Uniform Network Code Validation Rules

Version 8~~7~~.0

Effective Date – TBC ~~CSS Implementation Date~~

All rights reserved.
No part of this document may be reproduced, stored or transmitted without the

written permission of the Transporters.

Document Control

Version	Date	Reason for Change
8.0 Draft	Modification 0811S Implementation Date	• Clarification regarding the suspension of Inner and Outer Tolerance for Corrective Opening Meter Readings. • Minor updates to replace Gas Transporter with CDSP.
7.0 Live	CSS Implementation Date – 18/07/22	• Changes approved by July 2022 UNCC to become effective as of CSS implementation.
7.0 Draft	24/06/21	• Further clarification regarding suspension of Inner Tolerance including functional changes effective at Central Switching Service implementation date. • Minor amendments following agreement at Distribution Workgroup.
6.0	19/08/2021	• Added circumstances of where the CDSP may not use the TTZ value provided by the Shipper (XRN5072) • Added clarity to how an inserted or replacement read is handled under the Inner Tolerance Validation (XRN5180) • Amended to align to 'Converter' within UNC
5.2 Approved	17/10/2019	• Added suspension of InnerTolerance validation for Class 3 supply meter points in EUC band 01
5.1 For Approval	23/08/2019	• Added circumstances where Class 3 Supply Points shall not be subject to Validation.
5.0 Draft	09/08/2019	• Added circumstances where Class 3 Supply Points shall not be subject to Validation. • [Proposed suspension of Inner Tolerance Validation for Class 3 Supply Points while CDSP is not Validating all Meter Readings.] • Amendment to reflect that following Modification 565, CDSP perform Meter Reading validation as a Direct Service (TPD M 1.4.1(b)). • Amendment to reflect accepted spelling of Converter.
4.2 APPROVED	19/01/2019	Added circumstances where the RTC value may be derived by CDSP and where the RTC may not be used for consumption calculation.
4.1 APPROVED	03/11/2018	Changes to Class 3 and 4 Read

		Tolerances to reflect change in November 2018 UK Link Release (XRN3656) and change XRN4658.
4.0 APPROVED	18/05/2017	Approved at 18 May 2017 UNCC
3.1 DRAFT	20/03/2017 (03/05/2017)	1. Added note to Section 2.7 as the Converter tolerance check will not be applied until a change is implemented. 2. Clarification added regarding reads that are subject to tolerance checks (Section 1.9). 3. Moved validation based on groupings from section 1 to section 9. 4. Amended 'read' to 'reading' where applicable throughout document 5. Updated Class 1 & 2 reads using a weighted SOQ for the read tolerance validations. Presented to industry on 09/01/2017 and approved at the MTWG on 08/02/2017 (Section 2.10 & 2.11) 6. Updated to reflect weighted AQ validation. Note: Amendments associated with points 5 and 6 have been included to reflect UK Link functionality following PNID. Assessment will be undertaken with Users following PNID whether this shall be amended.
3.0 APPROVED	08/01/2016	Approved at 19 November 2015 UNCC
2.9 DRAFT	23/10/2015	Updated Appendix A to remove negative 'Round the Clock' indicator. Version approved by PN UNC for submission to November UNCC.
2.8 DRAFT	17/08/2015	Included process flow under Appendices
2.7 DRAFT	28/07/2015	Added validation 'groupings'. Under Section 9
2.6 DRAFT	10/06/2015	Updates to correct references & amendments to Section 5
2.5 DRAFT	29/04/2015	Updates following further analysis and discussions at Project Nexus workgroup & agreement on the read validation tolerances.
2.4 DRAFT	20/11/2013	Proposed updates for review at PN UNC
2.3 DRAFT	15/10/2013	Further updates following review
2.2 DRAFT	07/10/2013	Further updates following review at PN UNC on 30/09/2013
2.1 DRAFT	20 September 2013	Updates following Project Nexus requirements
2.0	20 January 2011	Clause 4 amended as a result of implementation of UNC0224, introduction and Document Control

		added.
1.0	05 July 2006	Rules established

Development of Rules

(a) Section M5.3.3 of the Transportation Principal Document (TPD) of the Uniform Network Code (UNC). specifies that:

"The "Uniform Network Code Validation Rules" (or "Validation Rules") are the rules and procedures contained in the document issued by the Transporters at the [Project Nexus Implementation Date] and so entitled and governed and amended in accordance with Section V12 unless the Authority shall upon application by any User made within one month after such notice, give Condition A11(18) Disapproval to the Transporters making any amendment in accordance with the provisions of Section V12."

(b) The requirement to publish the Uniform Network Code Validation Rules is specified in Section V12.1(b) of the TPD of the UNC. This section also provides for the document to be published and revised from time to time. The provision (TPD V12.2) reads :

"Each Document shall be kept up to date and published by the Transporters on the Joint Office of Gas Transporters' website."

(c) The Rules set out below meet the Transporters' obligation to prepare Guidelines, while the Document Control Section records changes which have been made to the Guidelines. The document is published on the Joint Office of Gas Transporters' website, www.gasgovernance.com.

(d) These Guidelines can only be modified in accordance with the requirements set out in paragraph 12 of Section V of the UNC Transportation Principal Document.

