

TITLE: Technical Officer for Thermo-Hydraulic and Thermo-Mechanical Analysis		JOB CODE: PRO-050
REPORTS TO LINE MANAGER: System Analysis and Standard Section Leader; Project Office		
DIRECT EMPLOYMENT: REQUIRED		GRADE: G4
Date Written: March 2007	Date Revised: March 2009	Date Revised:

Purpose:

To support the System Analysis and Standard Section (SASS) within the Project Office (PRO), especially as concerns thermo-hydraulic and thermo-mechanical analyses for piping systems and ITER components;

To analyse the 3D representation of the cooling water pipelines and propose a suitable layout and appropriate supporting systems;

To prepare the database and perform pressure drop calculations with localised and distributed coefficients;

To perform the thermo-hydraulic and thermo-mechanical calculations by using the main standards (ASME, European Norms, or Welding Research Council) and/or by using the piping-related equipment manufacturer's suggestions (API, NEMA, or EJMA).

Major Duties/Responsibilities:

- Performs thermo-hydraulic and thermo-mechanical analyses, in accordance with the requirements and priorities defined by the PRO management and in support of requests from other divisions, so as to verify the integrity of the ITER components;
- Prepares detailed and summary analysis reports;
- Prepares contracts and technical specifications for piping pressure drop or stress analyses;
- Follows-up and supervises analysis activities performed by experts outside the ITER Organization;
- Develops programs, macros and software routines to interfaces programs;
- Develops and improves the interface of Finite Element (FE) programs with Computer Aided Design (CAD) systems;
- Contributes updating and recording FE models developed by the ITER Organization and also by the Domestic Agencies (DA's);
- Maintains a strong commitment to the implementation and perpetuation of the ITER Safety Program, values and ethics.

Qualifications and Experience:

- **Education:**
 - Degree at least equivalent to 3 years of study after the High School Diploma, in Engineering, a technical field or other related discipline.
- **Technical experience:**

- Some years of experience in thermo-hydraulic and thermo-mechanical stress analysis using dedicated software (AFT Fathom and CAESAR II or similar);
 - Knowledge of the engineering aspects of designing and analysing components.
- **Social Skills:**
 - Capable of working in a team and interfacing with other groups and Divisions;
 - Ability to work effectively in a multi-cultural environment;
 - Ability to work in a team and to promote team work.
- **Language requirements:**
 - Fluent in English (written and spoken).
- **Computer and IT skills:**
 - Good command of CAD software, FE Programs, mathematical software, standard office software.

Direct Supervisor and Interfaces:

- Reports to the SASS Section Leader;
- Interfaces with all other ITER Departments and Divisions;
- Maintains good relations with other organizations within the ITER collaboration.

Authority/Approval Levels:

This position has authority and approval levels generally defined by the Head of the Project Office for his/her scope of work.

Measures of Effectiveness:

- Successfully provides support to the SASS in achieving the Section's defined objectives;
- Provides comprehensive reports and summaries of the performed and revised analyses;
- Provides FE models developed for the analyses;
- Successfully generates and maintains trustworthy, up-to-date information related to the technical scope of the machine;
- Successfully maintains effective communication with all organizations interfacing with ITER.