



DAS Upgrades



Anatomy of DAS Upgrades

- Wolf Creek
- Susquehanna
- Seabrook



Common Elements

- Existing RTP Installations
- 2000M Eligible upgrade



Differences

- Westinghouse PWR
- GE BWR
- Thermocouple compensation
- DALCAL Implementation



Wolf Creek

- Full Plant Computer Upgrade
- DAS in conjunction with Applications
- Transition during declared PPC INOP period



Hilling.

Wolf Creek Approach

- Input point spot check
- 5 Point Cal on "Critical Points"
- System engineer verification through application



Wolf Creek – The Install

- Transition well staged and executed by Utility.
- Issues
 - Thermocouples
 - Pulse Points
 - RTP Engine bug
 - Scan Speed (Input Impedance Issue)



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Wolf Creek – Lessons Learned

- Track Firmware versions
- Alert new clients to possible similar issues.
- Press for accurate information



Susquehanna

- Phased Upgrade
 - DAS Phase R*TIME feeds existing system with no application changes.
 - Transparent to existing PPC



Susquehanna – Install

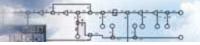
- Planned for 3 back shifts, partial transition each night.
- Work Crews well briefed
- Cooperative Operations Staff
- Automated validation well crafted and executed.



Susquehanna – Issues

- System released for work several hours late however expectation was for install to complete at original time.
- Dark Fibers
- Switch Reconfiguration
- TIP Tuning
- Communication Protocol





Susquehanna – Lessons Learned

- Automated validation proved fast and efficient.
- Client knowledge of existing system smooth transition



Hilling.

Seabrook

- Phased Upgrade
 - DAS Phase R*TIME feeds existing system with no application changes.
 - Transparent to existing PPC
- Only DAS phase approved.



Filling.

Seabrook - Install

- Non-aggressive installation plan
- Ongoing



Seabrook - Lessons Learned

- Install plan needs to accommodate immediate remediation for minor issues.
- Scientech needs to press clients harder to embrace prior lessons learned



Questions?

