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# Implementation of PI Historian for Substation Equipment Assessment at PECO Energy

## Progress to date, lessons learned, and next steps

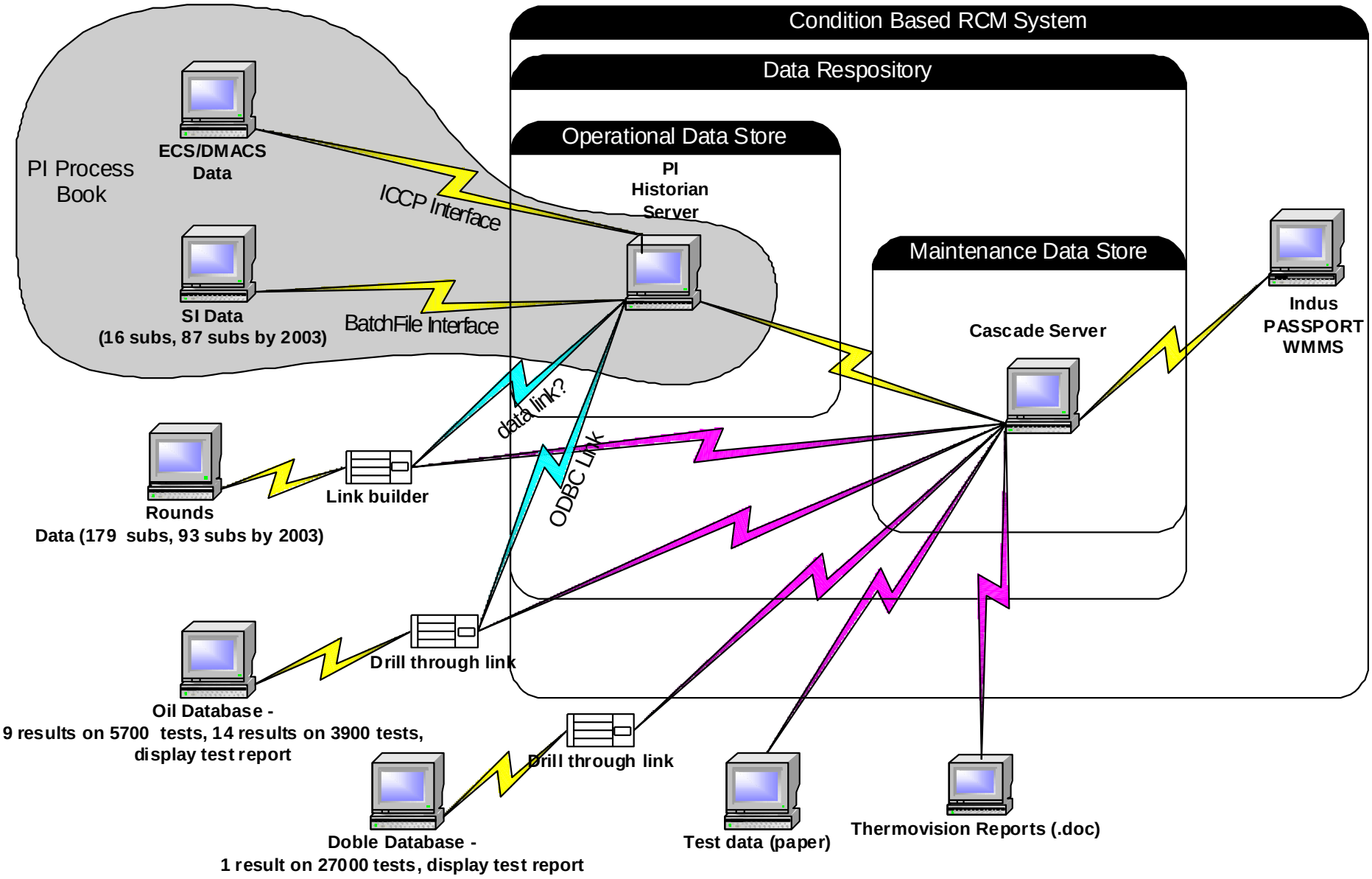
# Agenda

- Maintenance Data Analysis System
  - Background and Goals
  - Current System Architecture
- PI system configuration and history
- Process Book Displays
  - Equipment summary displays
  - Power System ‘batches’
  - IEEE Transformer Standard in Process Book
- Lessons learned to date
- Next steps
- Demo

