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Route de Vinon-sur-Verdon - CS 90 046 - 13067 St Paul Lez Durance Cedex - France

PRIOR INDICATIVE NOTICE (PIN)

OPEN TENDER SUMMARY

IO/21/OT/70000713/EBT

for

Engineering Services for High Energy Line Break (HELB) assessment and design activities

Abstract

The purpose of this summary is to provide prior notification of the IO intention to launch a competitive Open Tender process in the coming weeks. This summary provides some basic information about the ITER Organisation, the technical scope for this tender, and details of the tender process for the provision of Engineering Services for HELB assessment and design activities.

1 Introduction

This Prior Indicative Notice (PIN) is the first step of an Open Tender Procurement Process leading to the award and execution of a Framework Service Contract.

The purpose of this document is to provide a basic summary of the technical content in terms of the scope of work, and the tendering process.

The Domestic Agencies are invited to publish this information in advance of the forth-coming tender giving companies, institutions or other entities that are capable of providing these services prior notice of the tender details.

2 Background

The ITER project is an international research and development project jointly funded by its seven Members being, the European Union (represented by EURATOM), Japan, the People's Republic of China, India, the Republic of Korea, the Russian Federation and the USA. ITER is being constructed in Europe at St. Paul–Lez-Durance in southern France, which is also the location of the headquarters (HQ) of the ITER Organization (IO).

For a complete description of the ITER Project, covering both organizational and technical aspects of the Project, visit www.iter.org.

3 Scope of Work

The present tender process is aiming to set up a Framework Contract for Engineering Services for High Energy Line Break (HELB) assessment and design activities. Within the ITER Organization, Physical and Functional Integration Division (PFI) will be in charge of the implementation of this Contract. The summary scope of work is described below:

- WP1 – support to the identification of HELB Postulated Initiating Events (PIE)

Purpose	<ul style="list-style-type: none"> • On PFI request, to perform, or support PFI in the identification of HELB aggressor, targets, and PIEs.
Tasks	<ul style="list-style-type: none"> • For one given area, collect the 3D models and environment • Organize workshops with the different systems stakeholders in the area and EPNS to review the HELB hazards • Identify the postulated initiating events for HELB hazards in the area • Collect the main inventories from the systems as per the EPNS template • Participation to HELB workshop organized by IO (one workshop of 2h every week)

- WP2 – safety assessment

Purpose	The aim is to identify among the PIEs the ones that can challenge the safety demonstration. This can be done by simple engineering judgement applied to a series of events, as well as by detailed computations in the MELCOR code managed by EPNSD. This requires a good knowledge of nuclear safety analysis.
Tasks	All the following tasks are made in support to the EPNS responsible officer and under his/her supervision :

	<ul style="list-style-type: none"> • For one given area, and for a set of postulated initiating events, assess the criticality of the different PIEs • Determine for each PIE the impact on the ITER safety demonstration by simple engineering considerations for example on leak rate assessment, timescale estimate, sequence of events • Determine for each PIE the impact on the ITER safety demonstration by more complex modelling of the consequences in dedicated software such as MELCOR or equivalent • List all the unacceptable PIEs that have to be mitigated • Participation to HELB workshop organized by IO (one workshop of 2h every week) <p>As some questions related to safety consequences may arise during the execution of WP3 and WP4, on the request of EPNS responsible officer, some additional analyses may be requested to be run for a given area in parallel to WP3 and WP4 (example : sensitivity analysis)</p>
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- WP3 – feasibility studies up to preliminary design for HELB mitigation provisions

Purpose	Proposal of HELB mitigation provisions (including demonstration by assessment, or physical protection barrier) concept that can address the risk of HELB events taking into account the integration constraints of the area. These proposals are supported by static analysis and simple energy based computations and conclude with a preliminary design review
Tasks	<ul style="list-style-type: none"> • For all the unacceptable PIEs that have to be mitigated in that area, propose some HELB mitigation provisions concepts • Determine the load cases induced by the HELB events that have to be mitigated (pipe whip, jet impingement, thermal effect) • Based on available space and existing constraints (maintenance, dismantling, embedded plates allocation, installation sequence...) propose some simple mitigation concepts • Justification of the mitigation concepts versus the following load cases <ul style="list-style-type: none"> ○ HELB ○ Seismic load ○ thermal load ○ fire • the justification will include the structural margins of the mitigation concepts and embedded plates load pre-assessment • Production of the preliminary design drawings and 3D models • Participation to HELB workshop organized by IO (one workshop of 2h every week) • Organization or participation to Preliminary Design Review (PDR) and Design Integration Review (DIR) for HELB provision (one PDR per area, one DIR per area)

