Technical Specifications (In-Cash Procurement)

Diagnostics Technical Follow Up and Progress Monitoring

CFE for:

This document describes the technical needs for an expert specialist to provide updates and oversight of the In-Vessel Diagnostics (IVD) Section's Surveillance Plans, which are a key document to demonstrate correct execution and follow up of Protection Important Activities (PIA).

In addition, the expert will provide technical follow-up of ongoing IO projects.

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1   Purpose

This document describes the technical needs for an expert specialist to provide updates and oversight of the In-Vessel Diagnostics (IVD) Section's Surveillance Plans, which are a key document to demonstrate correct execution and follow up of Protection Important Activities (PIA).

In addition, the expert will provide technical follow-up of ongoing IO projects.

2   Scope

Within the IVD Section, there are a large number of systems which include Protection Important Components (PIC) and associated Protection Important Activities (PIA). As per the INB Order (see section 15), IO as the Nuclear Operator shall perform surveillance of any external interveners working on PIC or PIA.

Each diagnostic system maintains a Surveillance Plan and shall record evidence that the surveillance has been performed, ready for inspection by the ASN at any moment. Clear requirements for how the surveillance shall be performed and recorded, and evidence that it has been performed, are of significant importance for IVD.

The main objective of this contract is to ensure that surveillance of PIC and PIA is performed consistently and thoroughly in IVD.

As a supplementary objective, technical follow-up of ongoing IO projects shall be performed (such as documenting regular progress meetings, follow-up of resulting actions, activities in IO's PLM system, etc.).

3   Definitions

DA	Domestic Agency
FTE	Full Time Equivalent
IO	ITER Organization
IO-TRO	ITER Organization Technical Responsible Officer
IVD	In-Vessel Diagnostics
PIA	Protection Important Activity
PIC	Protection Important Component
PLM	Project Lifecycle Management

For a complete list of ITER abbreviations see: ITER Abbreviations (ITER_D_2MU6W5).

4   References

Links inserted in text

5   Estimated Duration

The duration shall be for 12 months from the contract Kick Off Meeting (KOM).

Services shall be provided predominantly off-site, with a maximum of 2 days per week on-site.

Services shall be provided by 0.6 FTE.

6 Work Description

For topic 1, a three-step approach will be followed:

    A. <u>Review of the existing Surveillance Plans</u>

        a. The Contract shall carefully review the Surveillance plans which already exist within IVD (e.g. ITER_D_UDSCWM), their supporting documents and the evidence recorded in associated folders.

        b. The objective of this task is to become familiar with the ongoing PIA for the different diagnostic systems, how they are reflected in the Surveillance Plans, and how the requirements for their surveillance are being followed.

    B. <u>Formal meetings with TROs</u>

        a. Based on the findings of Task 1, feedback shall be given to the TROs, highlighting good practices and areas for improvement (e.g. wording of surveillance actions, recording of evidence, etc.).

        b. These meetings will be used to give feedback on the quality, extent and relevance of their Surveillance Plans, including the assignment of improvement actions as required.

    C. <u>Monitoring</u>

        a. Based on the feedback and actions defined in Task 2, the ongoing use of the Surveillance Plans and recording of evidence shall be monitored, to ensure good practices are followed at all times.

        b. Monitoring of the specific follow-up actions shall also be performed.

For topic 2, the following activities shall be performed, as required for the IO projects listed below:

- Generating meeting preparatory notes, including agenda and draft attendee selection;
- Producing notes for IO meetings called by interfacing systems and review bodies;
- Drafting minutes for IO and DA meetings;
- Technical input in support of project change requests and other actions;
- Input documents, presentations and meeting notes related to Interface meetings.
- Input documents, presentations, meeting notes related to Monthly IO or DA meetings;
- Implementation reports for IO-related actions from IO or DA meetings;
- Creation and follow-up of Handover Packages (HOPs) in IO's PLM system;
- Input documents, presentations, meeting notes related to meetings of DA representatives with IO experts;
- Technical requirements collection and follow up using DOORS software e.g. production of Technical Specifications or interfacing documents;
- Input documents, presentations, meeting notes related to workshops and conferences.

Associated projects:

- 55.A0 – Magnetics
- 55.A3/A4/A9 – Outer Vessel Coils
- 55.A5/A6 – Steady State Sensors

- 55.A7/AD/AE/AF/AH/AI – Partial and Continuous Flux Loops
- 55.A8 – Fibre Optic Current Sensor (FOCS)
- 55.AA/AB/AC/AG/AJ – Inner Vessel Coils
- 55.AN/AP – Divertor and Blanket Rogowskis
- 55.AQ – Plasma Current Monitor
- 55.C8 – High Temperature Core Plasma Thomson Scattering
- 55.G2 – Divertor Thermocouples
- 55.G3.50 – Temporary Pressure Gauges
- 55.G8 – Erosion Monitor
- 55.GF – TF Mapping
- 55.GG – Calorimetry
- 55.GT – Tokamak Systems Monitoring
- 55.NE.C0 – Cryostat Electrical Feedthroughs
- 55.NE.V0 – In-Vessel Electrical Services
- 55.NE.X0 – Ex-Vessel Electrical Services

7   Responsibilities

7.1   Contractor's Responsibilities

In order to successfully perform the tasks in these Technical Specifications, the Contractor shall:

- Strictly implement the IO procedures, instructions and use templates;
- Provide experienced and trained resources to perform the tasks;
- Provide monthly schedule updates for the tasks being worked on by the Contractor;
- Contractor's personnel shall possess the qualifications, professional competence and experience to carry out services in accordance with IO rules and procedures;
- Contractor's personnel shall be bound by the rules and regulations governing the IO ethics, safety and security rules.