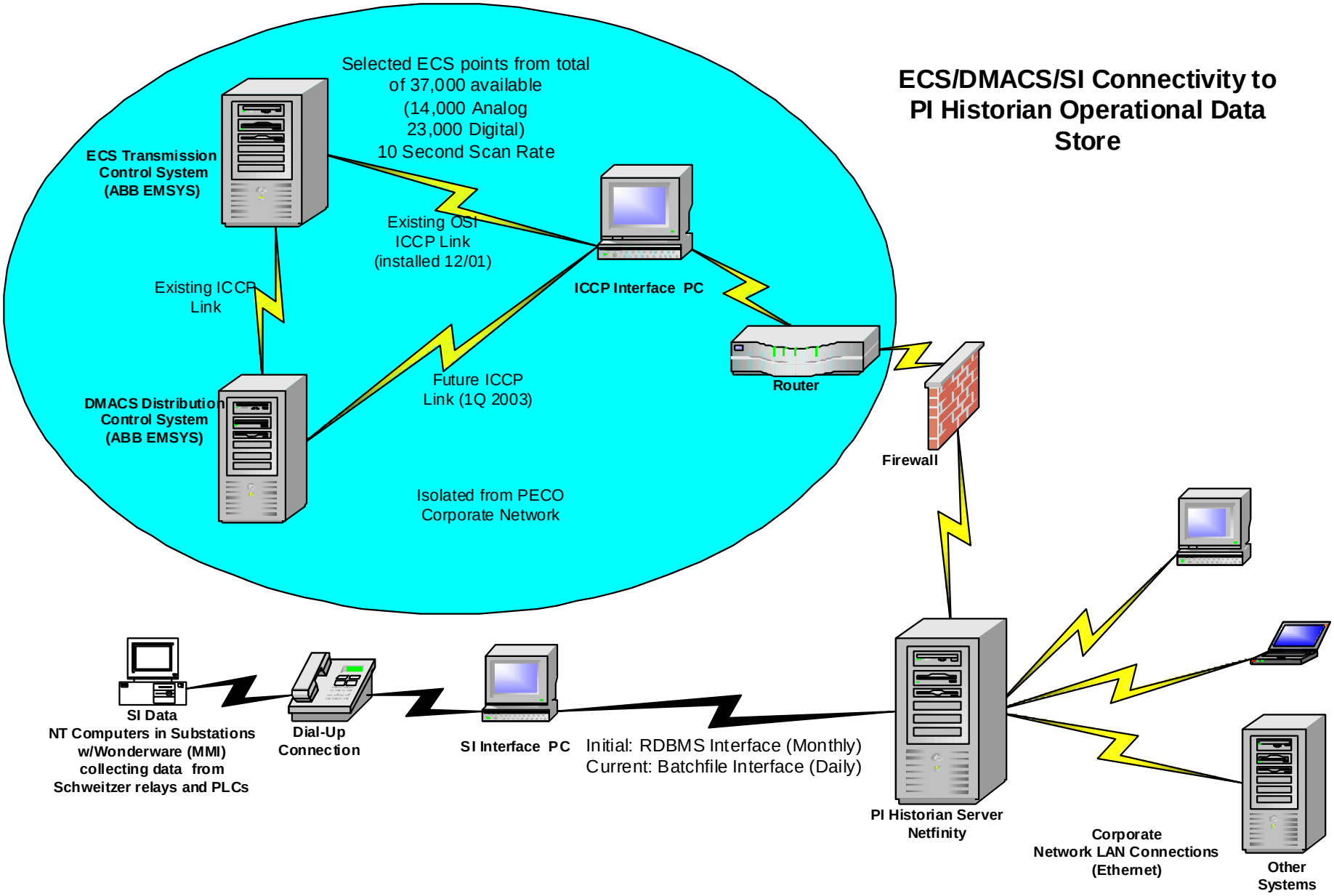
# T&S Maintenance Data Analysis System (MDAS)

- The current maintenance methodology is one that is time based.
- The data analysis system will allow us to store pertinent information (data warehouse) used by the knowledge management system (expert rules) to determine when a piece of equipment requires maintenance.
- Moves us from time based maintenance to condition based maintenance.
- Currently collecting over 48 Million data points per year from 9 SI substations.

