

## Technical Specifications (In-Cash Procurement)

# Technical Specification for Quality Control Inspection services of mechanical structures, systems and components

This Technical Specification provides requirement for Supplier of Quality control inspection and supervision to be carried out on behalf of ITER Organization for monitoring quality of supply chain for procured item and to ensure compliance with applicable requirements and approved reference documents.

This contract does not cover execution of the IO related to surveillance of external intervener as defined on art. 2.2.1 of [1]. It does not apply to statutory inspections for which ...

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## **1. Background**

ITER is a joint international research and development project that aims to demonstrate the scientific and technical feasibility of fusion power. The partners in the project - the ITER Parties - are the People's Republic of China, the European Union (represented by EURATOM), India, the Republic of Korea, Japan, the Russian Federation and the USA. The programmatic goal of ITER is "to demonstrate the scientific and technological feasibility of fusion power for peaceful purposes".

ITER facility is classified as Basic Nuclear Installation (Installation Nucléaire de Base (INB)) in accordance with French Regulation.

In accordance with the ITER agreement, the procurement of the major components of the ITER facility is mostly provided "in-kind" by the ITER Parties via established Domestic Agencies (DA), which enter into contract with companies for the fabrication and the supply the equipment. ITER facility is under construction in Cadarache, St Paul lez Durance, France.

ITER Organization (IO) is responsible for monitoring the quality of its supply chain. Quality control services are requested in the frame of this monitoring and outcomes are included in the final manufacturing files, collecting evidences that applicable requirements have been met.

**Expected documentation from the contractor may be used as supporting evidences provided to the French nuclear regulator.**

## **2. Purpose**

This technical specification provides requirements for supplier of inspections services and quality control supervision tasks executed on behalf of ITER Organization.

It specifies minimum requirements applicable to Contractor providing quality control inspection services and supervision tasks of manufacture, servicing, test, handling, transportation, receiving, preservation and storage, installation of procured fusion machine items/components.

This specification is intended to support issuance of Framework Contract, which will allow IO to request inspections services and Quality Control supervision tasks on call or on permanent basis.

Under this Frame Contract, single Task Orders will be issued specifying, if needed, additional dedicated requirements.

The framework contract aims to provide transversal support to concerned IO entities (e.g. the concerned PBS) in charge for procurement of items and needing therefore to implement QC supervision and inspections. This support is intended in addition to other resources that IO concerned entities may have been allocated to ensure quality control implementation as needed (e.g. assignment of IO staff, other dedicated inspection service contract, synergies with DAs).

In the frame of its general scope, frame contract could be used to support inspections execution as may be requested by PE/NPE network, therefore on item for which IO is considered as manufacturer.

### 3. Terminology and Acronyms

C:	Contractor
CT:	Central Team
DA:	Domestic Agency
IDM:	ITER document Management (system)
IO:	ITER Organization
IR:	Inspection Report
ITT:	Instruction to Tender
MIP:	Manufacturing and Inspection Plan (also called Control Plan)
PBS:	Plant Breakdown Structure
QMD:	Quality Management Division
QARO:	Quality Assurance Responsible Officer
QC:	Quality Control
QP:	Quality Plan
RO:	Responsible Officer
SRO:	Safety Responsible Officer
SSC:	Systems, structures or components
TO:	Task Order
TRO:	Technical Responsible Officer

<b>Contractor</b>	Firm or group of firms organized in a legal entity to provide scope of the supply
<b>C-RO</b>	Contractor Responsible Officer, who shall represent the Contractor for all matters related to the implementation of this Contract
<b>C-TRO</b>	Contractor Technical Responsible Officer in charge for management of technical aspect of this contract
<b>Domestic Agency (DA)</b>	An organization set up under the ITER Framework Agreement to provide goods or services to the ITER Organization through Procurement Arrangements (PA) and Task Agreements (TA)
<b>IO</b>	ITER Organization sometimes referred to as ITER
<b>IO RO</b>	IO Responsible Officer for this Contract or person delegated by him
<b>IO TRO</b>	ITER Technical Responsible Officer of the PBS Number requesting for service to the Contractor or IO person delegated
<b>IO QARO</b>	Appointed Quality Responsible Officer for IO procurement contracts
<b>Inspector</b>	An individual, belonging to contractor staff delivering inspections on IO behalf and holding the appropriate set of skills, competences and qualifications to perform assigned tasks in the frame of Quality Control supervision activities
<b>MIP ( also IP or ITP)</b>	An Inspection Plan is a sequential list of manufacturing and inspection operations affecting quality.

<b>PBS</b>	Plant Breakdown Structure
<b>Performer</b>	An all-inclusive term used to cover Domestic Agencies, Suppliers and Subcontractors
<b>Quality Plan</b>	<p>A document describing the, contract related, operational quality system to ensure that:</p> <ul style="list-style-type: none"> <li>• Contract requirements will be met</li> <li>• Evidence of such compliance is maintained</li> </ul> <p>It covers the whole scope of the contract including work performed by suppliers/subcontractors and addresses all activities performed in connection with the contract.</p>
<b>Supplier</b>	Any entity that provides goods or services to the ITER Organization or DA
<b>Supervision</b>	Quality control duties performed by the provider that will involve the checking, evaluating, witnessing, monitoring, validating, verification, review, reporting, or a combination of any of these activities, to determine and document conformance with given process and product requirements. It could include also other activities as may be decided for monitoring quality of supply (e.g. kick off/ manufacturing readiness meeting, follow up NCR, etc.)

