Heat Network Technical Assurance Scheme

Existing Heat Networks

Assessment Procedures

Overview

HNTAS-EX-AP-XX-M0

Version History

Revision	Notes	Date
V0.1	Draft issue	17/12/25

Disclaimer

The following HNTAS Code document is published in draft format. This document is intended to give the sector early sight of HNTAS requirements in their current stage of development for the purpose of facilitating sector understanding of the scheme.

Draft Code documents, including Technical Specifications and Assessment Procedures, have been reviewed and consulted on through a series of technical workshops with participation from a range of experts from across the heat network industry. The content of this document is still in development and subject to change. Requirements should not be considered as fixed at this stage.

Changes which may be made to this document in future include those to:

- reflect learnings from the New Build and Existing network pilot programmes;
- align with aspects of HNTAS which are subject to public policy consultation;
- align with new requirements in TS1 and MMS;
- align the terminology of this document with that used in other HNTAS documentation;
- rectify errors in this draft version; and
- improve clarity of contents.

The Key Failures set out in the draft Code documents have been identified as a specific area for review, to ensure that:

- all Key Failures enable a binary assessment;
- Key Failures are only included for genuine issues presenting major risks to KPIs, and that moderate or lower risks are considered via non-conformity processes; and
- Key Failures do not duplicate Technical Requirements unless there is a clear justification to do so.

DESNZ will be welcoming feedback on the information in this document via a change management process. This process will run in parallel to the HNTAS policy consultation and DESNZ invites stakeholders to engage with both, once they are open. You can sign up to receive updates on future detailed draft technical documents as they are published by contacting: heatnetworks@energysecurity.gov.uk.

Please be advised that this document references other HNTAS draft Code documents which have not yet been published. References to other documents will also be subject to change following the publication of updated standards. The final version of this document will be released before the launch of HNTAS.

Contents

Foreword

These Assessment Procedures form part of the UK Government's Heat Network Technical Assurance Scheme (HNTAS, The Scheme) delivered by the Department for Energy Security and Net Zero, in partnership with the Scottish Government and Ofgem. The Department for Energy Security and Net Zero appointed FairHeat as technical author for this document.

The Scheme has been designed and developed in consultation with a range of experts across the Heat Network industry in the form of Technical Sub-Working Groups, culminating in a series of Technical Specifications and Assessment Procedures to facilitate the validation and verification of performance outcomes of Elements within a Heat Network.

This document provides an overview of the series of Assessment Procedures applicable to all Elements within an Existing Heat Network.

This document sits within a series of Assessment Procedures for an Existing Heat Network as outlined in Table 1.

These Assessment Procedures have been issued in draft format and will be updated prior to scheme launch.

For further information on the use of this document within the Heat Network Technical Assurance Scheme, please refer to the Heat Network Technical Assurance Scheme – Existing Heat Networks – Scheme Rules – Assessment Regime (HNTAS-EX-SR-XX-AS) document.

Authors

Lucy Sherburn (FairHeat)

Jake Adamson (FairHeat)

Gareth Jones (FairHeat)

Joseph Shanley (FairHeat)

Tom Burton (FairHeat)

Shadow Code Management Committee

During the development of HNTAS, a Shadow Code Management Committee has been established, with representation from the Department for Energy Security & Net Zero (DESNZ), the Scottish Government, Ofgem and Heat Trust. The following items have been presented to, and approved by, this committee:

- Structure of Code documents for Existing Heat Networks
- Approach to Technical, Performance Monitoring and Data Protection and Smart Metering Requirements at each Milestone
- KPIs and thresholds at each Milestone

