

TITLE: ALIGNMENT AND METROLOGY – LEAD ENGINEER		TKM-046
REPORTS TO LINE MANAGER: MACHINE ASSEMBLY AND TOOLING SECTION LEADER		
DIRECT EMPLOYMENT: NOT REQUIRED	GRADE RANGE: P3-P4	
DATE WRITTEN: MARCH, 2007	DATE REVISED:	DATE REVISED:

Purpose:

The alignment and metrology engineer shall lead the effort to develop a global alignment and metrology strategy for ITER. Co-ordinate the development of the strategies, infrastructure and procedures required to meet the metrology needs of the Project. Initiate development tasks and participate in the development of the enabling technologies. Contribute to the development of the overall construction plan for the Project. Ensure compliance with the ITER Quality Assurance (QA) program, safety requirements and procurement procedures.

Main Duties/Responsibilities:

- Lead the effort to develop a global alignment and metrology strategy for ITER, including on-site metrology, and the dimensional control of the tokamak components during manufacture.
- Build and lead a small team of technician inspectors.
- Develop and qualify survey processes and procedures, as necessary, to ensure fit-for-purpose data from the component manufacturing cycle to enable assembly alignment.
- Develop the strategy for implementing manufacturing surveys with the ITER team, and with third-party inspectors.
- Detailed design of the ITER site, pit, tokamak, in-vessel datum systems and other sub-systems as necessary.
- Develop processes and procedures for on-site assembly survey to ensure fit-for-purpose data.
- Liaise closely with the ITER Quality Assurance Division to ensure that a uniform approach is developed for the dimensional control aspects of the assembly project.

- Define hardware, software and data analysis requirements. Prepare specifications. Procure, manage and maintain equipment.
- Establish and maintain data management and analysis protocols.
- Provide input to the procurement specifications for the tokamak components.
- Identify and implement specific development tasks and / or feasibility studies that may be needed, including writing technical specifications, tenders and managing contracts where appropriate.
- Participate in the acceptance of components.
- Maintain a strong commitment to the implementation and perpetuation of ITER values and ethics.

Qualifications Required:

- Professional engineer, with a University degree, or other acceptable combination of formal technical education combined with extensive practical experience, in the field of mechanical engineering, or a related discipline.
- Minimum of 15 years experience in the application of 3-d metrology techniques to the alignment of large, complex, precise engineering structures.
- Minimum of 10 years experience of tokamaks, or similar devices.
- Demonstrated ability to develop innovative solutions to complex engineering problems.
- Experience in project and contract management.
- Extensive knowledge of QA systems and their practical application.
- Experience of international procurement and tendering.
- Proactive, with drive and initiative.
- Ability to work in a multi-cultural environment.
- Ability to interface with team members at all levels.
- Good knowledge of the English language, both written and spoken.
- Ability to write clear and concise reports.

Work Direction and Interfaces:

Reports to the leader of the Machine Assembly and Tooling Section. Interfaces with all ITER Team members.

Authority/Approval Levels

Has authority and approval levels generally defined by the Tokamak Deputy Director General (DDG) for his/her scope of work.

Measures of Effectiveness

- Successfully develops the strategies and infrastructure required to support the on-site and off-site metrology activities.
- Successfully elaborates, maintains and implements the Metrology Plan and Procedures.
- Successfully generates and maintains coherent, comprehensive and understandable documentation.
- Successfully maintains effective communications within the ITER Organization and with collaborating organizations.
- Successfully communicates with the ITER machine component designers to formulate and validate the Metrology Plan and Procedures.
- Successfully completes the objectives set in agreement with the leader of the Machine Assembly and Tooling Section.