Market Code Schedule 16

Code Subsidiary Document No. 0203

Meter Read Submission: Validation

Version: 1.4 5

Date: 2927/0309/2010

Document Ref: CSD0203

Change History

Version Number	Date of Issue	Reason For Change	Change Control Reference	Sections Affected
1.0	14/05/2007			
1.1	31/08/2007			
1.2	08/03/2009	Enhanced usage threshold validation	MCCP020	
1.3	17/08/2009	Re-assessed Charges	MCCP035-CC	Section 2.1
1.4	29/03/2010	Changes to RF Calculation	MCCP046-CC	
1.5	27/09/2010	Validation on I Read	MCCP063	Section 2.1.5

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1. Purpose and Scope

This document sets out the validation process performed by the CMA on receipt of Meter Reads, to ensure that the Meter Reads are fit for use in the Settlement Process. Where a Meter Read does not meet these validation requirements, the CMA will notify the Licensed Provider or Scottish Water as appropriate that further investigation is required.

2. Meter Read Submission Validation Description

This process will be run by the CMA on the receipt of Meter Read Submissions in the form of Data Transactions T005.0, T005.1 and T017.0 in accordance with CSD 0202 (Meter Read Submission: Process). All Meter Reads submitted must contain the Data Items set out against the relevant Data Transaction in the Data Transaction Catalogue.

Meter Read Types are set out in CSD 0202.

Under Section 5.10 of the Market Code, validation requires to be carried out in respect of:

- registration and content validation;
- treatment of duplicate data;
- Volume validation.

2.1 Registration and Content Validation

The purpose of this validation is to ensure that the combination of Licensed Provider, SPID and Meter ID is a valid Registration combination. If the provider of the Meter Read is Scottish Water, then only the SPID and Meter ID combination needs to be validated against SPID Data.

The validation also checks that the Data Transaction content is valid (e.g. the Meter Read value is not unpopulated) and that the Meter Read date is not a date which is later than the date of submission of the Meter Read or earlier than the date of a previous Meter Read. Appendix 1 sets these out in detail.

2.1.1 Treatment of meters created since the market opening

For meters created since market opening using the notify meter details processes (Data Transactions T004.0, T004.2 T004.3) no read (other than an Opening Read) will be accepted without the presence of an I read. Meter Reads sent using Data transaction T005.0 to such meters where no I Read is present will be rejected by the CMA. The CMA will send a Data Transaction T009.0 with the Error Code DF 'Effective from date predates previous change'.

~~2.1.1~~2.1.2 Treatment of duplicate date Meter Reads

If more than one Meter Read is provided for any single read date for the same Meter ID, the CMA will check the later Meter Read Submission for duplication of data with the previously validated Meter Read Submission. Any difference will be reported on Data Transaction T009.0 or T009.1 (Error Notification) by the CMA for the later Meter Read Submission and the earlier Meter Read will be used in the Settlement process. Where a Licensed Provider or Scottish Water wishes to replace the earlier Meter Read, it should follow CSD0105 (Error Rectification & Retrospective Amendments).

Error Notification is provided as set out in the table below.

Meter ID	**Read Date**	**Read Type**	**Read Value**	***Outcome***
Both Meter Ids identical	Both Read Dates Identical	Both Read Types Identical	Both Read Values Identical	*Ignore the second read as it is identical*
Both Meter Ids identical	Both Read Dates Identical	Both Read Types Identical	Read Values Differ	*Error notification sent with Error Code = BF*
Both Meter Ids identical	Both Read Dates Identical	Read Types differ	Both Read Values Identical	*Error notification sent with Error Code = BF*
Both Meter Ids identical	Both Read Dates Identical	Read Types differ	Read Values Differ	*Error notification sent with Error Code = BF*

~~2.1.2~~2.1.3 Pseudo Meters

For a Pseudo Meter, Registration validation will include verification that only permitted Meter Read Types are submitted. Only the Read Types Initial and Final are applicable and all other Read Types will not be accepted.

