PN UNC
AMR Topic Workgroup

Options for Meter Reading Validation

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UNC Validation Rules

- The rules are described in the ‘UNC Validation Rules’ document, version 1.
- Explains the minimum requirement for validation that must be carried out against meter readings
- Different checks are performed depending on where (on site / system) & whether DM or NDM
- This is in addition to the validation used to determine that the data is in accordance with file formats & system requirements

Summary of Existing Validation Rules

- On Site (MRA) Validation;
  - Reading checked to ensure it is within a specified range either side of an estimated reading: Inner Tolerance Range (ITR)
  - Number of digits entered = number of dials recorded for the meter
  - Above is performed for meter & convertor readings

- Cyclic & Non Cyclic Meter Reading
  - Readings are subject to tolerance checking
  - Further tolerance check for consumptions over 10,000 cf (approx. 3,100 kWh) applied to ensure the reading is within a wider tolerance range of the estimated reading; Outer Tolerance Range (OTR)
  - Round the clock (RTC) test for 4 dial meters
  - Check on the convertor reading to ensure it is reading meter pulses correctly (Meter Volume – Uncorrected Convertor Volume)

Summary of Existing Validation Rules cont.

- Daily Read Equipment
  - Completeness check to ensure all readings expected have been received
  - Instrument configuration test to ensure that where a convertor is fitted a read is received
  - If 3 or more consecutive zero consumption readings are received compare with the same period in previous year
  - “And” test to check if any daily consumption is;
    - Outside the 30 day average non zero consumption by +3.5 Standard Deviations and
    - In excess of twice the average daily consumption i.e. AQ/365 x 2

Consumption Tolerance Ranges

Inner Tolerance Range	
Estimated Consumption in cf	**Tolerance + or - %**
10,001 - 50,000	150
50,001 - 100,000	120
100,001 - 200,000	90
200,001 - 350,000	60
350,001 - 500,000	30
500,001 - 99,999,999	10

Outer Tolerance Range	
Estimated Consumption in cf	**Tolerance + or - %**
10,001 - 50,000	300
50,001 - 100,000	240
100,001 - 200,000	180
200,001 - 350,000	150
350,001 - 500,000	150
500,001 - 99,999,999	75

Meter / Convertor Pulse Validation Tolerance Ranges

Meter/Convertor Pulse Validation	
Meter Pulse Value	**Meter & Uncorrected Convertor Gas Consumption Difference**
10 cf	+ or - 400 cf (40 pulses)
100 cf	+ or - 800 cf (8 pulses)
1,000 cf	+ or - 3,000 cf (3 pulses)

Strawman

- Following slides are possible options for validation of meter reads – actual or estimated reads
- The validation options are intended to assist discussions & further debate, they are not xoserve's proposals
- Meter reading validation obligations to remain with the Shipper.
- GT to continue to perform sense checks/logical checks on the read
- Objective of validations;
  - Cost effective validation routines at the correct point in the process & by the right party
  - Checks to ensure only accurate reads are loaded
  - Reduce the number of erroneous rejections
  - Remove requirement for Filter Failures at the end of the process
  - Continue to protect industry allocation processes & RbD smears
  - Improve data quality
  - Accurate charging

Meter Validation Strawman

- For Process 1, 2 & 3 tolerance check on read receipt, reject if;
  - Negative consumptions except after an estimated read
  - Consumption greater than 2 x D-7 actual
  - Consumption less than 0.5 x D-7 actual
  - Current DM >/< 3.5 Standard Deviation from 30 day average (ignore zero consumptions within period)
- For Process 4 tolerance check on read receipt, reject if;
  - Negative consumptions except after an estimated read
  - Consumption greater than 2 x the Allocation for the period
  - Consumption less than 0.5 x the Allocation for the period
- Validation of estimated reads would require GT to calculate an estimate in order to validate it
  - If standard methodologies were not applied to calculate the estimate how could the estimate be validated?

Possible Alternatives

- Use the Allocation calculated at D+1 by the GT to base the checks on, e.g. read greater than Allocation x 2 is rejected
  - Only for Processes 2, 3 & 4
  - For Process 1 sites could calculate an ‘Allocation’ for the purposes of performing read validation or
  - Continue with D-7 check for Process 1 sites as they are not weather sensitive
- This would rely on the accuracy of the site AQ
- Would need to use a ‘Provisional Allocation’ or wait 5 days for Close Out.

Validations aimed at Removing Filter Failures

- Current Filter Failure process suppresses charges when it fails a tolerance based on the AQ band
  - This is at the end of the process based on £ & p values
- To remove the requirement for “Filter Failures” the system would need to calculate transportation charges on receipt of the read
- This would involve complex & possible timely processing & with the potential volume of reads may result in system constraints
- Possibly need to consider the option of retaining a ‘Filter Failure’ type procedure at charge calculation as a safety net
- Option;
  - Use tolerance checks based on energy calculated at read receipt against AQ to validate read

Strawman Alternative Validations to Replace/Reduce Filter Failures

- At read receipt calculate the Reconciliation energy for the Meter Point. Where the energy exceeds a tolerance based on the AQ for the read period the read is rejected
- For example:

Lower AQ Band	Upper AQ Band	Reconciliation Energy Calculated at Read Receipt: Tolerance
0	73,199	Rec Energy + or - 50% of AQ/period of read
73,200	292,999	Rec Energy + or - 45% of AQ/period of read
293,000	731,999	Rec Energy + or - 40% of AQ/period of read
732,000	2,195,999	Rec Energy + or - 35% of AQ/period of read
2,196,000	5,859,999	Rec Energy + or - 30% of AQ/period of read
5,860,000	14,649,999	Rec Energy + or - 25% of AQ/period of read
14,650,000	29,299,999	Rec Energy + or - 20% of AQ/period of read
29,300,000	58,599,999	Rec Energy + or - 15% of AQ/period of read
58,600,000		Rec Energy + or - 10% of AQ/period of read

Rejections

- Rejection process refined to provide more meaningful rejection codes & reasons
- Facility for the Shipper to “flag” a read on submission to show that it may fail validation but the read has been verified and is correct
  - Would this require a different set of validation rules?
  - Would still need to validate meter serial number, number of dials etc