Code Document Structure

Assessment Procedures

Document Type	Element		Milestone					
			Overview	Milestone 2	Milestone 3A	Milestone 3B	Milestone 4	Milestone 5
			M0	M2	M3A	M3B	M4	
Assessment Procedures	Energy Centre	EC	HNTAS-EX-AP-XX-M0	HNTAS-EX-AP-EC-M2	HNTAS-EX-AP-XX-M3A	N/A	HNTAS-EX-AP-EC-M4	HNTAS-NB-AP-EC-P4
	District Distribution Network	DD		HNTAS-EX-AP-DD-M2		N/A	HNTAS-EX-AP-DD-M4	HNTAS-NB-AP-DD-P4
	Substation	SS		HNTAS-EX-AP-SS-M2		N/A	HNTAS-EX-AP-SS-M4	HNTAS-NB-AP-SS-P4
	Communal Distribution Network	CD		HNTAS-EX-AP-CD-M2		N/A	HNTAS-EX-AP-CD-M4	HNTAS-NB-AP-CD-P4
	Consumer Connection	CC		HNTAS-EX-AP-CC-M2		HNTAS-EX-AP-CC-M3B	HNTAS-EX-AP-CC-M4	HNTAS-NB-AP-CC-P4

Table 1: Existing Network Assessment Procedures structure

Scope

This document provides an overview of the series of Assessment Procedures applicable to all Elements within an Existing Heat Network.

References

Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

- Heat Network Technical Assurance Scheme – Existing Heat Networks – Scheme Rules – Assessment Regime (HNTAS-EX-SR-XX-AS)

Informative references

The following informative references apply to this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

- ISO 17029: Conformity Assessment — General principles and requirements for validation and verification bodies (ISO, 2019)

Terms and Definitions

For the purposes of this document, the terms and definitions given in the Heat Network Technical Assurance Scheme – Terms and Definitions (HNTAS-XX-TD) document apply.

Introduction

HNTAS is a performance-based assurance scheme, which contains impartial assessment and independent certification, to ensure that Heat Network performance outcomes are achieved, and maintained.

An impartial assessment is to be made with regards to claims made by a Responsible Party as to whether HNTAS Requirements have been fulfilled, and Key Performance Indicators (KPIs) will be achieved (validation) or have been achieved (verification), for identifiable Elements of a Heat Network.

The assessment activities to be undertaken to provide assurance that the HNTAS Requirements are fulfilled are contained within Assessment Procedures documentation. There is an Assessment Procedures document associated with each Technical Specification.

This document specifically provides an overview of the series of Assessment Procedures for an Existing Heat Network. It contains the following:

- An overview of Assessment under HNTAS
- An outline of the structure of the series of Assessment Procedures and of each individual Assessment Procedures document
- Descriptions of the different assessment activities required to assess against the HNTAS Requirements, including:
    - Assessment of Technical Requirements, Performance Monitoring Requirements and Data Protection and Smart Metering Requirements
    - Assessment of Key Failures
    - Descriptions of the different Levels of Assessment

More information on HNTAS assessment can be found within the Heat Network Technical Assurance Scheme – Existing Heat Networks – Scheme Rules – Assessment Regime (HNTAS-EX-SR-XX-AS) document.

1. Overview of Assessment

Assessment is to confirm, by validation or verification, the claim issued by the Responsible Party.

A claim will be issued by a Responsible Party to demonstrate that the Heat Network is in accordance with the applicable HNTAS Requirements for the applicable Element(s). Evidence will be issued alongside to support the claim.

HNTAS Requirements are outlined within the Technical Specifications for the applicable Element. HNTAS Requirements consist of the following:

1. Technical Requirements - requirements of a technical nature which relate to the generation and delivery of heat, specific to an Element and stage, which are to be fulfilled.

2. Performance Monitoring Requirements – requirements of a technical nature which are in relation to the performance monitoring of the Heat Network, using KPIs, and the Metering and Monitoring Systems that facilitate the performance monitoring.

3. Data Protection and Smart Metering Requirements (applicable to Consumer Connection Elements only) – requirements of a technical nature which relate to:
    - The processing of Personal Data; and
    - The software, infrastructure and associated equipment that enable two-way communication between Heat Network suppliers and consumers.

4. Key Failures - identified failures which occur frequently within the industry, which lead to poor performance outcomes. These Key Failures are to be avoided to demonstrate conformity with HNTAS Requirements.

5. Evidence Requirements - contain lists of evidence items, with descriptions and requirements, expected to be provided to demonstrate conformity with the Technical Requirement, Performance Monitoring Requirements, Data Protection and Smart Metering Requirements and avoidance of Key Failures.