- WP4 – detailed design of HELB mitigation provisions

Purpose	This activity consists in detailing for the PBS systems that need to implement the concepts of WP3 into engineering work package (EWP) maturity level. Computations are made to justify the fitness for purpose of the detailed design (static computations, elasto-plastic analysis and dynamic analysis on the target systems and their protective structures)
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Tasks	<p>For all the mitigation structures identified as necessary in the area</p> <ul style="list-style-type: none"> • Determine the load cases induced by the HELB events that have to be mitigated (pipe whip, jet impingement, thermal effect) • Based on available space and existing constraints (maintenance, dismantling,..) and simple mitigation concepts, further develop the design of mitigation measures into final design maturity • Justification of the mitigation final design versus the following load cases <ul style="list-style-type: none"> ○ HELB ○ Seismic ○ thermal load ○ Fire ○ Others when relevant • Production of the final design drawings and 3D models including BoM • Technical specification for procurement of HELB provision • EWP preparation for HELB provision • Organization of or participation to FDR, MAM for HELB provision (one FDR per area and one MAM per area)
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These activities will be executed in each area of the Tokamak Complex where HELB risk is present, and as per the current needs of support from PFI.

4 Procurement Process & Objective

The objective is to award a Framework Service Contract through a competitive bidding process.

The Procurement Procedure selected for this tender is called the Open Tender procedure.

The Open Tender procedure is comprised of the following four main steps:

- Step 1- Prior Indicative Notice (PIN) :
The Prior Indicative Notice is the first stage of the Open Tender process. The IO formally invites the Domestic Agencies to publish information about the forth-coming tender in order to alert companies, institutions or other entities about the tender opportunity in advance. **Interested tenderers are kindly requested to return the expression of interest form (Annex I) by e-mail by the date indicated in the procurement timetable below.**
- Step 2 - Invitation to Tender (ITT) :
Within 14 days of the publication of the Prior Indicative Notice (PIN) the Invitation to Tender (ITT) will be advertised. This stage is allow interested bidders who have seen the PIN to obtain the tender documents and to prepare and submit their proposals in accordance with the tender instructions.
- Step 3 – Tender Evaluation Process :
Tenderers' proposals will be evaluated by an impartial, professionally competent technical evaluation committee of the ITER Organization. Tenderers must provide details demonstrating their technical compliance to perform the work in line with the technical scope and in accordance with the particular criteria listed in the invitation to tender (ITT).
- Step 4 – Contract award :
A Framework service contract will be awarded on the basis of best value for money according to the evaluation criteria and methodology described in the Invitation to tender (ITT).

Procurement Timetable

The tentative timetable is as follows:

Milestone	Date
Publication of the Prior Indicative Notice (PIN)	18 th June 21
Submission of expression of interest form	02 nd July 21
Invitation to Tender (ITT) advertisement	09 th July 21
Clarification Questions (if any) and Answers deadline	02 nd August
Tender Submission	11 th August 21
Tender Evaluation & Contract Award	End August 21
Contract Signature	Begin Sept. 21
Contract Commencement	Mid Sept. 21

5 Quality Assurance Requirements

Prior to commencement of any work under this Contract, a “Quality Plan” shall be produced by the selected Contractor and submitted to the IO for approval, describing how they will implement the ITER Procurement Quality Requirements.

6 Contract Duration and Execution

The ITER Organization shall award Framework Contract in the third quarter of 2021. The resulting Framework Contract will be for a period of 18 months.

The working language of ITER is English, and a fluent professional level is required (spoken and written).

7 Experience

The tenderer shall demonstrate their experiences and knowledge in the following:

- Structural engineering and piping engineering;
- Design experience of large scale construction projects;
- Experience in nuclear projects;
- Installation and assembly of large scale construction projects;
- Knowledge of software types utilised in the Design (e.g. ANSYS);
- Nuclear safety assessments and/or analyses;
- Knowledge of safety software (e.g. MELCOR);
- Proficiency in CAD software, including in the production of 2D drawings from 3D Models;
- Detailed knowledge of industry drawing standards used to define structural works;

All resources proposed for this contract shall be fluent in English.

8 Candidature

Participation is open to all legal entities participating either individually or in a grouping/consortium. A legal entity is an individual, company, or organization that has legal rights and obligations and is established within an ITER Member State.

Legal entities cannot participate individually or as a consortium partner in more than one application or tender of the same contract. A consortium may be a permanent, legally-established grouping, or a grouping which has been constituted informally for a specific tender procedure. All members of a consortium (i.e. the leader and all other members) are jointly and severally liable to the ITER Organization.

In order for a consortium to be acceptable, the individual legal entities included therein shall have nominated a leader with authority to bind each member of the consortium, and this leader shall be authorised to incur liabilities and receive instructions for and on behalf of each member of the consortium.

It is expected that the designated consortium lead will explain the composition of the consortium members in a covering letter at the tendering stage. Following this, the Candidate's composition must not be modified without notifying the ITER Organization of any changes. Evidence of any such authorisation shall be submitted to the IO in due course in the form of a power of attorney signed by legally authorised signatories of all the consortium members.