by the Operator and authorised by the Settlement System Administrator may operate an IU and interrogation of a given Outstation requires use of a unique Outstation identification number.

Superseded

9 MISSING OR DEFECTIVE DATA AND CONTINGENCY ARRANGEMENTS

The Agreed Procedures listed in Schedule 16 to the PSA cover the following operational considerations of the data collection systems:

- Sources of missing or defective data
- Detection of defects
- Defect Procedures
- Validation of data
- Reconciliation of discrepancies
- Estimation procedures

10 NOTIFICATION/SETTLEMENT OF DISPUTES

As validation is available daily to the generating companies, disputes are likely to originate from that exercise. The generating companies will channel the dispute through their own Energy Management Centre to the Settlement System Administrator where the dispute will be dealt with using Agreed Procedures agreed pursuant to the PSA.

10.1 Testing following a Dispute

Testing to settle a dispute will be the responsibility of the generating company who, as Operators (defined in the PSA), will arrange for testing on equipment mounted in its operational position. Performance will be compared with previously calibrated test equipment by one of the following methods in the presence of the Settlement System Administrator or his nominee:-

(a) By injecting into the measuring circuits (ie excluding the primary current and voltage transformers) and comparing the

Superseded

readings or records over a sufficient period to ensure a reliable comparison.

(b) By operating the calibrated test equipment from the same primary current and voltage transformers as the measuring equipment, under operating conditions. The registrations and recordings of the two equipments shall be compared over a testing period of such length as will ensure that the conditions of test are similar to the normal conditions of operation and will ensure a reliable comparison.

(c) Using any other method which has been agreed with the Settlement System Administrator.

Representatives of the PES(s) will be entitled to witness tests taken as a result of a dispute, including calibration tests of the equipment to be used.

10.2 Testing following a belief that the metering equipment is not within the prescribed accuracy

Testing as described in 10.1 will be carried out by the Settlement System Administrator or the generating company who are the Operator (as defined in the PSA) of the Meter. The cost of the test will be borne by the party described in clause 56.9.2 of the metering section of the Pooling and Settlement Agreement.

