**In-line inspection contractor compliance check tables**

Recommended Practice

POF 321

2020  
Amended November 2021



**Foreword**

This document has been reviewed and approved by the Pipeline Operators Forum (POF) and is based on knowledge and experience available from POF members and others at the date of issue. It is stated however, that neither POF nor its member companies (or their representatives) can be held responsible for the fitness for purpose, completeness, accuracy and/or application of this document.

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**Changes November 2021**

The purpose of this revision is to comply with the new POF document numbering system. Changes mainly consist of updated references to other POF documents. In addition, editorial corrections may have been made.

# Introduction

Tables in this document are numbered in accordance with POF 320 *In-line inspection contractor compliance check*, and reference documents are as listed in POF 320.

# Tables 4.1 to 4.8

|  |  |
| --- | --- |
| **Date** | **Select date** |

Table 4.1: Contractor addresses (note: the location to be visited should be marked with a \*)

|  |  |  |
| --- | --- | --- |
| *Section* | *Requested information* | *Answers* |
| Headquarters | Contractor name | [Bedrijf] |
| Address |  |
| Postal address |  |
| Phone number |  |
| Fax number |  |
| E-mail address |  |
| Internet site (URL) |  |
| Activities and available services at this location |  |
|  | | |
| Research or Development Centre | Address |  |
| Postal address |  |
| Phone number |  |
| Fax number |  |
| E-mail address |  |
| Internet site (URL) |  |
| Activities and available services at this location |  |
|  | | |
| Regional offices | Postal address |  |
| Phone number |  |
| Fax number |  |
| E-mail address |  |
| Internet site (URL) |  |
| Activities and available services at this location |  |
|  | | |
| Regional offices | Postal address |  |
| Phone number |  |
| Fax number |  |
| E-mail address |  |
| Internet site (URL) |  |
| Activities and available services at this location |  |
|  | | |
| Regional offices | Postal address |  |
| Phone number |  |
| Fax number |  |
| E-mail address |  |
| internet site (URL) |  |
| Activities and available services at this location |  |

Table 4.2: Organisational information

|  |  |  |
| --- | --- | --- |
| *Section* | *Requested information* | *Answers* |
| Organizational chart | Please provide an organizational chart for the location with names of management personnel |  |
|  | | |
| Names of key personnel | Project management (preparation) |  |
| Project management (execution) |  |
| NDT specialist (incl. levels) |  |
| Head data analysis |  |
| QA/QC manager |  |
| Sales manager |  |
|  | | |
| Names of contact person (1) for completion of this questionnaire and for the appraisal (2) | Contact person (1) |  |
| Name |  |
| Phone number |  |
| E-mail address |  |
| Contact person (2) |  |
| Name |  |
| Phone number |  |
| E-mail address |  |
|  | | |
| Personnel involved during visit | Name | Function |
|  |  |
|  |  |
|  |  |
|  |  |
|  | | |
| Number of personnel in the following groups | Total number of staff |  |
| Office staff |  |
| Research & Development staff |  |
| Field Operations staff |  |
| Tool Maintenance staff |  |
| Data Analysis & Reporting staff |  |

Table 4.3: Available technical facilities

|  |  |  |  |
| --- | --- | --- | --- |
| Technical facilities | Pull test facilities | Pipe diameters |  |
| Test spool lengths |  |
| Speed range |  |
| Method of advancing tool |  |
| Medium |  |
| Pressure |  |
| Pump test facilities / Pump test loop | Pipe diameters: |  |
| Length of pump test facilities /test loop |  |
| Type of test facilities / loop (continuous/single run loop) |  |
| Speed range |  |
| Medium |  |
| Pressure range |  |
| Compression chamber | Length |  |
| Diameter |  |
| Maximum pressure |  |
| Other facilities |  | |
|  |  | |
|  |  | |
| Location of facilities listed above: |  | |

