Heat Network Technical Assurance Scheme – New Build Assessment Procedures – Energy Centre

Overview

HNTAS-NB-AP-EC-P0

Version History

Revision	Notes	Date
V0.4	Draft issue alongside consultation	10/04/25

Disclaimer

The following technical document has been prepared for issue ahead of the Heat Networks Technical Standards consultation and is published in a draft format. This document is intended to provide background context to the structure, style and contents of HNTAS draft Code documents, as they currently exist. The information in this document has been developed to facilitate understanding of the scheme.

DESNZ is not currently seeking views on specific individual technical requirements in the draft Code documents due to their large number and technical complexity.

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. We are seeking views on individual requirements through further, facilitated workshops with sector technical experts and through our pilot programme. The content of this document is therefore still in development and is subject to change. Requirements should not be considered as fixed at this stage.

You can sign up to receive updates and provide views 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. These referenced documents will be published at a later date. References to the Heat Networks Code of Practice (CP1) 2020 found within this document will also be subject to change following the publication of updated standards.

Contents

Foreword

This Assessment Procedure forms part of the UK Government's Heat Network Technical Assurance Scheme (HNTAS, the Scheme) delivered by the Department of Energy Security and Net Zero, in partnership with the Scottish Government and Ofgem. The Department of 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, 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 for the Energy Centre element.

This document sits within a series of Assessment Procedures for the Energy Centre as outlined in Table 1 below.

This Assessment Procedures – Energy Centre: Overview is current and valid as of [XXXX/XX].

For further information on the Heat Network Technical Assurance Scheme please refer to Heat Network Technical Assurance Scheme – Scheme Rules – New Build Heat Networks: Assessment Regime (HNTAS-SR-NB-AS).

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Normative document structure

Assurance Procedures

Document type	Element	Part/phase					
		Overview	Phase 1: Feasibility	Phase 2: Design	Phase 3: Construction	Phase 4: Operation (initial)	Phase 5: Operation (ongoing)
		P0	P1	P2	P3	P4	P5
Assessment Procedures (AP)	Energy Centre (EC)	HNTAS-AP-EC-P0	HNTAS-AP-EC-P1	HNTAS-AP-EC-P2	HNTAS-AP-EC-P3	HNTAS-AP-EC-P4	HNTAS-AP-EC-P5
	District Distribution Network (DD)	HNTAS-AP-DD-P0	HNTAS-AP-DD-P1	HNTAS-AP-DD-P2	HNTAS-AP-DD-P3	HNTAS-AP-DD-P4	HNTAS-AP-DD-P5
	Substation (SS)	HNTAS-AP-SS-P0	HNTAS-AP-SS-P1	HNTAS-AP-SS-P2	HNTAS-AP-SS-P3	HNTAS-AP-SS-P4	HNTAS-AP-SS-P5
	Communal Distribution Network (CD)	HNTAS-AP-CD-P0	HNTAS-AP-CD-P1	HNTAS-AP-CD-P2	HNTAS-AP-CD-P3	HNTAS-AP-CD-P4	HNTAS-AP-CD-P5
	Consumer Connection (CC)	HNTAS-AP-CC-P0	HNTAS-AP-CC-P1	HNTAS-AP-CC-P2	HNTAS-AP-CC-P3	HNTAS-AP-CC-P4	HNTAS-AP-CC-P5
	Consumer Heat System (CH)	HNTAS-AP-CH-P0	HNTAS-AP-CH-P1	HNTAS-AP-CH-P2	HNTAS-AP-CH-P3		

Table 1: Assessment Procedures structure

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 Technical Standards 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 Technical Standards 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 the Energy Centre element. 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 Technical Standards, including:
  - Assessment of Technical Requirements and Performance Monitoring Requirements
  - Assessment of Key Failures
  - Descriptions of the different Levels of Assessment
  - Assessment differences at HNTAS Stages

More information on HNTAS assessment can be found within Heat Network Technical Assurance Scheme – Scheme Rules – New Build Heat Networks: Assessment Regime (HNTAS-SR-NB-AS).

1. Scope

This document, and all documents part of the Energy Centre Assessment Procedures series, specifies Assessment Procedures applicable to an Energy Centre.

An Energy Centre is defined as a plant room that contains heat generation equipment; and/or equipment connecting to an energy source; or a substation which contains heat generation equipment (such as building connections with heat pumps or top-up boilers).

A detailed definition of the Energy Centre is contained within Heat Network Technical Assurance Scheme – Technical Specification – Energy Centre – Overview (HNTAS-TS-EC-P0).

2. 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.

i. Heat Network Technical Assurance Scheme – Scheme Rules – New Build Heat Networks: Assessment Regime (HNTAS-SR-NB).

