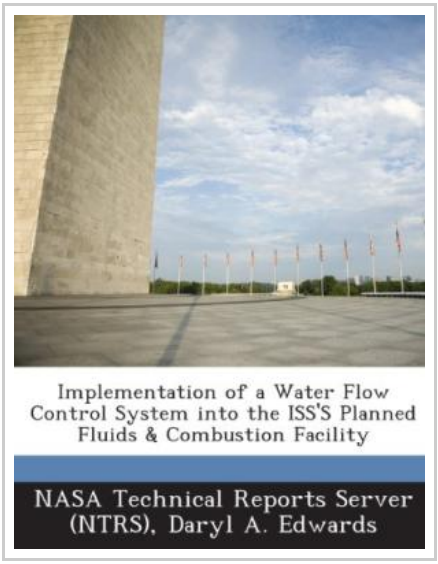

Implementation of a Water Flow Control System Into the ISSs Planned Fluids Combustion Facility

By Daryl A. Edwards

Bibliogov. Paperback. Book Condition: New. This item is printed on demand. Paperback. 22 pages. Dimensions: 9.7in. x 7.4in. x 0.1in.The Fluids and Combustion Facility (FCF) will become an ISS facility capable of performing basic combustion and fluids research. The facility consists of two independent payload racks specifically configured to support multiple experiments over the life of the ISS. Both racks will depend upon the ISSs Moderate Temperature Loop (MTL) for removing waste heat generated by the avionics and experiments operating within the racks. By using the MTL, constraints are imposed by the ISS vehicle on how the coolant resource is used. On the other hand, the FCF depends upon effective thermal control for maximizing life of the hardware and for supplying proper boundary conditions for the experiments. In the implementation of a design solution, significant factors in the selection of the hardware included ability to measure and control relatively low flow rates, ability to throttle flow within the time constraints of the ISS MTL, conserve energy usage, observe low mass and small volume requirements. An additional factor in the final design solution selection was considering how the system would respond to a loss of power event. This paper describes the...

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