Table 4.4: Overview of available tools, technologies and combinations thereof in one tool to be marked with an X. If applicable, the table is to be completed and expanded with additional (not listed) technologies. Below the table additional or explanatory remarks can be added.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Available technologies and  combinations in a tool  Main technology as per  performance sheet (extra  lines to be completed if required) | Single technology tool |  | MFL, Axial | MFL, Circumferential | UT, Compression Wave, Wall thickness | UT, Shear wave crack detection, Axial | UT, Shear wave crack detection, Circumferential | EMAT, Wall thickness | EMAT, crack detection, Axial | EMAT, crack detection, Circumferential | Eddy Current | Mapping | Leak detection | Other 1: | Other 2 | Other 3 |
| Geometry |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| MFL, Axial |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| MFL, Circumferential |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |
| UT, Compression wave, Wall thickness |  |  |  | | |  |  |  |  |  |  |  |  |  |  |  |
| UT, Shear wave crack detection, Axial |  |  |  | | | |  |  |  |  |  |  |  |  |  |  |
| UT, Shear wave crack detection, Circumferential |  |  |  | | | | |  |  |  |  |  |  |  |  |  |
| EMAT, wall thickness |  |  |  | | | | | |  |  |  |  |  |  |  |  |
| EMAT, crack detection, Axial |  |  |  | | | | | | |  |  |  |  |  |  |  |
| EMAT, crack detection, Circumferential |  |  |  | | | | | | | |  |  |  |  |  |  |
| Eddy Current |  |  |  | | | | | | | | |  |  |  |  |  |
| Mapping |  |  |  | | | | | | | | | |  |  |  |  |
| Leak detection |  |  |  | | | | | | | | | | |  |  |  |
| Other 1: |  |  |  | | | | | | | | | | | |  |  |
| Other 2: |  |  |  | | | | | | | | | | | | |  |
| Other 3: |  |  |  | | | | | | | | | | | | | |

Additional remarks:

Table 4.5: Details of inspection tools and technologies

|  |  |  |
| --- | --- | --- |
| **4.5.1** | **Gauging and cleaning tools** | |
|  | Diameter range |  |
|  | Diameter of smallest single body tool |  |
|  | Design of tools: |  |
|  | Bidirectional or single directional tool |  |
|  | Type of brushes: nylon, metallic, other |  |
|  | Type of sealing devices: discs, cups, material |  |
|  | Minimum bend radius acceptable |  |
|  | Back-to-back forged bends capabilities |  |
|  | Special cleaning tools |  |
|  | Type and design of special cleaning tool |  |
|  | Run conditions: |  |
|  | Minimum/maximum operating pressure |  |
|  | Minimum/maximum tool velocity |  |
|  | Medium |  |
|  | Restriction capabilities |  |
|  | ATEX |  |
|  | Equipped with a transmitter |  |
|  | Type of batteries |  |
|  | Life time of batteries |  |
|  | Conditions and limitations to detect the tool |  |
|  | Additional remarks |  |

|  |  |  |
| --- | --- | --- |
| **4.5.2** | **Geometry tools** | |
|  | Diameter range |  |
|  | Diameter of smallest single body tool |  |
|  | Measurement system |  |
|  | Type of sensors |  |
|  | Centre to centre distance of sensors |  |
|  | Axial measurement resolution during inspection |  |
|  | Design of tools: |  |
|  | Bidirectional or single directional tool |  |
|  | Restrictions capabilities |  |
|  | Minimum bend radius acceptable |  |
|  | Back-to-back forged bends capabilities |  |
|  | Run conditions: |  |
|  | Minimum/maximum operating pressure |  |
|  | Minimum/maximum tool velocity |  |
|  | Medium |  |
|  | Range of distance |  |
|  | Describe tool sleep mode if available |  |
|  | ATEX certification |  |
|  | Equipped with an SCU |  |
|  | Equipped with an IMU |  |
|  | Type of batteries |  |
|  | Additional remarks |  |