The Assessment Procedures will review and evaluate evidence provided to support the claim (fulfilment of HNTAS Requirements).

The Assessment Procedures documentation specifically contain the assessment activities at each Milestone, for the specific Heat Network Element.

Further guidance on assessment and Assessors, including pre-assessment requirements, assessment reports, statements of conformity, post-assessment requirements, are contained within the Heat Network Technical Assurance Scheme – Existing Heat Networks – Scheme Rules – Assessment Regime (HNTAS-EX-SR-XX-AS) document.

1.1. Validation and Verification

Validation and verification activities shall be undertaken by the Assessor during the HNTAS assessment process.

These activities relate to the timeline of the assessed claim. Validation is applied to claims regarding an intended future use or projected outcomes (confirmation of plausibility), while verification is applied to claims regarding events that have already occurred or results that have already been obtained (confirmation of truthfulness). An

illustration to show validation and verification application is shown in Figure 1 and Figure 2 below.

The majority of assessment activities are verification activities within the Existing Heat Network assurance pathway, as these Heat Networks are in operation at the point of assessment. However, some validation activities are still expected as part of the assessment activities.

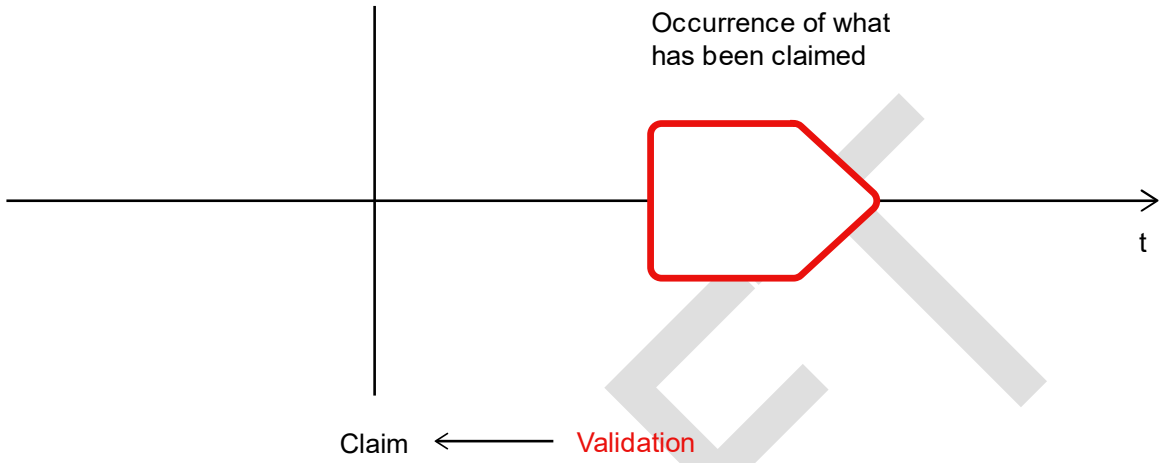

Figure 1: Validation

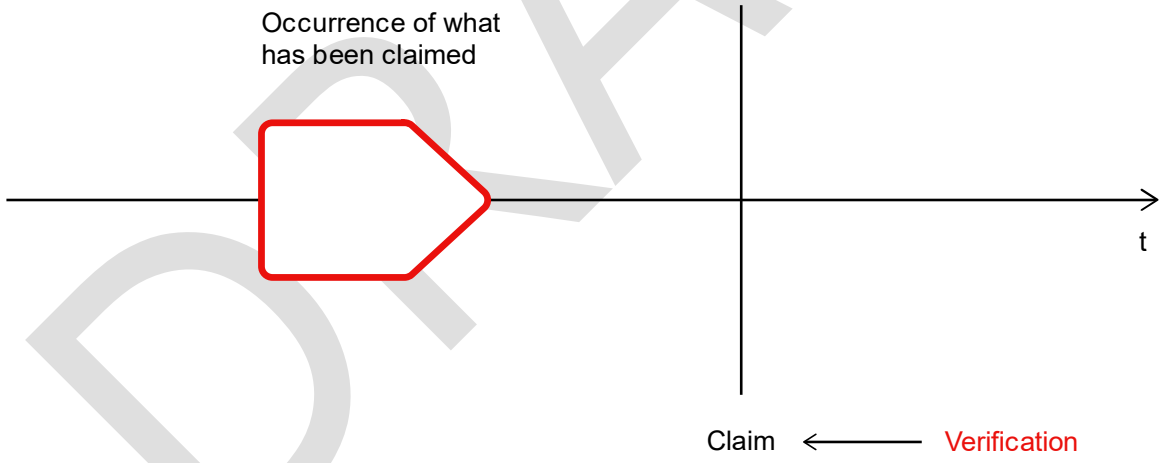

Figure 2: Verification

2. Structure of Assessment Procedures documentation

2.1. Structure of Assessment Procedures: Series

This document provides an overview of the Assessment Procedures for an Existing Heat Network.

This document sits within a series of Assessment Procedures for all Elements in an Existing Heat Network.

For a Consumer Connection in an Existing Heat Network, this series contains 5 separate documents for distinct Milestones in the Existing Regime, this is illustrated in Figure 3.

For all other Elements in an Existing Heat Network, this series contains 4 separate documents for distinct Milestones in the Existing Regime, this is illustrated in Figure 4.

Table 1 outlines the series of Assessment Procedures for all HNTAS Elements.

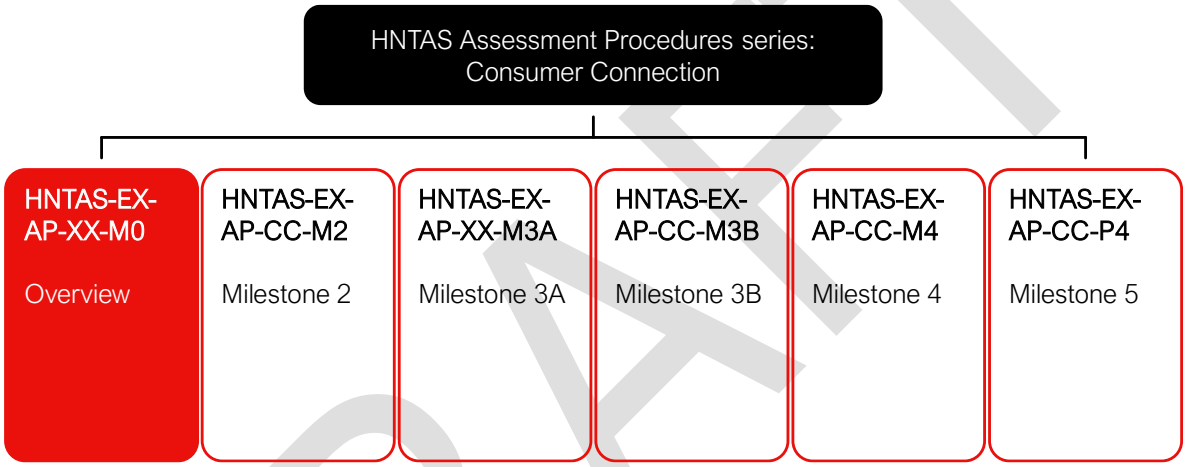

Figure 3: Illustration of Assessment Procedures series for the Consumer Connection

