Generic Applications with the Module Database

Overview of PI System in Entergy

- Started in 1997 for Entergy's fossil plants.
- 171,858 tags on 18 PI systems using 32 interfaces gathering data from DCS systems like Foxboro, Honeywell, Max 1000, WDPF, Ovation, ABB, Bailey, some PLC systems as well as a couple of custom interfaces.
- Currently have 2000 displays in 23 PIW files ranging in size from 15 MB to over 40 MB.

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Reasons for Using the MDB

- Tag name inconsistencies between plants and units. With few exceptions, no two DCS points are remotely similar from plant to plant and unit to unit.
- Record keeping. You can store any amount of data in the properties of the Module Database.
- Less confusion of which tags store the desired data for new employees.
- It makes generic applications easier to create.

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Generic Applications for the MDB

- Equipment Health Monitoring System (EHMS) – in use
- Operational Information System (OIS) display development – in development
- Operations Transaction Server (OTS)
- Reporting potential both within the MDB and using Excel, Access or other tools.

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Reasons for implementing the MDB in EHMS

- After creating the displays for only six critical pieces of equipment, the size of the EHMS PIW was over 8 MB for **one unit**.
- Due to the formatting of our details displays, the display load time could take as long as one to two minutes on a fast connection.

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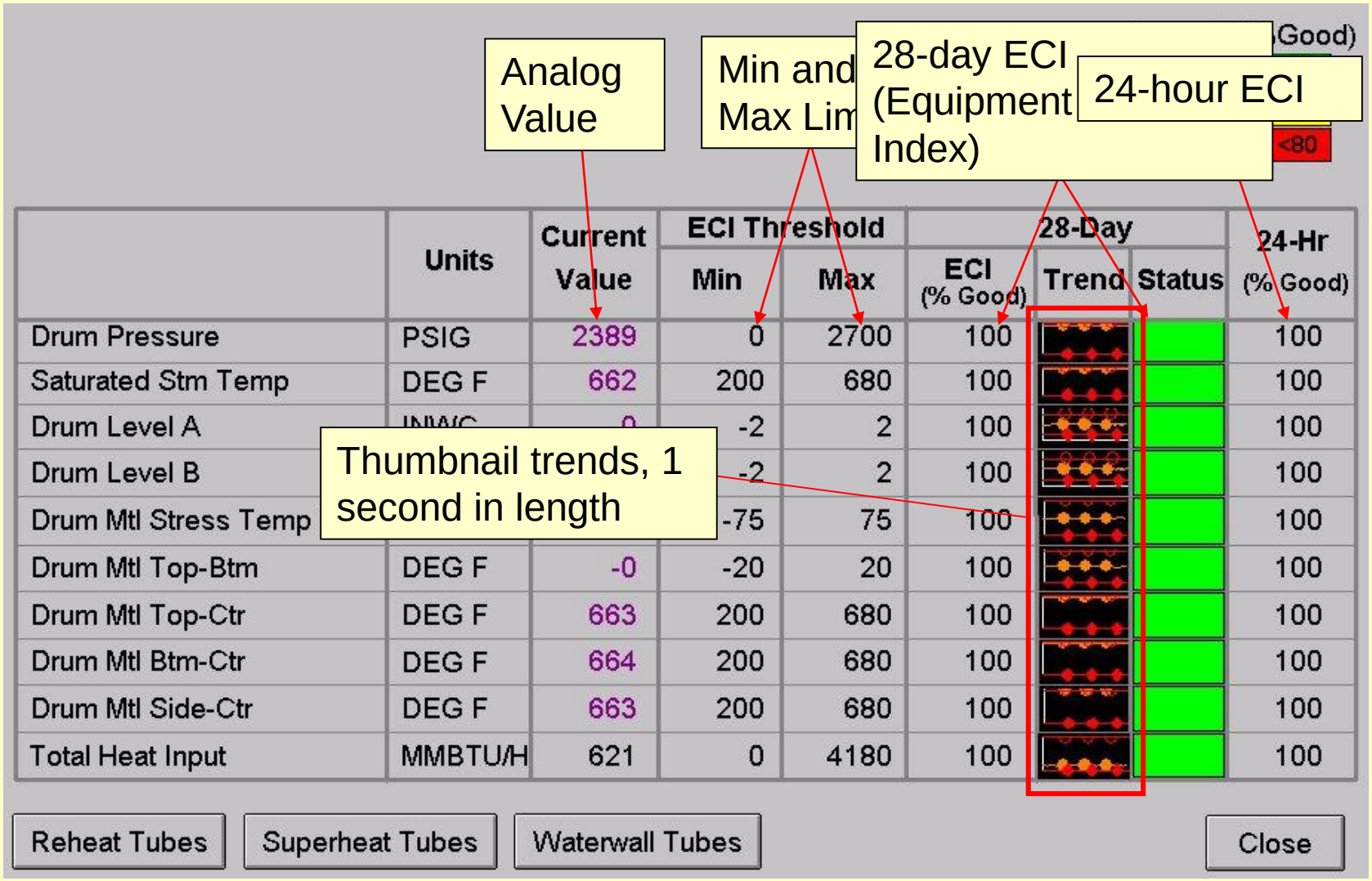
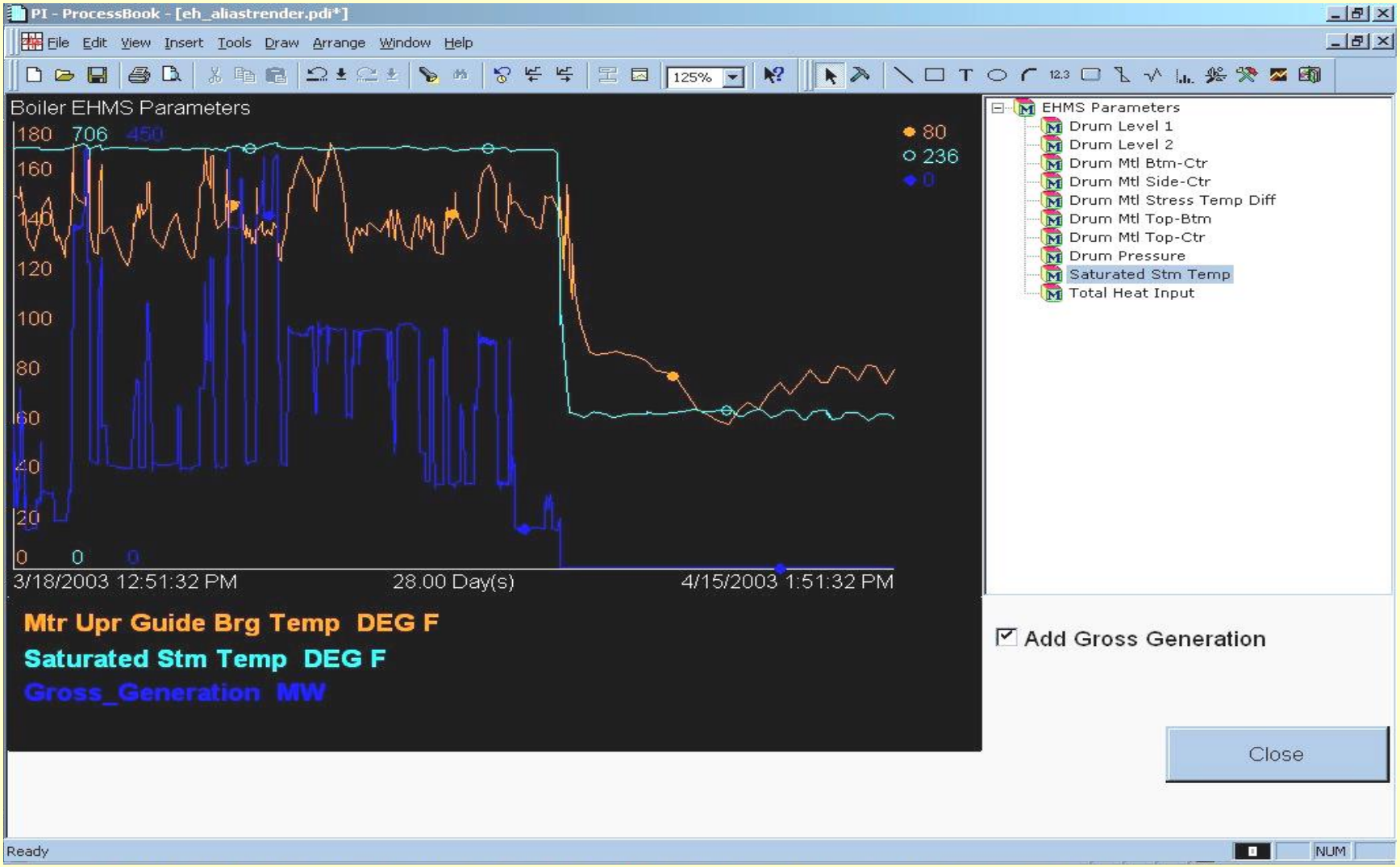
EHMS