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

3. Terms and definitions

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

Term	Definition
Assessment Procedure	The assessment to be undertaken to validate or verify whether the heat network design, installation, commissioning or operation is in accordance with the Technical Standard(s).
Assessor	A registered individual permitted by HNTAS to undertake assessment activities at a particular level.
Claim (of conformity)	The claim that the design, construction, commissioning, and/or operation of the heat network will meet or does meet Technical Standards. Objective evidence is provided to support the claim.
Construction Phase	The third phase of a heat network development. This phase covers the construction of a heat network. This phase contains Construction Design (Stage 4), Installation (Stage 5) and Commissioning (Stage 6) Stages.
Energy Centre	Plant room that contains heat generation equipment; and/or equipment connecting to an energy source; or a Substation which contains heat generation equipment (such as a building connection with heat pumps or top-up boilers). Typically contains heat generation equipment (such as heat pumps, CHPs, chillers), top-up generation equipment (boilers, for example), plate heat exchangers (PHE), pumps, expansion and pressurisation units, thermal storage, water quality equipment, BMS/control equipment, strainers, control valves, and heat meters.
Evidence Requirements	Lists of evidence items, with descriptions and requirements, expected to be provided to demonstrate conformity with the Technical Requirements, Performance Monitoring Requirements, and avoidance of Key Failures.
Key Failures	Key Failures are identified failures which occur frequently within the industry and lead to poor performance outcomes.
Key Performance Indicators (KPIs)	A quantifiable metric used to measure the performance of a heat network. Key Performance Indicator values and thresholds are to be defined during the design stages, and the heat network shall be designed to ensure KPIs can be achieved in operation.

Term	Definition
Level of Assessment	The level of depth an assessment is to be undertaken against a HNTAS requirement to determine compliance, ranging from Level 1 (self-declaration) to Level 5 (exhaustive, in-depth assessment).
Performance Monitoring Requirements	Requirements of a technical nature which relate to the performance monitoring of the heat network, using KPIs, and the Metering and Monitoring systems that facilitate performance monitoring.
Responsible Party	The Responsible Party is responsible for providing evidence to prove conformity with the requirements, such as producing the Statement of Applicability for Heat Network Projects and serves as primary point of contact for the assessment and/or certification body.
Stage 1: Concept Design	Stage 1 is the first HNTAS Stage. This stage corresponds to RIBA Stage 2. This will likely align with pre-planning applications and will be prior to the progression of design, with potential handover of design to additional parties.
Stage 2: Developed Design	Stage 2 is the second HNTAS Stage. This stage corresponds to RIBA Stage 3 design. Assessment at this stage is optional. This stage occurs prior to progression of design in RIBA Stage 4. This will likely align with submission of planning applications and may have potential handover of design to additional parties.
Stage 3: Technical Design	Stage 3 is the third HNTAS Stage. This stage corresponds to pre-construction activities at RIBA Stage 4 design, prior to design sign off and procurement and construction commencing.
Stage 4: Construction Design	Stage 4 is the fourth HNTAS Stage. This stage corresponds to RIBA Stage 4/5 design items that occur within the Construction Phase.
Stage 5: Installation	Stage 5 is the fifth HNTAS Stage. This stage corresponds to the installation activities of a heat network.
Stage 6: Commissioning	Stage 6 is the sixth HNTAS Stage. This stage corresponds to the commissioning activities of a heat network, prior to commissioning sign off, practical completion and handover to the heat network operator.
Stage 7: Operation and Maintenance (initial 2 years)	Stage 7 is the seventh HNTAS Stage. This stage corresponds to the operation and maintenance activities of a heat network during the first two years of operation.
Stage 8: Ongoing Monitoring	Stage 8 is the eighth HNTAS Stage. This stage corresponds to the ongoing operation and maintenance of a heat network during operation.

Term	Definition
Statement of Applicability	Document which states the applicable Technical Standards for each heat network project and any modifications or dispensations that are agreed and applied.
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. The Technical Requirements are predominantly based on existing industry requirements (from codes, guidance and other standards). Where existing industry requirements could not be identified, these have been developed.
Technical Standards	Technical Standards consist of all the types of technical obligations under HNTAS. These include: • Conformity with the Technical Requirement • Conformity with Performance Monitoring Requirements • Avoidance of Key Failures • Submission of evidence
Validation	Confirmation of a claim, through the provision of objective evidence, that the requirements for a specific intended future use or application have been fulfilled. Objective evidence can come from real or simulated sources. Validation is considered to be a process for evaluating the reasonableness of the assumptions, limitations and methods that support a claim about the outcome of future activities. Validation is applied to claims regarding an intended future use based on projected information (confirmation of plausibility).
Verification	Confirmation of a claim, through the provision of objective evidence that specified requirements have been fulfilled. Verification is considered to be process for evaluating a claim based on historical data and information to determine whether the claim is materially correct and conforms with specified requirements. Verification is applied to claims regarding events that have already occurred or results that have already been obtained (confirmation of truthfulness).