|  |  |  |
| --- | --- | --- |
| **4.5.3** | **MFL tools, Axial magnetisation:** | |
|  | Diameter range |  |
|  | Diameter of smallest single body tool |  |
|  | Measurement system: |  |
|  | Type and dimensions of primary sensors |  |
|  | Centre to centre distance of primary sensors |  |
|  | Axial measurement resolution during inspection |  |
|  | Type and dimensions of ID/OD sensors |  |
|  | Centre to centre distance of ID/OD sensors |  |
|  | Type of magnets, e.g. brushes, blocs, strips, other |  |
|  | Design of tools |  |
|  | Bidirectional or single directional tool |  |
|  | Restrictions capabilities |  |
|  | Minimum bend radius acceptable |  |
|  | Back-to-back forged bends capabilities |  |
|  | Run conditions: |  |
|  | Minimum/maximum operating pressure |  |
|  | Minimum/maximum tool velocity |  |
|  | Medium |  |
|  | Range of distance |  |
|  | Describe tool sleep mode if available |  |
|  | ATEX certification |  |
|  | Equipped with a SCU |  |
|  | Equipped with an IMU |  |
|  | Type of batteries |  |
|  | Additional remarks |  |

|  |  |  |
| --- | --- | --- |
| **4.5.4** | **MFL tools, Circumferential magnetisation** | |
|  | Diameter range |  |
|  | Diameter of smallest single body tool |  |
|  | Measurement system: |  |
|  | Type and dimensions of primary sensors |  |
|  | Centre to centre distance of primary sensors |  |
|  | Axial measurement resolution during inspection |  |
|  | Type and dimensions of ID/OD sensors |  |
|  | Centre to centre distance of ID/OD sensors |  |
|  | Type of magnets, e.g. brushes, blocs, strips, other |  |
|  | Design of tools: |  |
|  | Bidirectional or single directional tool |  |
|  | Restrictions capabilities |  |
|  | Minimum bend radius acceptable |  |
|  | Back-to-back forged bends capabilities? |  |
|  | Run conditions: |  |
|  | Minimum/maximum operating pressure |  |
|  | Minimum/maximum tool velocity |  |
|  | Medium |  |
|  | Range of distance |  |
|  | Describe tool sleep mode if available |  |
|  | ATEX certification |  |
|  | Equipped with a SCU |  |
|  | Equipped with an IMU |  |
|  | Type of batteries |  |
|  | Additional remarks |  |

|  |  |  |
| --- | --- | --- |
| **4.5.5** | **UT tools, Compression wave for wall thickness measurement** | |
|  | Diameter range |  |
|  | Diameter of smallest single body tool |  |
|  | Measurement system: |  |
|  | Type and frequency of transducers |  |
|  | Diameter of transducers |  |
|  | Centre to centre distance of transducers |  |
|  | Axial measurement resolution during inspection |  |
|  | Design of tools |  |
|  | Bidirectional or single directional tool |  |
|  | Restrictions capabilities |  |
|  | Minimum bend radius acceptable |  |
|  | Back-to-back forged bends capabilities |  |
|  | Run conditions: |  |
|  | Minimum/maximum operating pressure |  |
|  | Minimum/maximum tool velocity |  |
|  | Medium |  |
|  | Range of distance |  |
|  | Range of velocity |  |
|  | Describe tool sleep mode if available |  |
|  | ATEX certification |  |
|  | Equipped with an SCU |  |
|  | Equipped with an IMU |  |
|  | Type of batteries |  |
|  | Additional remarks |  |

|  |  |  |
| --- | --- | --- |
| **4.5.6** | **UT tools, Shear wave for crack detection and sizing** | |
|  | Diameter range |  |
|  | Diameter of smallest single body tool |  |
|  | Measurement system |  |
|  | Type of crack detection (axial/circumferential/helical) |  |
|  | Type and frequency of transducers |  |
|  | Diameter of transducers |  |
|  | UT beam angle |  |
|  | Centre to centre distance of transducers |  |
|  | Axial measurement resolution during inspection |  |
|  | Design of tools: |  |
|  | Bidirectional or single directional tool |  |
|  | Restrictions capabilities |  |
|  | Minimum bend radius |  |
|  | Back-to-back forged bends capabilities |  |
|  | Run conditions: |  |
|  | Minimum/maximum operating pressure |  |
|  | Minimum/maximum tool velocity |  |
|  | Medium |  |
|  | Maximum distance |  |
|  | Describe tool sleep mode if available |  |
|  | ATEX certification |  |
|  | Equipped with an SCU |  |
|  | Equipped with an IMU |  |
|  | Type of batteries |  |
|  | Additional remarks |  |