#### **4. References**

- [1] Order dated & February 2012 relating to general technical regulation applicable to INB-EN (7M2YKF)
- [2] ITER Procurement Quality Requirements (ITER\_D\_22MFG4).
- [3] Procurement Requirements for Producing a Quality Plan (ITER\_D\_22MFMW)
- [4] Inspector Competency Verification Procedure (TVUJZY)
- [5] Inspector Evaluation Sheet (TVURCX)
- [6] Inspection Report Template (TVUQWY)
- [7] Manufacturing and Inspection Plan (22MDZD)
- [8] ITER Requirements Regarding Contractors Deviations and Non Conformities (ITER\_D\_22F53X)

Applicable requirements for the inspection execution (e.g. inspector qualification) will be specified in the assignment request. They are in accordance with operation to be witnessed as indicated in the reference MIP [7] which will be provided with the assignment request.

#### **5. Scope of Work**

The scope of this contract is to supply to the IO inspection and quality control supervision services in order to ensure compliance with applicable requirements and approved reference documents.

This includes assessment, monitoring, reviewing and reporting on activities listed in the MIP for which Intervention Points have been marked up by IO.

This service may include also any other activities as may be decided for monitoring quality of supply (e.g. kick off meeting) and supervision on NCR follow up, pre-manufacturing activities, qualification of processes related to mock-up, prototype manufacturing and

testing, supervision on series manufacturing activities utilizing the qualified processes and supervision activities on site in the frame of manufacturing completion of procured items.

The inspection service contract does not cover execution of the IO related to surveillance of external intervener as defined on art. 2.2.1 of [1]. It does **not** apply to statutory safety inspections.

**However, it must be noted that part of the expected documentation may be used as support documentation to answer to the French nuclear regulator.**

It could cover requests for inspections and supervision on behalf of IO when acting as manufacturer of pressure equipment. In such cases assignment will specify this scope and SGS inspector will have to be qualified according to applicable IO internal procedures and provisions as may be applicable.

Inspections may be requested in all IO member countries (Domestic Agencies) which are partners in the ITER project: China; Europe; India; Japan; Russian Federation; South Korea; USA.

Exceptionally, inspection may be requested in other countries in which case availability and conditions will be discussed and agreed case by case with the contractor.

Concerned items may be from all main structures, systems and components: (SSCs): Main Vacuum Vessel and Ports; Cryostat ; Magnets; Tritium Plant; Divertor; Cooling Water Systems; Diagnostics; Other equipment and systems. They may be not limited only to mechanical components.

## 6. **Estimated Duration**

The duration of the Framework Contract is for 2 years firm + 2 years optional periods. Services will be called as required by the means of Task Orders.

## 7. **Work Description**

7.1 The contractor is requested to supply to the IO inspection and quality control supervision services as described in the scope of this document and related to manufacturing, delivering and installation of SSC for ITER project. In particular:

7.2 The contractor shall make available qualified inspectors to:

- a. Perform supervision tasks on behalf of IO.
- b. Verify that the item conforms to agreed requirements.
- c. Verify that supplier work activities are performed in accordance with the IO accepted QP to the specific work or otherwise directed in writing by IO and IO requirements.
- d. Report formally on observations and conformity following supervision.
- e. Report formally on progress.

- f. Ensure monitoring/follow up of detected findings as may be requested in the frame of his assignment, recording status (pending/closed/ description of actions, etc.)

**Note:** the contractor is not performing QC supervision inspection on behalf of the supplier. The Contractor shall ensure strict monitoring of its assigned staff and put in place measures to avoid inspector link and relationship with the supplier or its subcontractor, which may result in less effective supervision actions.

In order to prepare and execute the assigned tasks, the contractor shall preliminary provide a list of potential inspectors on the base of information and requests by IO, which will include needed info to set the intervention (location, item, supplier name/contacts, type of inspection, requested inspector skills and qualification).

Information provided by the Contractor shall include updated CV of inspectors, copy of qualification certificates as may be applicable for requested assignment and documents in evidence of internal assessment of competences (e.g. an inspector evaluation sheet equivalent [5] as implemented within IO [4]), which shall be described in contractor Quality Plan approved by IO [2][3]. Contractor shall made available relevant document/information to IO for preliminary evaluation and acceptance (e.g. anticipated by email) and uploaded on IDM exchange area.

The contractor shall propose inspectors who are fully competent and qualified to perform the work in accordance with the inspection request from IO. In particular inspectors who perform review of NDE results shall have a qualification according to ISO 9712 (or equivalent) as may be applicable depending by assignment request i.e. MT,PT,RT,UT,ET and VT.

Contractor shall ensure that proposed inspectors are conversant with European Pressure Equipment Directives and Nuclear regulation as may be applicable as per requested assignment.

IO may require if needed further evidence, including phone interview for assessment the proposed inspector is fully suitable for the requested assignment.