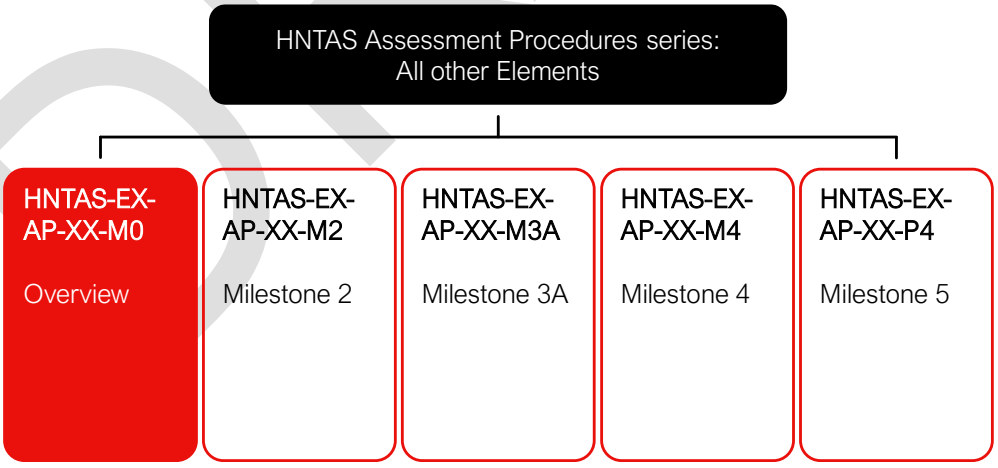

Figure 4: Illustration of Assessment Procedures series for all other Elements

2.2. Structure of Assessment Procedures: Individual Milestone documents

The individual Assessment Procedures documents are split into sections for each Milestone for an Existing Heat Network.

All Assessment Procedures contain:

- The minimum Level of Assessment and Assessment Procedures for each Technical Requirement; and
- The minimum Level of Assessment and Assessment Procedures for each Performance Monitoring Requirement.

The Consumer Connection Assessment Procedures also contain:

- The minimum Level of Assessment and Assessment Procedures for each Data Protection and Smart Metering Requirement

2.2.1. Technical Requirements Section

Within each Technical Requirements section, a table is presented which contains a list of the HNTAS Technical Requirement codes.

For each HNTAS Technical Requirement, the minimum Level of Assessment to be undertaken by the Assessor is outlined.

A description of the Assessment Procedure, based on the Level of Assessment, is also provided.

2.2.2. Performance Monitoring Requirements Section

Within each Performance Monitoring Requirements section, a table is presented which contains a list of the Performance Monitoring Requirement codes.

For each Performance Monitoring Requirement, the minimum Level of Assessment to be undertaken by the Assessor is outlined.

A description of the Assessment Procedure, based on the Level of Assessment, is also provided.

2.2.3. Data Protection and Smart Metering Requirements Section

Within each Data Protection and Smart Metering Requirements section, a table is presented which contains a list of the Data Protection and Smart Metering Requirement codes.

For each Data Protection and Smart Metering Requirement, the minimum Level of Assessment to be undertaken by the Assessor is outlined.

A description of the Assessment Procedure, based on the Level of Assessment, is also provided.

3. Assessment Activities

3.1. Assessment of Technical Requirements, Performance Monitoring Requirements, and Data Protection and Smart Metering Requirements

The validation and verification activities carried out by assessors are to confirm the reliability of information declared in claims. Assurance is provided by validation or verification and gives confidence to stakeholders and parties interested in the claim.

Required levels of assurance have been defined for each activity. The minimum Level of Assessment required is assigned to each individual Technical Requirement, Performance Monitoring Requirement, and Data Protection and Smart Metering Requirement.

Based on the minimum Level of Assessment, the assessor shall determine the Assessment Procedure using:

- The description of the Assessment Procedure assigned to each individual requirement.
- The overall description of the Level of Assessment contained within Table 2.

The following section describes the Levels of Assessment in more detail.

3.1.1. Levels of Assessment

Level	Description	Activity	Example Verification
1	Self-assessment	N/A	N/A
2	Evidence provided	Check that the requisite evidence has been provided. Check that the evidence format matches the description of the requisite evidence.	Review of water quality records Check that a document which contains record of water quality sampling has been provided and shall check that the appearance of the document matches that of water quality sampling records (e.g. not a blank document or contains another item).
3	Appropriateness check of evidence	Undertake assessment as outlined in Level 2. In addition, review documentation, assumptions, inputs utilised and methodology to confirm: • The required content (as outlined within the Technical Requirement, Performance Monitoring Requirement or Evidence Requirement) or expected content (based on industry best practice) is contained within the evidence • The approach is in accordance with applicable Technical Standard(s), and as a consequence the output should result in conformity with applicable Technical Standard(s), and the KPIs (where applicable), or alternatively, there is nothing that comes to attention that would indicate to the Assessor that the applicable Technical Standard(s) would not be achieved.	Review of PPM Schedule In addition to Level 2, check that the PPM Schedule is in accordance with applicable Technical Standard(s) and contains the required information. There is nothing that comes to the attention of the Assessor which would suggest that the output (PPM Schedule) would not conform to the applicable Technical Standard(s).