Table 2: Terms and definitions

4. 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 design, installation, commissioning, or operation (dependent on the HNTAS Stage) is in accordance with the applicable Technical Standards for the applicable element(s). Evidence will be issued alongside to support the claim.

The Technical Standards are outlined within the Technical Specification for the applicable element. The Technical Standards consist of the following:

- 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
- 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
- Key Failures – identified failures which occur frequently within the industry and lead to poor performance outcomes. These Key Failures are to be avoided to demonstrate compliance with the Technical Standards
- Evidence Requirements – lists of evidence items, with descriptions and requirements, expected to be provided to demonstrate conformity with the Technical Requirement, Performance Monitoring Requirements, and avoidance of Key Failures

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

The Assessment Procedures documentation specifically contain the assessment activities at each HNTAS assessment stage, for the specific heat network element.

Further guidance on assessment and Assessors, including [pre-assessment requirements, assessment reports, statements of conformity and post-assessment requirements], are contained within Heat Network Technical Assurance Scheme – Scheme Rules – New Build Heat Networks: Assessment Regime (HNTAS-SR-NB-AS).

4.1 Validation and verification

Validation and verification activities shall be undertaken by the Assessor over the course of 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 HNTAS Stages in relation to validation and verification are also shown below in Figure 3.

Figure 1: Validation

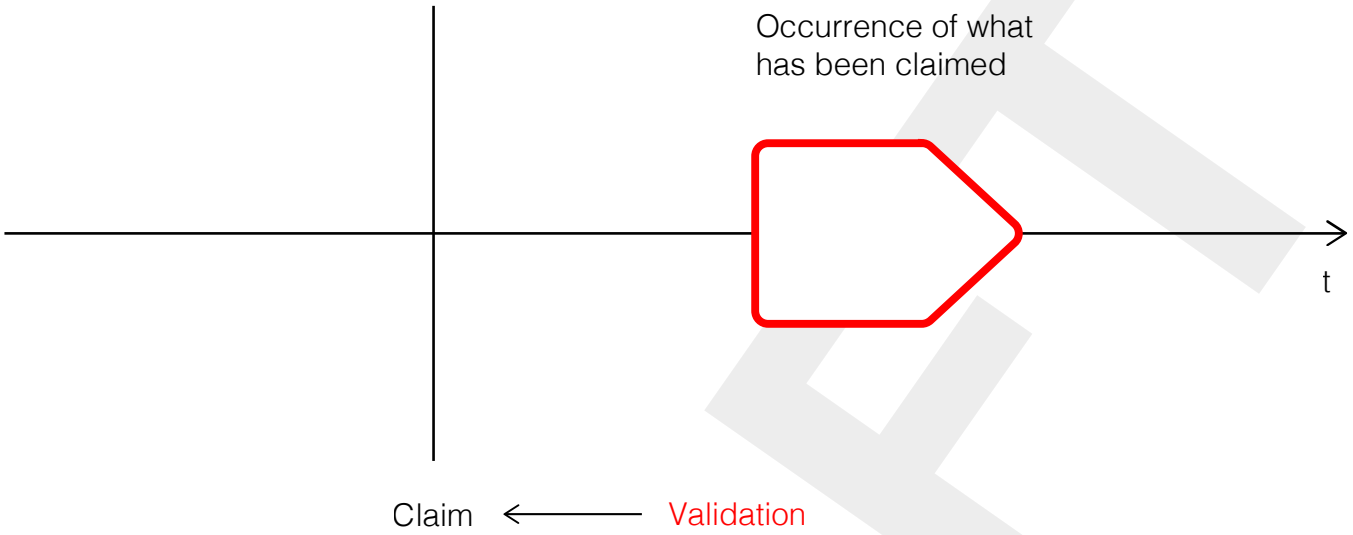


Figure 2: Verification

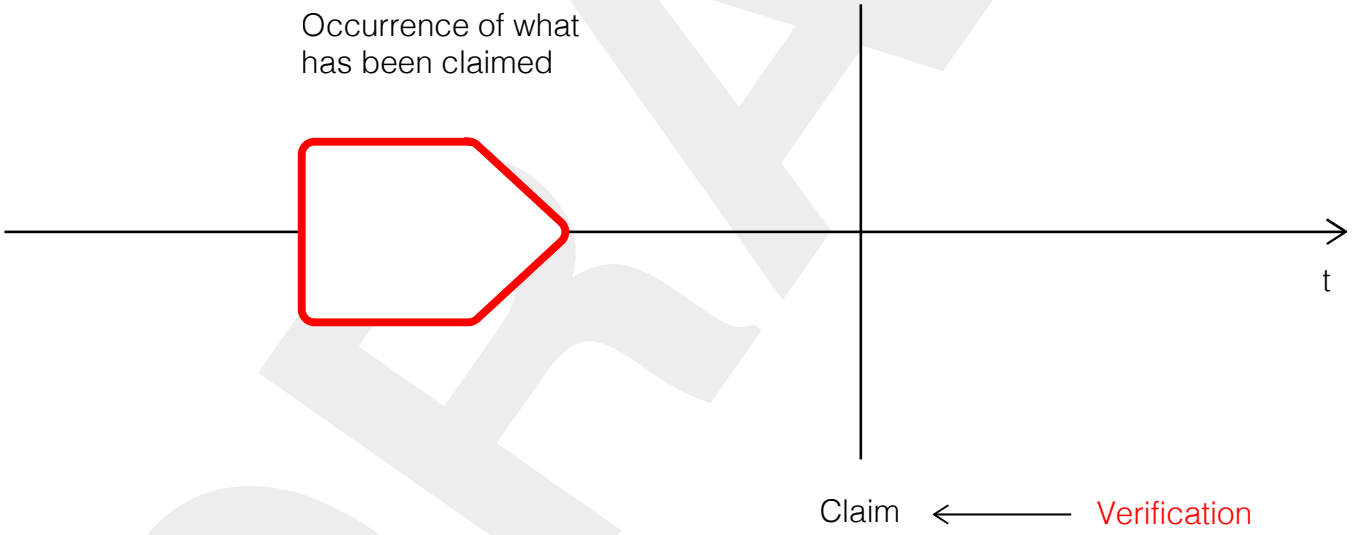
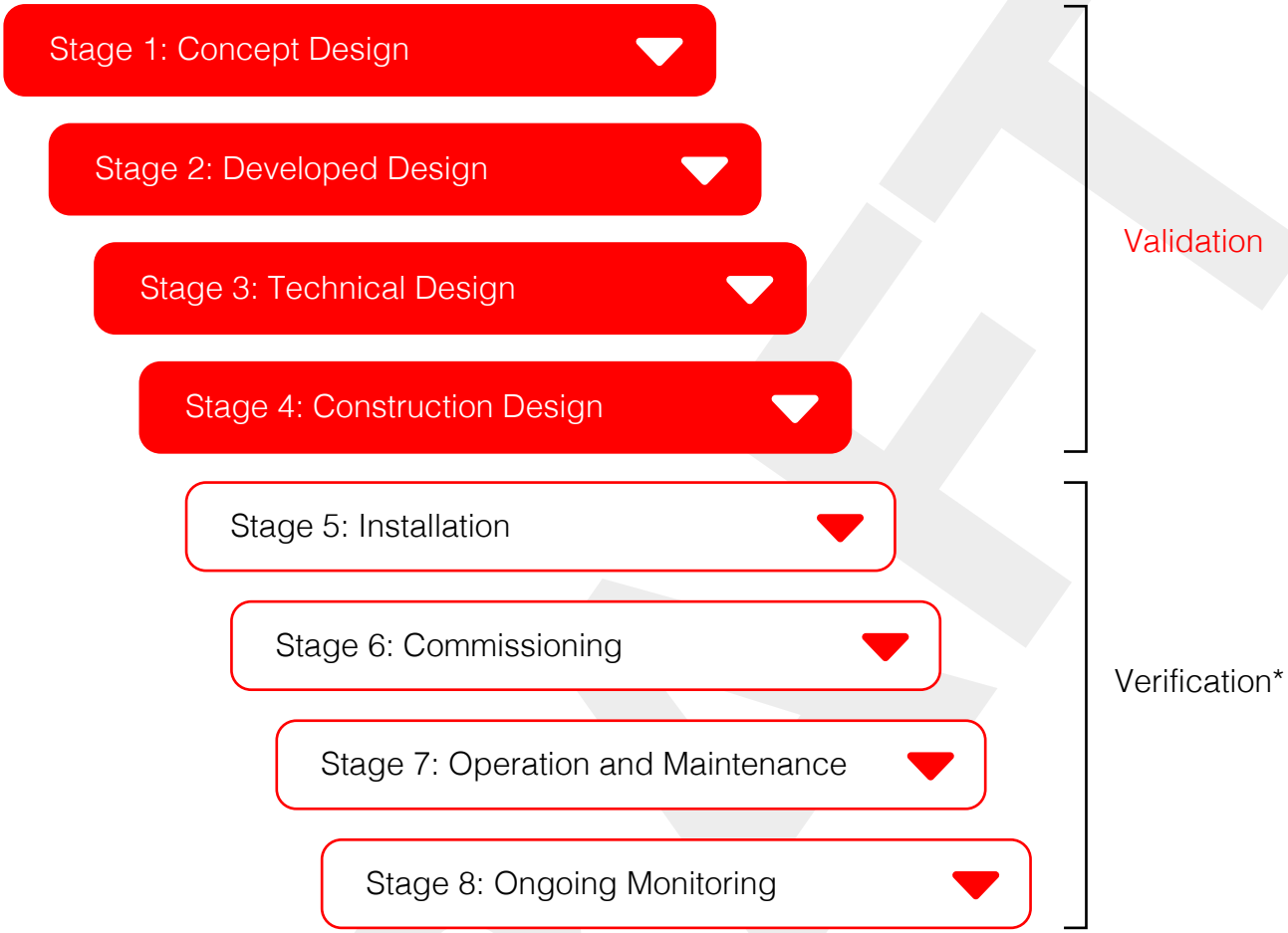