Meter Read Types that are not permitted will be rejected as follows:

i. A Data Transaction T005.1 (Meter Read) submitted by the Licensed Provider will be rejected using Error Code DI 'Transaction Not permitted'. For the avoidance of doubt, a T005.1 containing any of the following Meter Read Types will be rejected:

C: Regular Cyclic Read;

U: Customer Read; and

T: Transfer Read.

ii. A Data Transaction (Meter Read) T005.0 submitted by Scottish Water containing any of the following Meter Read Types will be rejected using Error Code ‘AT’ (Meter Read Rejected: Read Type inappropriate):

X: (Temporary Disconnection Read); and

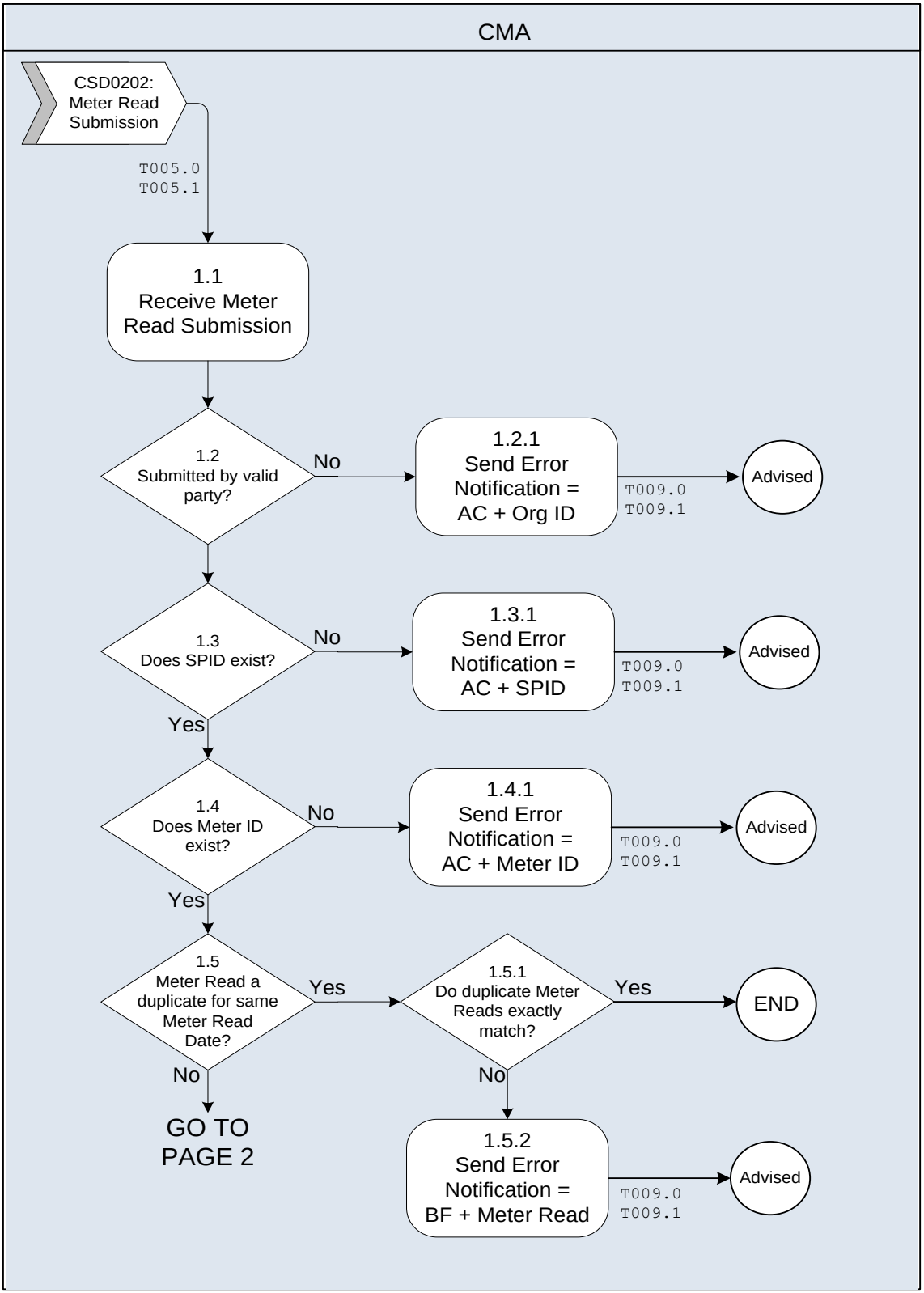
Y: (Reconnection Read).