# Maintenance Data Analysis System (MDAS) Overview



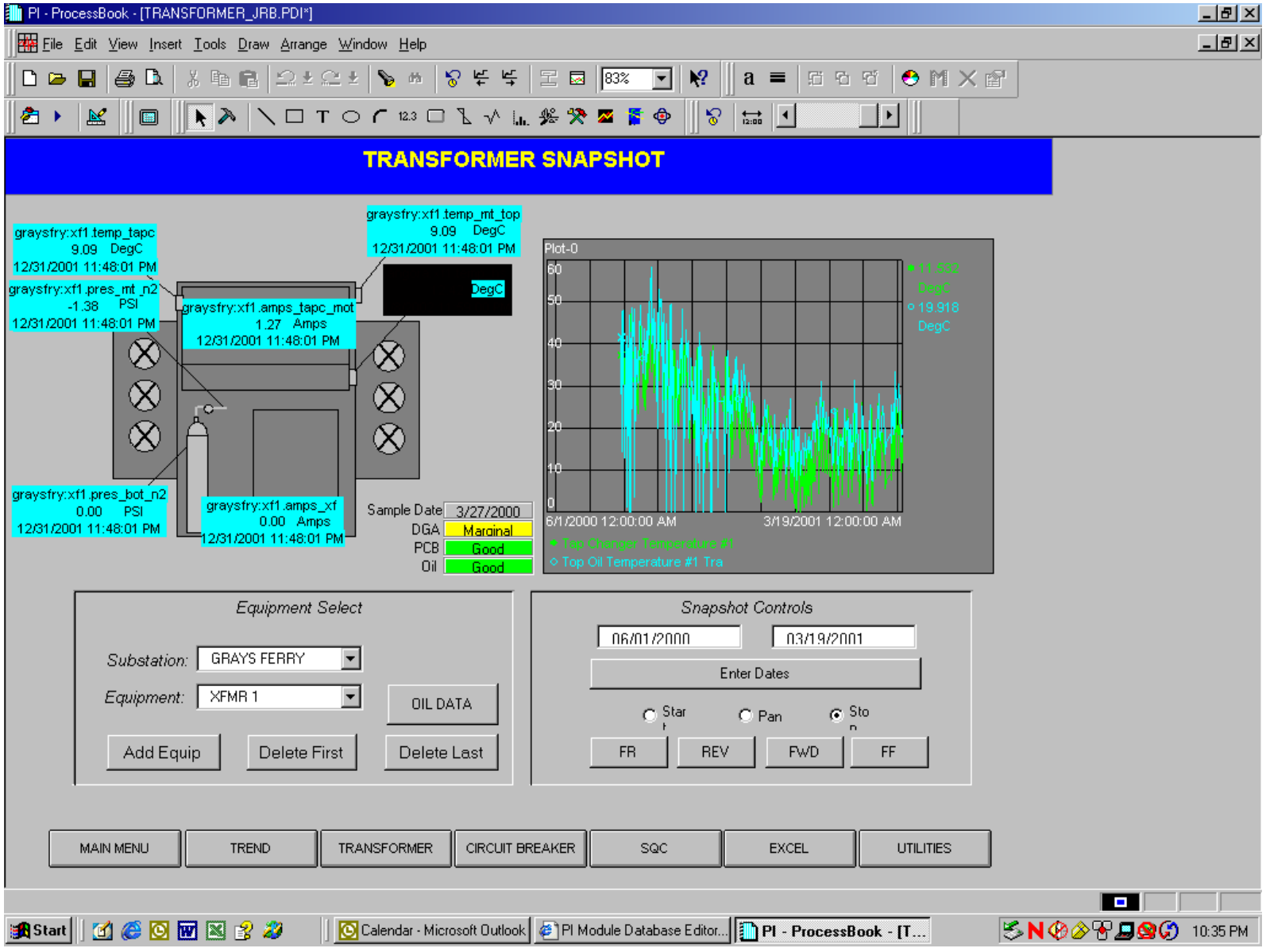
# ECS/DMACS/SI Connectivity to PI Historian Operational Data Store