CONTENTS

1. Introduction. 05
2. Meter Reading Validation. 09
3. Validation on Readings received as part of an Asset Update. 12
4. Class 1 DM Supply Points. 13
5. Unique Sites 14
6. Consumption Adjustments 15
7. Validation to Site Visit Readings 16
8. Tolerances Ranges 17
9. Grouping of Validations Performed 20

Appendix A - Round The Clock Indicators . . . 22
Appendix B - Calculated Gas Card Readings. . . .
23Appendix C – MRA HHT Validation . . . .
27
Appendix D: Read Validation Process Flow . . . 28

1 Introduction

This is the document referred to in Section M 5.3 of the Uniform Network Code Transportation Principal Document. It does not form part of the Uniform Network Code.

1.1 This document describes the validation rules which will be applied to non-daily (Class 3 and 4) and daily metered (Class 1 and 2) Supply Meter Point meter readings, read equipment, converter readings and associated data before they are applied to User and Transporter systems. All parameterised values are subject to amendment in accordance with the procedures set out in Section M 5.3.3 of the Uniform Network Code – Transportation Principal Document. Any changes will be notified to Users. References in this document to Meter Readings (reading(s)) are consistent with Section M 1.5.2 of the UNC – i.e. include converter readings as appropriate.

1.1.1 Following implementation of UNC Modification 0700 the CDSP is required to select a minimum of one Non Opening Meter Reading in a seven Day Batch Period for Class 3 Supply Meters on Smaller Supply Points to assess whether it is a Valid Meter Reading. The CDSP will be required to select this Meter Reading from User's Batch Submissions which must be 7 days of less in duration (M5.8.1(b)). Each Meter Reading selected shall be subject to the CDSP element of validation as described above. The CDSP shall prioritise use of a Meter Reading where the Read Date is the User 'specified date' consistent with TPD M 5.8.4 (a). **Where the CDSP is not performing Validation against every Meter Reading submitted by the User, any references within this document to CDSP Validation related to 'all' Meter Readings shall exclude Meter Readings submitted by a User but not selected by the CDSP to be subject to Validation.** The CDSP shall, for any Meter Readings submitted by a User but not subject to CDSP validation, determine whether such Meter Readings are valid for the purposes of M 5.8.5 in accordance with Appendix E.

1.2 These rules are the minimum requirement of validation that must be undertaken for readings applied by Users prior to submitting to the ~~Transporter~~CDSP.

1.3 Readings from Class 1 daily metered Supply Meter Points will be validated by the ~~Transporter~~ Daily Metered Service Provider (DMSP) in accordance with the relevant rules described herein.

1.4 Readings from Class 2, 3 & 4 Supply Meter Points must be validated by the Users before submitting to the CDSP~~-~~ in accordance with the relevant rules described herein.

1.5 Readings that do not pass the validations described will be rejected by the ~~Transporter~~ CDSP with the relevant rejection reason.

1.6 The validation described in this document will be in addition to that used to determine that the data is in accordance with the file specification and system requirements.

1.7 The validation refers to cyclic and non-cyclic meter readings, including transfer readings, consumption adjustments and readings provided with, or derived as a result of, RGMA transactions.

1.8 In addition to User validation, the ~~Transporter~~ CDSP will undertake a two step validation process as described in Section 2 below for all readings listed under Section 1.9, subject to the following exclusions~~;~~:

1.8.1 An initial tolerance check (Inner Tolerance) that can be overridden by the User. The override flag can be submitted with the reading or on re-submission of the reading following rejection. This Inner Tolerance validation will be suspended for the following Meter Reading types or sources:

a) a Meter Reading submitted with a Meter Information Notification;

b) a Meter Reading submitted with a Meter Information Update Notification;

c) an Opening Meter Reading for a Class 3 or 4 Supply Meter;

d) a Meter Reading submitted by a User once it has become the Registered User and submitted prior to an Opening Meter Reading being submitted or otherwise determined in accordance with paragraph M 5.13.4;

e) a Meter Reading obtained in accordance with paragraph M 5.10, and submitted prior to the fulfilling of an Opening Meter Reading being submitted or otherwise fulfilled; or

f) Smaller Supply Point Class 3 Supply Meters - with the exception of Check Read following a Site Visit Readings where this will still be applied. For the avoidance of doubt, Users shall continue to perform this validation as they will maintain contiguous Meter Readings

~~e)~~g) a Corrective Opening Meter Reading submitted and agreed by Proposing and Withdrawing Users.

1.8.2 Must Reads Inner Tolerance Validation may be overridden by the CDSP where, following ITR failure the CDSP manually assess the Meter Reading(s) and determine that the Meter Reading has been obtained from the asset recorded on UK Link systems and accords with the Meter Reading history.

1.8.3 Where the submitted read is for an Actual Read Date between two existing reads, be that by insertion or by update to an existing read, then the override flag, if supplied, shall be considered for the validation of backward (i.e. related to consumption periods prior to the submitted read) and forward (i.e. related to consumption periods subsequent to the submitted read) consumption periods. For the avoidance of doubt, the override flag must be provided where either one, or both, consumption periods breach the Inner Tolerance validation.

1.8.4 ~~1.8.4~~ The second test (Outer Tolerance) will be applied if the reading or consumption adjustment passes the Inner Tolerance check. Where the reading or consumption adjustment fails this test the reading will be rejected and can not be overridden.

~~1.8.4~~1.8.5 Where a Corrective Opening Meter Reading has been submitted and agreed by Proposing and Withdrawing Users then the Outer Tolerance tests may be overridden by the User submitting the reading.

