## **PROCESS SIMULATION FOR FUEL DELIVERY FROM STORAGE AND DELIVERY**

## SYSTEM IN FUSION POWER PLANT

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The storage and delivery system of the tritium plant in fusion power plant has to safely handle the fuel gases, mainly tritium-contaminated gases. One of main objectives of the storage and delivery system is to deliver the main fuels, such as tritium or highly concentrated tritium and deuterium gases to the fuelling system directly where fuels are injected using various methods: gas puffing, pellet injection, and neutral beam injection.

The storage and delivery system should deliver the tritium and tritium-contaminated gases to the fuelling system with various fuelling flow rates, in spite of long distance between the storage and delivery system and the fuelling system. One of solutions to satisfy the safety guideline is to maintain the outlet pressure of the storage and delivery system under atmosphere to prevent the leakage of tritium-contaminated gases in case of the break of the long pipe line between the storage and delivery system and the fuelling system.

The study is focused on the process simulation in order to test the performance of the fuel delivery from the storage and delivery system to the fuelling system. Various configurations of equipments and control logics are modeled and analyzed to satisfy the requested conditions from the fuelling system and the safety guideline for the outlet pressure of the storage and delivery system. The results will help perform the overall process design of the storage and delivery system.