

# Job Title: Neutral Beam Coordination Officer IO0735

Requisition ID **7000** - Posted - (France, 13067 St Paul Lez Durance Cedex) - **Science and Technology Expertise - New Posting**

The ITER Organization brings together people from all over the world to be part of a thrilling human adventure in southern France—building the ITER Tokamak. We require the best people in every domain.

We offer challenging full-time assignments in a wide range of areas and encourage applications from candidates with all levels of experience, from recent graduates to experienced professionals. Applications from under-represented ITER Members and from female candidates are strongly encouraged as the ITER Organization supports diversity and gender equality in the workplace.

ITER Organization (IO) is an Equal Opportunity/Inclusive organization committed to diversity in the workplace, with diversity and Inclusiveness being one of the ITER Values.

As IO attracts and retains people coming from a vast array of different backgrounds and cultures, bias and exclusion cannot be tolerated. IO believes it is our diverse perspectives and backgrounds that gives unique strength and value to the ITER mission, regardless of race, member nation, gender, religion, status, sexual orientation, or disability - all are welcome and respected at ITER.

Our working environment is truly multi-cultural, with 29 different nationalities represented among staff. The ITER Organization Code of Conduct gives guidance in matters of professional ethics to all staff and serves as a reference for the public with regards to the standards of conduct that third parties are entitled to expect when dealing with the ITER Organization.

The south of France is blessed with a very privileged living environment and a mild and sunny climate. The ITER Project is based in Saint Paul-lez-Durance, located between the southern Alps and the Mediterranean Sea—an area offering every conceivable sporting, leisure, and cultural opportunity.

To see why ITER is a great place to work, please look at this video

**Application deadline:** 09/06/2023

**Department:** Engineering Design Department

**Division:** Heating & Current Drive Division

**Section:** Neutral Beam Section

**Group:** Not applicable

**Job Family:** Scientific Coordination

**Job Role:** Coordinating Scientist

**Job Grade:** P4

**Language requirements:** Fluent in English (written & spoken)

**Contract duration:** Up to 5 years

## Purpose

As a Neutral Beam Coordination Officer, you will act as the ITER Organization (IO) Technical Responsible Officer (TRO) for the follow up of R&D activities, under the Neutral Beam Test Facility (NBTF) agreement, to ensure activities are carried out with the NBTF team at Padua (Italy) to achieve IO objectives.

You will also conduct modelling activities and perform calculations to support the design, optimization and integration of the ITER neutral beam components which are outside the scope of the Neutral beam test facility. This include physics analysis leading to loads on components, and in support of transversal functions of the neutral beam system.

You will work closely with the Neutral Beams Section Leader to ensure the Research and Development (R&D) necessary is carried out appropriately, and that the scientific and technical inputs are available to ITER NB from NBTF, within prescribed need dates

### **Background**

At ITER NBTF in Padua, a 100kV Ion Source Facility called SPIDER (Source for Production of Ion of Deuterium Extracted from Radio Frequency) has been in operation since 2018, while a 1MV beam facility called MITICA (Multi Megavolt ITER Injector & Concept Advancement) is under construction (which is planned to be operation in 2025). The experience gained in these facilities is to be employed in the construction and operation of ITER Heating NB (HNB) and DNB. An additional challenge to be addressed in realizing the ITER systems is to make them compatible with fusion nuclear environment.

### **Key Duties, Scope, and Level of Accountability**

- Acts as IO Technical Responsible Officer for experimental activities carried out at NBTF;
- Oversees contract progress for NBTF, following up with the NBTF Project Manager on the progress of the work, addressing scientific and technical issues and support the identification of scientific priorities;
- Participates in the commissioning and experimental phases of the test facilities and contributing to the definition and interpretation of the experimental results;
- Coordinates the R&D activities related to the Neutral Beam (NB) development in NBTF;
- Coordinates the NBTF physics/technology lessons learned, and supports the Section Leader in implementing them, as appropriate, in Heating Neutral Beam (HNB) and Diagnostic Neutral Beam (DNB);
- Develops systems to ensure NBTF documents are uploaded, updated, or archived;
- Provides NBTF progress reporting, identifying issues, risks, and solutions to support the Section Leader towards the resolution of them;
- Keeps abreast of worldwide developments in NB injection technology ,and also gains and sustains thorough knowledge of the ITER NB system including all the associated technology and interfaces;
- Works with the NBTF team to ensure the NBTF experimental program meets the ITER NB needs in the definition of the commissioning program and the experimental program;
- Performs extended missions, periodically, to the NBTF site to participate in the experimental and commissioning activities as part of the NBTF team;
- Manages the documentation and procurement arrangements for the ITER NB system, ensuring consistency with the experimental outputs from the test facility;
- Interacts with ITER or the Domestic Agency (DA) staff responsible for NB system interfaces;
- Provides feedback to the NB team and DAs about issues faced and solutions found during SPIDER(Source for Production of Ion of Deuterium Extracted from Radio Frequency (RF) Plasma, and MITICA (Megavolt ITER Injector & Concept Advancement) commissioning and operations;
- Support the NB team throughout the design and manufacturing phases of the NB components to ensure the systems meet the ITER specifications.
- May be requested to perform other duties in support of the project;
- May be required to work outside ITER Organization reference working hours, including nights, weekends and public holidays.