1.9 The tolerance check validation will apply to energy calculated from the following;

- Actual cyclic readings (including reads from AMR/Dataloggers)
- Actual non-cyclic readings
- Site Visit reads (Check Reads). See section 7
- Readings received as part of, or derived as a result of, an RGMA transaction (excluding installation readings) - See section 3
- Opening (Transfer) Reading
- Must Read
- Consumption Adjustments
- Class change reading

- Replacement readings
- CDSP Estimated Read (Outer Tolerance only will be applied)

1.10 On submission of the read communication by the Shipper, the ~~GT~~ CDSP will perform a set of validations based on 3 groupings, please see Section 9 for further detail:

Set 1: Read Submission-

Set 2: Asset

Set 3: Read Validation-

2. Meter Reading Validation

2.1 A completeness check to ensure all readings expected have been received, including converter readings where a converter is installed.

2.2 All meter readings will be subjected to a Round the Clock test to detect possible instances where a meter has made a complete revolution of the dials between readings. The Round the Clock test will be checked against the previous actual reading not the estimated reading, including estimated transfer readings.

The term Round the Clock (RTC) refers to the number of times the meter or converter has gone "through the zero's" (TTZ) e.g. has moved from 9999 to 0001. The use of this indicator and the reading will permit the volume of gas to be calculated as well as detecting any reversal of readings following an earlier erroneous reading. A detailed explanation of the logic is given in Appendix A.

All meter readings provided by Shipper Users, except for those associated with Meter Information Notifications and Meter Information Update Notifications , require that the Round the Clock indicator is populated. In circumstances described in Appendix A, the CDSP may recalculate the Round the Clock value for a valid meter reading already recorded in the UK Link system.

Where the CDSP is not assessing all Meter Readings submitted as to whether they are Valid (UNC Modification 0700 refers) the CDSP will prioritise the utilisation of Meter Readings where a non zero Round the Clock value is provided for Non Opening Meter Readings for Class 3 Supply Meters for Smaller Supply Points. Where the non-zero Round the Clock value and a User ‘specified date’ are contained within the same Batch Period the CDSP shall seek to use both Meter Readings.

2.3 Validation to ensure the read is equal to or greater than a previous actual reading (not estimated reading), in addition, for replacement reads, the read must be less than or equal to a subsequent actual read.

2.4 All readings supplied by Users, including readings received as an asset update (with the exception of installation reads and a Corrective Opening Meter Reading) and replacement reads, will be subject to tolerance checking as described below.

2.5 An Inner Tolerance validation will be applied to all readings as described in Section 8

2.5.1 The User may ‘override’ the ‘Inner Tolerance Check’ by indicating as such when submitting the reading.

a) The CDSP will not apply this Inner Tolerance validation on readings for Smaller Supply Point Class 3 Supply Meters, with the exception of Check Read following a Site Visit Readings where this will still be applied.

b) Where the Actual Read Date of the submitted read is between two existing reads then the CDSP will assess the requirement for the override flag against the backward and forward consumption periods. If supplied, the read will pass this validation provided that one or both of the consumption periods breach the Inner Tolerance validation.

~~b)~~c) Where a Corrective Opening Meter Reading is submitted and agreed by Proposing and Withdrawing Users.

2.5.2 A further tolerance check (Outer Tolerance check) will be applied, a reading that breaches the Outer Tolerance check will be rejected by the ~~Transporter~~ CDSP (with the exception of a Corrective Opening Meter Reading).

2.5.3 Tolerance ranges will be based on the AQ band for a Supply Meter Point. Tolerance Ranges are shown in Section 8.

2.6 The tolerances will be applied using the previous actual meter reading, including an installation read.

2.7 Where a converter is installed additional checks will be performed to ensure that the converter is reading meter pulses correctly. The following checks will be performed. The check will not be applied to a Variable Pressure site.

2.7.1 Calculate;
(Converter Corrected Volume / Meter Read Volume) / Meter Point Correction Factor

2.7.2 A Converter Tolerance check will be applied on the 'Ratio' between the converter reads and meter reads:

Ratio = Vol 1 / Vol 2 / Meter Correction Factor

Where;
Vol 1 = Volume calculated using converter corrected reads
Vol 2 = Volume calculated using converter uncorrected reads, or meter reads if uncorrected reads are not available

2.7.3 The tolerance ranges are:

Class 1 & 2 meter points: 0.95 to 1.05
Class 3 & 4 meter points: 0.85 to 1.15

Note: The tolerance validations described under section 2.7 will not be applied. This will apply to all meter points in Class 1, 2, 3 & 4. This validation will not be performed until a change in functionality to the reading validation rules is delivered.

2.8 Reads submitted as part of an asset update will be subject to read validations with the exception of installation reads.

2.9 Replacement reads will only be accepted if a reading for the same date is recorded on UKLink.

2.10 For Class 1 & 2 meter points where an actual is received following an estimated reading, including an estimated transfer reading, within GFD+5 the following will apply:

2.10.1 On receipt of the actual reading it will be validated to ensure equal to or greater than the previous actual reading.
- If yes, accept the actual reading
- If no, reject

2.10.2 Tolerance validations will be applied using the previous actual reading.

2.10.3 For Class 1 or 2 Supply Meter Points the read tolerance validation will use a weighted SOQ to validate the read. The weighted SOQ is derived between the last actual read and the current read to define the maximum allowed consumption (this will take account of any changes in the SOQ during the period from the last actual read to the previous actual read).

i.e. Weighted SOQ = $\frac{(SOQ^1 * \text{No of Days}) + (SOQ^2 * \text{No of Days})}{\text{Total No of Days}}$

2.10.4 Where the actual reading is accepted the consumption and energy will be calculated from the previous actual reading and new estimate(s) calculated, 'better estimate', for the gas day.