Level	Description	Activity	Example Verification
4	In-depth, extensive review of evidence (sample).	Undertake assessment as outlined in Level 3. Additionally, review the outputs of a representative sample and, where applicable, undertake independent exercises, to confirm the accuracy of the sampled outputs and conformity with the applicable Technical Standard(s), and the KPIs (where applicable). There shall be nothing that comes to attention that would indicate to the Assessor that the non-sampled items would not conform with the applicable Technical Standard(s), and the KPIs (where applicable).	Review of Maintenance and Remedial Action Log Select a representative sample of logged maintenance activities (see Section 3.1.3). Review the contents of the Maintenance and Remedial Action Log to confirm that activities have been undertaken and recorded in accordance with the applicable Technical Standard(s). For example, shall ensure a check that valves have been exercised at the frequency as required by the PPM Schedule.

Level	Description	Activity	Example Verification
5	In-depth, extensive review of evidence (100%).	Undertake a methodology check as outlined in level 3. Additionally, review all outputs and where applicable, undertake independent exercises, to confirm the accuracy of all outputs and conformity with the applicable Technical Standard(s), and the KPIs (where applicable).	Review of working pressure assessment Undertake an in-depth review of working pressure assessment and confirm assumptions made, methodology used to calculate working pressures, and outputs of assessment are reasonable given the design characteristics of the system and are in accordance with the applicable Technical Standard(s). Where required, undertake independent calculations to confirm accuracy of pressure assessment. Confirm that risks have been identified and assessed, and that mitigation measures have been considered and implemented where appropriate.

Table 2: Description of Levels of Assessment

3.1.2. Levels of confidence and increasing Level of Assessment

The level of assurance that is provided by the assessment is related to the degree of confidence in the claim.

The degree of confidence in the claim is related to the Levels of Assessment as outlined in Table 3 below. By undertaking the Level of Assessment, the level of confidence described should be achieved. For example, by undertaking a Level 3 assessment (review of methodology, inputs, assumptions etc.), the assessor should achieve a limited level of confidence.

However, if the Assessor is not satisfied, based on the minimum Level of Assessment undertaken, that associated level of confidence has been achieved, then the Assessor shall increase the Level of Assessment until they are satisfied that the required level of confidence has been achieved.

For example, a Level 3 assessment should be increased to a Level 4 or 5 assessment if when reviewing the methodology and assumptions the Assessor does not achieve a limited level of confidence.

Level of Assessment	Confidence level	Description
1	N/A	No level of confidence can be achieved as to whether HNTAS Requirements have been fulfilled and/or required performance outcomes achieved as no assessment undertaken.
2	Minimal	Assessment limited to confirmation that evidence has been provided in an appropriate format. Given there is no assessment of the appropriateness of the methodology, or accuracy of evidence, the assessor will only be able to have a minimal level of confidence in the reliability of the claim.
3	Limited	For this Level of Assessment, the Assessor should have a limited level of confidence in the reliability of the claim, based on an assessment of the inputs, methodology and assumptions, recognising that no assessment has been carried out on the accuracy of outputs.
4	Reasonable	The Assessor should have a reasonable degree of confidence in the reliability of the claim (e.g. on whether the HNTAS Requirements have been fulfilled), based on an in-depth review of the accuracy of a representative sample of items.
5	High	Based on the procedures performed and the outputs reviewed, the Assessor should have a high degree of confidence in the reliability of the claim.

Table 3: Levels of assurance

3.1.3. Level 4 assessment: selecting representative sample

A Level 4 assessment is defined as an in-depth, extensive review of evidence on a sample basis.