Figure 3: Validation and verification mapped to HNTAS Stages



*May contain some validation activities

It should be noted that whilst Figure 3 above shows validation associated with Stages 1-4, and verification with stages 5-8, there may be elements of validation assessment activities contained within Stages 5-8. For example, reviewing commissioning methodology prior to commissioning being undertaken is a validation activity that will fall into Stage 6.

5. Structure of Assessment Procedures documentation

5.1 Structure of Assessment Procedures: series

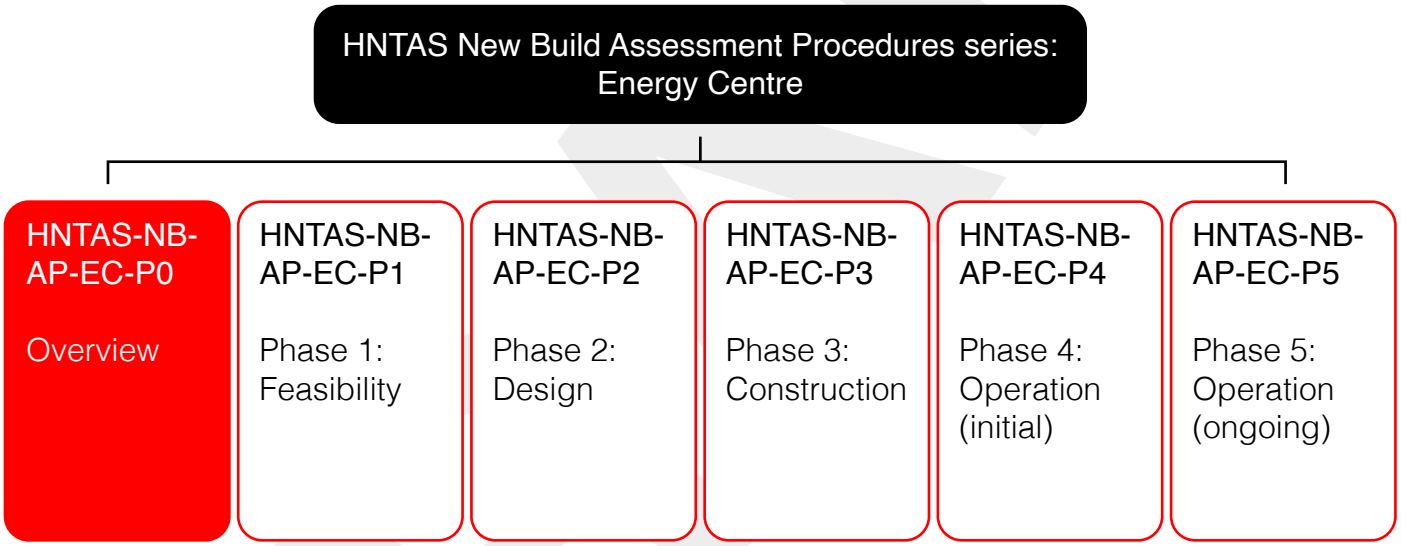
This document provides an overview of the Assessment Procedures for the Energy Centre element.

This document sits within a Series of Assessment Procedures for the Energy Centre.

The series contains five separate documents for each HNTAS phase, which contains the specific Assessment Procedures for the Energy Centre at each stage.

Figure 4 illustrates the Assessment Procedures series for an element. Table 1 outlines the series of Energy Centre Assessment Procedures alongside the other HNTAS elements.

Figure 4: Illustration of the Assessment Procedures series



5.2 Structure of Assessment Procedures: individual phase documents

The individual Assessment Procedures documents at each phase are split into sections for each HNTAS Stage.

A description of HNTAS phases and stages is provided in Heat Network Technical Assurance Scheme – Scheme Rules – New Build Heat Networks: Assessment Regime (HNTAS-SR-NB-AS).

Each section contains:

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

5.2.1 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.

5.2.2 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.