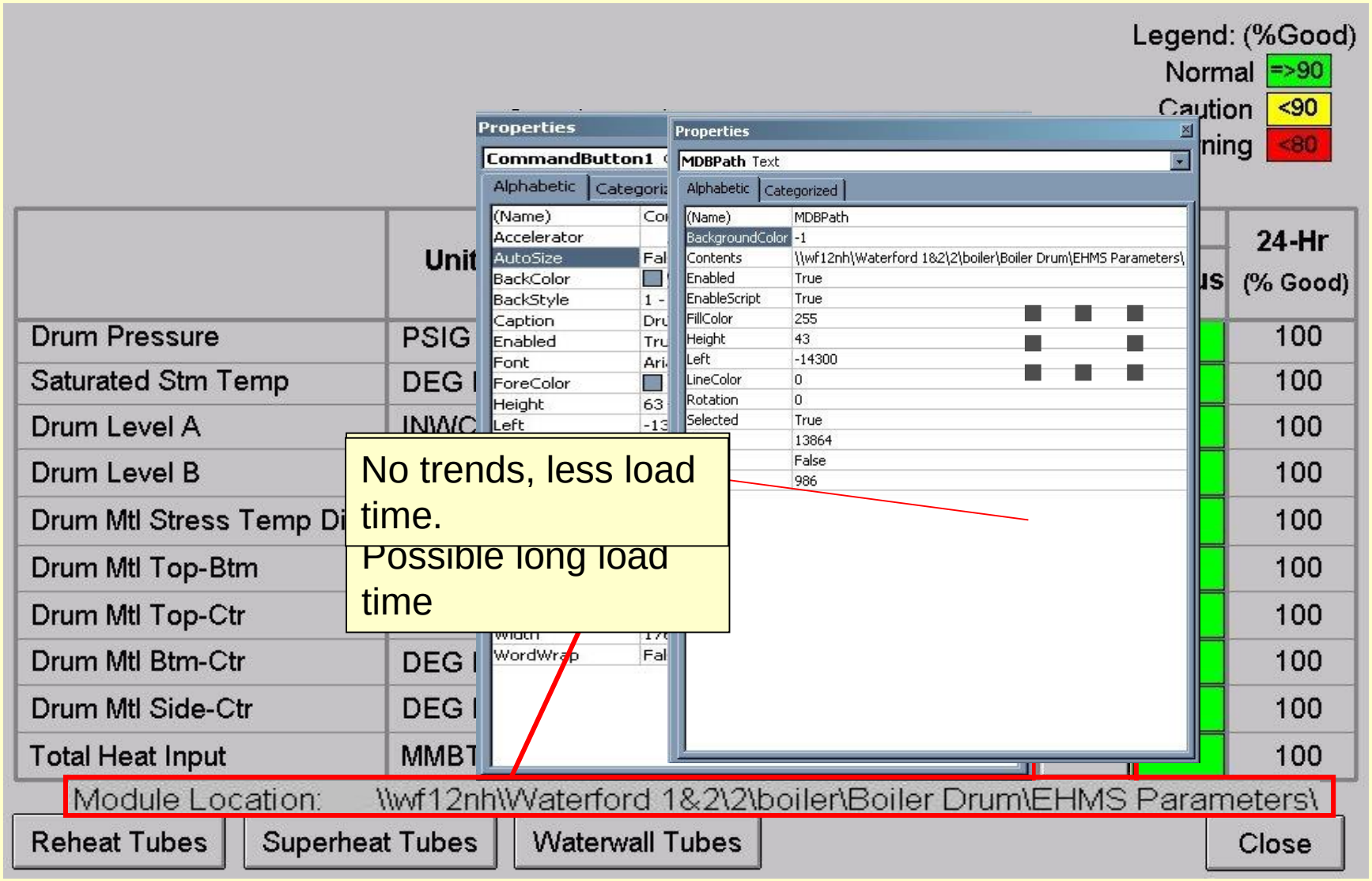
	Units	Current Value	ECI Threshold Min	ECI Threshold Max	28-Day ECI (% Good)	28-Day Trend	28-Day Status	24-Hr (% Good)
Drum Pressure	PSIG	2389	0	2700	100			100
Saturated Stm Temp	DEG F	662	200	680	100			100
Drum Level A	IN/A/C	0	-2	2	100			100
Drum Level B			-2	2	100			100
Drum Mtl Stress Temp			-75	75	100			100
Drum Mtl Top-Btm	DEG F	-0	-20	20	100			100
Drum Mtl Top-Ctr	DEG F	663	200	680	100			100
Drum Mtl Btm-Ctr	DEG F	664	200	680	100			100
Drum Mtl Side-Ctr	DEG F	663	200	680	100			100
Total Heat Input	MMBTU/H	621	0	4180	100			100