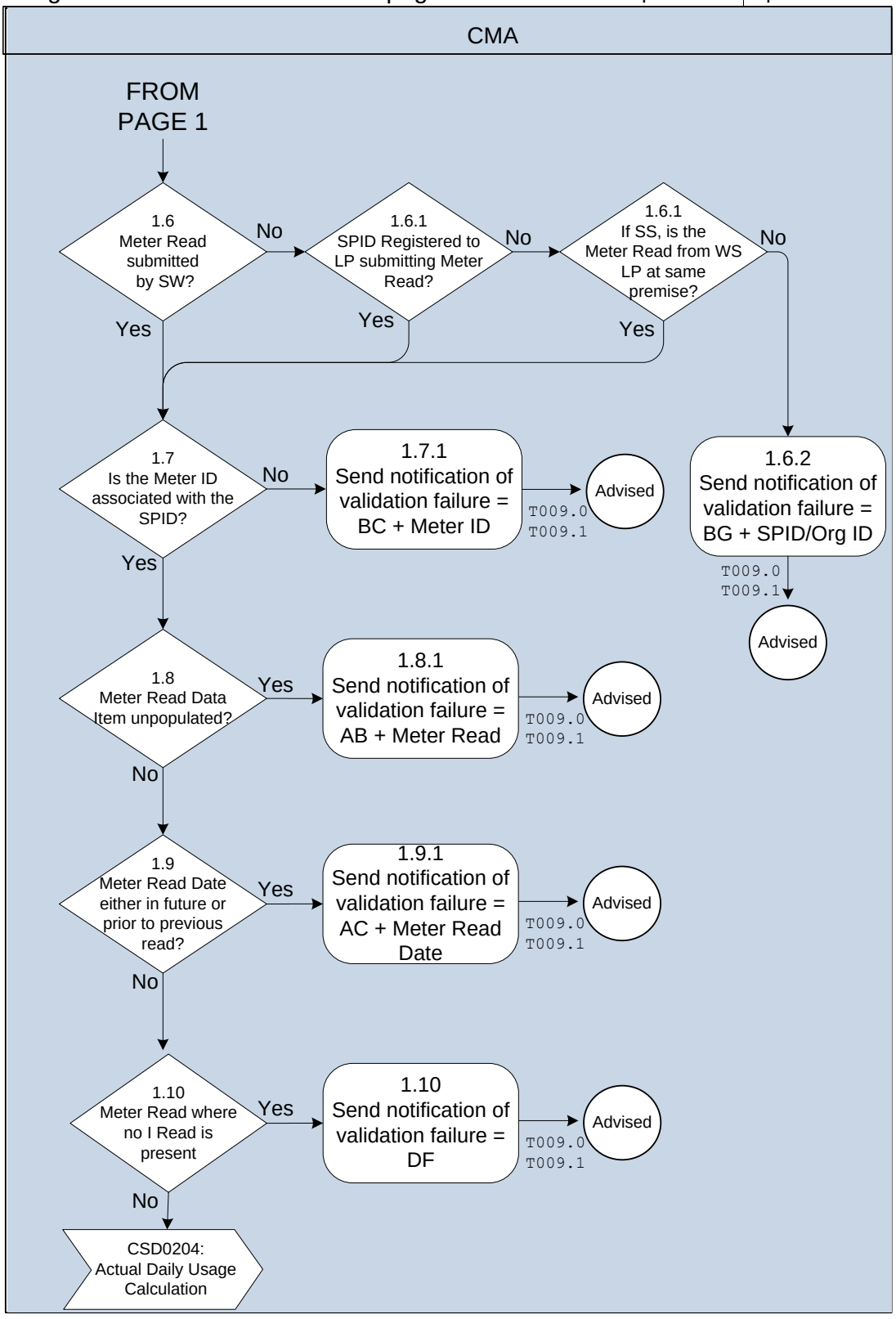
iii. A Data Transaction T017.0 (Notify Meter Swap), that is Meter Read Types E (End Read) and O (Opening Read) submitted by Scottish Water will be rejected using Error Code ‘DI’ (Transaction not permitted).

