

# Overview of Technical Audit and Risk Assessment

August 2023



# Technical Audit and Risk Assessment

## Auditor Overview - Kelton

- Certified auditors
- Proven track record and ability to investigate a wide range of activities
- Specialists in the field
- Ability to investigate outside of procedural constraints



## Audit Overview

- Stream 1 – Field Work Assessment
  - Audit of maintenance activities
  - Risk Assessment of activities
- Stream 2 – Management Audit
  - Top down approach
  - Maintenance Strategies, people, reporting functions, processes

# Risk Assessments

- Risk assessments were undertaken of each activity where a potential risk of introducing measurement errors can be identified.
- For each risk area all the current mitigations to prevent risk were documented along with any further recommendations for improvement where applicable.
- Those where recommendations were applicable were included in the Audit Report and subsequent actions agreed.

## Risk Areas

- Flow Computers
- Pressure Transmitters
- Analogue to Digital Converters
- Orifice Plate removal and inspection
- Temperature Transmitter

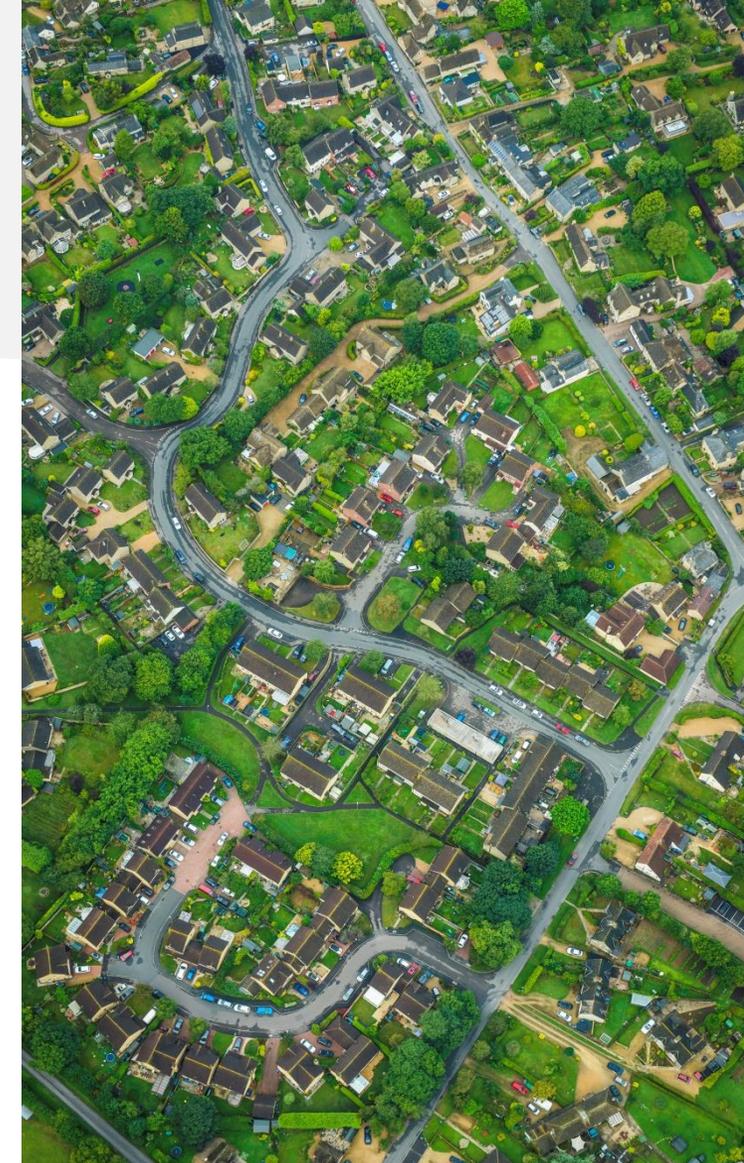
## Assessment criteria

- Preparation and Precautions
- Hookup methodology
- Test Procedure
- Re-instatement

# Audit Controls and Categorisation

- Controls assessed and findings categorised
- Each finding requiring a commitment for resolution

Category	Definition
1	A non-conformance which indicates that the system is not complying with the criteria, and which has led, or is likely to lead to a mismeasurement
2	A non-conformance which indicates that the system has not been complying with the criteria. The non-conformance no longer exists but may require correction of data or calculations.
3	A non-conformance which is indicative of the system not being operated or maintained correctly or procedure not being followed, which has neither led to, nor is likely to lead to a mismeasurement.
Observation	Findings that show areas for concern or improvement and reduce the risk for future mismeasurement



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# Audit Summary

- Useful exercise to discuss in detail with industry experts and reinforce our strategic direction.
- Findings generally in line with the Performance Improvement Plan
- Majority of findings are observations providing additional clarity for further improvements to that already in flight.
- Two Category 2 findings where immediate investigation was undertaken. No measurement error apparent.  
*Already high priority on the improvement plan.*
- Seven Category 3 findings, primarily relating to current Joint Office ME/2 procedural documentation.  
*Catered for in the new ME/2 document on trial and the additional documents being developed in the metering suite.*
- Good feedback 'Cadent staff, both operational on site and head office have demonstrated a high level of competency in their understanding of the systems and processes'.
- 'Great deal of enthusiasm around the willingness to learn and improve the systems and processes.'