2.10.5 The Tolerance Ranges applied shall use the Weighted AQ –

i.e. Weighted AQ = $\frac{(AQ^1 * \text{No of Days}) + (AQ^2 * \text{No of Days})}{\text{Total No of Days}}$

2.11 For Class 3 & 4 meter points where an actual is received following an estimated transfer or Class change reading, the following will apply:

2.11.1 On receipt of the actual reading it will be validated to ensure equal to or greater than the previous actual reading.

- If yes, continue validation
- If no, reject

2.11.2 Tolerance validations will be applied using the previous actual reading

2.11.3 The AQ will be used to determine which Tolerance Band shall be utilised.

2.11.3.1 The current effective AQ on the date of the read will be used for the purposes of the read tolerance validation following a transfer with an estimated reading, where the transfer did not effect a Class change.

2.11.3.2 The Weighted AQ will be used for the read tolerance validation following a Class change with an estimated reading.

2.11.4 Where there is a change in the Class of the Supply Meter Point from Class 3 or 4 to Class 1 or 2, and an estimated Class change read is calculated and recorded, the next valid actual read received will be be validated back to the previous actual read and will use a weighted SOQ for the purposes of the read tolerance validation. The weighted SOQ is derived between the last actual read and the current read to define the maximum allowed consumption (this will take account of any significant changes in the SOQ during the period of the Class change from the last actual read to the previous actual read)

2.11.5 Where the actual reading is accepted the consumption and energy will be calculated from the estimated transfer reading.

3. Validation on Readings received as part of, or derived as a result of, an Asset transaction

3.1 Readings submitted within, or derived as a result of, an RGMA transaction (other than an installation reading) will be validated against the 'Outer Tolerance' check. If the read fails the tolerance, the transaction will be rejected.

3.2 An asset removal will be rejected if actual readings exist after the effective date of the asset removal.

3.3 If the asset is recorded as removed, readings will not be accepted for a read date after the effective date of the asset update.

4. Class 1 DM Mandatory Supply Points

For all non Telemetered Class 1 Supply Meter Points the daily readings are obtained and submitted by the ~~Gas Transporters~~ Daily Metered Service Provider (DMSP).

The validations described will be performed by the ~~Transporters'~~ DMSP on non-telemetered Class 1 Supply Meter Points.

5. Non Standard Supply Meter Points (formerly known as Unique Sites)

The meter read tolerance validation described in Section 8 will be performed on the portfolio of Supply Meter Points formerly known as unique sites with the exception of NTS & LDZ Telemetered Supply Meter Points..

The Supply Meter Points that are currently known as unique sites are;

- All NTS sites including Direct Connect sites, Connected System Operator (CSO) sites and Shared Supply Meter Points
- NTS Interconnectors
- LDZ Telemetered sites
- LDZ Connected System Operator (CSO) sites
- LDZ sites with NTS Optional Rate and/or LDZ Optional Rate
- LDZ Shared Supply Meter Points
- LDZ Site with Specific Calorific Values (CV)
- LDZ Sites with any Special Metering Arrangements in place

Note: The reads for the above site types will continue to be obtained by the ~~Gas Transporter (~~DMSP, or in the case of telemetered Supply Meter Points, ~~/~~ by NG Transmission~~)~~ and will be managed under Class 1.

6. Consumption Adjustments

6.1 A Consumption Adjustment can be submitted for the following reasons;

a. To replace the consumption recorded where the meter is on 'Bypass'

b. To replace the consumption recorded where there has been a confirmed theft of gas

c. To replace the consumption recorded where there has been a Daily Read Error

d. To replace the consumption recorded where there has been a fault on the asset

e. To correct the total consumption for a 'Twinstream Meter' Supply Point

6.2 The period of the consumption adjustment must align to reads recorded on UKLink

6.3 The total corrected consumption for the period must be submitted.

6.4 Users must validate the Consumption Adjustment prior to submitting to the Transporter.

6.5 Where a User submits a Consumption Adjustment the validations and tolerance ranges described under Section 8 will be applied.

6.6 Where the Consumption Adjustment fails the validations it will be rejected by the Transporter.

7. Validation to Site Visit Reads (Check Reads)

7.1 Read validation and converter tolerance checks will be applied over the ‘Check Read Period’. The following will be treated as a ‘Check Read’ where derivable equipment is installed;

- Check Read following a Site Visit

- Readings received as part of, or derived as a result of, an RGMA transaction.

- Shipper transfer and Class change reading

- Bypass reading

7.2 The daily average energy between the Check Read period (as defined in 7.1) will be calculated, the daily value will be used to validate against the SOQ for Class 1 and 2 and the AQ for Class 3 & 4. The SOQ/AQ will be the prevailing value for the date of the Site Visit.

7.3 A replacement reading will be rejected where the read date falls within the Check Read period (as defined in 7.1)

7.4 The ‘Round the Clock’ indicator should be based on the latter of either the previous Check Read, installation read, bypass reading or the transfer read.