7.2   IO's Responsibilities

The IO shall:

- Nominate a Responsible Officer to manage the Contract;
- Organise monthly meeting(s) on work performed;
- Review documents in a timely fashion

8   List of Deliverables and due dates

D #	Description	Due Dates
D1	Summary Report for Topic 1A (presenting findings from Task 1A, including lists of documents reviewed and identifying general areas of improvement [if any])	T0 + 3 months
D2	Summary Report for Topic 1B (including links to minutes of meetings with TROs and improvement actions as required)	T0 + 6 months
D3	Summary Report for Topic 1C (presenting results of Surveillance Plan monitoring and closed improvement actions)	T0 + 9 months
D4	Summary Report for Topic 2 (including links to produced documents, a summary of actions placed and followed-up, and a record of PLM-related activities)	T0 + 12 months

9 Acceptance Criteria

The deliverables will be posted in the Contractor's dedicated folder in IDM, and the acceptance by the IO will be recorded by their approval by the designated IO TRO. These criteria shall be the basis of acceptance by IO following the successful completion of the services. These will be in the form of reports as indicated in Section 8.

10 Specific requirements and conditions

The personnel proposed by the Contractor to carry out the work described in Section 6 must have:

- A professional qualification in engineering with at least 15 years' relevant experience of systems engineering in a complex nuclear project environment;
- Demonstrated experience (at least 15 years) of technical writing skills;
- Demonstrated experience (at least 15 years) of system requirements management (including safety requirements/Defined Requirements) and follow-up, using IBM DOORS software;
- The ability to be consistent and work well under pressure with good attention to detail;
- Capability to work in English language, both verbally and written;
- Able to work with partners and the ITER host to define critical needs;
- Ability to align work priorities with overall project schedule.

Experience in the following areas is required:

- Technical document generation and review;
- Technical risk analysis;
- Project Management.

11 Work Monitoring / Meeting Schedule

Work is monitored through monthly project meetings as required (the frequency of meetings can be increased through agreement between the Contractor and the IO TRO).

12 Delivery time breakdown

See Section 8, "List of Deliverables and due dates".

13 Quality Assurance (QA) requirements

The organisation conducting these activities should have an ITER approved QA Program or an ISO 9001 accredited quality system.

The general requirements are detailed in ITER Procurement Quality Requirements (ITER_D_22MFG4).

Prior to commencement of the task, a Quality Plan must be submitted for IO approval giving evidence of the above and describing the organisation for this task; the skill of workers involved in the study; any anticipated sub-contractors; and giving details of who will be the independent checker of the activities (see Procurement Requirements for Producing a Quality Plan (ITER_D_22MFMW)).

Documentation developed as the result of this task shall be retained by the performer of the task or the DA organization for a minimum of 5 years and then may be discarded at the direction of the IO. The use of computer software to perform a safety basis task activity such as

analysis and/or modelling, etc. shall be reviewed and approved by the IO prior to its use, in accordance with Software qualification policy (Software Qualification Policy (ITER_D_KTU8HH)).

14 CAD Design Requirements

For the contracts where CAD design tasks are involved, the following shall apply:

The Supplier shall provide a Design Plan to be approved by the IO. Such plan shall identify all design activities and design deliverables to be provided by the Contractor as part of the contract.

The Supplier shall ensure that all designs, CAD data and drawings delivered to IO comply with the Procedure for the Usage of the ITER CAD Manual (ITER_D_2F6FTX), and with the Procedure for the Management of CAD Work & CAD Data (Models and Drawings ITER_D_2DWU2M).

The reference scheme is for the Supplier to work in a fully synchronous manner on the ITER CAD platform (see detailed information about synchronous collaboration in the ITER_D_GNJX6A - Specification for CAD data production in ITER Contracts.). This implies the usage of the CAD software versions as indicated in CAD Manual 07 - CAD Fact Sheet (ITER_D_249WUL) and the connection to one of the ITER project CAD data-bases. Any deviation against this requirement shall be defined in a Design Collaboration Implementation Form (DCIF) prepared and approved by DO and included in the call-for-tender package. Any cost or labour resulting from a deviation or non-conformance of the Supplier with regards to the CAD collaboration requirement shall be incurred by the Supplier.

15 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 and Subcontractors 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 and Subcontractor following the requirements of the Order 7th February 2012 (PRELIMINARY ANALYSIS OF THE IMPACT OF THE INB ORDER - 7TH FEBRUARY 2012 (AW6JSB v1.0)).

Compliance with Defined requirements for PBS 55 - Diagnostics (NPEVB6 v2.0) or its flowed down requirements in SRD-55 (Diagnostics) from DOORS (28B39L v5.2) is mandatory.