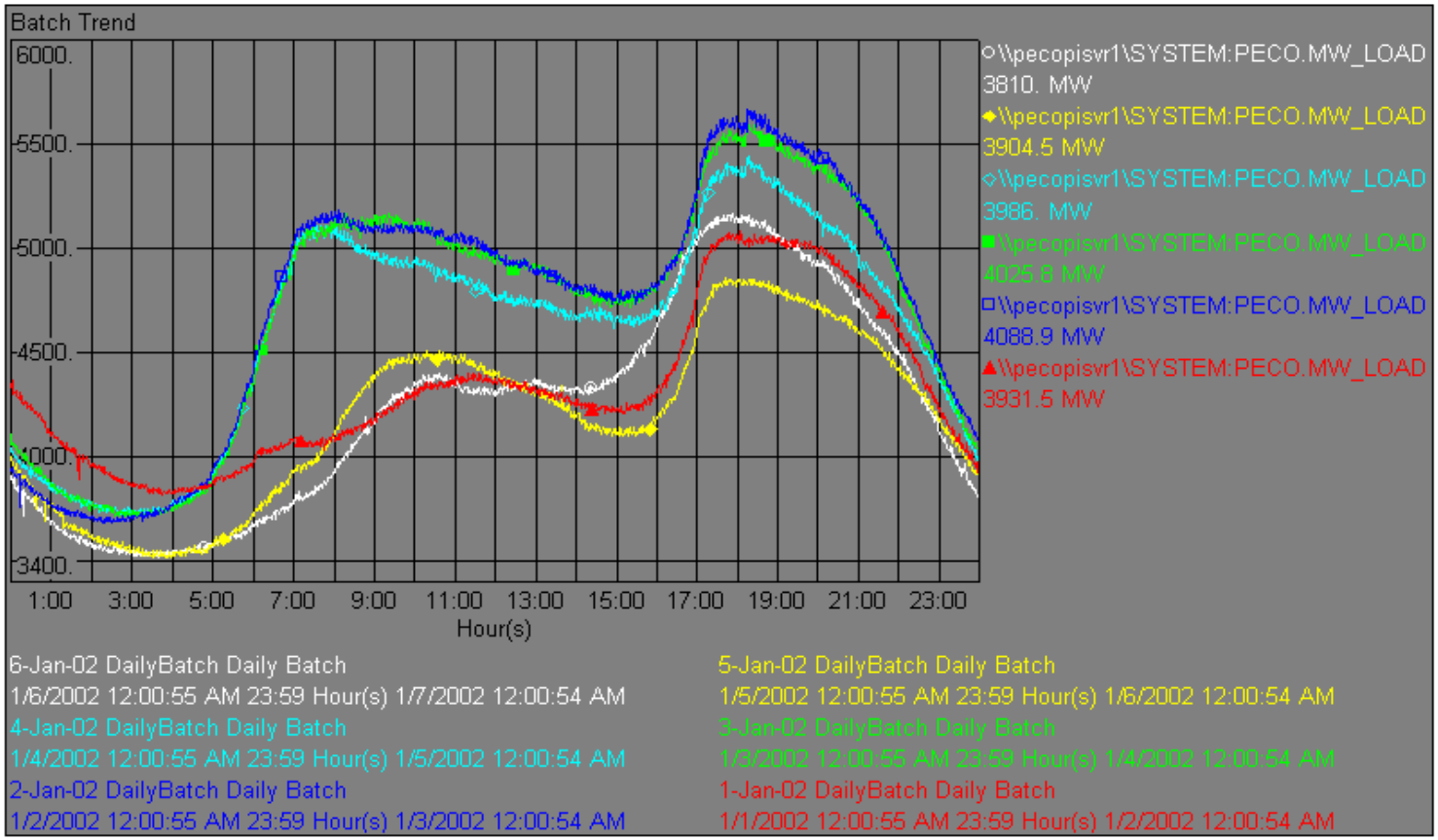
# PI Historian Implementation
## A short history

- Test server (v3.2) delivered from vendor in February 2001.
- Test server rebuilt (v3.3) in July 2001
- Production server configured in August 2001.
- Production server databases rebuilt in November 2001.
- ICCP interface installed in December 2001.
- PI-Ping and Perfmon purchased in December 2001.
- Batchfile interface begins use in January 2002.