7.5 Where a reading has been treated as a Check Read the reading will be used for validation purposes.

8. TOLERANCE RANGES

8.1 Tolerances Applicable to Class 1 and 2 Meter Points - Daily Reading Received Following an Actual Reading (see section 2.10 for further information on the SOQ used for the validation)

Lower AQ Band (kWh)	Upper AQ Band (kWh)	Tolerances where read will be accepted	Tolerances where a Read will be Accepted if Submitted within Override Flag (Inner Tolerance)	Outer Tolerance Where Read will be Rejected (Market Breaker)
1	1	0% - 2,000,000% of SOQ	2,000,001% - 7,000,000 % of SOQ	>= 7,000,001% of SOQ
2	200	0% - 10,000% of SOQ	10,001% - 25,000 % of SOQ	>= 25,001% of SOQ
201	500	0% - 4,000% of SOQ	4,001% - 10,000 % of SOQ	>= 10,001% of SOQ
501	1,000	0% - 2,000% of SOQ	2,001% - 5,000 % of SOQ	>= 5,001% of SOQ
1,001	5,000	0% - 400% of SOQ	401% - 2,000 % of SOQ	>= 2,001% of SOQ
5,001	10,000	0% - 200% of SOQ	201% - 500 % of SOQ	>= 501% of SOQ
10,001	20,000	0% - 150% of SOQ	151% - 400 % of SOQ	>= 401% of SOQ
20,001	73,200	0% - 300% of SOQ	301% - 600 % of SOQ	>= 601% of SOQ
73,201	732,000	0% - 250% of SOQ	251% - 550 % of SOQ	>= 551% of SOQ
732,001	2,196,000	0% - 200% of SOQ	201% - 500 % of SOQ	>= 501% of SOQ
2,196,001	29,300,000	0% - 150% of SOQ	151% - 450 % of SOQ	>= 451% of SOQ
29,300,001	58,600,000	0% - 100% of SOQ	101% - 400 % of SOQ	>= 401% of SOQ
58,600,001	and above	0% - 100% of SOQ	101% - 350 % of SOQ	>= 351% of SOQ

8.2 Tolerances Applicable to Class 3 and 4 Meter Points - Reading Received Following an Actual Reading (see section 2.11 for further information on the SOQ used for the validation where there is a change in Class)

Lower AQ Band (kWh)	Upper AQ Band (kWh)	Tolerances where read will be accepted	Tolerances where a Read will be Accepted if Submitted within Override Flag (Inner Tolerance)	Outer Tolerance Where Read will be Rejected (Market Breaker)
1	1	0% - 2,000,000% of AQ/365 x no. of days	2,000,001% - 7,000,000 % of AQ/365 x no. of days	> 7,000,000% of AQ/365 x no. of days
2	100	0% - 20,000% of AQ/365 x no. of days	20,001% - 45,000 % of AQ/365 x no. of days	> 45,000% of AQ/365 x no. of days
101	200	0% - 10,000% of AQ/365 x no. of days	10,001% - 25,000% of AQ/365 x no. of days	> 25,000% of AQ/365 x no. of days
201	500	0% - 4,000% of AQ/365 x no. of days	4,001% - 55,000 % of AQ/365 x no. of days	> 55,000% of AQ/365 x no. of days
501	1,000	0% - 2,000% of AQ/365 x no. of days	2,001% - 25,000 % of AQ/365 x no. of days	> 25,000 % of AQ/365 x no. of days
1,001	5,000	0% - 400% of AQ/365 x no. of days	401% - 7,000 % of AQ/365 x no. of days	> 7,000% of AQ/365 x no. of days
5,001	10,000	0% - 200% of AQ/365 x no. of days	201% - 2,000 % of AQ/365 x no. of days	> 2,000% of AQ/365 x no. of days
10,001	20,000	0% - 150% of AQ/365 x no. of days	151% - 1,100 % of AQ/365 x no. of days	> 1,100% of AQ/365 x no. of days
20,001	73,200	0% - 300% of AQ/365 x no. of days	301% - 1,100 % of AQ/365 x no. of days	> 1,100% of AQ/365 x no. of days
73,201	732,000	0% - 250% of AQ/365 x no. of days	251% - 1,000 % of AQ/365 x no. of days	> 1,000% of AQ/365 x no. of days
732,001	2,196,000	0% - 200% of AQ/365 x no. of days	201% - 1,000% of AQ/365 x no. of days	> 1,000% of AQ/365 x no. of days
2,196,001	29,300,000	0% - 150% of AQ/365 x no. of days	151% - 700% of AQ/365 x no. of days	> 700% of AQ/365 x no. of days

29,300,001	58,600,000	0% - 100% of AQ/365 x no. of days	101% - 400% of AQ/365 x no. of days	> 400% of AQ/365 x no. of days
58,600,001	and above	0% - 100% of AQ/365 x no. of days	101% - 350% of AQ/365 x no. of days	> 350% of AQ/365 x no. of days

9. Grouping of Validations Performed

On submission of the read communication by the Shipper, the GT will perform a set of validations based on 3 groupings, in the following order:

Set 1: Read Submission
- reading received within the read submission timescales, including the transfer reading (Opening read) and Check Read
- an actual reading cannot be replaced for Class 1 and 2 meter points

Set 2: Asset
- all expected readings are received e.g. corrected and uncorrected reads where a Converter is recorded
- meter point status is 'Live' and asset status must not be 'Removed'
- asset serial number matches the serial number held (fuzzy match)
- reading provided must equal the number of dials and digits recorded for the asset

Set 3: Read Validation
- Read validation tolerances
- Converter tolerance check (see section 2.7)
- for replacement readings, the date of the reading is on or after the Code Cut Off Date (Line In the Sand (LIS))
- for replacement readings, a reading exists for the same date on UKLink-for replacement readings, the Shipper submitting the reading was the registered Shipper on the date of the reading
- for replacement readings, the reading is not within the period of a consumption adjustment
- for replacement readings, the reading is not within the Check Read period

For each group all relevant validations within the set will be performed and rejections provided in the notification to the Shipper.

