

NOAA POES Engineering Network Prototype Status

Arthur T McClinton Jr.

GSAW 98

February 27, 1998

Outline

- **System Overview**
- **Purpose of the Prototype**
- **Lessons Learned**
- **Sample of the system**

Introduction

Overview

- **Engineering Network Prototype will provide greater access to satellite engineering housekeeping data (more clients, more data manipulation capabilities), and allow analysis activities to be moved off the operational system.**

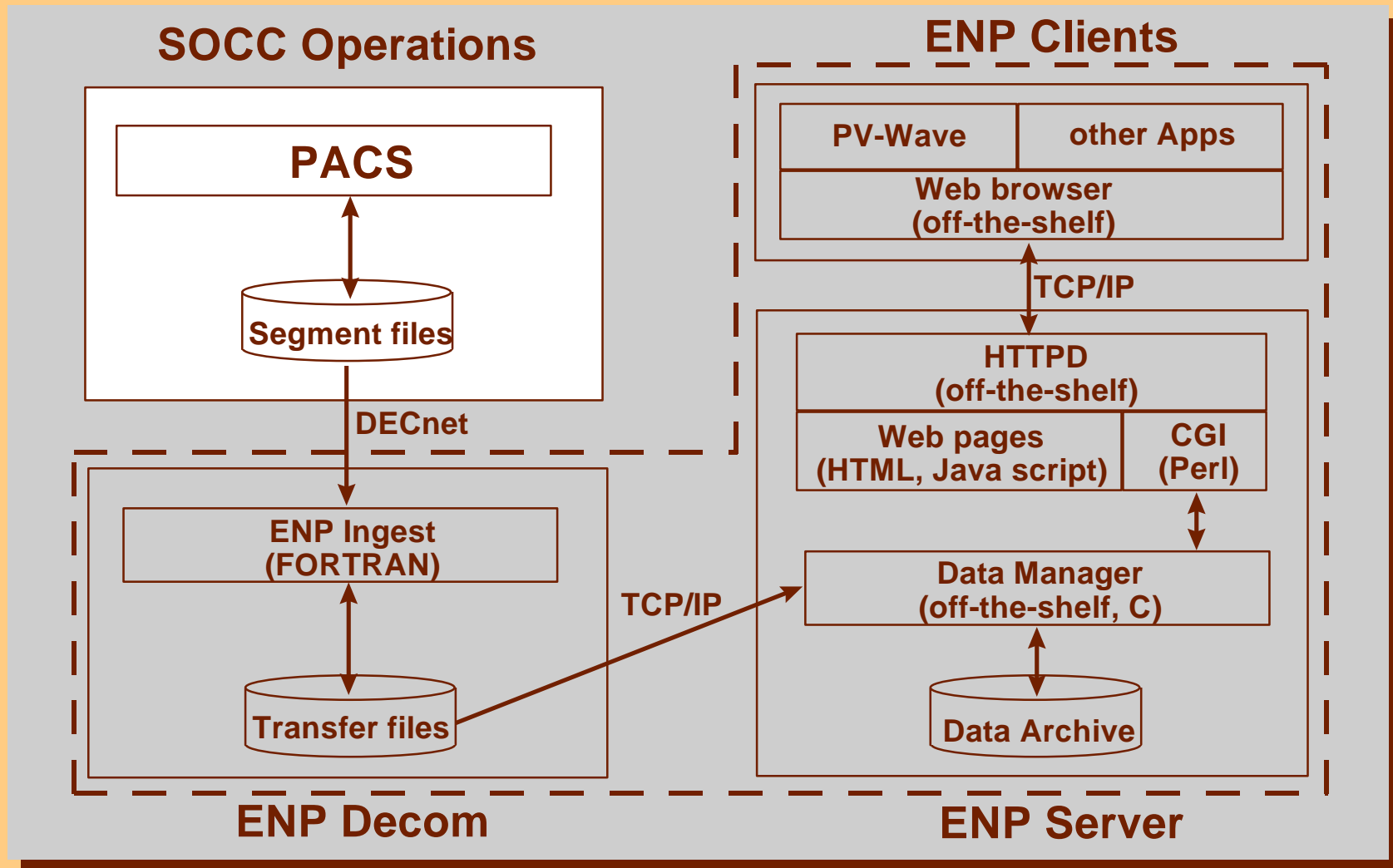
Purpose

- **Determine requirements for operational system**
- **Establish core capabilities for user evaluation**
- **Evaluate design alternatives: database, graphics, etc.**
- **Expose risks of development in target system**