6. Assessment activities

6.1 Assessment of Technical Requirements and Performance Monitoring Requirements

The validation and verification activities carried out by Assessors is to confirm the reliability of information declared in claims. Assurance is provided by validation/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 requirement for Technical Requirements and Performance Monitoring Requirements.

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 3

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

6.1.1 Levels of Assessment

#	Description	Activity	Example Validation	Example Verification
1	Self-assessment	N/A	N/A	N/A
2	Evidence provided	Assessor shall check that the requisite evidence has been provided. Assessor shall check that the evidence format matches the description of the requisite evidence.	***Review of risk register:*** Assessor shall check that a document which contains the risk register has been provided and shall check that the appearance of the document matches that of risk register (it is not a blank document or one that contains another item).	
3	Appropriateness check of evidence	Assessor shall undertake an assessment as outlined in Level 2. In addition, Assessor shall 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 Technical Standards and/or industry practice, and as a consequence the output should result in conformity with the Technical Standards, including the KPIs, or alternatively, there is nothing that comes to the Assessor's attention that would indicate that the Technical Standards would not be achieved.	***Review of annual heat demands:*** • In addition to Level 2, Assessor shall check that the methodology, inputs, and assumptions used to calculate loads have been carried out in accordance with applicable technical standards and/or industry practice. For example, check that benchmarks used for loads are representative of the building use. • There is nothing that comes to the Assessor's attention which would suggest that the outputs would not conform to the Technical Standards, including KPIs.	***Review of O&M manual contents:*** • In addition to Level 2, Assessor shall check that the O&M manual contents have been undertaken in accordance with applicable technical standards and/or industry practice and contain the required information. • There is nothing that comes to the Assessor's attention which would suggest that the output (completed O&M manual) would not conform to the Technical Standards.

#	Description	Activity	Example Validation	Example Verification
4	In-depth, extensive review of evidence (sample).	Assessor shall undertake assessment as outlined in Level 3. Additionally, Assessor shall 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 Technical Standards, including the KPIs. There shall be nothing that comes to the Assessor's attention that would indicate that the non-sampled items would not conform with the Technical Standards, including the KPIs.	***Review of pipework sizing:*** • Assessor shall review the methodology, inputs and assumptions used to calculate pipe sizes to confirm they conform with the Technical Standards and/or industry practice. • Assessor shall select a representative pipework sample (see Section 6.1.3). Assessor shall review outputs (pipe sizes) and undertake own individual calculations on the pipework sample to confirm the accuracy of sampled outputs. • Assessor shall ensure there is nothing that comes to attention that would indicate that non-sampled items would not conform with the Technical Standards and/or industry practice.	***Review of commissioning certification:*** • Assessor shall select a representative sample of commissioning certification (see Section 6.1.3). • Assessor shall review the contents of the commissioning certification to confirm that it has been produced in accordance with the Technical Standards and/or industry practice. • For example, Assessor shall ensure that the commissioning that has been undertaken is in accordance with the technical requirements and the design (such as correct set points) and contains the necessary information.

#	Description	Activity	Example Validation	Example Verification
5	In-depth, extensive review of evidence (100%).	Assessor shall undertake a methodology check as outlined in Level 3. Additionally, Assessor shall review all outputs and where applicable, undertake independent exercises, to confirm the accuracy of all outputs and conformity with the Technical Standards, including the KPIs.	***Review of network distribution pump:*** • Assessor shall review the methodology, inputs and assumptions used to select and size the network distribution pump to confirm it conforms with the Technical Standards and/or industry practice. • Assessor shall review outputs (pump size) and undertake their own individual calculations to confirm accuracy of sampled outputs and the suitability of the pump size. • This may also be applied where a representative sample is not possible (as in there is only one item).	***Review of water quality samples:*** • Assessor shall carry out in-depth review of all water quality sample results and trends to ensure water quality parameters are trending within the agreed limits. • Where samples trend outside the agreed limits, Assessor shall review the remedial actions log to ensure that actions are being taken to resolve issues. • Note that the Assessor review is limited to a check that remedial action has been undertaken. The Assessor is not expected to review whether remedial action is suitable.

Table 3: Description of the Levels of Assessment

6.1.2 Levels of confidence and increasing Levels 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 4 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 Technical Standards 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 (such as whether the Technical Standards 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 4: Levels of assurance

6.1.3 Level 4 assessment: selecting representative sample

A Level 4 assessment is defined as an in-depth, extensive review of evidence on a sample basis. This may require undertaking independent calculations to determine the accuracy of the evidence.

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 Technical Standards 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 compliance.

The type of sample assessment will depend on the specific requirement. Examples of Level 4 checks have been provided below in Table 5 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 (so if there are three items and there is a 25% minimum sample size, then one item shall be selected for the sample).

