

OSIsoft®

USERS²⁰¹¹ CONFERENCE




Turning **insight** into **action**.



Putting it all Together: Assemble Your PI Reports and Displays Into Status Dashboards

Presented by **Laurie Dieffenbach**, Product Manager, OSIsoft
Mike Wood, Product Manager, OSIsoft



At UC 2003, ANR gave a presentation that described the standards and site applications developed on the PI System infrastructure.



PI in a Modern Power Plant

More Uses Than Just a Troubleshooter

Presented by: Brian M. Wood, American National Power, Inc




PI in a Modern Power Plant – American National Power, Inc. PI User Conference '03

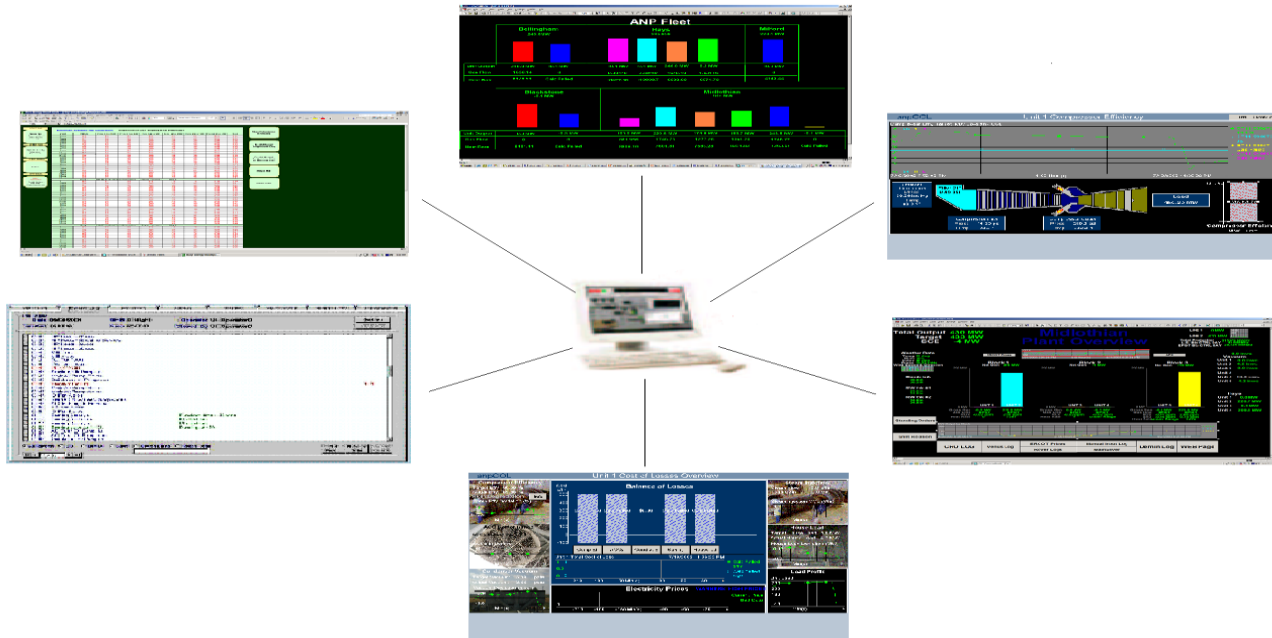
Developed Applications for Sites

- Mimicked DCS Screens
- Administrative Spreadsheets
- Plant Overview ProcessBook & Excel Screens
- Reports Automatically Generated
- All calculations put in as Performance points
- Unit Efficiency Calculations & PB Screens
- Electronic Log for Operators
- Batch for Startup Analysis
- Troubleshooting, etc...

PI in a Modern Power Plant – American National Power, Inc. PI User Conference '03



