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## **ACCURATE TIME-LINKED DATA ACQUISITION SYSTEM FIELD DEPLOYMENT AND OPERATIONAL EXPERIENCE<sup>\*†</sup>**

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### **ABSTRACT**

The Accurate Time-Linked Data Acquisition System (ATLAS) became fully operational on the Long-term Inflow and Structural Test (LIST) turbine at Bushland, Texas in May of 2000. In the LIST configuration, one data acquisition unit is mounted on the rotor and two additional acquisition units are mounted near the base of the turbine. All communication between the rotor unit and the ground is via telemetry. Data acquisition on all three units is synchronized (within +/- 1 microsecond) by slaving the units to universal time with the Sandia-developed Programmable Accurate Time Synchronization Module. A total of 74 channels of instrumentation is monitored by the three acquisition units. Data acquisition occurs at a 30 Hz rate for a continuous data throughput of over 35,000 bits per second, resulting in over 2 GB of ASCII data per day. Implementation of the system is discussed and operational experience is reviewed.

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