Type of assessment / evidence for sample check	Applicable Stage(s)	Description of sample check
Assessment of equipment selection/sizing	Stage 1-4	Assessor shall select a representative sample of equipment items to review the sizing methodology, inputs, and outputs. Independent calculations shall be undertaken to confirm the accuracy of outputs. For an Energy Centre the following shall always be included in a representative sample: a. All heat generation equipment items for an Energy Centre, or plate heat exchanger for a Substation b. Network distribution pumps c. Pressurisation/expansion provision
Assessment of pipework sizing	Stages 1-4	Assessor shall select a representative sample of pipework to review the sizing methodology, inputs, and outputs. Independent calculations shall be undertaken to confirm the accuracy of outputs. For an Energy Centre the sample shall include as a minimum the common flow and return pipework.

Type of assessment / evidence for sample check	Applicable Stage(s)	Description of sample check
Assessment of spatial requirements	Stage 1-4	Assessor shall select a representative sample of equipment items to review the spatial requirements. For example, within an Energy Centre, the Assessor may choose to review the spatial requirements of the lead heat source, pressurisation and expansion provision, and a pump set.
Assessment of schedules (Technical Parameter Schedule, KPI Schedule, Monitoring Points Schedule, for example)	Stage 1-6	Assessor shall select a representative sample of items within the schedule. The assessment sample shall be of [25%] of all parameters contained within the schedule.
Assessment of diagrams/ schematics/drawings	Stage 1-6	Assessor shall select a representative sample of drawings to assess.
Assessment of Technical Submittals	Stage 4	Assessor shall select a representative sample of Technical Submittals to review, which includes key equipment for each element. For an Energy Centre or Substation, the following shall always be included in a representative sample: • All heat generation equipment items for an Energy Centre, or plate heat exchanger for Substation • Network distribution pumps • Pressurisation/expansion provision
Assessment of Technical Change Log	Stage 4	The assessor shall select a sample [10%] of changes and ensure they have been recorded correctly in the Technical Change Log.
Assessment of as-builts/updated documentation	Stage 4, 7-8	The assessor shall select a sample [10%] of evidence items to assess whether they have been recorded correctly in the Technical Change Log.
Assessment of Installation (installation inspection)	Stage 5	Assessor shall inspect a representative sample of installation to review, depending on the element. For an Energy Centre or Substation, the inspection shall include key areas but is not an exhaustive check of everything in detail.

Type of assessment / evidence for sample check	Applicable Stage(s)	Description of sample check
Assessment of commissioning methodologies	Stage 6	Assessor shall select a representative sample of key equipment items to review the commissioning methodology. This shall be done on a risk-based approach on which commissioning items will most impact performance outcomes.
Assessment of commissioning certification	Stage 6	Assessor shall select a representative sample of key equipment items to review the commissioning methodology. This shall be done on a risk-based approach on which commissioning items will most impact performance outcomes.
Assessment of O&M manual	Stage 6	Assessor shall select a sample number of items within the O&M manual to review. A risk-based approach shall be used to select items which are most important for ongoing operation.
Assessment of remedial action and maintenance log	Stage 7-8	Assessor shall 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 training log	Stage 7-8	Assessor shall select a sample number of items within the training log to review in depth. Sample shall be [10%] of items contained within the log.
Assessment of risk register	Stage 1-8	Assessor shall select a sample number of items within the risk register to review in depth. Sample shall be [10%] of items contained within the log.

Table 5: Stage 4 sample check descriptions

6.2 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.

6.3 Assessment at Stage 2: Developed Design

Stage 2: Developed Design is an optional HNTAS assessment stage.

The Technical Standards at Stage 2: Developed Design are the same as at Stage 3: Technical Design. Where there are Technical Requirements of Performance Monitoring Requirements which are not applicable at Stage 2, this will be indicated within the tables containing the requirements.

The Assessment Procedures at Stage 2 are also to follow the same Assessment Procedures as Stage 3. However, given that there is less detail present at Stage 2, there will need to be a judgement by the Assessor as to whether the requirement has been met, where less information is available. The assessment at Stage 2 should focus on ensuring there is nothing present at that level of detail, which would prevent the Technical Requirement or Performance Monitoring Requirement from being fulfilled at Stage 3. This same concept should be applied to the Key Failures.