Reheat Tubes | Superheat Tubes | Waterwall Tubes | Close

EHMS


PI - ProcessBook - [eh_aliastrender.pdi*]
File Edit View Insert Tools Draw Arrange Window Help
125%
Boiler EHMS Parameters
180 706 450
160
140
120
100
80
60
40
20
0 0 0
80
236
0
3/18/2003 12:51:32 PM
28.00 Day(s)
4/15/2003 1:51:32 PM
Mtr Upr Guide Brg Temp DEG F
Saturated Stm Temp DEG F
Gross_Generation MW
EHMS Parameters
Drum Level 1
Drum Level 2
Drum Mtl Btm-Ctr
Drum Mtl Side-Ctr
Drum Mtl Stress Temp Diff
Drum Mtl Top-Btm
Drum Mtl Top-Ctr
Drum Pressure
Saturated Stm Temp
Total Heat Input
Add Gross Generation
Close
Ready
NUM

EHMS


Legend: (%Good)
Normal =>90
Caution <90
ning <80
Properties
CommandButton1
Alphabetic
Categorized
(Name)
Accelerator
AutoSize
BackColor
BackStyle
Caption
Enabled
Font
ForeColor
Height
Left
WordWrap
Properties
MDBPath Text
Alphabetic
Categorized
(Name) MDBPath
BackgroundColor -1
Contents \\wf12nh\Waterford 1&2\2\boiler\Boiler Drum\EHMS Parameters\
Enabled True
EnableScript True
FillColor 255
Height 43
Left -14300
LineColor 0
Rotation 0
Selected True
13864
False
986
No trends, less load time.
Possible long load time
Unit
24-Hr (% Good)
Drum Pressure PSIG 100
Saturated Stm Temp DEG 100
Drum Level A 100
Drum Level B 100
Drum Mtl Stress Temp Di 100
Drum Mtl Top-Btm 100
Drum Mtl Top-Ctr 100
Drum Mtl Btm-Ctr DEG 100
Drum Mtl Side-Ctr DEG 100
Total Heat Input MMBT 100
Module Location: \\wf12nh\Waterford 1&2\2\boiler\Boiler Drum\EHMS Parameters\
Reheat Tubes
Superheat Tubes
Waterwall Tubes
Close

Operational Information System (OIS)

Reasons for using the MDB to develop Processbook displays:

- Many displays to build that are similar if not identical in design
- The display holds a considerable amount of information that is similar or identical to other units' or plant's needs. We currently have displays that hold up to 100 or more tags.
- There appeared to be a significant decrease to the required man-hours when compared to the time-consuming point-and-click including tag searches.