If the read submission fails the first set of validations "read submission", all relevant checks will be performed and any that fail the validations will be notified to the Shipper i.e. if there is more than one failure reason all will be communicated to the Shipper via the relevant rejection code.

Where any failures are recorded the next set of validations "Asset" will not be executed.

If the "read submission" validations pass, the second set "Asset" will be performed. All relevant checks for that set of validations will be performed and any that fail the validations will be notified to the Shipper.
Where any failures are recorded the next set of validations "Read Validation" will not be executed.

All rejections in each set of validations will be notified to the Shipper.
If both the "Read Submission" and "Asset" validations have passed the third set

of validations “Read Validation” will be performed.
Only where all 3 sets of validations have passed will the reading be accepted.
Process flow included under Appendix D.

Note: Please refer to the appropriate rejection codes for the complete list of read rejections.

APPENDIX A: 'ROUND THE CLOCK' INDICATORS

REQUIREMENTS AND DEFINITIONS

1. The term 'Round the Clock' will be used in a single context to denote that a meter or converter has passed through all its zeros and will not necessarily imply that the meter or converter has made a complete revolution of all its dials (i.e. more than 10,000 hundred cubic feet (hcf) on a four dial meter, 100,000 hcf on a five dial meter etc).

   The indicator is to be used for all meters and converters but in the remainder of the text the term meter will be used for ease of understanding.

2. This means that in the circumstance for a meter reading in hcf;

2.1 Present Reading 6000

Previous Reading 5000

If the volume passing through the meter is 1,000hcf then the RTC indicator will be 0.

If the volume passing through the meter is 1 1,000hcf (because the meter has made one complete revolution of all its dials) the RTC indicator will be 1. Here the meter has gone through the zero's once.

If the volume passing through the meter is 21,000hcf (because the meter has made two complete revolutions of all its dials) the RTC indicator will be 2. Here the meter has gone through its zeros twice.

2.2 Present Reading 0999

Previous Reading 9999

If the volume passing through the meter is 1,000hcf then the RTC indicator will be 1 as the meter has gone through the zero's once.

If the volume passing through the meter is 11,000hcf (because the meter has made one complete revolution of the dials) the RTC indicator will be 2 as the meter has gone through the zero's twice.

If the volume passing through the meter is 21,000hcf (because the meter has made two complete revolutions of all the dials) the RTC indicator will be 3 as the meter has gone through the zero's three times.

NB: A customer reading will be treated as an actual reading for the purpose of this test. The negative consumption indicator will only be used if the previous reading is an estimate.

3. The test to detect whether a meter has made more than one complete revolution of its dials will be applied only to 4 dial meters or where the previous reading is an estimate. For meters with 5 or more dials the reading will assumed to have gone forward unless the previous reading is an estimate.

4. Where the CDSP has provided one or more consecutive estimated Meter Readings, and a subsequent actual Meter Reading is received, the read history will be assessed to determine if the last recorded actual read has a later processing date than that of the latest held estimated read. Where such a read does exist, then the consumption between the current and previous read will be calculated by the CDSP as follows, using the RTC value provided by the Shipper User:

   The volume between the current actual Meter Reading and the last recorded actual Meter Reading

   minus

   The sum of the volume between the last recorded actual Meter Reading and the read immediately prior to the current actual Meter Reading

   Where such a read does not exist (the processing date of the last recorded actual read is earlier than the processing date of the latest estimated read) then the RTC to be used by the CDSP in validation and consumption calculations will be derived as follows:

   RTC value of the current actual Meter Reading

   minus

   The sum of the RTC value of all reads between the last recorded actual Meter Reading and the current actual Meter Reading

5. In some circumstances Meter Readings may be received from Shipper Users in an order that does not reflect that with which the Meter Readings were taken. For example, Shipper Users may, subject to other rules regarding validity of a Meter Reading, insert a Meter Reading with a reading date prior to that of the last valid Meter Reading recorded on UK Link systems. Also, Shipper Users may replace an existing Meter Reading with a reading date prior to that of the last valid Meter Reading recorded on UK Link systems.

   In such circumstances, where a Meter Reading (an 'inserted Meter Reading') is provided with a Round the Clock value greater than zero the CDSP may reduce the Round the Clock associated with the Meter Reading for the subsequent reading date by one where the subsequent read already has a RTC recorded against it.

   Where a Replacement Meter Reading is loaded where the Round the Clock value provided is different from the Meter Reading being replaced this may be a candidate for the CDSP to amend the RTC for the subsequent Meter Reading. For example, if the Replacement Reading RTC is greater than that associated with the Meter Reading that is being replaced, and where the subsequent read already has a RTC recorded against it the subsequent Meter

Reading RTC value will be reduced by one.

Where an inserted or Replacement Meter Reading is received and there is a subsequent estimated read, in order to ensure any RTC value received is correctly utilised by the CDSP, the forward consumption will be calculated as follows:

The total, original, backward and forward volume

minus

The replacement backward volume (between the replacement or inserted reading and the previous read, calculated as per point 4 if previous read is not actual)

Appendix B: Calculated Gas Card Readings

Note: The following is the obligation of the Users. The Transporter will not be required to carry out the following checks from readings taken from Gas Cards.

