



| CPC ENGINEERING SPECIFICATION | |
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| SECTION SOP | Doc. No. CES-26-116 |
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PROCEDURE FOR VALIDATION OF OUTSOURCED/INHOUSE PROCESSES (HT/NDT/WELDING)

| Rev | Reason of Change | Date | Made By | Reviewed By | Approved By | Status |
|-----|------------------|------------|---------|-------------|-------------|----------|
| 0 | INITIAL RELEASE | 13-02-2024 | PK | USR | JG | Released |





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1.0 PURPOSE

To describe the methods to validate the outsourced processes

2.0 SCOPE

2.1 Following procedures require Validation: -

- A. Heat Treatment
- B. NDT
- C. Welding

3.0 METHODOLOGY

3.1 Heat Treatment: -

3.1.1 Equipment

| | Calibration | Frequency of Calibration |
|-----------------|-------------------|--------------------------|
| Furnaces | As per Annex M of | Yearly |
| Recorders | As per Annex M of | Qtly |
| Temp Indicators | As per Annex M of | Qtly |
| Thermocouples | As per Annex M of | Qtly |

3.1.2 Qualification of Personnel: -

- A. Furnace Operators - Trained in HT Processes.
Should be able to operate both
Continuous & Batch Type furnaces.
- B. Production Supervisor - ITI
- C. Inspector – ITI
- D. NDT- SNT-TC-1A Level-2 qualified

3.1.3 Methods: -

As per details covered under relevant CPC Material specifications
Mentioned below: -

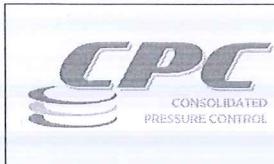
- A. CES 26-104

3.1.4 Acceptance Criteria

As per details covered under relevant Material
Specification mentioned at 3.1.3

3.1.5 Records: - Following records will be maintained: -





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- A. Material Test Reports (Mill/Independent Lab)
- B. Heat Treatment Graphs
- C. Mechanical Test Reports -
Test results of relevant QTC.
- D. Calibration records

3.1.6 Revalidation –

Once in a year or whenever there is a change in procedure.

3.2 NDT - (MPT/LPT/& VT)

3.2.1 Equipment

As per details contained in CPC NDT Procedure of relevant practice.

3.2.2. Qualification of Personnel-

SNT-TC-1A Qualified Level 2 of relevant practice in accordance with CPC written practice for training, qualification & certification of NDT personnel.

3.2.3 Methods: -

As prescribed in relevant practice procedures below-

- A. CWI-27-008 for LPT
- B. CWI-27-009 for MPT
- C. CWI-27-011 for VT

3.2.4 Acceptance Criteria

As per PSL based relevant clause of API - 6A acceptance criteria defined in CPC NDT Procedure listed at 3.2.3 above.

3.2.5 Records: - Following records will be maintained

- A. NDE reports traceable to lot.
- B. Level-2 certificate of the technician.
- C. Calibration certs of the Equipment used.
- D. For Liquid penetrant test Cert of the chemicals used for Examination.

3.2.6 Revalidation –

NDE process re validation will be done once in every 12 months or if NDE not performed for 12 months' interval then re-validation shall be performed prior to performing NDE or whenever there will be any changes in NDE codes or API products specification or change in essential variables/ procedures/ testing media etc.



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3.3 WELDING

3.3.1 Equipment

SMAW Technique – Arc welding machines & Instruments

GTAW Technique –

- A. Power Source
- B. Torch
- C. Backing System
- D. Protective Equipment
- E. Material based consumables

Calibration frequency – six months

3.3.2 Qualification of Personnel

As per ASME-IX & conformity with relevant API product specification and base material requirement

3.3.3 Method

As per ASME-IX & as per applicable API product specification

3.3.4 Acceptance Criteria

As per ASME –IX & PSL based relevant clause of API – 6A/16D

3.3.5 R e c o r d s : -

Following records will be maintained

- A. WPS (as per ASME-IX)
- B. PQR (as per ASME-IX)
- C. WPQ (as per ASME-IX)
- D. Welder continuity Record
- E. Calibration of welding equipment

3.3.6 Revalidation – Requalification of the welding operator/procedure

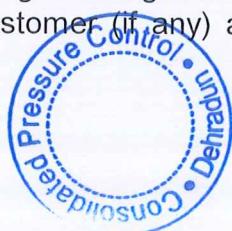
Whenever there is a change in –

- A. Ref code
- B. Essential variables
- C. Procedure
- D. Equipment
- E. Operator is out of job for more than six months.

4.0 RESPONSIBILITIES

4.1 Assessment of vendors – Materials + QC (CDP-31)

4.2 Quality Technicians are responsible for ensuring that all required inspections and/or tests specified above including those given in the relevant specs / drawings and those specified by customer (if any) are performed and items



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accepted as per criteria laid for acceptance.

4.3 Records shall be maintained by QC

4.4 Manager QAD will be responsible for revalidation of the procedure(s)

5.0 Nonconformance – To be handled as per CPC Procedure. (CDP-27)