|  |  |  |
| --- | --- | --- |
| **4.5.7** | **EMAT tools, Wall thickness measurement** | |
|  | Diameter range |  |
|  | Diameter of smallest single body tool |  |
|  | Measurement system |  |
|  | Type of transducers |  |
|  | Number of transducers |  |
|  | Distance between transducers |  |
|  | Axial measurement resolution during inspection |  |
|  | Design of tools: |  |
|  | Bidirectional or single directional tool |  |
|  | Restrictions capabilities |  |
|  | Minimum bend radius acceptable |  |
|  | Back-to-back forged bends capabilities |  |
|  | Run conditions: |  |
|  | Minimum/maximum operating pressure |  |
|  | Minimum/maximum tool velocity |  |
|  | Medium |  |
|  | Maximum distance |  |
|  | Describe tool sleep mode if available |  |
|  | ATEX certification |  |
|  | Equipped with an SCU |  |
|  | Equipped with an IMU |  |
|  | Type of batteries |  |
|  | Additional remarks |  |

|  |  |  |
| --- | --- | --- |
| **4.5.8** | **EMAT tools, Crack detection and sizing** | |
|  | Diameter range |  |
|  | Diameter of smallest single body tool |  |
|  | Measurement system |  |
|  | Type of crack detection (axial/circumferential/helical) |  |
|  | Type of transducers |  |
|  | Number of transducers |  |
|  | Distance between transducers |  |
|  | Axial measurement resolution during inspection |  |
|  | Design of tools: |  |
|  | Bidirectional or single directional tool |  |
|  | Restrictions capabilities |  |
|  | Minimum bend radius acceptable |  |
|  | Back-to-back forged bends capabilities |  |
|  | Run conditions: |  |
|  | Minimum/maximum operating pressure |  |
|  | Minimum/maximum tool velocity |  |
|  | Medium |  |
|  | Maximum distance |  |
|  | Describe tool sleep mode if available |  |
|  | ATEX certification |  |
|  | Equipped with an SCU |  |
|  | Equipped with an IMU |  |
|  | Type of batteries |  |
|  | Additional remarks |  |

|  |  |  |
| --- | --- | --- |
| **4.5.9** | **Eddy current tools** | |
|  | Diameter range |  |
|  | Diameter of smallest single body tool |  |
|  | Measurement system |  |
|  | Type of transducers |  |
|  | Diameter of transducers |  |
|  | Centre to centre distance of transducers |  |
|  | Axial measurement resolution during inspection |  |
|  | Design of tools: |  |
|  | Bidirectional or single directional tool |  |
|  | Restrictions capabilities |  |
|  | Minimum bend radius acceptable |  |
|  | Back-to-back forged bends capabilities? |  |
|  | Run conditions: |  |
|  | Minimum/maximum operating pressure |  |
|  | Minimum/maximum tool velocity |  |
|  | Medium |  |
|  | Maximum distance |  |
|  | Describe tool sleep mode if available |  |
|  | ATEX certification |  |
|  | Equipped with a SCU |  |
|  | Equipped with an IMU |  |
|  | Type of batteries |  |
|  | Additional remarks |  |

|  |  |  |
| --- | --- | --- |
| **4.5.10** | **Mapping tools** | |
|  | Diameter range |  |
|  | Diameter of smallest single body tool |  |
|  | Measurement system |  |
|  | Design of tools: |  |
|  | Bidirectional or single directional tool |  |
|  | Restrictions capabilities |  |
|  | Minimum bend radius acceptable |  |
|  | Back-to-back forged bends capabilities? |  |
|  | Run conditions: |  |
|  | Minimum/maximum operating pressure |  |
|  | Minimum/maximum tool velocity |  |
|  | Medium |  |
|  | Maximum distance |  |
|  | Describe tool sleep mode if available |  |
|  | ATEX certification |  |
|  | Type of batteries |  |
|  | Additional remarks |  |