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Module Database Issues

- **Who needs to be involved in determining the names of the modules and aliases?**

  One man team for module/alias naming. Why? Too many cooks. This insures consistency with the naming and locations of the modules, aliases, and properties.

- **How do we prioritize what needs to be "modularized" first or even determine what needs to be in the MDB?**
  - Address those items that are currently needed in the development of Processbook displays.
  - Modularize the parameters that will be used by outside applications such as Excel or external VB applications
  - Anything else

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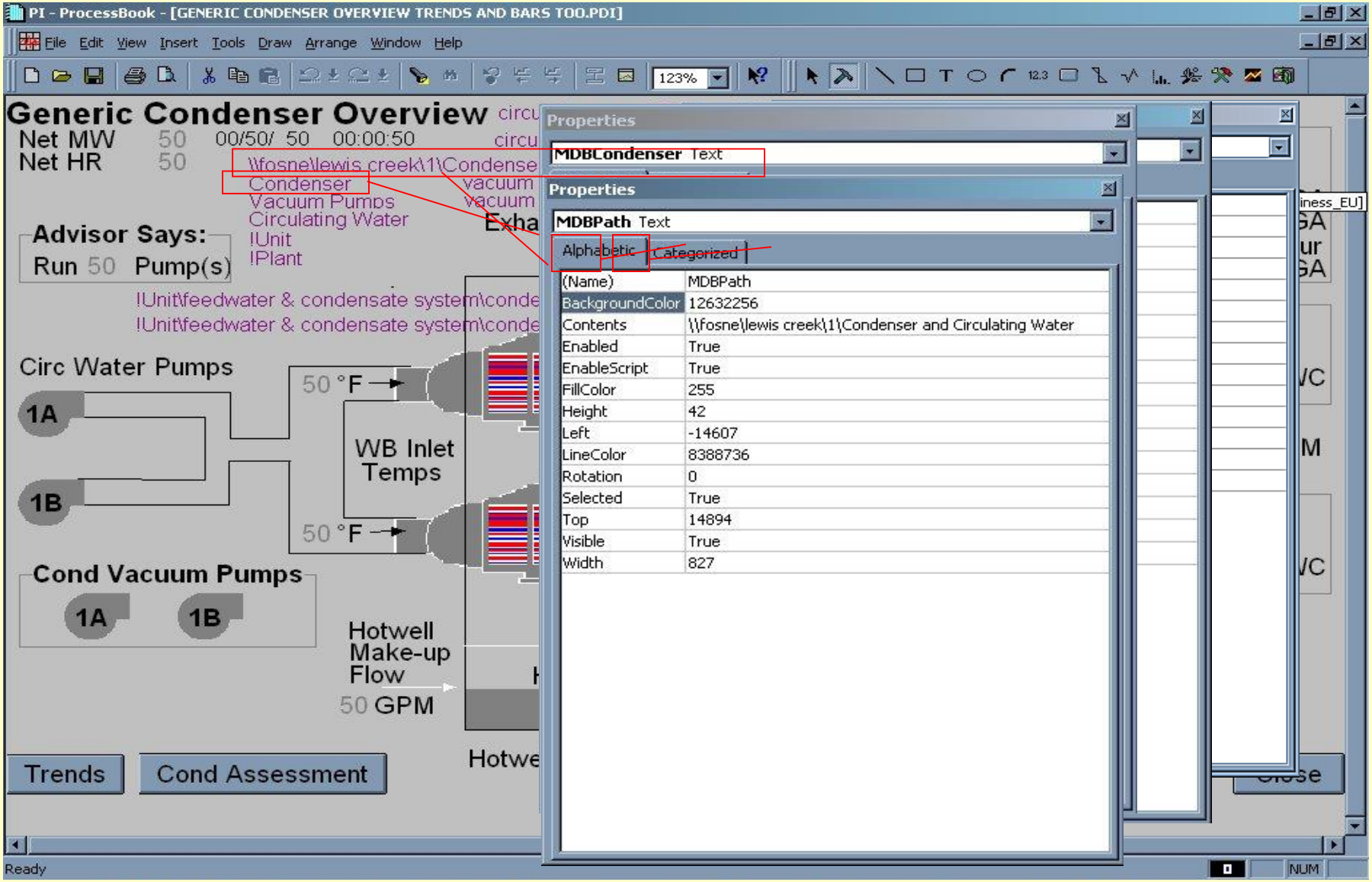
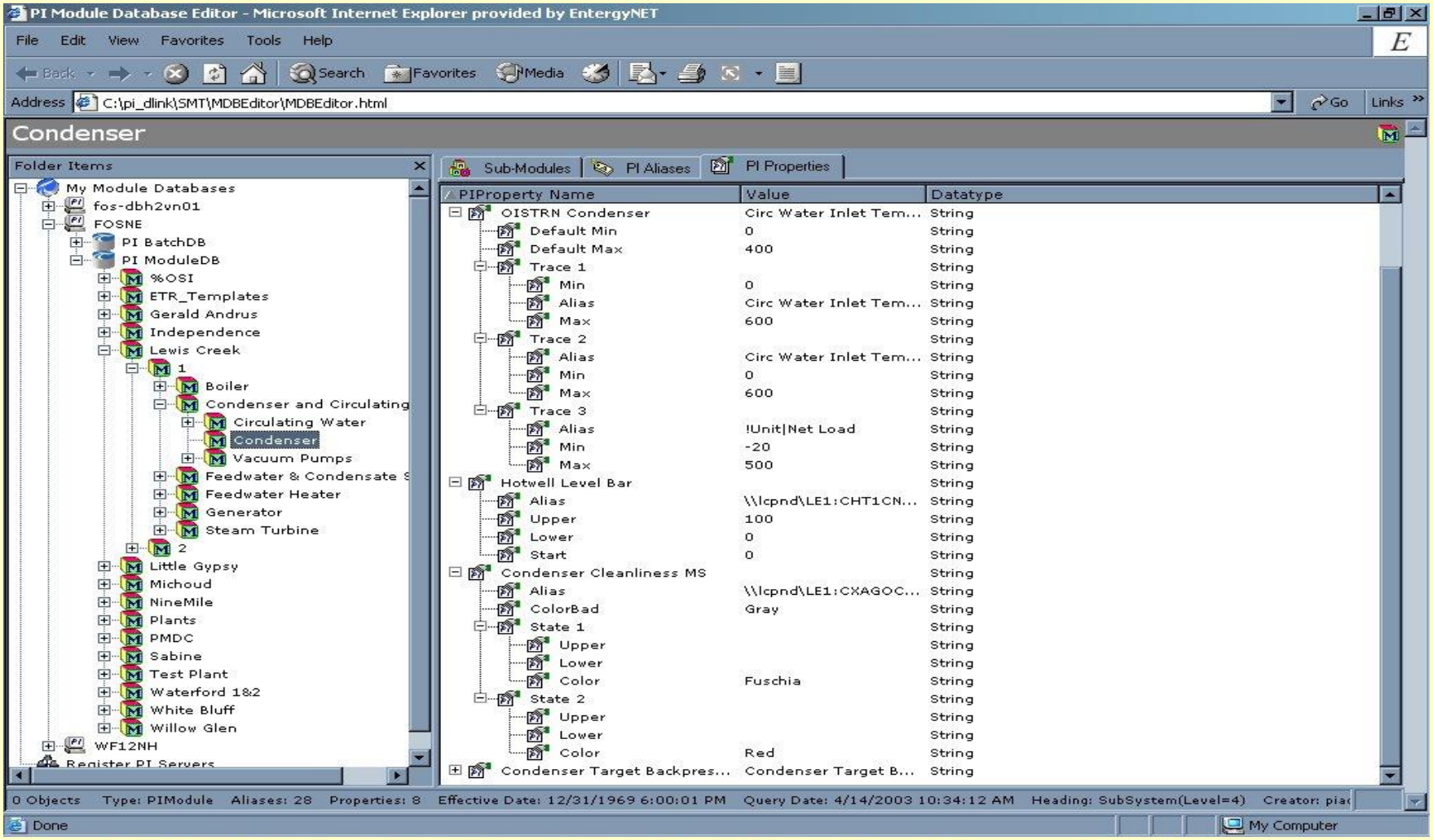
Operational Information System (OIS)



Operational Information System (OIS)



Questions?

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