Once a proposed inspector is accepted for assignment, access to exchange area on IDM will be granted to him/her for the uploading of Inspection Reports and any additional deliverable as may be requested (e.g. Flash report).

A different workflow for uploading of deliverables could be agreed between IO-RO and C-RO case by case depending by specific assignment (e.g. granting access to C-TRO for uploading on behalf of the inspector and after contractor internal technical review of the deliverable).

Inspection report template shall be equivalent to the one used in IO [6] and it shall be included in contractor Quality Plan approved by IO [2][3].

- 7.3 IO may request and Contractor shall provide availability for specific additional induction/training/qualification scheme, to be provided by IO, in order to confirm assignment (for instance for assignment for monitoring of pressure equipment for which IO is manufacturer as per PED regulation).
- 7.4 Upon signature of the Task Order (TO), each inspection request will be initiated by email correspondence from the IO-RO to the C-RO normally about 10 days before scheduled inspection date. Shorter advance notice may be agreed and accepted by the Contractor. The request by IO will identify the supplier or subcontractor, the location of inspection, the type of inspection.
- 7.5 Supervision and inspection work could be requested on-call basis for punctual inspection (half day, one or more full days) or on permanent-basis (resident and semi-resident inspectors) for fixed duration of time, which could be full time or even some days per week.

Assignment is considered as ‘‘permanent’’ also in following cases:

- inspections are requested at the same facility/location for a given period with no more than 4 days interruption between 2 inspections.
- Requests of inspection are at close facilities in the same geographical area (e.g. ‘‘Hefei area’’ – different factories within 100km distance – as per case by case agreement between IO and the contractor)

Fixed fees for call out are applicable only in case of on-call basis inspections and the first day of consecutive ones.

- 7.6 In case of permanent assignment, inspector should not limit his intervention only to check of control points on Inspection Plan but should keep a more global supervision role in the interest of IO applying any measure to ensure that the Supplier meet all requirements and fully comply with applicable codes and standards in quality assurance within their supply scope. These measures address for instance:
- Incoming inspection of raw material and storage conditions with particular attention to the material segregation (e.g. carbon steel from stainless steel);
  - Clarification on inspection/test/approval characteristics, standards and specifications, acceptance criteria, inspection and test procedures, control points
  - Material quality, preparation of work, manufacturing, qualification of workers and cold final acceptance tests (at local manufacturing site, co-ordinated with respective DA activities)
  - Define, review and execute metrology, dimensional control, destructive (DT) and non-destructive testing (NDT)
  - Package, storage and transport
  - Assembly of SSCs
  - Hot final acceptance testing at respective test beds
  - Monitoring and follow up of findings and action implementation
- 7.7 Inspection could be requested at DA Suppliers/subcontractor’s premises in each of the participating countries or at suppliers directly contracted by the IO.



- 7.8 Inspection may also requested at IO site in Cadarache (France) in case of assignment to support receiving and/or manufacturing completion and/or installation of procured items.
- 7.9 Upon request for inspection, the Contractor shall provide written confirmation by email within 3 days providing name of inspector and his updated Curriculum Vitae and supporting evidences for assignment acceptance by IO. In order to confirm the assignment IO may ask for any further evidence as considered appropriate (e.g. copy of qualification certificates, evidence of training and/or successful examination test as applicable, interview, etc.).
- 7.10 Inspection activities are typically detailed in a Manufacturing and Inspection Plan [7] marked up according to IO internal procedure although additional spot inspections may be requested if deemed necessary by the IO RO who may also request for unscheduled inspections.
- 7.11 IO TRO of PBS requesting for the inspection shall provide before the inspection relevant reference documents like for instance :
- Applicable MIP (including the witnessing control points defined by IO)
  - Technical Specification, procedures and/or relevant manufacturing drawings as applicable
  - Other documents as may be applicable (e.g. manufacturing drawings; welding, brazing, and soldering documents; manufacturing, inspection, and testing procedures; etc.)

These documents could be anticipated by email and/or could be uploaded in outgoing folder in the exchange area in IDM. In case of resident inspectors these reference documents may be made available directly by IO supplier.

IO-TRO must confirm latest applicable version for consistency verification by Contractor inspector. At any time Contractor may request IO-TRO to confirm latest applicable version as may be considered needful or in case of any doubt.

## **8. Duties of inspectors**

The duties to be performed by the QC inspector are largely dependent on the type of equipment and nature of the activities. The duties shall be defined and discussed during the preparation of the assignment. A non-exhaustive list of inspector duties includes to:

- General supervision of equipment and facilities.
- Ensure that the correct revision of applicable documents like drawings, procedures and work instructions are being used during the execution of the activities.
- Ensure that M&TE during testing and inspections are correct, appropriate and calibrated.
- Identify special process issues during execution, such as welding, brazing and other manufacturing processes.