|  |  |  |
| --- | --- | --- |
| **4.5.11** | **Leak detection tools** | |
|  | Diameter range |  |
|  | Diameter of smallest single body tool |  |
|  | Measurement system |  |
|  | Design of tools (e.g.): |  |
|  | Bidirectional or single directional tool |  |
|  | Restrictions capabilities |  |
|  | Minimum bend radius acceptable |  |
|  | Back-to-back forged bends capabilities? |  |
|  | Run conditions: |  |
|  | Minimum/maximum operating pressure |  |
|  | Minimum/maximum tool velocity |  |
|  | Medium |  |
|  | Maximum distance |  |
|  | Describe tool sleep mode if available |  |
|  | ATEX certification |  |
|  | Type of batteries |  |
|  | Additional remarks |  |

|  |  |  |
| --- | --- | --- |
| **4.5.12** | **Special and other tools (to be specified)** | |
|  | Information on special tools and tools that are based on technologies that are not listed above can be entered in this table. Extra forms are separately available in POF 322. | |
|  | Type of technology e.g. ART, DMR, Helical MFL, etc. |  |
|  | Diameter range |  |
|  | Diameter of smallest single body tool |  |
|  | Measurement system: |  |
|  | Type and dimensions of sensors |  |
|  | Centre to centre distance of sensors |  |
|  | Axial measurement resolution during inspection |  |
|  | Design, type of tool (e.g.): |  |
|  | Multi-diameter tool |  |
|  | Push-Pull tool |  |
|  | Floating Bidirectional tool |  |
|  | Robot (crawler, tether, self-propelling) |  |
|  | Other, specify: |  |
|  | Run conditions: |  |
|  | Minimum/maximum operating pressure |  |
|  | Minimum/maximum tool velocity |  |
|  | Range of distance |  |
|  | Medium |  |
|  | Describe tool sleep mode if available |  |
|  | ATEX certification |  |
|  | Equipped with a SCU |  |
|  | Equipped with an IMU |  |
|  | Type of batteries |  |
|  | Additional remarks |  |

Table 4.6: Complementary services

Information on complementary services in support of ILI that are available from or via the ILI Contractor can be listed in this table. The table can be completed with not mentioned services.

|  |  |  |
| --- | --- | --- |
| *Section* | *Requested information* | *Answers* |
| Complementary services | Pipeline cleaning:   * Available from ILI Contractor or contracted out * Type of technologies * Pipeline cleaning procedures * Acceptance criteria |  |
| Portable tool traps:   * Availability of portable tool traps * Available diameters * Compliance to (local) safety regulations |  |
| Above ground markers, types |  |
| Permanent magnet markers |  |
| Nitrogen (cleaning, purging, run in) |  |
| Pumping |  |
| Tethered/umbilical operations |  |
| Tool cleaning:   * Available from Contractor or contracted out? * Types of solvents * Tool cleaning procedures * Acceptance criteria * Acceptance criteria for remnants of NORM (Naturally Occurring Radioactive Material) |  |
| Lifting:  Available from Contractor or contracted out? |  |
| FFS analysis, Available algorithms: |  |
| NDT services (e.g. for feature verification):   * Available from ILI Contractor (in-house): Technologies and Qualification level(s) * Contracted out: Technologies and Qualification level(s) * Available procedures |  |
| Additional services: |  |