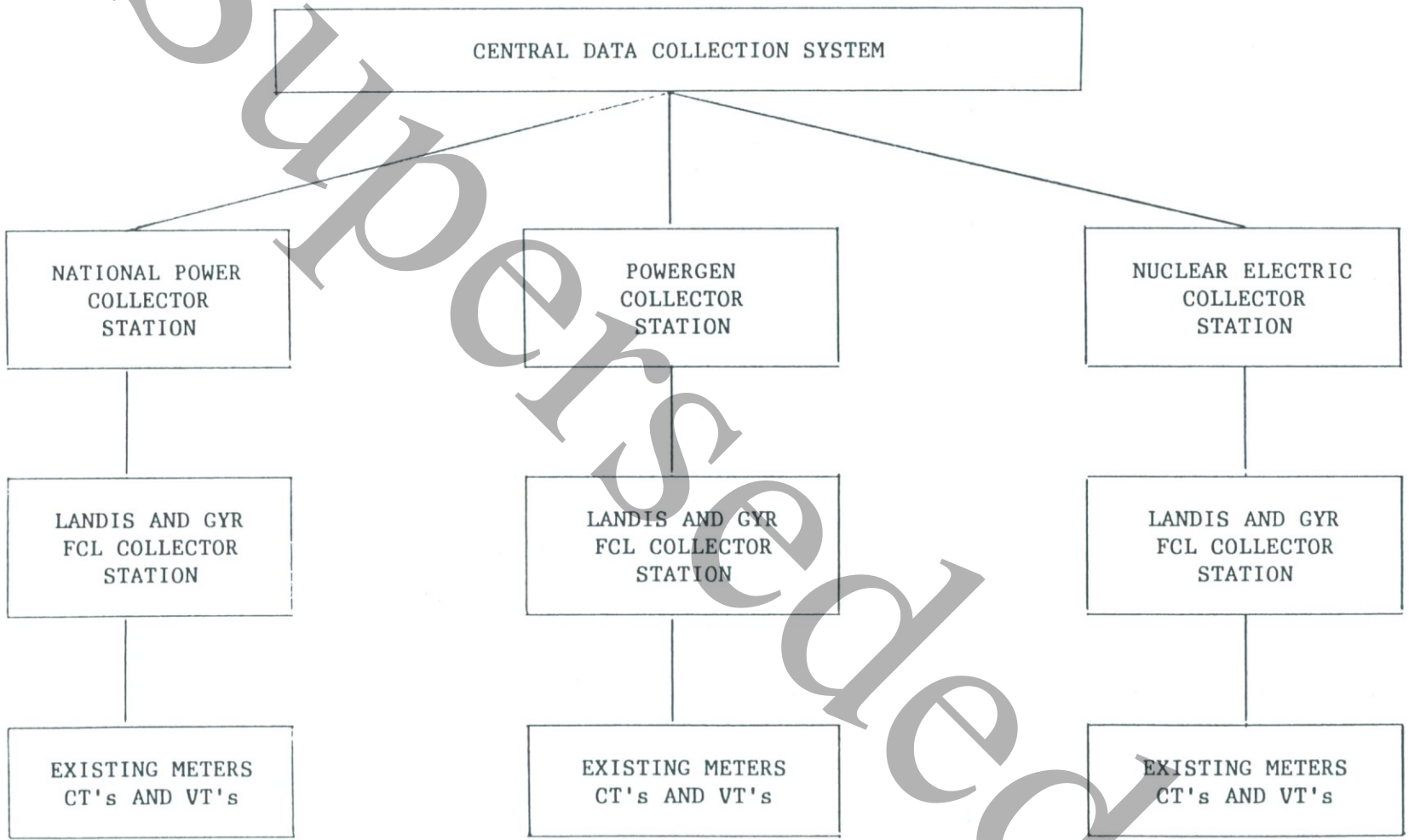
11 SUBMISSION TO ARBITRATION

Failure of the Agreed Procedures agreed pursuant to the PSA and the Executive Committee (as defined in the PSA) to resolve a dispute will result in that dispute ascending to the independent arbiter.

The generating company will refer the matter to the Electricity Supply Industry Arbitration Association pursuant to the PSA and Agreed Procedures agreed pursuant thereto.

Superseded

DIAGRAM 1



Superseded

APPENDIX A

GUIDELINES FOR THE PERIODIC CHECKING AND RECALIBRATION OF METERS DURING OPERATION OF THE INTERIM METERING SCHEME

1 Test of Calibration (accuracy check)

1.1 The existing Meters in the IMS are to be replaced during the installation of the FMS. The new Meters will be working at an early stage into the IMS data collector. It is recommended that routine accuracy checks are carried out on the IMS Meters.

The frequency of accuracy checks will be as laid out below with the start date of the last recalibration as shown in the historic records transferred.

Manufacturer	Meter Type	Period
Ferranti	(FLF	3 yrs
	(FMF	5 yrs
	(FNF	5 yrs
GEC	E72F	3 yrs
L&G	all	5 yrs
C&H	(FN	2 yrs
	(KTA	2 yrs

1.2 A test of calibration will be carried out when

(a) The Meter Operator (as defined in the PSA) believes that the Meter is not performing to its required accuracy.

(b) Under the metering section of the Pooling and Settlement Agreement clause 56.9.2 where either the Settlement System Administrator or a third party believes that the Meter is not performing to its required accuracy.

Superseded

2 Periodicity of Recalibration

Under normal circumstances, meters shall be subject to the following periods of recalibrations:-

Manufacturer	Meter Type	Period
Ferranti	(FLF	3 yrs
	(FMF	6 yrs
	(FNF	10 yrs
GEC	E72F	6 yrs
L&G	all	10 yrs
C&H	(FN	3 yrs
	(KTA	5 yrs

3 Methods for Recalibration

Meters will be subject to renovation and recalibration against a traceable Standard either on site, at a workshop or at a Meter testing laboratory.

For Meters on circuits that remain in service

Either

(i) a Meter removed from site will be replaced immediately with a previously recalibrated meter suitable prepared and compensated for the circuit.

Or

(ii) provided the other Meter (main or check) on site is within its calibration period, one Meter may be removed and returned to site within 10 working days.

Superseded

4 Application of Recalibration Procedures to the Interim Metering Scheme

The Interim Metering Scheme is likely to be superceded by late 1992 (3 years). Provided that this timescale is maintained, and on the basis that it is not economic to refurbish and recalibrate a Meter for a duty of less than six months, the above calibration periods may be extended by six months.

Superseded

APPENDIX B

LABELLING OF METERS FOR IMPORT AND EXPORT

1 The terms Import and Export are defined in sub-clauses 3.10 and 3.11 and it is considered desirable to recommend a standard method of labelling Meters (or suitable labelling panels etc.), and to establish the relationship between Import and Export, Active Energy, and Import and Export, Reactive Energy. Accordingly, Meters (or suitable labelling panels etc.) shall be labelled in accordance with this Appendix B.

2 Active Energy

Active Energy is considered to be Imported when it flows to the plant or apparatus of a generating company from the plant or apparatus of NGC or a PES system. The Meter(s) registering this Active Energy should be labelled "Import".

Active Energy is considered to be Exported when it flows from the plant or apparatus of a generating company to the plant or apparatus of NGC or a PES system. The Meter(s) registering this Active Energy should be labelled "Export".

3 Reactive Energy

Within the context of this Code of Practice 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 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

Superseded

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

NOTE: This convention is based on "Import" and "Export" being from the viewpoint of the Registrant of the Metering System.

Superseded