~~2.1.3~~2.1.4 Process Diagrams

Registration & Content Validation page 1/2

Updated 17 Apr 2007




CMA
FROM PAGE 1
1.6 Meter Read submitted by SW?
No
1.6.1 SPID Registered to LP submitting Meter Read?
No
1.6.1 If SS, is the Meter Read from WS LP at same premise?
No
Yes
Yes
Yes
1.7 Is the Meter ID associated with the SPID?
No
1.7.1 Send notification of validation failure = BC + Meter ID
Advised
T009.0
T009.1
1.6.2 Send notification of validation failure = BG + SPID/Org ID
T009.0
T009.1
Advised
Yes
1.8 Meter Read Data Item unpopulated?
Yes
1.8.1 Send notification of validation failure = AB + Meter Read
Advised
T009.0
T009.1
No
1.9 Meter Read Date either in future or prior to previous read?
Yes
1.9.1 Send notification of validation failure = AC + Meter Read Date
Advised
T009.0
T009.1
No
1.10 Meter Read where no I Read is present
Yes
1.10 Send notification of validation failure = DF
Advised
T009.0
T009.1
No
CSD0204: Actual Daily Usage Calculation

~~2.1.4~~2.1.5 Interface and Timetable Requirements

Step Ref:	When	Action/Decision	From	To	Data Transaction
1.1	Ad hoc	Receive Meter Read Submission	CMA	LP/SW	Meter Read Submission (T005.0, T005.1)
1.2		Does the submitter of the Meter Read have a recognised Organisation ID (Org ID)?	CMA		
1.2.1		If the submitter of the Meter Read is not a known Org ID, send Error Notification. Go to Validation Failure Reporting.	CMA	LP/SW	Error Transaction T009.0, T009.1
1.3		Is the SPID an existing SPID?	CMA		
1.3.1		If the SPID is not a known SPID send Error Notification. Go to Validation Failure Reporting.	CMA	LP/SW	Error Transaction T009.0, T009.1
1.4		Is the Meter ID an existing Meter ID?	CMA		
1.4.1	Daily	If the Meter ID is not a known Meter ID send Error Notification. Go to Validation Failure Reporting.	CMA	LP/SW	Error Transaction T009.0, T009.1
1.5		If a validated Meter Read has been submitted for this Meter ID with the same Meter Read Date go to 1.5.1 otherwise go to 1.6	CMA		
1.5.1		Do the Meter Reads for the previous and current Meter Read exactly match, if so the process ends, otherwise go to 1.5.2	CMA		
1.5.2		If all the Meter Read Data Item values do not match send error Go to Validation Failure Reporting.	CMA	LP/SW	Error Transaction T009.0, T009.1
1.6		If the Meter Read Provider is Scottish Water go to 1.~~10~~7, otherwise go to 1.6.1.	CMA		
1.6.1		Is the SPID registered to the Meter Read providing Market Participant, or corresponding SS SPID if RWSM if so go to 1.7 otherwise go to 1.6.2	CMA		
1.6.2		If the SPID is not registered to the Org ID of the Meter Read Provider send Error Notification. Go to Validation Failure Reporting.	CMA	LP/SW	Error Transaction T009.0, T009.1
1.7		Is the Meter ID associated with the SPID, if so go to 1.8, otherwise go to step 1.7.1	CMA		

Step Ref:	When	Action/Decision	From	To	Data Transaction
1.7.1		If the Meter ID is not associated with the SPID send Error Notification. Go to Validation Failure Reporting.	CMA	LP/SW	Error Transaction T009.0, T009.1
1.8		If the Meter Read is unpopulated go to 1.8.1, otherwise go to 1.9	CMA		
1.8.1		If the Meter Read is unpopulated send Error Notification. Go to Validation Failure Reporting.	CMA	LP/SW	Error Transaction T009.0, T009.1
1.9		Is the Meter Read date prior to previous Meter Read or after the submission date, if not go to 1.9.1, otherwise go to 2.	CMA		
1.9.1		If the Meter Read date is in the future send Error Notification. Go to Validation Failure Reporting, otherwise go to 1.10.	CMA	LP/SW	Error Transaction T009.0, T009.1
1.10		If the Meter Read is submitted for a meter notified since the market opening Date where no I Read is present Go to Validation Failure Reporting.	CMA	LP/SW	Error Transaction T009.0, T009.1

2.2 Volume Validation

Once the CMA has calculated the Actual Daily Volume supplied to a meter in relation to a Supply Point in accordance with CSD 0204 (Volume Processing and Estimating), it will validate the Meter Read submitted to it in respect of that meter. The CMA will not carry out such validation in respect of Type I, Type O and Type Y Meter Reads, because there will no relevant Actual Daily Volume associated to these.