Table 4.7: ILI tool running and performance statistics

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Tool and technology  Requested information |  | Geometry | MFL, Axial | MFL, Circumferential | UT,  Compression wave, Wall thickness | UT, Shear wave crack detection | EMAT,  Wall thickness | EMAT,  Crack detection | Eddy Current | Mapping | Leak detection | Total |
| Number of pipelines inspected during the last 5 year | Year 20 |  |  |  |  |  |  |  |  |  |  |  |
| Year 20 |  |  |  |  |  |  |  |  |  |  |  |
| Year 20 |  |  |  |  |  |  |  |  |  |  |  |
| Year 20 |  |  |  |  |  |  |  |  |  |  |  |
| Year 20 |  |  |  |  |  |  |  |  |  |  |  |
| Total number of kilometres of pipelines inspected during last 5 year | Year 20 |  |  |  |  |  |  |  |  |  |  |  |
| Year 20 |  |  |  |  |  |  |  |  |  |  |  |
| Year 20 |  |  |  |  |  |  |  |  |  |  |  |
| Year 20 |  |  |  |  |  |  |  |  |  |  |  |
| Year 20 |  |  |  |  |  |  |  |  |  |  |  |
|  | |  |  |  |  |  |  |  |  |  |  | Average of all runs |
| First run success rate (%) of last 5-year inspections. To be reported per year and as 5-year average. | Year 20 |  |  |  |  |  |  |  |  |  |  |  |
| Year 20 |  |  |  |  |  |  |  |  |  |  |  |
| Year 20 |  |  |  |  |  |  |  |  |  |  |  |
| Year 20 |  |  |  |  |  |  |  |  |  |  |  |
| Year 20 |  |  |  |  |  |  |  |  |  |  |  |
| 5 Year average |  |  |  |  |  |  |  |  |  |  |  |
| Percentage of runs with acceptable or no data loss as part of all runs (ref. POF 100 [3], Section 7.1). | Year 20 |  |  |  |  |  |  |  |  |  |  |  |
| Year 20 |  |  |  |  |  |  |  |  |  |  |  |
| Year 20 |  |  |  |  |  |  |  |  |  |  |  |
| Year 20 |  |  |  |  |  |  |  |  |  |  |  |
| Year 20 |  |  |  |  |  |  |  |  |  |  |  |
| 5 Year average, all runs |  |  |  |  |  |  |  |  |  |  |  |

Table 4.8: Client list

Overview of clients of ILI services.

|  |  |  |
| --- | --- | --- |
| *Client* | *Year/period* | *Provided services* |
|  |  |  |

# Tables 5 to 11

Table 5: Health, safety and environment.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| *Document, Section* | *Requested information* | *Answers and Observations/Recommendations from Reviewer* | | | *Verdict* |
|  | Documented HSE system. If available, please provide a copy. |  | | |  |
|  | Certified to ISO 14001 [6] or equivalent? If so, please provide copy of certificate. |  | | |  |
|  | Certified to ISO 18001 [5] or equivalent? If so, please provide copy of certificate. |  | | |  |
|  | Statistics for number of incidents and injuries during current year and last 2 year:  1. Reported incidents (near misses)  2. Medical attention only cases  3. Restricted workday cases  4. Lost workday cases  5. Fatalities | Current year 20  ,  (up to mm, yyyy)  1.  2.  3.  4.  5. | Year 20  1.  2.  3.  4.  5. | Year 20  1.  2.  3.  4.  5. |  |
|  | Who has responsibility for HSE management systems at your facilities |  | | |  |
|  | Who has responsibility for HSE compliance during ILI runs? |  | | |  |
|  | Written safety/loss prevention program. If available, please provide a copy. |  | | |  |
|  | Safety Emergency Plan/Procedure for jobs/locations. If available, please provide a copy. |  | | |  |
| POF specifications - POF 100 [3], Section 3.1, 3.2 | Policy of ATEX or equivalent certification of tools |  | | |  |

Table 6: Quality assurance

|  |  |  |  |
| --- | --- | --- | --- |
| *Document, Section* | *Requested information* | *Answers and Observations/Recommendations* | *Verdict* |
| Quality system review | Are you certified to a quality system? If so, please indicate the applicable system and provide copy of the certificate. *(Note: if not ISO 9001 [4], essential differences should be indicated),* |  |  |
|  | Please provide a copy of the latest quality audit report and follow-up actions taken (if required) |  |  |
|  | If your quality certification is different from ISO 9001 [4], please provide the following information:   * Internal quality audit scheme. * A copy of latest audit for review. |  |  |
|  | | | |
| API 1163 [1], section 10. Quality management system | Compliance to quality system above |  |  |

Table 7.1: Personnel training and qualification practice/procedure.

