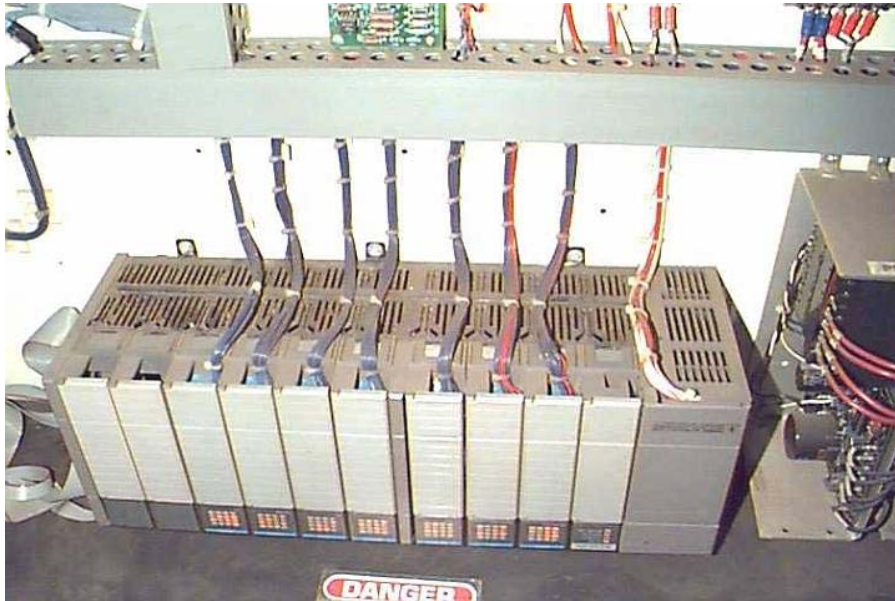


Hall A Dynapower MPS PLC Upgrade

Brian Eng

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Left & Right Arm - Dipole PLC



- Allen-Bradley SLC 500
- Used to monitor interlock circuits and control power supply switches
- PLC has had faults that needed physical access to recover
- Controller lifecycle status has been discontinued
 - No longer in production as of Jan 2017

Replacement System Options - DSG Note 2019-13

Prices from March 2019 for single complete system

- Allen-Bradley ControlLogix - ~\$14400
 - Cost prohibitive
- National Instruments CompactRIO- ~\$6000
 - Different programming environment
 - Module channels don't always match existing system
 - cRIO only has 16-ch instead of the 8-ch used currently (need to change wiring)
- Allen-Bradley CompactLogix - ~\$4300
 - Nearly all existing modules have direct replacement
 - 1746-OG16 to 1769-OG16

Current Status

- Two complete systems (for Left and Right Arm) plus one spare of each type have been ordered
 - Due late March 2019
- Converted existing code from RSLogix 500 to Studio 5000
 - No functional changes to the logic
- Developing plans for tests to be performed before and after PLC replacement
 - Need to verify system behaves the same