2.2.1 Threshold Validation

The CMA will check the value of the Actual Daily Volume calculated for a meter relating to a Supply Point using the formulae below. The read submission will either be accepted with an OK response or rejected with an error code as per the following table.

Where:
ADV is the Actual Daily Volume in m^3 computed using the new candidate meter read; and
PEDV is the latest Prior Estimated Daily Volume in m^3 for the same period computed using the previously accepted meter reads.

PEDV Value	ADV Value	Acceptance (OK) or Error Return Code as per D4004
PEDV <=0	ADV = 0; SPID Vacant = True	*OK*
	ADV = 0; SPID Vacant = False	*BZ*
	-3 < ADV <0	*BN*
	ADV <= -3	*BV*
	0 < ADV	*BH*
0 < PEDV	ADV = 0; SPID Vacant = True	*OK*
	ADV = 0; SPID Vacant = False	*BZ*
	-3 < ADV < 0	*BN*
	ADV <= -3	*BV*
	ADV < 0.2 * PEDV	*BL*
	2 * PEDV < ADV	*BH*
	0.2 * PEDV <= ADV <= 2 * PEDV	*OK*

Section 2.8 of CSD0202 Meter Read Submission Process describes the use of Re-reads.

2.2.2 Capacity Limit Validation

The CMA will check the Actual Daily Volume calculated for a meter related to a Supply Point, by comparing its value to the value of the maximum Volume that the CMA considers could have been supplied to the meter related to the Supply Point. The CMA will derive the value of that maximum Volume from the physical meter size, as notified by Scottish Water for each Supply Point. The CMA will consider the value of the Actual Daily Volume to be validated if it is less than the value of the maximum Volume that could have been supplied to that meter, divided by the number of days in the relevant Year, as shown by the following formula:

$$\text{If ADV} < (MAC_i / DIY)$$

Where:

ADV is the value of the Actual Daily Volume that the CMA calculated for the meter;

MAC_K is the value of the maximum Volume that could have been supplied to the meter *K* (as derived from the relevant physical meter size); and

