

Case Study : Rod Drop Monitoring EDF Energy - Hinkley Point B



Introduction

The recording of control rod drop times is a regulatory requirement of the nuclear site license. To overcome the spares issues with obsolete equipment, Servelec Controls developed a new Rod Drop Monitoring system using commercially off-the-shelf hardware and software. The following solution can be easily adapted to the requirements of any nuclear power station, and has a proven install base.

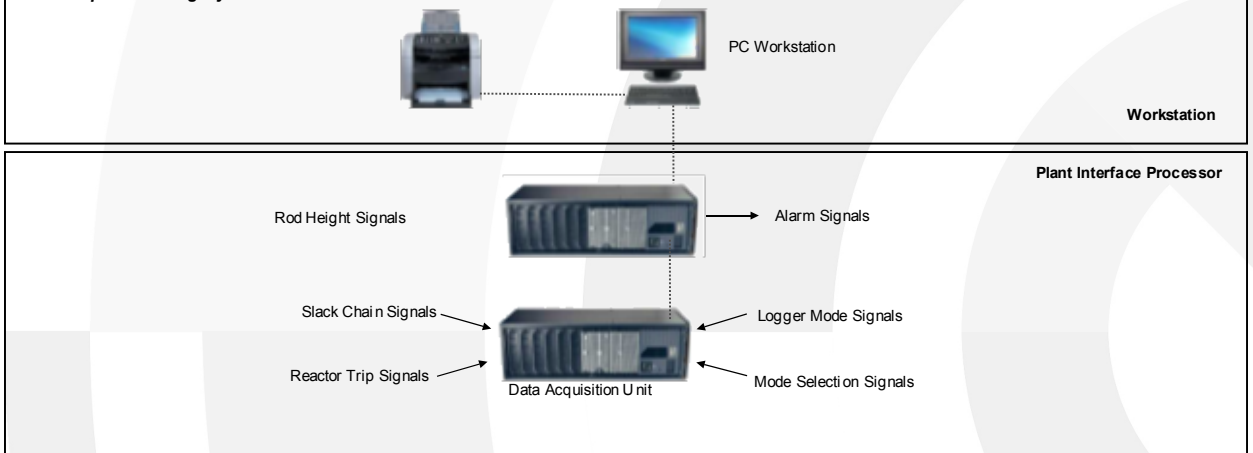
EDF Energy Requirements

- Real-time rod height display & slack switch status.
- Automatic collection of 'reactor trip' data. Data window requirements:
 - Data window to start at 2 sec. pre trip condition.
 - Data window to extend for 28 sec. post trip condition
 - Data collection to include all 121 rods.
 - Data resolution: 20 msec.
- Data to be visualised through chart display & printouts: rod height versus time.
- System to calculate intermediate values.
- Alarm system to include: reactor trip, power supply failure & system health status.



System to support the following

Rod Drop Monitoring System Overview



System Benefits

- Automatic data processing: The previous system involved laborious manual intervention to process & print the data charts. All data processing & chart printing is fully automated in the new system.
- Calibration facility: The system includes a calibration spreadsheet HMI to allow operators to calibrate the rod height data against actual rod height (conversion of pulse inputs into analogue rod height).
- Resolution: The system provides increased resolution & extended windows for the data charts. This enhances the data quality for 'post trip' analysis work.
- Chart Display: multi-line detailed charts showing 2secs before trip and 28secs afterwards.
- Security: User access is based on an 'administrator controlled' user privileges set-up.
- File management and archiving facility: offering user-friendly off-line storage of trip & calibration data).

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