1.1 The following refers to the calculation of a **Calculated Gas Card Reading** which (subject to compliance with section M5.13) can be used as an 'Opening Meter Reading' upon Supply Point Transfer.

1.2. Calculated Gas Card Readings will be subject to the same tests as detailed in Section 2, Cyclic Meter Readings.

2 Formula

2.1 The Calculated Gas Card Reading shall be calculated in the same units as the Gas Card Reading from the Gas Card and will be calculated using the following formula:

(((c – b) / (b – a)) * (y – x)) + y

where:

a is the Accumulative Daily Value for first date in the Applicable Sequence.
b is the Accumulative Daily Value for last date in the Applicable Sequence.
c is the Accumulative Daily Value for the Supply Point Registration Date.
x is the First Reading in the Applicable Sequence.
y is the Last Reading in the Applicable Sequence.

2.2 No Calculated Gas Card Reading shall be calculated where **a** = **b** or where **x = y**.

2.3 For Metric calculation (M3) the Calculated Gas Card Reading shall be in the Range 00000.10 to 99999.90. [Note: The least significant digit is always zero].

2.4 For Imperial calculation (Cubic Feet) the Calculated Gas Card Reading shall be in the Range 0000.01 to 9999.99.

2.5 The First Reading and Last Reading must be taken from a date within the six month period prior to the Supply Point Registration Date.

3 Definitions

3.1 **Accumulative Daily Value**
The value used to provide a seasonal adjustment factor within the formula. Values for the relevant date within the 'Applicable Sequence' are determined using the table in Appendix C.

3.2 **Applicable Sequence**

The sequence of actual Gas Card Readings used to generate the Calculated Gas Card Reading (by execution of the formula).

3.3 **Calculated Gas Card Reading**
As defined in Uniform Network Code – Transportation Principal Document Section M1.4.3(h).

3.4 **Gas Card Reading**
As defined in Uniform Network Code – Transportation Principal Document Section M1.4.3(f).

3.5 **First Reading**
The first of the actual Gas Card Readings taken within the six month period prior to the Supply Point Registration Date.

3.6 **Last Reading**
The last of the second, third, fourth or fifth actual Gas Card Readings taken prior to the Supply Point Registration Date within the six month period prior to the Supply Point Registration Date.

3.7 **Supply Point Registration Date**
As defined in Uniform Network Code – Transportation Principal Document G1.1.5

CALCULATED GAS CARD READINGS

1 The following table is used to determine the 'Accumulative Daily Value' for application within the formula

Table 4:

Month	**Date**	**Seasonal Factor**	**Seasonal Factor / 100**	Accumulative Daily Value
January	01/01/04	13.80	0.138	0.138 = 0.138 + 0
	02/01/04		0.138	0.276 = 0.138 + 0.138
	03/01/04		0.138	0.414 = 0.276 + 0.138
			"	"
February	01/02/04	13.60	0.136	4.414 = 4.278 + 0.136
	02/02/04		0.136	4.55 = 4.414 + 0.136
	03/02/04		0.136	4.686 = 4.55 + 0.136
			"	"
March	01/03/04	12.20	0.122	8.344 = 8.222 + 0.122
	02/03/04		0.122	8.466 = 8.344 + 0.122
	03/03/04		0.122	8.588 = 8.466 + 0.122
			"	"
April	01/04/04	09.80	0.098	12.102
May	01/05/04	07.10	0.071	15.015
June	01/06/04	04.20	0.042	17.187
July	01/07/04	02.40	0.024	18.429
August	01/08/04	02.40	0.024	19.173
September	01/09/04	04.20	0.042	19.935
October	01/10/04	07.30	0.073	21.226
November	01/11/04	10.30	0.103	3.519
December	01/12/04	12.70	0.127	26.633
January	01/01/05	13.80	0.138	30.581
January	01/01/06	13.80	0.138	60.888
January	01/01/07	13.80	0.138	91.195
January	01/01/08	13.80	0.138	121.502

January	01/01/09	13.80	0.138	151.945
January	01/01/10	13.80	0.138	182.252
January	01/01/11	13.80	0.138	212.559
January	01/01/12	13.80	0.138	242.866
January	01/01/13	13.80	0.138	273.309
January	01/01/14	13.80	0.138	303.616
January	01/01/15	13.80	0.138	333.923
January	01/01/16	13.80	0.138	364.230
January	01/01/17	13.80	0.138	394.673
January	01/01/18	13.80	0.138	424.980
January	01/01/19	13.80	0.138	455.287
January	01/01/20	13.80	0.138	485.594
January	01/01/21	13.80	0.138	516.037
January	01/01/22	13.80	0.138	546.344
January	01/01/23	13.80	0.138	576.651
January	01/01/24	13.80	0.138	606.958

Appendix C: Meter Reading Agency HHT (On Site) Validation

Note: The following is the obligation of the Users. The Transporter will not be required to carry out the following checks.