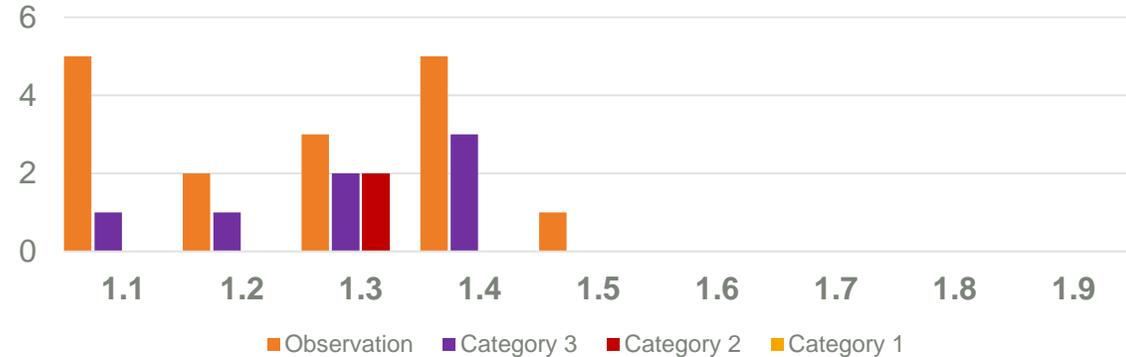
**Overall, the assessment categorisation of the audit is **Satisfactory**.**

# Controls and Findings Overview

**Audit area 1 - Demonstrate compliance with the Company obligations for the quality and quantity of gas transported within its networks.**

## Controls examined

1.1	Engineering Specifications to ensure Standards and controls are in place
1.2	Maintenance Strategies in place for management of systems
1.3	Measuring Devices are calibrated in line with strategies and records maintained
1.4	Procedures are in place to ensure suitable equipment with the relevant uncertainty
1.5	Data must be logged to a reporting system and monitored for discrepancies
1.6	A Mismeasurement process must be in place defining the acceptance protocol
1.7	Sampling procedures must ensure samples are representative results utilised correctly
1.8	Changes must be made through a suitable management of change process.
1.9	Procedures are in place for system entry and management of data



## Key Findings

- Category 2**
  - Guidance on managing contaminated plates no clear
  - Lack of control & management of the Flow Computer master configurations with no way to distinguish between different flow computer versions and revisions.
- Category 3**
  - No procedure in place for the ME-2 validation results review into the maintenance strategy by use of uncertainty calculations
  - Whilst there are processes to evaluate test results there is no formal process to consider any modification to the maintenance strategy.
- Observations**
  - Current documentation is very cumbersome and confusing
  - Lack of up-to-date local cabling & electrical documentation

# Objectives and Findings Overview

## Audit Area 2 - Demonstrate appropriate assurance is in place to ensure the quality and quantity of gas transported is accurate

2.1	All Relevant standards, Legislation and Requirements are reviewed and up to date and cascaded.
2.2	Internal and Third party system reviews and audits must be conducted.
2.3	Roles, responsibilities and accountabilities are clearly defined in the relevant procedures.

- *The Technical Audit was based on current status*
- *The improvement plan was shared with auditors but unless actions in place at the time of the audit they were not taken into account.*
- *All documents and systems made available to the auditor*



### Key Findings

- **Category 3** - Mechanical team not fully competent in carrier operation.
- **Observations** - Consideration should be given to formalising a visitation schedule to promote interaction between departments.
  - there are a number of opportunities for improvement surrounding the documentation to provide a consistent coherent suite of documents.
  - Cadent have in place a comprehensive system of independent measurement audits which is well structured.

# Observations and Recommendations overview

## Policy & Procedures

### Observations

- A conglomerate of policy and procedures makes it difficult to follow the working process around the management of measurement on the installations.
- Unclear hierarchy document suite. Confusing and not efficient in their purpose

### Recommendations

- Clear structured hierarchy document suite for Policies and Procedures required.
- Make the document trail efficient with demonstrable outputs to the purpose & objective of Management of Measurement for custody transfer sites.
- Clear, transparent and auditable workflow processes should be defined to mitigate exposure to mis-measurement.
- Communicate to teams associated with measurement activities.

## Data Validation

### Observations

- There is only an informal method of review currently in place that reviews performance results.
- No Uncertainty evaluation carried out using ME/2 results
- Limited follow up on quality/quantity data gathered that may indicate maintenance intervention required.

### Recommendations

- Enhance current method of ME/2 data to ensure compliance to system performance agreements.
- Implement Uncertainty analysis tool to demonstrate compliance.

## Capability

### Observations

- Support to the field technicians during ME-2 validations and equipment change outs from the engineering teams could be improved

### Recommendations

- Team Strengthening & Communication
  - Continue to develop team members to enhance and meet business requirements.
  - Enhancement required on the level of 'priority' with support within field teams

# Current Status and next steps

- **Audit overview of findings provided to GDN's through Metering Technical Forum.**
- Joint GDN project for ME2 standard covering:
  - Goal setting for GDN's to develop step by step procedures
  - Enabler for new metering technology and advances in test equipment
  - Review of applicable documents within the ME2 suite
  - validate at a system level, against an uncertainty budget.
- **Performance Improvement Plan prioritisation based on audit findings**
  - Procedural documentation – ME2 utilisation
  - Configuration database implementation for all meter types

## Commitments

- A series of commitments for mitigating actions agreed with the auditor against findings
- Updates to be provided to the auditor regarding progress/completion of commitments
- Report to be updated in line with completion of committed mitigating actions

# Thank you

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