Description

- **NOAA 14 polar weather spacecraft telemetry houskeeping data extracted from Global Area Coverage files and stored on server.**
- **Data accessed via client Windows PC using web browser for downloading and plotting**
 - **Netscape Navigator**
 - **Microsoft Explorer**
- **Tools provided to visualize and manipulate the data**
 - **PV Wave**
 - **Excel**

Functional Diagram



Ad Hoc Query Default Page

The screenshot shows the 'Ad Hoc Query' page in a Netscape browser window. The browser title is 'Netscape - [Engineering Network Main]' and the address bar shows 'http://psvr01.mitretek.org:8080'. The page header includes the NOAA logo and the text 'National Oceanic and Atmospheric Administration'. Below the header, there are links for 'NESDIS Page', 'Engineering Network Approaches', 'Parameter Information', 'Navigation', 'Ad Hoc', 'Canned', 'Lookup Mnemonics', 'Describe Parameter', and 'Show Availability'. The main content area is titled 'Ad Hoc Query' and contains several input fields and buttons. Red arrows point from text labels on the left and right sides to specific elements on the page.

Left Side Labels:

- Click here for Ad Hoc query page
- Start date entry field
- Start time entry field
- Plot/table selection
- Parameter selection
- Click to submit

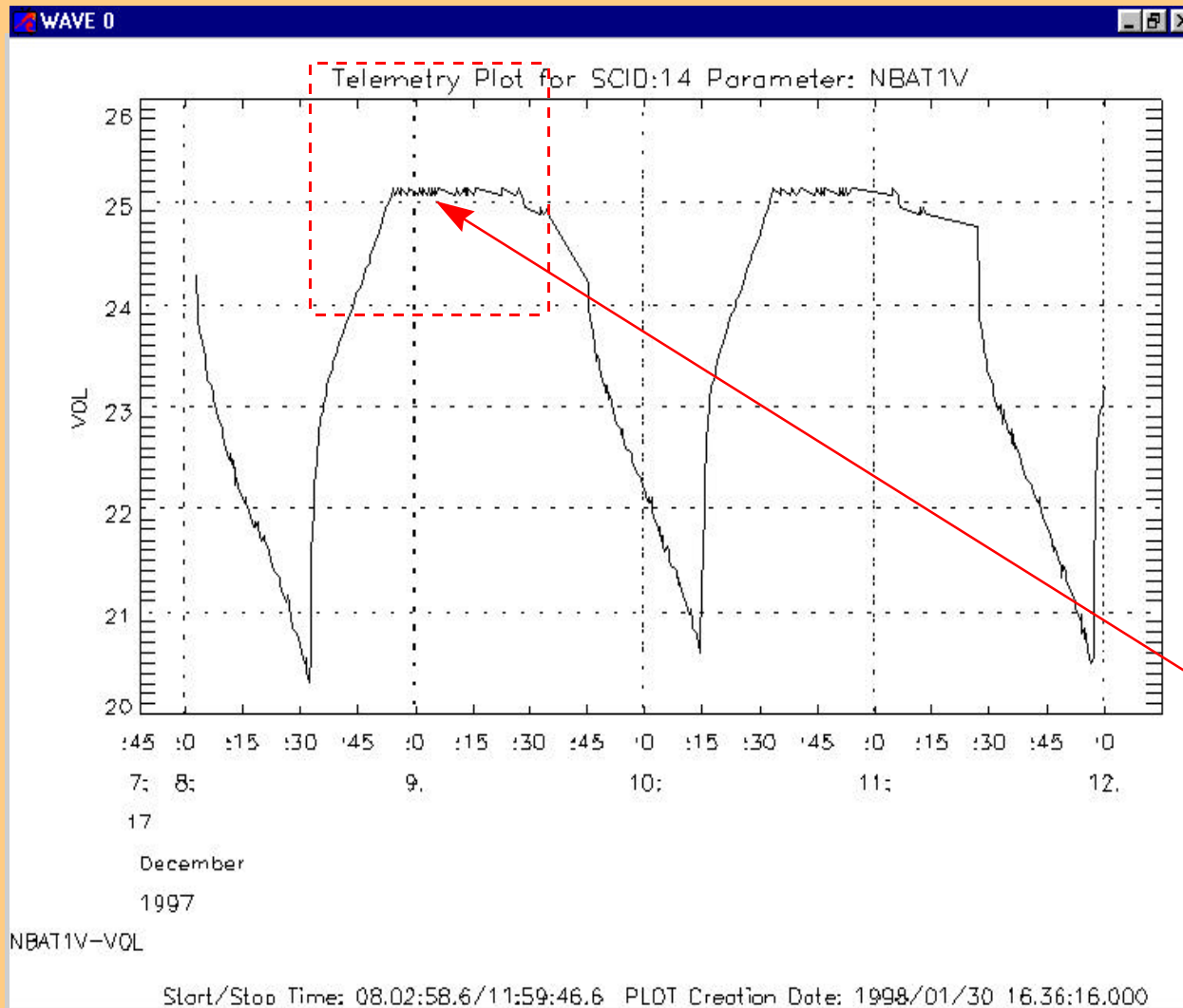
Right Side Labels:

- URL site
- End date entry field
- End time entry field
- Frequency
- Duration
- Filter expression
- Click to Reset

Page Elements:

- URL site: <http://psvr01.mitretek.org:8080>
- Start Date: (yyyyymmdd or yyyyday) [19961027]
- Spacecraft Number: [14]
- End Date: (yyyyymmdd or yyyyday) [19961027]
- Start Time: hours [00] minutes [00] seconds [00]
- End Time: hours [00] minutes [00] seconds [00]
- Display the data in?: [PV Wave]
- Frequency: (hhmmss) []
- Duration: (hhmm) []
- Ad Hoc (Pseudo) Telemetry Parameters: []
- Filter: []
- Submit [] Reset []

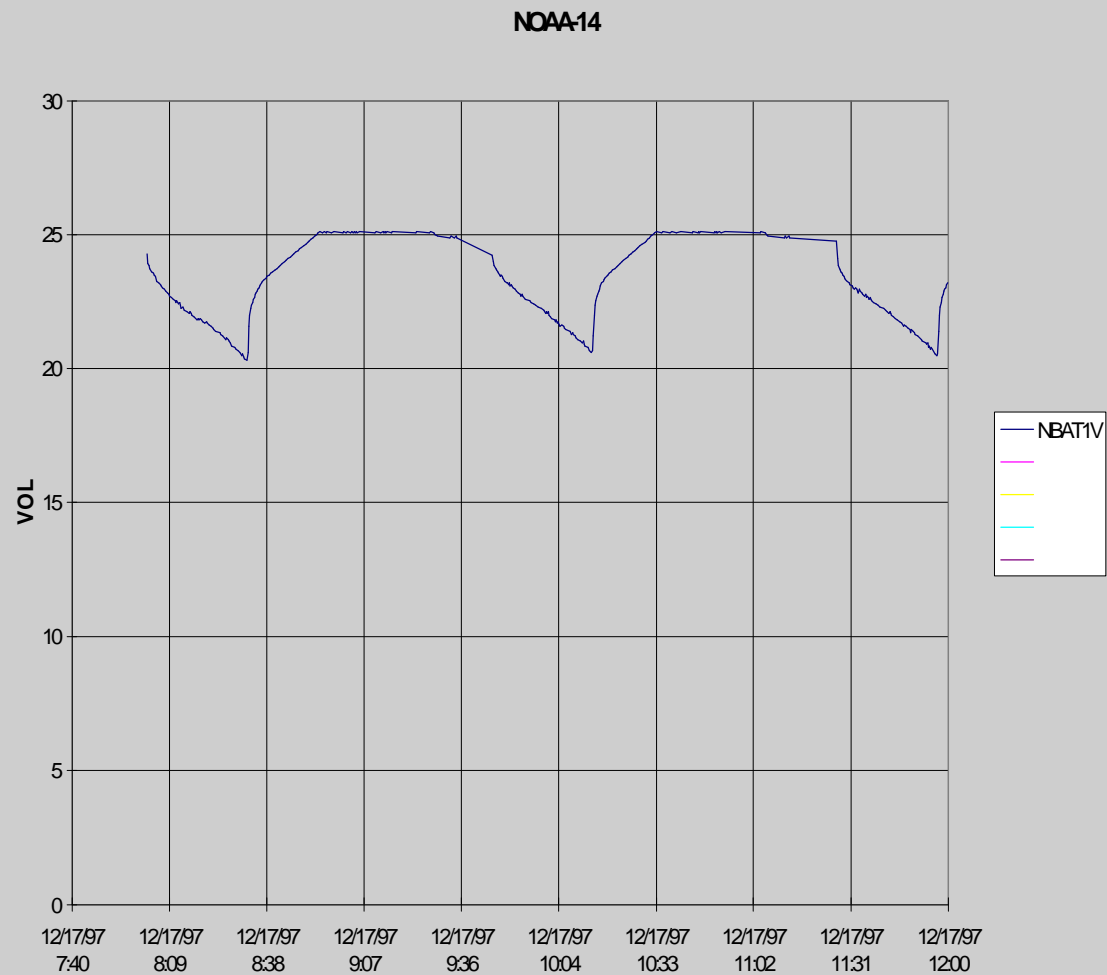
PV-Wave Plot: NBAT1V



- All plots are in color on same axes
- Plots up to 5 parameters on one graph to compare
- Click on area of graph to enlarge



Excel Plot: NBAT1V

- Up to 8 parameters can be plotted on same time scale
- Scale and plot type can be altered dynamically by the user



ENP Navigation Page

Netscape - [Engineering Network Main]
File Edit View Go Bookmarks Options Directory Window Help
Location: http://psvr02.mitretek.org:8080/fo01.shtml

  National Oceanic and Atmospheric Administration

NESDIS Page: [NESDIS](#) [Ad Hoc](#) [Canned](#)
Engineering Network Approaches: [Navigational](#)
Parameter Information: [Lookup](#) [Mnemonics](#) [Describe Parameter](#) [Show Availability](#)

Document last modified on Wednesday, 26-Mar-97 11:23:53 EST.

Spacecraft General Information - Navigational

Start Date (yyyymmdd or yyyydoy) **Spacecraft Number** **End Date** (yyyymmdd or yyyydoy)

1997351 14 19971217

Start Time (hours minutes seconds) **End Time** (hours minutes seconds)

08 : 00 : 00 07 : 59 : 59 .9

Display the data in? **Frequency** (hhmmss) **Duration** (hhmm)

Excel 000032

[Go Subsystems](#) [Reset](#)

[Return to previous Page.](#)

Document last modified on Thursday, 64-Dec-97 11:14:16 EST.