- Witness and review tests of Production Proof Samples to the requirements specified.
- Advise on inspection activities and support identification of issues in implementation of NDE procedures.
- Ensure identification of Mill Certificates against material for all parts and that material complies with drawing requirements and IO material specifications.
- Ensure that identification marks are traceable back to the material certificates and are matching with the related drawing.
- Verify status of incoming items from suppliers and sub-contractors for workmanship, damage, contract documentation compliance and certification.
- Verify correct use of approved filler metal for welding and brazing activities and check traceability between ID marks, labelling and certificate.
- Review of welding/brazing procedures, welder/brazer qualifications to the specified requirements and verify correct use and witness relevant qualification/production weld test coupons as per requirements if required.
- Check welds visually and where appropriate witness the corresponding non-destructive examinations and review results (radiographs, etc.) as the work progresses (not at the end of the contract).
- Witness manufacturing, assembly and installation operations for compliance with approved procedures and drawings.
- Verify general condition of equipment in manufacturing phase, including cleanliness conditions.
- Check validity of personnel qualifications as may be applicable (NDE operators, welders, etc.)
- Witness tests execution in compliance with applicable procedures as identified in the Inspection plan (MIP) – e.g. pressure tests, vacuum tests, type tests, leak tests, functional tests, etc. – checking acceptability of results Vs applicable specifications, codes and standards.
- Carry out final inspections, which are typically part of the Factory Acceptance Tests (FAT).
- Ensure that the Inspection Plans (e.g. MIP or ITP) are signed off by all interested parties at each point as work on the MIP/ITP progresses.
- Ensure that all previous scheduled operations are correctly released before start execution of new operation on the ITP/MIP and report any inconsistency immediately to concerned IO TRO.
- Inform and advice the **IO related ROs immediately and no later than 1 working day of any nonconformity** found during the inspections and/or supervision. Flash report template may be authorized by IO for this purpose.
- Inform the IO related ROs on quality issues including feedback concerning strengths and weaknesses, if any.
- Sign off witnessed operations in MIP/ITP acting on behalf of IO, whereas appropriate and upon satisfactory result.

- Issue a factual report summarising inspection performed using Inspection Report template as agreed in the approved Contractor QP. Other means/template (e.g. Flash report) could be agreed case by case between IO and the Contractor.
- Check nameplate and CE marking as per applicable requirements.
- Review Data Package.
- Execute inspection before shipping to confirm all measures as defined in the shipping plan and applicable procedures (preservation, accelerometer installation, package, etc.) have been properly implemented.
- Record findings and ensure track/follow up till to their closure as may be applicable in the frame of given assignment.
- Support IO to coordinate and execute remote inspections, including relevant recording and report.
- Issue and upload on IDM a complete and exhaustive Inspection report, no later than 3 days from inspection completion. IR shall record all essential data, applicable documents/criteria and results, and having as attachment pictures as appropriate in order to provide more clear traceability of what witnessed.

## **9. Contractor's Requirements**

The Contractor shall ensure full technical, financial and economic capacity in relation to the technical scope and financial size of the Contract and full coverage of the professional competences necessary for the implementation of the work ensuring safe, timely and cost efficient management.

9.1 Contractor shall only use inspectors from local offices in the relevant country where the work is being performed. Inspectors who are Nationals of the relative country shall be available as some DA suppliers may have access restrictions for non-nationals.

9.2 Use of inspector from other countries could be authorized by IO on case by case evaluation and through written confirmation send to the contractor. This will not to generate extra costs for IO and cost will be defined according to agreed price table considering country where inspection is executed.

9.3 It is responsibility of contractor to timely ensure, if needed, entry right for access to their inspectors.

9.4 The Contractor shall prepare necessary travel arrangements for the inspections. It shall be responsible for obtaining written permission and clearance from the supplier or subcontractor in advance to enter and perform the inspections.

Whenever possible IO will provide Supplier's contact references in order for the Contractor to confirm foreseen date and set directly needed arrangement to ensure inspector presence for assigned tasks execution.

9.5 The official language of the ITER Organization is English. Therefore all input and output documentation relevant for this Contract shall be in English. The Contractor shall ensure that its team performing and supervising this Contract, including

inspectors, supervisor and back office staff, have an adequate knowledge of English writing skills, to allow efficient communication and adequate drafting of deliverables. This requirement also applies to all Contractors' team staff performing inspections or participating in meetings with the ITER Organization.

- 9.6 Contractor must have a well-organized, highly skilled team, with in-depth proven knowledge and experience in ALL the following technical domains:
- Civil Constructions
  - Materials, structures, mechanical components and Pressure Equipment
  - Machinery and rotating mechanical equipment
  - Electrical Equipment
  - Nuclear field
- 9.7 Contractor shall submit a Quality Plan giving details of the proposed organisational structure for delivering of services under this specification, including organization chart with name of appointed C-RO and C-TRO(s), roles and responsibilities of individuated functions, roadmap, and resource allocation within the anticipated time schedule, execution workflow and the proposed lines of communication together with responsibilities to ensure homogenous and effective coordination worldwide. Quality Plan shall be uploaded in IDM exchange area. Any updating of this Quality Plan shall be immediately notified to IO for acceptance.
- 9.8 Contractor shall ensure that proposed inspectors are fully competent and qualified for the assigned tasks and conversant with European and ASME codes as applicable. To this purpose **the Contractor shall have in place a system, acceptable to IO and having as reference criteria from ISO 17020, for internal training, competency assessment and internal qualification of inspectors assigned to requested tasks.** This system has to be traceable, auditable upon request by IO, and ensure homogeneous and continuous verification of competence of assigned inspectors including technical review of deliverables and periodic monitoring.
- 9.9 Contractor must provide CV of appointed C-TRO(s) showing evidence of appropriate competences for technical review tasks. IO reserve the right to veto any C-TRO thought to be unsuitable.
- 9.10 In case of specific tasks like for instance review of welding or NDT process and results the contractor shall provide inspectors holding recognized external qualifications according to ISO or EN standards (for instance according to ISO 9712 for NDT). Depending by specific task/assignment, other external qualifications may be considered as acceptable evidence of appropriate competence (e.g. ASME (AI, AIN, AIS, ANII, ANIS), ASNT, EDF-CEIDRE, UFIP-UIC, COFREND, AWS (CWI or SCWI), CSWIP (level 2 or 3), PCN (Level 2 or 3); BGAS-CSWIP (SWI or SPI -grade 1 or 2-), ACCP ( level II or III), NACE (level 2 or 3), ICORR (level 2 or 3), BGAS CSWIP (Grade 2 or 1) or equivalent). External qualifications according to main international standards (e.g. European or other international ones) are preferred to internal qualifications.
- 9.11 In particular with reference to inspections in the field of welding and NDT, contractor shall propose **as minimum** following number of qualified inspectors for country :