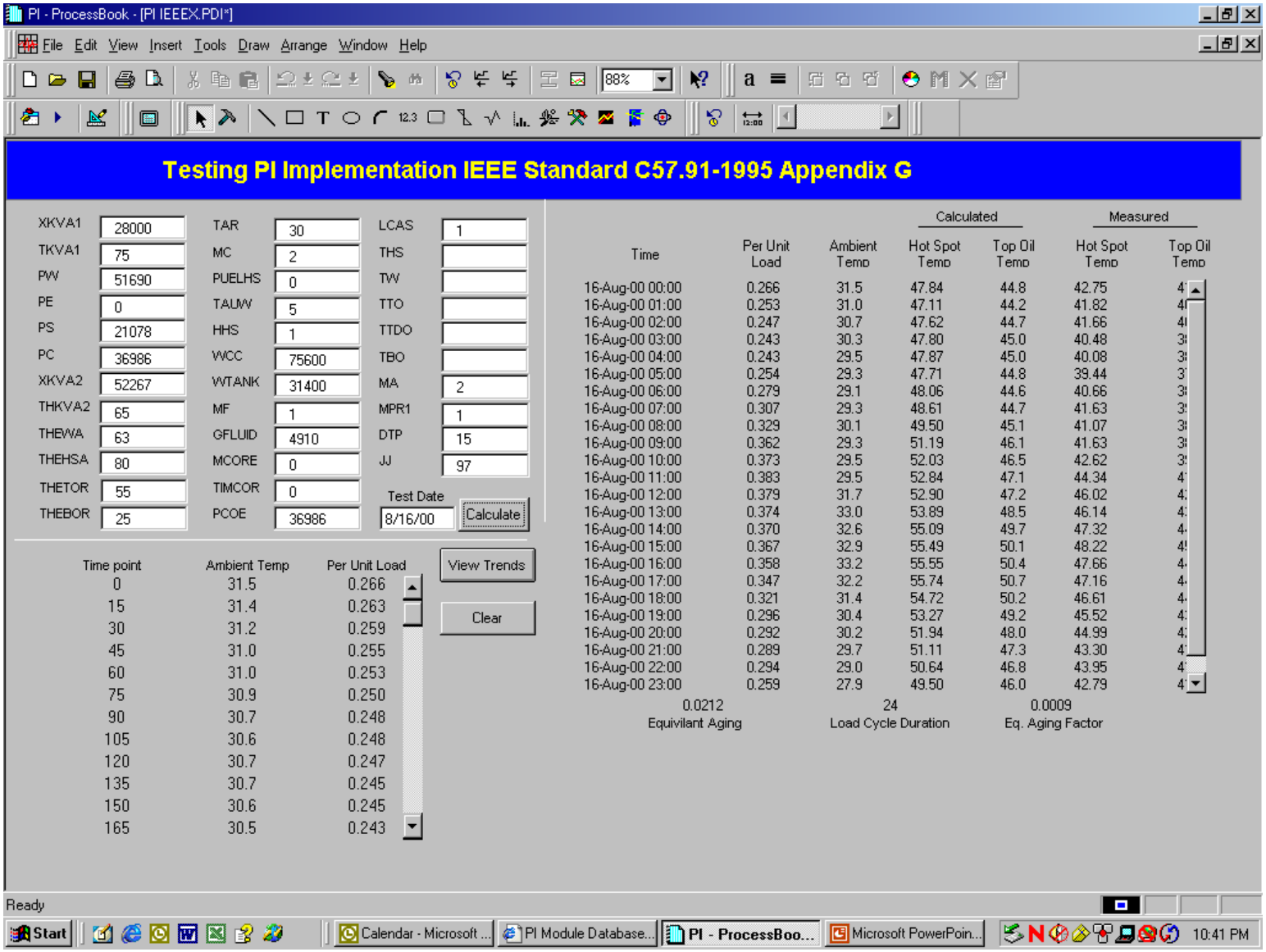
# Transformer Process Book Display with ODBC links



