



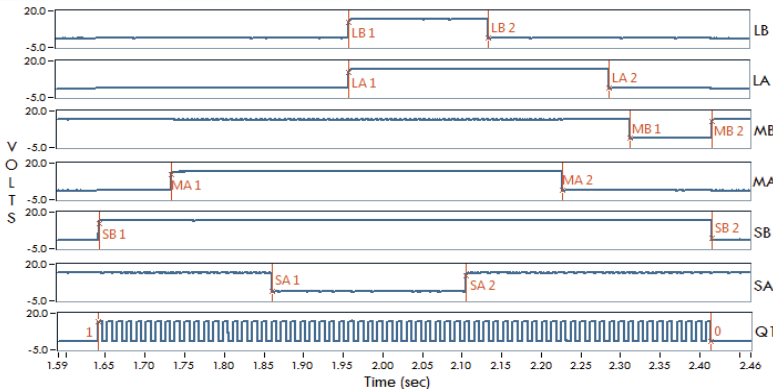
TIMING & SEQUENCING VERIFICATION OF SLAVE CYCLERS

For the Rod Control System in Pressurized Water Reactors (PWRs)

Slave cycler timing, and sequencing tests are performed to verify the signal timing of the slave cycler stationary, moveable, and lift logic cards in the rod control logic cabinet. This test is normally performed in Westinghouse Pressurized Water Reactors (PWRs) near the end of a refueling outage.

The slave cycler test equipment will automatically acquire the signals from the six slave cycler decoder cards associated with each rod control power cabinet, along with their associated Q1 binary signal. Upon completion of data acquisition, the system will subsequently analyze the timing signals to verify that each signal transition, relative to the Q1 signal, occurs at the expected time. The test data is then stored for archiving and trending purposes.

Slave Cycler Signals for Withdraw Sequence



Timing Report for Stationary Gripper Signals

| PC | SA1 | | | SA2 | | | SB1 | | | SB2 | | |
|---------|-------|-------|-----|-------|-------|-----|-------|------|-----|-------|-------|-----|
| | Count | msec | Bar | Count | msec | Bar | Count | msec | Bar | Count | msec | Bar |
| 1AC | 37 | 221.6 | | 77 | 465.6 | | 1 | 2.8 | | 0 | 775.7 | |
| 2AC | 37 | 221.6 | | 77 | 465.6 | | 1 | 2.8 | | 0 | 775.8 | |
| **SCD** | 33 | 197.1 | | 77 | 466.0 | | 1 | 2.6 | | 0 | 776.6 | |
| 1BD | 37 | 221.7 | | 77 | 465.7 | | 1 | 3.0 | | 0 | 775.9 | |
| 2BD | 37 | 221.6 | | 77 | 465.6 | | 1 | 2.9 | | 0 | 775.9 | |

Featured Benefits

PLANT BENEFITS

- Recover Outage Time
- Decrease Troubleshooting Time
- Identify Logic Cabinet Failures
- Monitor System Reliability

EQUIPMENT BENEFITS

- Acquisition of Q1 for Each Slave Cycler
- Portable, Lightweight, Quick Hookup
- Collect Data on Slave Cyclers For All Power Cabinets Within 15 Minutes

SOFTWARE BENEFITS

- Slave Cycler Timing and Sequencing Identified Automatically
- Quick Reporting Flags Any Anomalies
- Data Trended from Cycle to Cycle



EIB Slave Cycler Test System

10CFR50 Appendix B Program

For more information please contact: Darrell W. Mitchell | Technical Services Manager
Ext: 108 Email: darrell@ams-corp.com

Ryan D. O'Hagan | Engineering Project Manager
Ext: 103 Email: ryan@ams-corp.com

AMS Technology Center
9119 Cross Park Drive
Knoxville, TN 37923, USA

TEL 865 691 1756
FAX 865 691 9344

EMAIL info@ams-corp.com
WEB www.ams-corp.com

© 2018 AMS CORPORATION