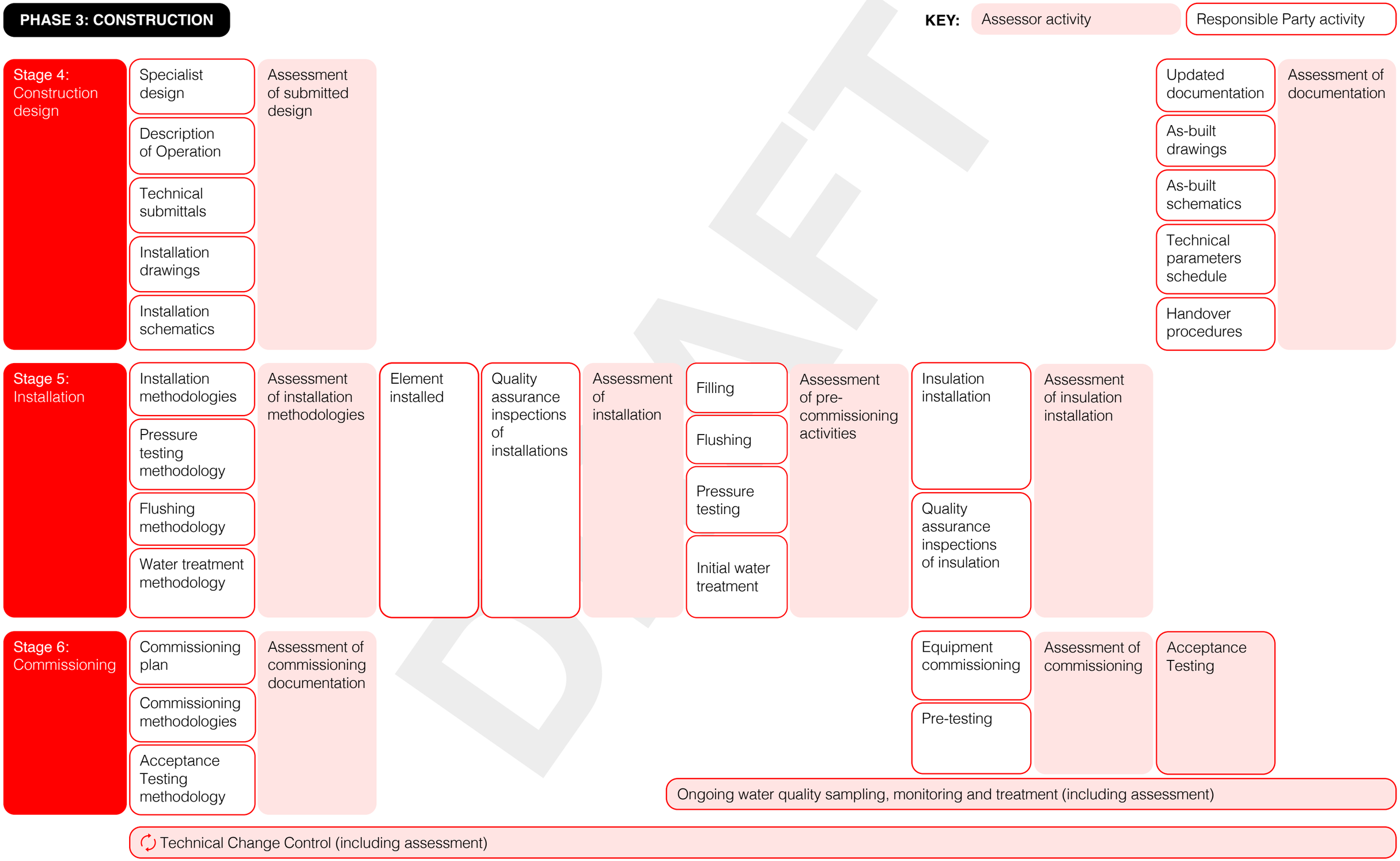
6.4 Assessment at Phase 3: Construction

During Phase 3: Construction, there are three stages which run simultaneously. Within these three stages there are multiple activities that are required to be undertaken before others are started. As a result of the dependencies and sequencing of the Construction Phase, mid-stage assessments will be necessary.

For example, prior to starting pressure testing, a methodology for pressure testing will be required. The Assessor will need to assess the methodology prior to the pressure testing commencing.

Figure 5 below illustrates the anticipated sequence of activities for a typical project. This illustrates the activities of both the Responsible Party and Assessor. The sequence of activities and where mid-stage assessments are necessary shall be agreed between the Responsible Party and Assessor prior to the activities being undertaken.

Figure 5: Typical sequence of activities during Construction Phase, with activities of an Assessor and Responsible Party outlined



7. Note on applicability

The applicability of the Technical Standards contained within the Technical Specifications for a heat network will depend on the specific heat network characteristics. This includes heat generation technology type, the typology of heat network and the temperature of the heat network.

At each stage a Statement of Applicability shall be produced by the Responsible Party, which determines the applicable Technical Standards for the specific heat network.

The applicability of the Technical Standards will inform which assessments are required.

Further requirements on the Statement of Applicability are outlined in Heat Network Technical Assurance Scheme – Scheme Rules – New Build Heat Networks: Assessment Regime (HNTAS-SR-NB-AS).

References

ISO (2019) Conformity assessment General principles and requirements for validation and verification bodies ISO/IEC 17029:2019