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Remote Experimentation on DIII-D: Operations and Concepts¹ T.A. CASPER, D.N. HILL, W.H. MEYER, J.M. MOLLER, B.W. STALLARD, R.D. WOOD, LLNL, J.T. SCOVILLE, B.B. MCHARG AND THE OPERATIONS GROUP, GA, R.J. COLCHIN, D. GREENWOOD, ORNL, S. DAVIS, PPPL, S. BLY, Consultant — The DIII-D tokamak in San Diego, CA was operated for a full day of experiments from a Remote Experimental Site at LLNL where a team of researchers directed experimental operations and successfully completed an experiment designed to investigate L-H transition physics and plasma detachment from the divertor. The team at LLNL comprised the physics experiment leader and scientists operating the plasma shape control system, neutral beam heating, diagnostics and intershot data analysis. Researchers at ORNL and PPPL sites also participated in this experiment. Communication among all sites was implemented with four internet-based, audio/video links to provide discussions essential to operations and research in progress. This experiment was completed with an efficiency comparable to that achieved with local control room operations. Details of the remote operation, the concepts involved and its relevance to ITER will be discussed.

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