

TITLE: Tritium Analysis Technical Engineer		CEP-101
REPORTS TO LINE MANAGER: Leader of Tritium Plant Section, Fuel Cycle Engineering Division, Department for Central Engineering and Plant Support		
DIRECT EMPLOYMENT: REQUIRED		GRADE RANGE: G5-G6
Date Written: July 2008	Date Revised:	Date Revised:

Purpose:

A technical engineer is required to support process integration design, schedule, testing and commissioning, and integrated operation procedures. Systems performance, particularly safety important systems and integrated operation of the ITER fuel cycle have to be analyzed based on models currently under development.

Major Duties/Responsibilities:

- Supports the ITER Responsible Officers of the Tritium Plant in process integration design, in preparation of procurement specifications and schedules;
- Develops procedures for testing and commissioning and integrated operation procedures;
- Supports work on interfaces within the Tritium Plant and Fuelling and Vacuum Pumping;
- Supports the Domestic Agency teams in developing models for component systems, particularly safety important systems;
- Models systems, such as gas supply and pumping, hydrogen isotopes delivery from metal-hydride containers, plasma exhaust chemical purification, cryogenic distillation isotope separation, water detritiation (based on Combined Electrolysis and Catalytic Exchange technology), gas detritiation either by drying or by isotopic exchange with liquid water in packed columns, etc;
- Analyzes the fuel cycle systems' dynamic performance for various scenario of operations;
- Models tritium inventory distribution and variations during the fuel cycle operations; develops operation strategies to minimize uncertainties in tracking and accountancy;
- Prepares schematic drawings, process flow diagrams and descriptive technical documentations for the Tritium Plant;
- Provides technical support in preparation of technical specifications for external contracts;
- Maintains a strong commitment to the implementation and perpetuation of the ITER safety program, values and ethics.

Qualifications and Experience:

- **Education:** University degree in Chemical Engineering or Nuclear Technology
- **Experience:** At least 5 years' experience in areas of handling hydrogen isotopes and simulation of chemical processes, in particular of hydrogen isotopes processing and separation;
- Knowledge of isotope separation technologies by distillation and chemical isotopic exchange;
- Very good level of computer skills;
- General understanding of ITER fuel cycle operation would be advantageous;
- Knowledge of codes and software for simulation of chemical processes, for example ASPEN, would be advantageous;
- **Language requirements:** High level of written and spoken English.

Work Direction and Interfaces:

- Reports to the Tritium Plant Section Leader of the Fuel Cycle Engineering Division (FCD).
- Close co-operation with other groups within the FCD. Main interfaces outside ITER are with the Domestic Agencies (DAs) having Tritium Plant procurement packages and with industry delivering the control system.

Authority/Approval Levels:

This position has authority and approval levels generally defined by the leader of the Tritium Plant Section for his/her scope of work.

Measures of Effectiveness:

- Successful support of simulation of ITER Tritium Plant and analysis fuel cycle operations;
- Timely provisions of inputs/outputs of operation simulation for assessing interfaces within Tritium Plant and fuel cycle;
- Successful communication with the Tritium Plant Section, other groups in the Fuel Cycle Division and with the DAs.