Abstract Submitted
for the APR10 Meeting of
The American Physical Society

Double Chooz Slow Monitoring System PI-JUNG CHANG, GLENN HORTON-SMITH, DAVID MCKEE, DEEPAK SHRESTHA, Kansas State University, LINDLEY WINSLOW, JANET CONRAD, Massachusetts Institute of Technology — The Double Chooz experiment aims to measure neutrino flux from two nearly identical detectors with an uncertainty less than 0.6%. The Double Chooz slow monitoring system records conditions of the experiment's environment which can impact the experiment's goals. The slow monitoring system includes temperatures and voltages in electronics, experimental hall environmental conditions, line voltages, liquid temperatures, PMT's magnetic field, radon concentrations, and photo-tube high voltages. This system scans all channels automatically, stores data in a common database, and warns of changes in the two detectors' physical environments. Most functions in this system can be accomplished by 1-Wire® products from Dallas Semiconductor. We can use a single master for several functions' controls and operations and the power is derived from a signal bus. Every device has a unique unalterable ID. The sensors monitoring the liquid system, such as liquid thermal meters, are covered by epoxy in order to isolate in the liquid. Their radioactivity can be ignored and will not affect the uncertainty in the system.

Pi-Jung Chang
Kansas State University

Date submitted: 19 Oct 2009 Electronic form version 1.4