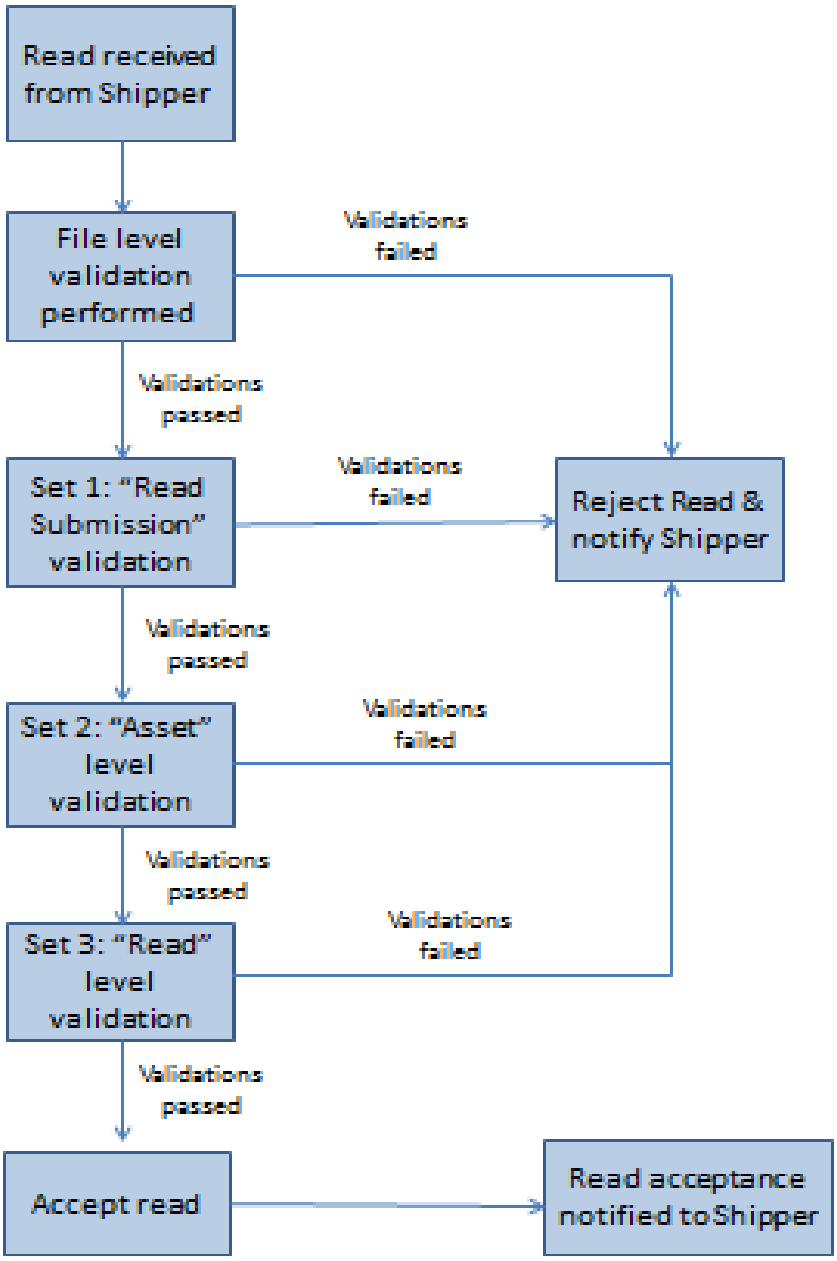
1 Validation for this input will be performed at the time of data capture on the HHT.

2 The Meter Reading will be checked to ensure that it is within a specified range either side of an estimated reading. This is known as an Inner Tolerance Range (ITR). The estimated reading will be calculated using the consumption history and the AQ of the meter.

3 If the Meter Reading input is outside the ITR, the meter reader will be required to re-input the meter serial number. If this number is that on the HHT (the correct meter) then they will be required to re-input the reading. This confirms the accuracy of the first reading or corrects an error on the first attempted input. If the meter number differs a meter exchange will be initiated. Similar checks are to be performed on converter readings.

4 A check will be made on the number of digits for a Meter Reading i.e. six digits must be input for a six dial meter. No alteration to the number of dials can be made on the HHT. Any anomalies discovered will be reported as they generally signify meter exchanges.

Appendix D: Read Validation Process Flow



Appendix E: Assessment of Meter Readings where the CDSP is not assessing all Meter Readings submitted as to whether they are valid

1 Following implementation of UNC Modification 0700 the CDSP is required to select a minimum of one Non Opening Meter Reading in a seven Day Batch Period for Class 3 Supply Meters on Smaller Supply Points to assess whether it is a Valid Meter Reading and therefore shall be subject to the [CDSP] element of validation described above.

2 Any Valid Meter Readings shall be used for Offtake Reconciliation.

3 Any Meter Readings that are not subject to this processing will need to be assessed for the purposes of Meter Reading performance as described in M 5.8.5.

4 The CDSP shall:

4.1 Select one Non Opening Meter Reading submitted from the Batch Period – as defined in M5.8, taking account as necessary of the User specified date. This Meter Reading will be subject to Validation.

4.2 If this Meter Reading successfully passes this Validation, this Meter Reading will be considered Valid, and the remaining Non Opening Meter Readings submitted by the User will be considered valid for the purposes of Meter Reading performance.

4.3 If this Meter Reading does not successfully pass this Validation, this Meter Reading will not be considered Valid, and a further Meter Reading selected by the CDSP within the Batch Period. If this second Meter Reading successfully passes this Validation, this Meter Reading will be considered Valid, and the remaining Non Opening Meter Readings (but not the initially validated Meter Reading as described in 4.1) submitted by the User will be considered valid for the purposes of Meter Reading performance.

4.4 If this second Meter Reading fails Validation, this Meter Reading will not be considered Valid and no further Meter Readings will be subject to Validation. All remaining Non Opening Meter Readings within the Batch Period shall not be considered valid for the purposes of Meter Reading performance.