### **Measures of Effectiveness**

- Participates in the commissioning and experimental phases of the NBTF as part of the NBTF team, producing scientific reports and documenting the lessons learned;
- Ensures that lessons learned from NBTF are implemented in ITER NB systems within defined timelines;
- Ensure that the documentation produced by NBTF team is uploaded and distributed within defined schedule;
- Coordinates the R&D or design work completed by self or others;
- Ensures process efficiency and quality of end solution;

- Successfully supports the NB team during procurement phases of the components, ensuring deliverables meet requirements;
- Completes missions within cost, schedule and safety, including integration issues (systems and interfaces) and specification.

## Experience & Profile

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- **Professional Experience:**
  - Minimum 8 years' experience in design and operation of Neutral Beam Systems, and / or negative ion sources, and / or accelerator devices, within complex international environments or projects.
- **Education:**
  - PhD degree or equivalent in the Physics or Engineering field or other relevant discipline;
  - The required education degree may be substituted by extensive professional experience involving similar work responsibilities and/or additional training certificates in relevant domains.
- **Language requirements:**
  - Fluent in English (written and spoken).
  - Ability to communicate in French or Italian is an advantage.
- **Technical competencies and demonstrated experience in:**
  - NB Injector Physics and Engineering;
  - Use of beam codes: - IBsimu, BTR, OPERA or equivalent;
  - Delivery and operations execution: execute work with consistency, testing, and input, adapting to the changing context;
  - Project management: planning, measuring progress, managing risks and costs, and reporting on progress to manage programs or initiatives within the constraints of human and financial constraints;
  - Contract, and procurement, management and execution: define needs and requirements, perform sourcing activities, and manage delivery including managing external parties to ensure implementation according to contractual agreements;
  - Problem solving: assess problems, identify root causes, and reach practical solutions in a consistent way to reach project objectives;
  - Publications in recognized scientific journals is considered an advantage;
  - Negative ion beam production mechanisms is considered an advantage.
- **Behavioral Competencies:**
  - Collaborate: Ability to facilitate dialogue with a wide variety of contributors and stakeholders;
  - Communicate Effectively: Ability to adjust communication content and style to deliver messages to work effectively in a multi-cultural environment;
  - Drive results: Ability to persist in the face of challenges to meet deadlines with high standards;
  - Manage Complexity: Ability to analyze multiple and diverse sources of information to understand/define problems accurately before moving to proposals;
  - Instill trust: Ability to apply high standards of team mindset, trust, excellence, loyalty and integrity.
- **Additional Behavioral Competencies:**
  - Nimble Learning: Actively learns through experimentation when tackling new problems, using both successes and failures to inform decision making;
  - Strategic Mindset: Ability to see ahead to future possibilities, translating them into breakthrough strategies.

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## ***The following important information shall apply to all jobs at ITER Organization:***

- Maintains a strong commitment to the implementation and perpetuation of the ITER Safety Program, ITER Values (Trust; Loyalty; Integrity; Excellence; Team mind set; Diversity and

Inclusiveness) and Code of Conduct;

- ITER Core Technical Competencies (Knowledge of these competencies may be acquired through on-board training at basic understanding level for all ITER staff members) :
  - 1) Nuclear Safety, Environment, Radioprotection and Pressured Equipment
  - 2) Occupational Health, Safety & Security
  - 3) Quality Assurance Processes
- Implements the technical control of the Protection Important Activities, as well as their propagation to the entire supply chain;
- May be requested to work on beryllium-containing components. In this case, you will be required to follow the established ITER Beryllium Management Program for working safely with beryllium. Training and support will be provided by the ITER Organization;
- May be requested to be part of any of the project/construction teams and to perform other duties in support of the project;
- Informs the IO Director-General or Department Head of any important and urgent issues that cannot be handled by line management and that may jeopardize the achievement of the Project's objectives.
- For staff expected to perform on-call, shift hours, or other work outside ITER Organization reference working hours, including nights, weekends, and public holidays, the possession of a driving license valid in France is required. No commuting vehicle will be provided by the ITER Organization.