Country	Number of proposed inspectors	
	Holding welding qualification	Holding NDT qualification
China	6	6
Europe	3	3
India	3	3
South Korea	3	3
Japan	2	2
Russian Federation	2	2
USA	2	2

An inspector could have both qualifications in welding and NDT field. In this case he/she can be counted twice, in the column related to welding and also in the column related to NDT.

Proposed inspectors holding several qualifications in both welding and NDT field should be considered as preferable.

9.12 Contractor must have geographical presence in all countries which are ITER stakeholders (ref. section 5) and having **at least one** office in every concerned country.

9.13 Contractor must have adequate availability of competent and qualified local staff in all ITER DA 'countries to ensure efficient and timely answer to request of inspections providing a dedicated inspector for each assigned task. The contractor inspector should be from the local office nearest to the place of inspection unless otherwise agreed with the IO. A list of potential inspectors for each country should be provided for evaluation by IO and kept updated by the Contractor.

9.14 Contractor shall have in place a system for periodic monitoring and assessment of performance of their inspector (at least one per year) which has to be described in the QP.

9.15 The use of subcontracted personnel is not permitted.

9.16 The Contractor shall ensure that inspectors are bound by confidentiality for all IO supplied information. Each inspector may be required to sign a declaration of confidentiality and impartiality by supplier or subcontractor being inspected.

9.17 All contractors' inspectors must observe and respect applicable safety rules when on duty at the supplier and manufacturer's facilities, in particular when required shall wear proper safety equipment for inspections, such as hardhats, safety shoes, safety vests, gloves, safety harnesses, eye protection, etc. most of which are considered to be provided by the supplier inspected.

9.18 There must be no conflict of interest i.e. The Contractor should have no other commercial interest in the manufacturing contracts for which the services are required (e.g. any involvement in the processing of weld samples, production

radiography or other test examinations). IO-RO shall be timely informed of any situation of potential conflict of interest the C-TRO may have knowledge.

- 9.19 The Contractor shall have an ISO 9001 accredited quality system or equivalent one covering all countries concerned by inspection requests
- 9.20 Contractor should have accreditation as per ISO 17020 or show evidence of equivalent system is in place covering field of inspection, type and range congruent with scope of the requested service.
- 9.21 Contractor shall nominate a C-RO in order to ensure effective coordination and performance of this contract among Contractor staff from different concerned countries. The C-RO is focal contact point with IO. Local C-RO may be nominated for local coordination. In this case list relevant list shall be communicated to IO-RO and keep updated.
- 9.22 The Contractor shall be responsible for communicating without delays any technical difficulties which might result in deviation from contract technical specifications.
- 9.23 The Contractor shall immediately contact the IO RO and IO TRO if its inspector does not receive an adequate co-operation and work schedule from the supplier to complete his/her duties in the timeframe requested by IO or to meet required delivery date.
- 9.24 The Contractor shall provide rates for inspection (full day or half day) for each country, a fixed fee for call-out. All these rates shall include all inspection related cost (preparation, waiting time, reporting, coordination, supervision, traveling and other subsistence charges like meals and hotel) and shall be detailed in the table in the agreed TO or ITT.

Country	Fixed fee for call-out EUR	Full day rate normal weekdays EUR	Full day rate overtime/WE EUR	Half day rate normal weekdays EUR	Half day rate overtime/WE EUR	Hourly rate overtime EUR
China						
South Korea						
India						
Europe						
Russian Federation						
Japan						
USA						

- 9.25 Normal inspector working time is considered 8 hrs per day (full day inspection). Travelling time is not considered as working time.

Justification for overtime (working time above 8hr per day) shall be sent in written form by the Contractor to the IO within 3 days from the inspection for approval. Overtime will not be paid without the proper justification in due time. The accurate

number of days for each of the inspections shall be managed by means of Time Boards describing the breakdown of time spent by the Inspectors for each of the inspections (full day inspection/half day inspection/ overtime hrs).

If requested, Contractor shall allow Audit by IO at Contractor premises to evaluate service performance in accordance to provisions from this Technical Specification.