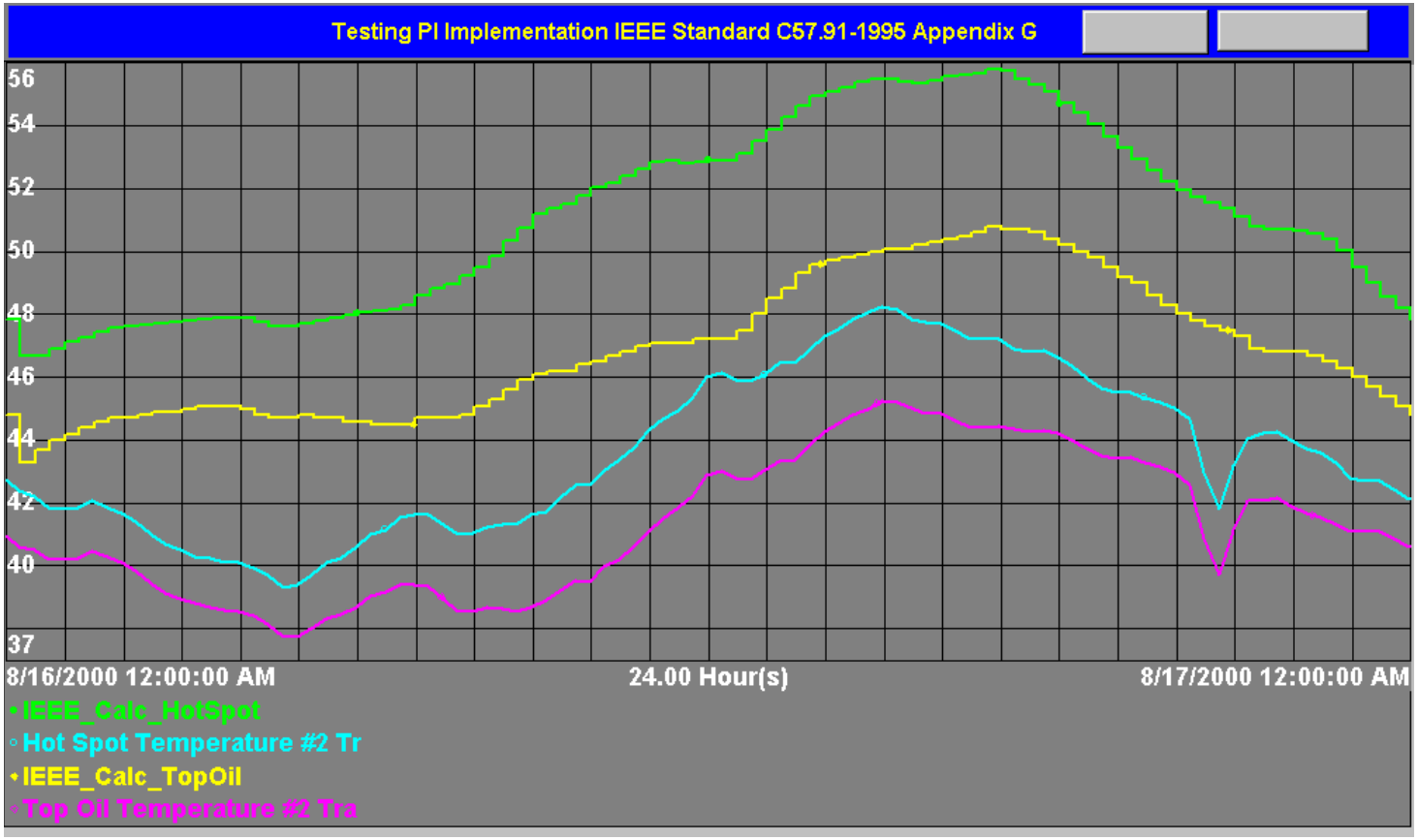
# Batch Trends



# IEEE Standard in Process Book



# IEEE Standard Graph



# Lessons Learned

- Train early and often.
  - Initial training held, but ongoing training needed.
- Define PI point naming convention earlier.
- Use DevNet to jumpstart development.
- Spend the time up front to verify all data and compression settings.
  - OSI provides a good set of tools to modify and update archives.
- ICCP link is difficult to set-up initially, but once configured it runs well.
  - Be sure to have access to EMS vendor during install.
- Batchfile interface is simple and reliable.

# Next Steps

- Use Module Database for ODBC links to other systems.
- Use Module Database for Equipment displays
- PI ACE?
- Web displays.

# Demonstration of Displays