The Opportunity



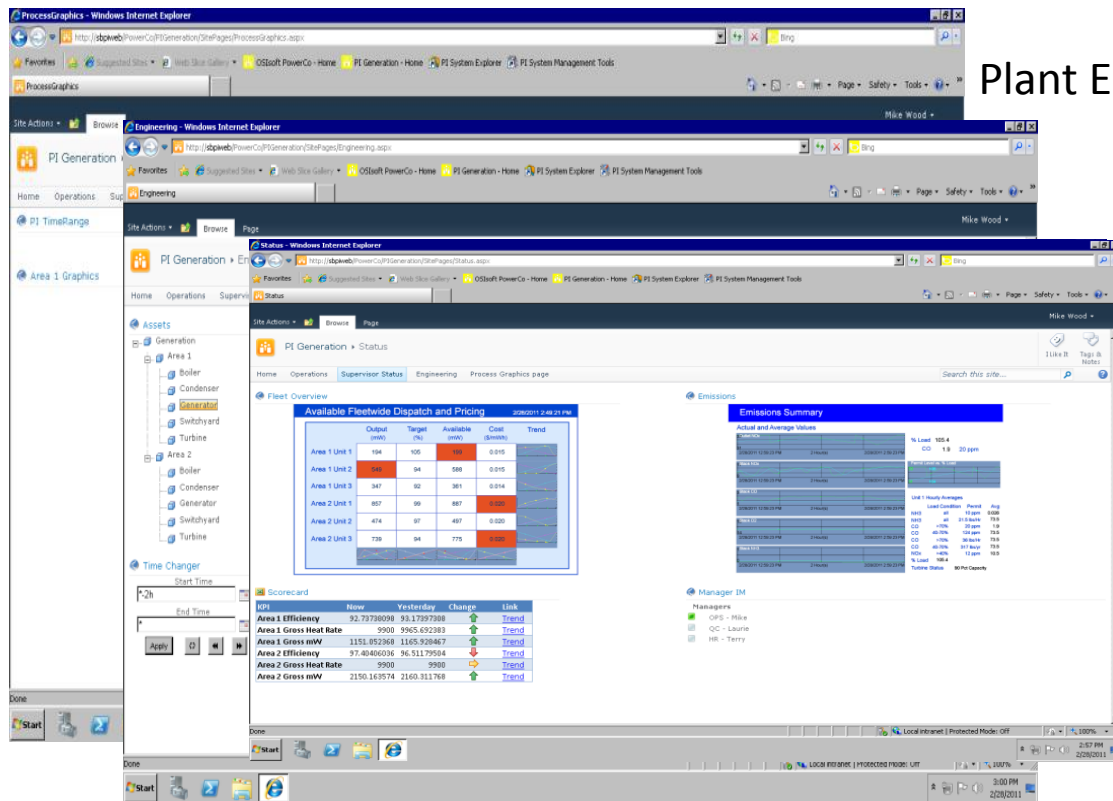
One of ANR's stated goals was to make the information more readily accessible to a larger audience by leveraging web technology

The Goal

In this presentation we will show how

- PI WebParts and the SharePoint environment can bring together information
- To distribute it using a browser interface

The resulting SharePoint site is made up of four pages, Operations, Supervisor Status, Engineering and Process Graphics



Plant Equipment Status Screens

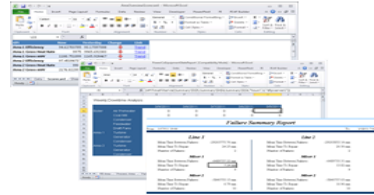
Engineering Dashboard of Equipment Detail and Plant Production KPIs

Operational Dashboard of enterprise KPIs and reports
Plant level dashboard of Fleet Dispatch, Emissions, and Area Scorecard