## **10. Competency verification and selection of QC inspectors**

The inspections shall be performed by competent inspectors and qualified as appropriate depending on type of activity and assigned task. Each new inspector's CV will be presented to IO for review and acceptance prior to any initial assignment.

The contractor shall produce a written procedure, acceptable to IO, for the training, assessment, and qualification of inspectors. This procedure shall provide detail on addressed technical competency requirements. External qualifications if considered shall be identified. This procedure shall be made available to IO on request.

Inspector should meet following minimum requirements:

- Basic academic training in subjects relevant to technical domain of competency,
- 5 years minimum professional experience in areas connected with related inspection/equipment
- Certificate proving sufficient Visual Acuity Applicable visual limitations shall be indicated on the visual acuity record .Corrected or uncorrected near distance acuity in at least one eye shall be such that the individual is capable of reading from a standard eye test chart as per standards recognized tests. Test shall be performed at least every 12 months.
- Ability to conduct a requested inspection and having writing skills acquired through continuous experience for issuance of final inspection report and NCR sheets

Prior to submitting an inspector to IO for supervision work, the provider shall ensure the inspector is trained, assessed, and qualified for the work to be performed in accordance with their written procedure. Additional dedicated training may be requested whereas provided by IO and according to IO internal procedure.

## **11. Work Execution**

### **11.1 Incoming notifications**

Each inspection request will be initiated by email correspondence from the IO RO to the C-RO and it will identify the supplier or subcontractor, the location of inspection, the timeframe of the inspection, the type of inspection.

Formal notification must be normally received with 10 days advance notice.

The Contractor shall send written answer no later than 3 days from the notification for assignment.

When confirming the assignment Contractor shall send CV of proposed inspector for acceptance by IO if not already previously accepted for similar assignment.

## 11.2 Preparation of the QC assignment

The competences and qualification must be verified against specific task for assignment. Mission for supervision shall be defined as clearly as possible beforehand.

To this purpose IO TRO shall provide applicable reference document to prepare and carry out the inspection like, as applicable:

- A print out of the notification
- A copy of the MIP
- A copy of the procedures and/or work instructions subject to the assignment
- Any particular information related to the activity, like actions requested during previous visits
- Any non-conformity related to the activity
- Any special request the IO TRO may have related to the activity to be monitored

Whereas documents are accessible in IDM to the inspector in the IDM exchange area, IO TRO must provide instruction to access the selected documents and must confirm that they are in the latest applicable revision. In case a list of all applicable document is provided (e.g. in case of resident inspector) IO TRO must immediately inform the inspector regarding any modification (revision or new procedure applicable).

As part of the preparation of the inspector assignment a meeting or a conference call could be organised between the IO-RO, IO-TRO and the C-RO, C-TRO and contractor inspector as appropriate in order to brief and discuss the applicable requirements.

In addition to start-up meetings, the inspector may be required to attend meetings at the manufacturer's or Domestic Agencies premises.

All inspectors must observe and respect applicable safety rules when on duty at the manufacturer's facilities. Specific additional rules, like photography prohibition, could be also be applied and must be observed by inspectors.

Inspector shall inform IO-RO in case of any restrictions from the Supplier and negatively affecting effectiveness of the inspection and assigned supervision tasks.

## 11.3 Performing of the QC assignment

The performance of the assignment shall be done based on all the input gathered during the preparation. The QC inspector could use supporting check list when available or drafted by him summarising all the important points to be checked during the mission. The check list and the handwritten notes taken during the assignment shall be reviewed at the end of the visit in order to verify that no essential points have been missed. Before leaving the premises the QC inspector shall check that:

- All the points of the check list has been covered
- He has a copy of the attachments he intends to add to his assignment report
- He has signed the MIP whereas appropriate and following satisfactory results. If not signed the inspector shall add a proper justification in the assignment report.
- He has informed the supplier of any abnormalities he has found



In case major issues during the visit the inspector shall contact immediately, or within 24 hrs at max, the IO-TRO and IO-RO.

When results are satisfactory the QC inspector shall sign off the supplier document if necessary.

When results are ‘not satisfactory’ the QC inspector shall hold signing those documents off and also the relevant operation until they get acceptable.

Each inspection shall not be bypassed and that equipment, material, or fabricated assemblies shall not be released for further work activities until all inspections are complete and the results accepted.

When the inspector detects that an applicable requirements is not fulfilled he shall record a FINDING in his report. In this case the Result of Inspection shall be ‘NOT SATISFACTORY’.

When applicable requirement is fulfilled but the inspector detects any weakness for which could be requested an improvement or a preventive actions he shall report his observation as ‘recommendation’ in the IR. In this case the Result of Inspection shall be ‘SATISFACTORY, with comments’.

When applicable, after satisfactory completion of inspection, ITP/MIP must be signed by the inspector.

