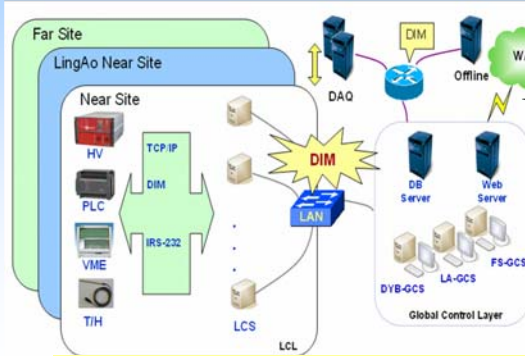


Detector Location



Detector Control System Design

The Daya Bay reactor neutrino experiment is aimed at a measurement of the neutrino mixing angle θ_{13} with the sensitivity of 0.01 in $\sin^2 2\theta_{13}$ at the 90% confidence level. The experiment design takes two short baselines and one long baseline positioned with identical detectors to measure the relative rates and energy spectra of electron antineutrinos.

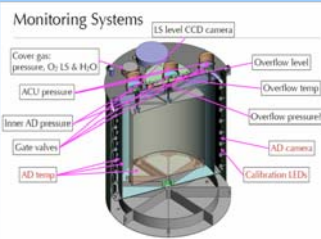
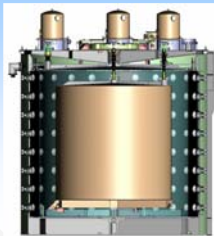


Framework of Detector Control System

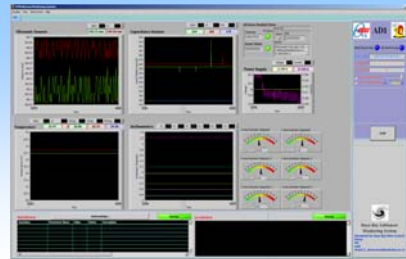
Main Functions of DCS

- Top-level SCADA software framework for integrating subsystems
- Configurable and user-friendly GUIs
- Xml format based remote parameter configuration
- Alarm & error logic
- Database storage
- Data trend
- Remote control
- Safety interlock
- Security management

AD Detector



AD Monitoring During Filling



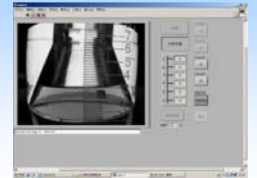
AD Lid Sensor Monitoring



Calibration

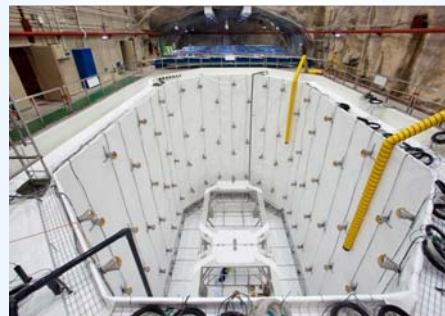
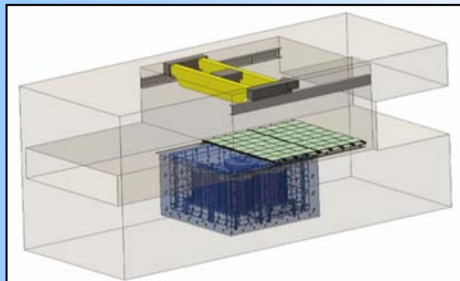
Monitoring Items:

2 detectors per near site
4 detectors at far site

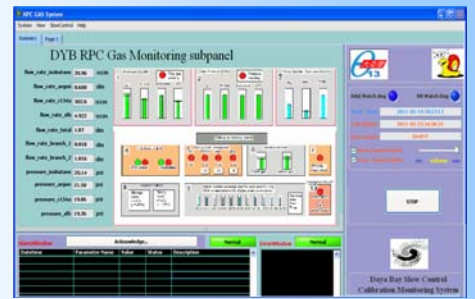


Liquid Level CCD

Muon Detector



Muon Water Pool & PMTs in Hall#1



RPC GAS Monitoring GUI

Subsystem include: RPC, RPC GAS, In/out water system, Muon LED calibration, RPC FEE low voltage monitoring... etc.

Equipment

Monitoring and Control Items

- High voltage
 - AD PMT, Muon PMT, RPC
- Front End Electric (FEE) VME crate
 - AD, in/out water pool, RPC



AD PMT High Voltage GUI



FEE VME Crate Monitoring



RPC High Voltage GUI

Environment & Remote Control

Monitoring Items

- Temperature
- Humidity
- Air Pressure
- Video & Pictures
- Radon Mon.



Hall5 Temperature Real Time Monitoring



Picture Gallery

Schedule

Summer 2011

Data taking with 2 antineutrino detectors at the Daya Bay near hall.

Fall 2012

Data taking with full experiment, all 8 antineutrino detectors in 3 experimental halls.