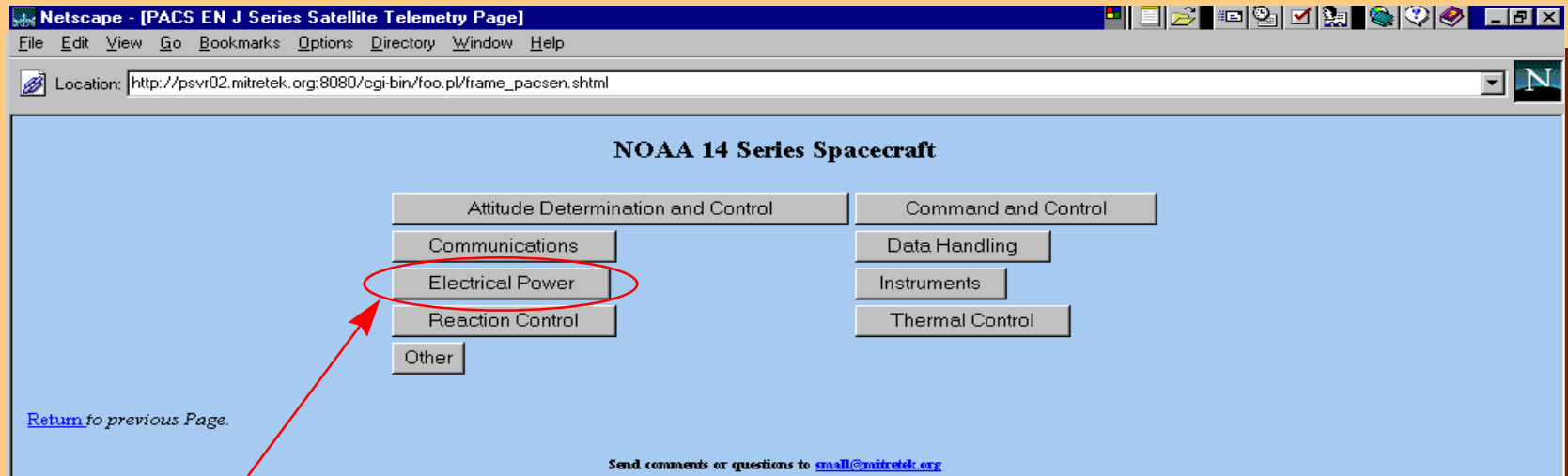
- Click to reach Navigation Page

- Setup desired plot ranges and style

- Click to select parameters by subsystem or assembly

Note: Filters not available in the Navigation mode

Navigation Subsystem Pages

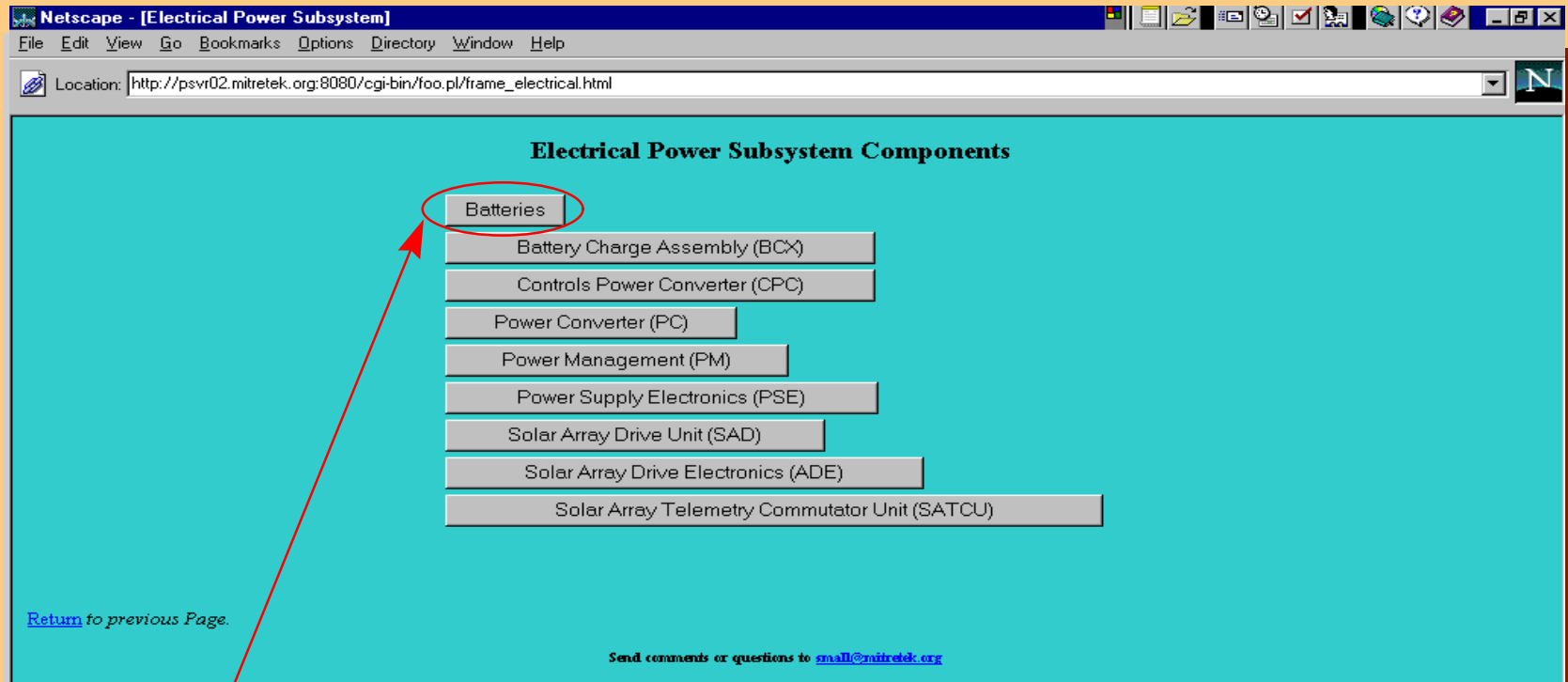


Click title to select desired subsystem

Example: Locate battery voltage parameter NBAT1V

Begin by going to Electrical Power subsystem

Navigation Subsystem Pages (continued)



Go to Batteries to find individual battery parameters

Navigation Subsystem Pages (concluded)

Battery Telemetry

	Battery 1	Battery 2	Battery 3
Voltage	<input checked="" type="checkbox"/> NBAT1V	<input type="checkbox"/> NBAT2V	<input type="checkbox"/> NBAT3V
Pack A Temperature	<input type="checkbox"/> NBAT1AT	<input type="checkbox"/> NBAT2AT	<input type="checkbox"/> NBAT3AT
Pack B Temperature	<input type="checkbox"/> NBAT1BT	<input type="checkbox"/> NBAT2BT	<input type="checkbox"/> NBAT3BT
A TCE-H	<input type="checkbox"/> NTCE1H	<input type="checkbox"/> NTCE3H	<input type="checkbox"/> NTCE5H
B TCE-H	<input type="checkbox"/> NTCE2H	<input type="checkbox"/> NTCE4H	<input type="checkbox"/> NTCE6H
A TCE-L	<input type="checkbox"/> NTCE1L	<input type="checkbox"/> NTCE3L	<input type="checkbox"/> NTCE5L
B TCE-L	<input type="checkbox"/> NTCE2L	<input type="checkbox"/> NTCE4L	<input type="checkbox"/> NTCE6L

To Select a parameter, click on the appropriate square box. To obtain Help, click the appropriate text next to the square box.
Parameter Color Code: Analog; Binary; Hex; CNT or DBC; DIS

[Return to previous Page.](#)

Send comments or questions to small@mitretek.org

Check appropriate boxes and Submit Query or Add to generate a pick list of parameters to plot

Click on Reset to create a new list of parameters

Conclusions

- **WEB Technology made for easy client server integration**
- **Quicker development (9 staff months)**
 - Rapid development using pieces of existing COTS or PACS system code
 - Easy to add/swap in new COTS products
 - Users were able to pick it up with minimal training
 - Familiarity breeds consent
- **Use of COTS may require modifying some requirements**
 - General look and feel of plot
 - EXCEL and PV-Wave date format is one such example
 - Point limitations in EXCEL
- **Provided new methods of performing same task**