#### **11.4 Reporting and deliverables**

- a. The Contractor must ensure that personnel attend pre-manufacture kick-off meetings when required, perform inspection visits as appropriate and issue reports within 3 working days from the end of the inspection/assignment unless differently agreed.
- b. The inspector shall timely report the inspection/supervision results to C-TRO, C-RO, concerned IO-TRO and IO-RO not later than 3 days after the end of intervention unless otherwise agreed by writing with IO. Any major finding shall be immediately reported to IO within 24 hours anticipating it per email to the concerned IO ROs ( the IO Contract RO; IO TRO and IO QARO for the related assignment)
- c. Any nonconformity shall be reported straight after the inspection with precise description of the discrepancy, the reason for its appearance, if known, and corrective actions taken on site – e.g. separation of the affected items, stopping of the manufacturing, etc.
- d. When the specified requirements are fulfilled but the inspector has detected weak points in the manufacturing process, he shall advise on any improvement or preventive actions he might deem as necessary. It shall be made clear in the inspection report that this is just a recommendation.
- e. An Inspection Report shall be issued for each day of inspection as minimum unless differently agreed and approved by IO-RO (e.g. in case of multi-day inspection or of resident inspectors). In any case, any detected finding shall immediately reported. Alternative template to this purpose may be agreed ( e.g. daily flash report).

- f. Upon finalisation of the assignment, the contractor inspector shall draft the assignment report written in English as soon as practically possible.
- g. Prior to the official release of the inspection reports they shall be subject to an independent technical review by the C-TRO before submitting them to IO. Upon acceptance, the IR and all attachments shall be uploaded and properly retained in the exchange area of the IDM folder.

A dedicate folder in IDM exchange area must be created for uploading from contractor inspectors. Dedicated folder will be created and communicated to the contractor for each assignment.  
The draft report shall be sent to IO within 3 working days by uploading it on IDM.
- h. IDM document type of the Inspection Report is : [IN]-ITER Inspection Report
- i. While uploading report on IDM exchange area, inspector has to send notification to concerned IO TRO at least. Possible IO expert may be added in the notification list as requested by the IO-RO and/or IO-TRO (e.g. assigned QARO).
- j. Provided consistence with Sign-off authority as may be applicable, for each assignment concerned IO TRO shall be selected as approver and assigned IO QARO shall be selected as reviewer as well as any other IO expert as may be defined by the IO TRO.
- k. If any comments by assigned IO reviewers, IO-TRO may decide to reject the IR that in this case will be sand back to the inspector for revision and new uploading following the standard review cycle in IDM.
- l. Each report must detail the work performed; the people met; time spent on inspections.
- m. Pictures (digital images) should be taken, with agreement with suppliers/subcontractors, and attached as part of the inspection report.
- n. IR shall be issued for each inspection/operation witnessed. If the assignment is relevant to several consecutive inspections (several operations on the same MIPs), a unique IR may be agreed with IO to cover the full assignment ( several operations reported in the same IR).
- o. The inspection report must be written in English.
- p. Any instruction or checklist used during the inspection shall be included in the report as attachment.
- q. Inspector has to record and fill all relevant data. Documents providing cross references for the results given must be attached unless those are already traceable in IDM (in this case UID reference shall be provided in the report), so that information is explicit and easily traceable. When an inspection is complete following information is sent:
  - ✓ the inspection report,

- ✓ extra documents (manufacturer's dossiers, certificates, etc.) within 3 days after the end of inspections
  - ✓ copy of a release note, if applicable
- r. Unless otherwise agreed Inspection Report shall be equivalent to IR used by IO [6] and it shall include as minimum:
- Inspectors name and signature
  - inspection date
  - participants
  - time frame
  - inspection basis (IO's specification, MIP, QP, norms and standards)
  - inspected items
  - inspection performed
  - results, incl. NDT results
  - non-conformities
  - other relevant data like measurement instrument identification
  - issue date
  - attachments, if applicable

Inspection Report FORM used by Contractor shall be included in Quality Plan and agreed with IO.

- s. The NDE results and methods used have to be captured in the inspection reports.
- t. Care must be taken that all attachment mentioned in the report are properly stored in the IDM folder in the exchange area.
- u. If any comments by the reviewers IO-TRO may decide to reject the IR that in this case will be sand back to the inspector for revision and new uploading following the standard review cycle in IDM.
- v. All deliverables must be checked for technical review by the C-TRO before submitting them to IO. Traceability of this review has to be maintained (e.g. signature on the Inspection report).
- w. The retention period is for all duration of the IO project.

## 11.5 Monitoring

All deliverables must be checked for technical review by C-TRO before submitting them to IO. Contractor must have organization in place to ensure independent review of deliverables before issuance. Traceability of this review has to be maintained.

Each assigned QC inspector shall be audited at least once a year by the C-TRO or a supervisor nominated by C-TRO. The monitoring results shall be reported to C-RO and uploaded in the exchange area of the IDM folder.

