

Systems Engineering to Design a Water Cooling System for a Fusion Reactor

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US ITER participates in International Thermonuclear Experiment Reactor (ITER) that is constructed in Europe, at Cadarache, France. Specifically, US-ITER is responsible for design, engineering and procurement of the Tokamak Cooling Water System (TCWS). TCWS is designed to provide cooling, baking and chemical control of client systems including first wall, blanket, vacuum vessel, divertor and neutral beam injector. TCWS consists of piping with valves and various fittings, heat exchangers, pumps, pressurizer, etc. Details in system design and engineering procedure, configuration, and various operations will be discussed during the presentation.