|  |  |  |  |
| --- | --- | --- | --- |
| *Document, Section* | *Requirement* | *Answers and Observations/Recommendations* | *Verdict* |
| ANSI/ASNT-ILI-PQ-2017 [2], Section 7.0 | Training programs. If available, please provide a copy. |  |  |
| ANSI/ASNT-ILI-PQ-2017[2], Section 4.0, 9.5 | Written practice/procedure describing training, experience and examination for each level of qualification.  *Note: written practice to be reviewed for items 4.1 - 4.5 of ANSI/ASNT-ILI-PQ-2017.* | 4.1:  4.2:  4.3:  4.4:  4.5: |  |

Table 7.2: Number and level of certified tool operators.

|  |  |  |  |
| --- | --- | --- | --- |
| *Document, Section* | *Requirement* | *Answers and Observations/Recommendations* | *Verdict* |
| ANSI/ASNT-ILI-PQ-2017[2], Section 9.0 | Number and level of certified tool operators for each ILI tool technology  *Note: at random a number of certification documents should be reviewed on compliance to requirements of chapter 9 and recommended minimum training and experience levels (tables 1 to 7 of* ANSI/ASNT-ILI-PQ-2017 [2] *where applicable).* | MFL technology, axial:  Level 1:  Level 2:  Level 3: |  |
| MFL technology, transverse:  Level 1:  Level 2:  Level 3: |  |
| Ultrasonic technology, compression wave:  Level 1:  Level 2:  Level 3: |  |
| Ultrasonic technology, shear wave:  Level 1:  Level 2:  Level 3: |  |
| EMAT technology:  Level 1:  Level 2:  Level 3: |  |
| Geometry technology:  Level 1:  Level 2:  Level 3: |  |
| Mapping technology:  Level 1:  Level 2:  Level 3: |  |
| Additional technology: (describe)  Level 1:  Level 2:  Level 3: |  |

Table 7.3: Number and level of certified data analysts.

|  |  |  |  |
| --- | --- | --- | --- |
| *Document, Section* | *Requirement* | *Answers and Observations/Recommendations* | Verdict |
| ANSI/ASNT-ILI-PQ-2017 [2], Section 9 | Number and level of certified data analysts for each ILI tool technology | MFL technology, axial:  Level 1:  Level 2:  Level 3: |  |
| MFL technology, transverse:  Level 1:  Level 2:  Level 3: |  |
| Ultrasonic technology, compression wave:  Level 1:  Level 2:  Level 3: |  |
| EMAT technology:  Level 1:  Level 2:  Level 3: |  |
| Geometry technology:  Level 1:  Level 2:  Level 3: |  |
| Mapping technology:  Level 1:  Level 2:  Level 3: |  |
| Additional technology, specify:  Level 1:  Level 2:  Level 3: |  |
| Informative | What is the physical location (city and country) where the data analysis is carried out? |  |  |

Table 7.4: Number and qualification of FFS analysts

|  |  |  |  |
| --- | --- | --- | --- |
| *Document, Section* | *Requirement* | *Answers and Observations/Recommendations* | *Verdict* |
| POF specifications - POF 100 [3], chapter 2.6 | If FFS analysis is available (ref. Table 4.6), what are the number and qualifications of analysts for each analysis method. |  |  |

Table 7.5: Qualifications of assigned personnel for field operations, data analysis and reporting.

|  |  |  |  |
| --- | --- | --- | --- |
| *Document, Section* | *Requirement* | *Answers and Observations/Recommendations* | *Verdict* |
| POF specifications - POF 100 [3],  Section 7 | Team leader during ILI field activities: Level II tool operator for the applicable technology |  |  |
| Data analysis and reporting Lead: Level II Data Analyst for the applicable technology |  |  |
| Review of final Client report: Level III Data Analyst for the applicable technology |  |  |

Table 8: Compliance of technical requirements of ILI tools *(note: it should be indicated in this table if the performance specifications, qualification requirements and other requested information is available and the Reviewer is requested to review examples and give his/her observations, recommendations and a verdict*.