## **12. Contract KPI**

Monitoring of contract performance execution will use following KPIs

KPI #	Description	Criteria
1	Inspector readiness and availability	List of potential inspectors for IO evaluation and selection is timely provided following request by IO for inspection assignment
2	Inspector qualification and competences	Inspectors proposed have requested skills, competences and qualification and relevant evidences are full traceable and made available to IO ( evaluation sheet, CV , qualification certificate )
3	Timely uploading of IR	Deliverable uploaded in IDM exchange area within 3 days from the inspection completion
4	Deliverable content quality	IRs are complete and are recording all requested essential data (e.g. reference MIPs and concerned operation are clearly identified; applicable procedure giving criteria for the inspection are referenced; material component identification table is completed. M&TE are identified; calibration certificate is attached as appropriate; etc.).
5	Deliverable approval rate	IRs uploaded are approved with no major comments on content and/or rejections. In case of rejection/request for revision a new version is timely uploaded within one week max

## **13. Management of special issues**

### **13.1 Non-availability of Resources**

Should any contractor inspector(s) not be made available after notification for assignment the Call-out shall be revisited. Any adjustments for the time lost should be negotiated by the IO-RO and C-RO. The Contractor must justify in written form this non availability of recourses giving relevant details. In case of non-availability of resources from the contractor, IO reserves the right to evaluate the justification provided and apply liquidated damages.

### **13.2 Delays/Failure to Deliver**

In the event that a requested inspection Call-Out(s) suffers delays, then the Call-Out schedule and outputs to be delivered shall be discussed between the IO RO and C-RO. The IO-TRO and C-TRO shall inform of the situation and recommend the course of action to be followed. Agreement on how to proceed shall be negotiated between the parties.

### **13.3 Cancellation of an inspection by the IO**

13.3.1 Upon any assignment following request on call basis for punctual inspection, contractor inspector is requested to be in direct contact with IO supplier representative and immediately inform IO-RO for any needed adjustment of inspection scheduling (cancelled, delayed and prolonged inspections).

In case the inspection is cancelled and the relevant information is provided to the contractor (to the C-TRO, C-RO or directly to the inspector) by IO or its

suppliers at least 2 days before the inspection scheduled date, no cost/fee can be invoiced to IO. In case of missing information to the contractor relevant to inspection cancellation or the information is provided later than 2 days before the scheduled date **only** the fixed call-out fee could be invoiced to IO by the Contractor.

13.3.2 In case of permanent assignment (resident inspector), the inspector is requested to strictly follow up scheduled interventions with the Supplier. In case of any change causing no inspection day (e.g. public holiday or other reasons), contractor must immediately inform the IO-RO for assignment adjustment and no inspection day will be invoiced to IO. Nevertheless, whereas there is no inspection due to any reason not communicated to contractor's inspector (e.g. waiting time due to unpredictable delay for intervention preparation) this time will be normally invoiced to IO as inspection time.

#### 13.4 Solving of Issues

When issues arise which must be resolved between the IO, the Vendor and the Contractor, the issue must be advised in writing (Electronic/Written). In either case the recipient of the issue shall be responsible for ensuring that the issue is resolved and the resolution is communicated in writing to the initiator.

#### **14. Payment Conditions, Amendments and Liquidated Damages**

For all Payment Conditions, amendments and liquidated damages please refer to the Task Order and Framework Contract respectively.

#### **15. Quality Assurance (QA) requirement**

The Contractor shall have ISO 9001 accredited quality system or equivalent one. The general requirements are detailed in ITER Procurement Quality Requirements [2].

The Contractor should have accreditation as per ISO 17020 covering all countries as listed in chapter 5 of this document and with a scope consistent with requested service. Whereas Contractor's accreditation certificates are not fully available for specified countries and scope of service, the Contractor shall provide detailed measures in place, auditable by IO, to ensure full and equivalent level of control on quality of inspection delivering including (but not limited to): training, competency assessment, qualification and monitoring of inspectors.

Prior to commencement of the work, a Quality Plan which complies with Procurement Requirements for Producing a Quality Plan [3] shall be submitted to IO for approval with evidence of the above. The Contractor's Quality Plan shall describe the organisation for tasks; roles and responsibilities of workers involved in; and giving details of who are the independent checkers of the activities.

Where any deviation is requested or non-conformity has happened from the Technical Specification, Contractors Deviations and Non Conformities the ITER

Requirements Regarding Contractors Deviations and Non Conformities [8] shall be followed.

Documentation developed as the result of this task shall be retained by the Contractor of the task for a minimum of five (5) years and then may be discarded at the direction of the IO.

IO will monitor implementation of the Contract's Quality Plan. Where necessary, IO will assess the adequacy and effectiveness of the quality system specified in the Quality Plan through surveillance or audit. Where condition adverse to quality is found during monitoring, IO may request to the Contractor to take corrective action.

## 16. **Safety requirements**

ITER is a Nuclear Facility identified in France by the number-INB-174 ("Installation Nucléaire de Base").

For Protection Important Components and in particular Safety Important Class components (SIC), the French Nuclear Regulation must be observed, in application of the Article 14 of the ITER Agreement.

In such case the Suppliers must be informed that:

- The Order 7th February 2012 applies to all the components important for the protection (PIC) and the activities important for the protection (PIA).
- The compliance with the INB-order must be demonstrated in the chain of external contractors.
- In application of article II.2.5.4 of the Order 7th February 2012, contracted activities for supervision purposes are also subject to a supervision done by the Nuclear Operator.

For the Protection Important Components, structures and systems of the nuclear facility, and Protection Important Activities the contractor shall ensure that a specific management system is implemented for his own activities and for the activities done by any Supplier following the requirements of the Order 7th February 2012 [20] (Please refer to ITER\_D\_4EUQFL - Overall supervision plan of external interveners chain for Protection Important Components, Structures and Systems and Protection Important Activities).