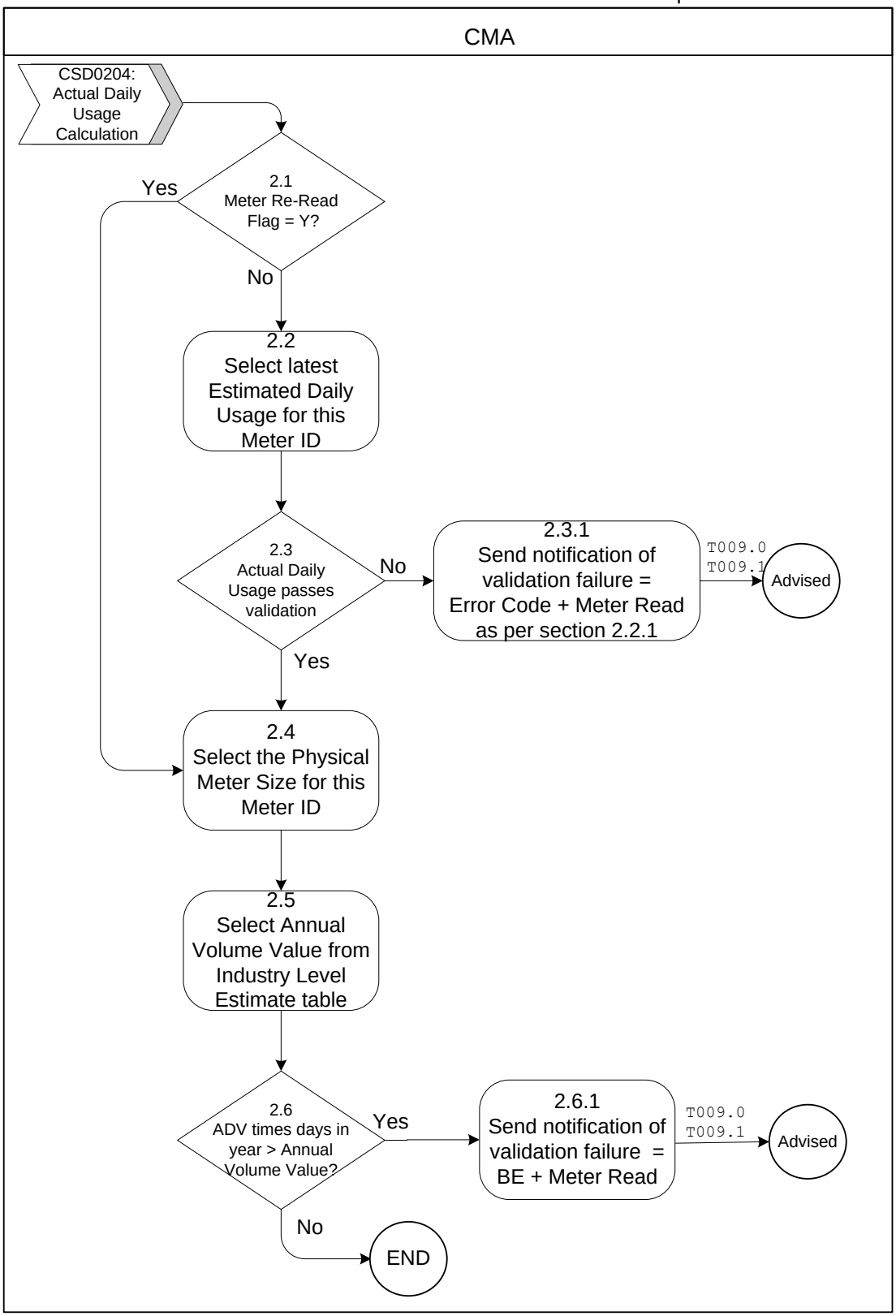
DIY is the number of days in the Year.

Once it has validated a Meter Read, the CMA will make the data from that Meter Read available to the relevant Licensed Provider in accordance with CSD0202 (Meter Read Submission Process).

2.2.3 Process Diagrams

Volume Validation

Updated 5th March 2010



2.2.4 Interface and Timetable Requirements

Step Ref:	When	Action/Decision	From	To	Information/Transaction
2.1		Is the Meter Re-Read Flag = 'Y', if so go to 2.4.	CMA		Meter Re-Read Flag
2.2		Select the latest Estimate Daily Volume for this Meter ID	CMA		Estimate Daily Volume, Meter ID
2.3		Does the Actual Daily Volume fail the validation steps described in section 2.2.1? If so go to 2.3.1, if not go to 2.4	CMA		SPID, Meter ID, SPID Vacant Flag, Actual Daily Volume, Estimated Daily Volume
2.3.1		If the Actual Daily Volume fails the threshold validation described in section 2.2.1, send appropriate Error Message	CMA		Error Transaction T009.0, T009.1
2.4		Select the Actual Meter Size from the Registration Details for this Meter ID	CMA		SPID, Meter ID, Actual Meter Size
2.5		Using the Actual Meter Size and the Industry Level Estimate Table (Part of Standing Data), select the Annual Volume	CMA		Actual Meter Size, Industry Level Estimate Table, Annual Volume
2.6		If the Actual Daily Volume * Number of days in the year (to annualise) is more than the Annual Volume go to 2.6.1. Otherwise End	CMA		Actual Daily Volume, Annual Volume
2.6.1		If the Annualised Actual Daily Volume is more than the Annual Volume send Error Notification, Validation Failure Reporting	CMA		Error Transaction T009.0, T009.1

2.3 Validation Failure - Error Transactions

In the event that a Meter Read fails validation, the CMA will notify the Party who submitted the Meter Read, using Data Transaction T009.0 or T009.1 (Error Notification).

Meter Reads that fail threshold validation will be recorded in the Meter Read history, but will not be used in any subsequent Volumetric Charge Calculations.

The Data Transaction for each failed Meter Read Submission will contain the Data Items set out against the relevant Data Transaction in the Data Transaction Catalogue.

The Error Codes are fully defined in the Data Transaction Catalogue.