|  |  |  |  |
| --- | --- | --- | --- |
| *Document, Section* | *Requirement* | *Answers and Observations/Recommendations* | *Verdict* |
| API 1163 [1], section 6.2  Performance specifications  POF specifications - POF 100 [3], section 4.4.1 (appendix 5) | Performance specifications; available for full range of tools:  6.2.1: General  6.2.2: Applicable anomalies components, features and characteristics  6.2.3: Detection thresholds and probability of detection  6.2.4: Probability of identification  6.2.5: Sizing accuracy  6.2.6: Sizing capability  6.2.7: Limitations  6.2.8: Geometric passage capabilities  6.2.9: Other capabilities |  |  |
| API 1163 [1] section 6.3  Qualification requirements | Qualification requirements; available for full range of tools:  6.3.1: General  6.3.2: Essential variables  6.3.3: Data and analysis requirements  6.3.4: Validation based on historic data  6.3.5: Validation based on full scale tests  6.3.6: Validation based on small-scale tests, modelling and analyses |  |  |
| API 1163 [1] section 6.4  Documentation and other requirements | 6.4.1: General  6.4.2: Detection thresholds, PODs and POIs  6.4.3: Sizing accuracies  6.4.4: Review and revision requirements |  |  |
| POF specifications - POF 100 [3], Section 4.4.2. Basis of performance | Basis of performance specifications for each (series of) tools |  |  |
| POF specifications - POF 100 [3], Section 4.4.3. Exclusions and limitations | Exclusions and limitations for each (series) of tools |  |  |
| POF specifications - POF 100 [3], Section 4.4.4. Access to supporting performance information | Access to information in support of stated tool performance specification |  |  |
| POF specifications - POF 100 [3], Section 4.5.  Tool performance verification | Verification of basis of tool performances through formal testing or field verification |  |  |
| POF specifications - POF 100 [3], section 4.6.  Changes to tool specification or performance specification sheets | Changes to tool and performance specifications in Contractor quality system |  |  |

Table 9: Compliance of operations and project management. *(note: it should be indicated in this table if the documentation is available and the Reviewer is requested to review it and give his/her observations, recommendations and a verdict.*

|  |  |  |  |
| --- | --- | --- | --- |
| *Document, Section* | *Requirement* | *Answers and Observations/Recommendations* | *Verdict* |
| API 1163 [3], section 7  System Operational Verification | Procedures describing:  7.2: Project requirements  7.3: Pre-inspection requirements  *Note: Moments of documented quality checks:*   * *prior to shipping the tool* * *arrival on site* * *prior to launching the tool*   *Covering items like, but not limited to: battery life, initiation technique, maintenance records for components, corrective actions from past failures, mobilisation of spares & tools, any client specific modifications for pipeline geometry, pipeline operating parameters, loading/retrieving equipment*  7.4: Inspection requirements  7.5: Post inspection requirements  *Note: Moments of documented quality checks:*   * *After receiving the tool* * *Prior to shipping the tool back* | 7.2:  7.3:  7.4:  7.5: |  |
| Informative | Procedure describing actions to take when a tool got stuck in a pipeline |  |  |

Table 10: Compliance to reference documents of ILI reporting. *(note: it should be indicated in this table if reporting is compliant and formats are available. The Reviewer is requested to review examples and give his/her observations, recommendations and a verdict*

|  |  |  |  |
| --- | --- | --- | --- |
| *Document, Section* | *Requirement* | *Answers and Observations/Recommendations* | *Verdict* |
| Reporting requirements  API 1163 [3], section 9 | Compliance of reports to requirements  9.2: Report contents  9.3: Reporting formats  9.4: Data deliverable | 9.2:  9.3:  9.4: |  |
| POF specifications - POF 100 [3],  section 7 | Reporting formats:  7.1: Operations report  7.2: Preliminary report  7.3: Final report  7.4: Raw data report  7.5: Multiple run comparisons report  7.6: Experience report  7.7: Additional reporting | 7.1:  7.2:  7.3:  7.4:  7.5:  7.6:  7.7: |  |

Table 11: *Observations of specific aspects (optional stage)*

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| --- | --- | --- |
| *Specific aspects* | *Observations* | *Verdict* |
|  |  |  |