Contribution ID: **481** Type: **not specified**

P4.146 Preliminary source terms investigation for decontamination of fusion reactor in-vessel component maintenance process in hot cell

Thursday, 20 September 2018 11:00 (2 hours)

The fusion reactor produces a large amount of tritium dust in the vacuum vessel due to the plasma unstable events, decontamination is an indispensability dispose in the IVC maintenance and decommissioning, it also plays an extremely important role in reducing the radioactive pollutants diffusion, cumulative radiation dose and staff occupational exposure level, controlling radioactive effluent of nuclear facilities and enhancing remote handling equipment life and reliability and even series environmental protection problems.
Evaluating of hot cell interior decontamination solution for tritium dust is a complexity task. The source terms investigation, as an important basis for the selection of cleaning methods and the formulation of the decontamination process, is the foundation for the selection of clean and decontamination methods and the development of remote handling dedicated equipment. This paper is based on fusion reactor hot cell indoor cleaning decontamination process of latent source items, combining comprehensive consideration with dust composition of mainstream fusion device data datum and representations after future D-T burning. Collecting, analysis and concluding the characterization, composition, morphology, status, potential risk of dust in vacuum vessel, especially the impact of tritium retention for the decontamination process. Combining consider the confinement of the hot cell facility, release relevant evaluation criteria for the selection of protective measures and decontamination solution.

Presenter: GONG, Zheng (Key Laboratory of Optoelectronic Devices and Systems of Ministry of Education and Guangdong ProvinceCollege of Optoelectronic Engineering Shenzhen University)

Session Classification: P4