On receipt of a T009.0 or T009.1 the Licensed Provider or Scottish Water will need to investigate the error and either resubmit the Meter Read as a Re-Read (where the Error Code is "BH", “BL”, “BZ”, “BN” or “BV”), where the Trading Party believes the Meter Read to be correct, or update the information required to ensure the failure will not reoccur and a new Meter Read can be submitted.

Appendix 1 – Validation Failure Types

A full description of each validation failure type is provided below. The DTC contains all the Error Codes and Data Items (summarised in section 1.1).

Unrecognised Organisation ID – error occurring when the Licensed Provider's Organisation ID is not recognised as being within the market. This could occur as a result of either:

- an error occurring during the production of the Data Transaction; or
- because the party is not registered with the CMA when the Meter Read is received.

Unrecognised SPID – error occurring when the CMA does not have a record of the Supply Point in its system. This anomaly could occur as a result of either:

- an error occurring during the production of the Data Transaction; or
- because the SPID is not registered with the CMA when the meter read is received.

Unrecognised Meter ID – error occurring when the CMA does not have a record of the meter in its system. This anomaly could occur as a result of either:

- an error occurring during the production of the Data Transaction; or
- because the meter has not been registered with the CMA when the Meter Read is received.

SPID not Registered to this Licensed Provider – error occurring when a mismatch exists between the Licensed Provider and SPID held CMA registration data within the Meter Read Submission. Here the SPID is not registered for that Licensed Provider for the Meter Read date being submitted. The error may occur because:

- registration data has not been updated upon a Transfer Registration;
- the SPID has incorrectly populated; or
- the SPID has transferred to a new Licensed Provider.

Meter ID not associated with this SPID – error occurring when a mismatch exists between the Meter ID and SPID within the Meter Read Submission. The meter ID is not associated with that SPID at the Meter Read date being submitted. The error may occur because:

- registration data has not been updated upon a meter change;
- the SPID has incorrectly populated; or
- the Meter ID has been incorrectly populated.

Missing Meter Read value – error occurring when the Meter Read Submission does not contain a Meter Read value for the Volume. This Data Item should be populated and the submission remade.

Meter Read Date invalid – error occurring when the Meter Read Date is in the future or before the previous Meter Read Date. The Licensed Provider should check the Meter Read Date and resubmit the Meter Read Submission with the correct Meter Read Date, if necessary.

Outside Volume threshold – error occurs when the standard threshold used to sense check Volume have been broken. This may result from:

- A large change in the Volume pattern at the site and be correct;
- A meter fault having occurred requiring resolution; or
- Incorrect population of the Meter Read field resulting in erroneous Volume.

Where the Meter Read has been certified as correct, the Meter Read can be resubmitted as a Re-Read.

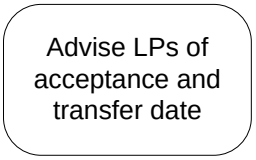
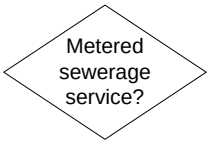
Outside Volume capacity limit – error occurs when the capacity threshold has been broken. This may result from either:

- A meter fault having occurred requiring resolution; or
- Incorrect population of the Meter Read field resulting in erroneous Volume.

Duplicate Meter Read mismatch – error occurs when a Meter Read is submitted by a Licensed Provider with the same Meter Read Date, but different Meter Read Data Item values, as a Meter Read Submission previously submitted by another Licensed Provider. The mismatch should be investigated and resolved.

Appendix 2 – Process Diagram Symbols

As used in this document

Symbol	Name	Details
	Step	An action step. It appears in the "swimlane" of the party responsible for performing the action.
	Decision	A decisive question rather than an action. Followed by Yes or No, or occasionally WS (Water Service) or SS (Sewerage Service) the process splits depending on the answer to the question in the decision diamond.
	To another process	A flow in, or input to, another documented process
	From another process	A flow in, or output from another documented process.
	End	Used after a decision diamond, generally to mean "do nothing" as it is the end of the process.
	Advised	Used after a process step to show "passive" action on the part of a data flow receiver e.g. to represent "Advised" or "Invoiced"
1.2.1	Reference	Reference within each step or decision to the numbering in the tables
T005.2	Transaction reference	Reference to the data transaction occurring as an output from the step it appears next to.