The purpose of a Level 4 assessment is to ensure that there is a reasonable level of confidence in the reliability of the claim. To achieve this level of confidence, the Assessor should have a high level of confidence that the sampled items conform to the HNTAS Requirement and a high level of confidence that the sample is representative of the entire subject.

Together, this should provide a reasonable level of confidence in the reliability of the claim.

The sample to be assessed is down to the judgement of the Assessor. As set out above, the Assessor shall have a high degree of confidence that the sample selected is representative of the entire subject, to allow for a reliable assessment of conformity.

The type of sample assessment will depend on the specific requirement. Examples of Level 4 checks have been provided below in Table 4 to provide guidance on the type of check and how to determine the sample. Percentages are given to provide an indication of the minimum sample size. Where the percentage figure applied results in a number which is not a whole number, it shall be rounded up to the nearest whole number (e.g. if there are 3 items and there is a 25% minimum sample size, then 1 item shall be selected for the sample).

Type of assessment / evidence for sample check	Description of sample check
Assessment of O&M Manual	Select a sample number of items within the O&M manual to review. Risk based approach shall be used to select items which are most important for ongoing operation.
Assessment of as-built drawings	Undertake a sample check that updates to the as-built drawings (or other documentation) have been made where necessary.
Assessment of Maintenance and Remedial Action Log	Select a sample number of items within the remedial action and maintenance log to review in depth. Sample shall be [10%] of items contained within the Log.
Assessment of Register of Operatives	Select a sample number of Operatives within the Register to review in depth. Sample shall be [10%] of items contained within the Register.
Assessment of Operating Risk Register	Select a sample number of risks within the Risk Register to review in depth. Sample shall be [10%] of items contained within Risk Register.
Assessment of Condition Audit/Survey	Select a representative sample of equipment items within the Condition Log to review in depth.

Type of assessment / evidence for sample check	Description of sample check
	For an Energy Centre, the following shall always be included in a representative sample: • Heat generation equipment items • Network distribution pumps • Pressurisation and expansion equipment
Assessment of Resilience Strategy	Select a representative sample of risks to heat supply identified within the Strategy and determine whether the Resilience measure implemented is appropriate to mitigate said risk. Sample shall be [10%] of items contained within Risk Register.
Assessment of water quality parameters	Select a representative sample of water quality parameters. The assessment sample shall be of [25%] of all water quality parameters.
Assessment of Technical Parameter Schedule, KPI Schedule and Monitoring Point Schedule	Select a representative sample of items within the schedule. The assessment sample shall be of [25%] of all parameters contained within the schedule.

Table 4: Sample check descriptions

3.2. Assessment of Key Failures

Throughout the Assessment, the Assessor shall confirm that the applicable Key Failures, as outlined in the Statement of Applicability, are not present (or will not be present in the future) and the outcomes are avoided (or will be avoided), based on the evidence reviewed as part of the Assessment.

3.3. Assessment at Milestone 3A

Milestone 3A entails the assessment of the Performance Improvement Plan (PIP). This plan details and evidences how a Responsible Party intends to improve network performance and reliability to that required by Milestone 4. As shown in Table 1, a single Technical Specification and Assessment Procedure exists, which is applicable for all Elements for this Milestone.

3.4. Assessment at Milestone 3B

Milestone 3B consists of the assessment of HNTAS Requirements for the Consumer Connection Element only. Therefore, at Milestone 3B a single Technical Specification and a single Assessment Procedures document exist for this Element.

4. Statement of Applicability

The applicability of the HNTAS Requirements contained within Technical Specification for an Element will depend on the specific Heat Network characteristics. This includes heat generation technology type, the typology of Heat Network, the temperature of the Heat Network.

At each point of assessment a Statement of Applicability shall be produced by the Responsible Party, which determines the applicable HNTAS Requirements for the specific Heat Network.

The applicability of the HNTAS Requirements will inform which assessments are required.

Further requirements on the Statement of Applicability are outlined in the Heat Network Technical Assurance Scheme – Existing Heat Networks – Scheme Rules – Assessment Regime (HNTAS-EX-SR-XX-AS) document.