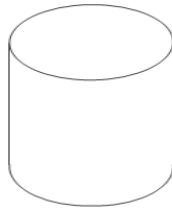
Process Overview



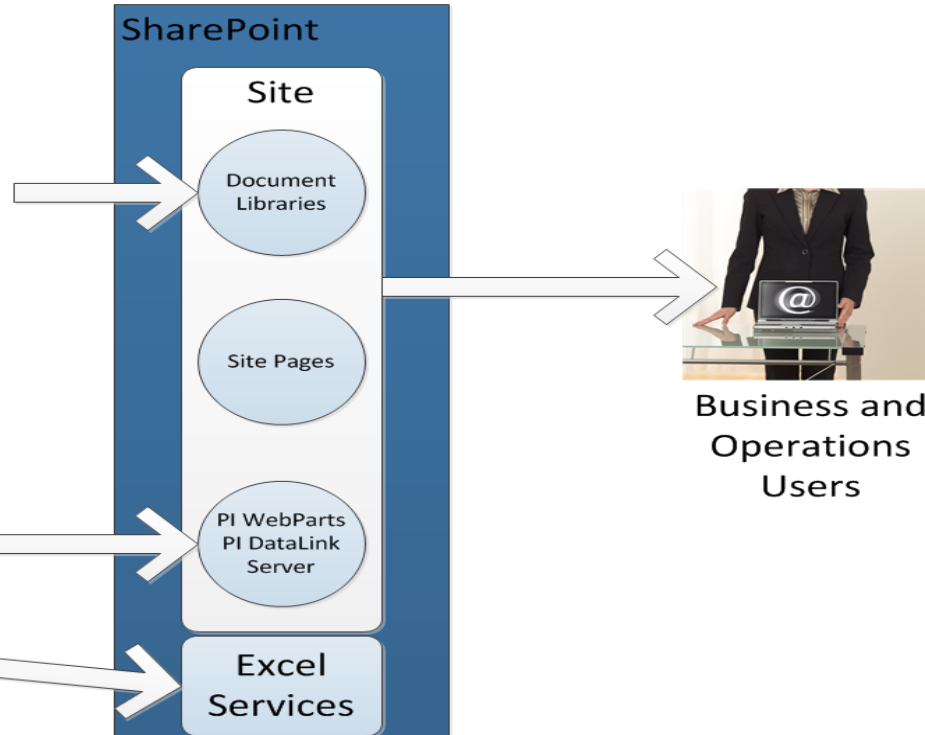
PI ProcessBook Displays



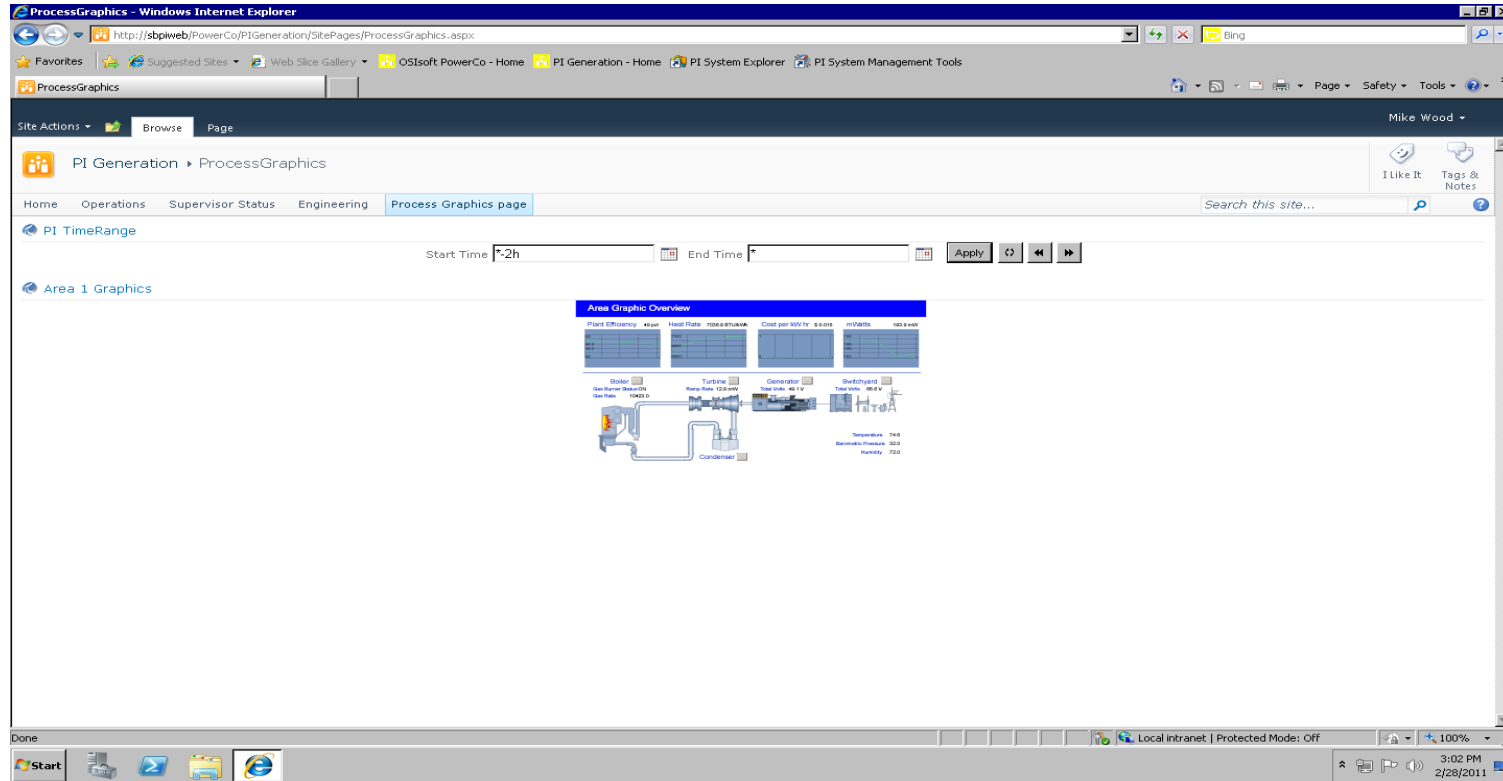
PI DataLink Reports



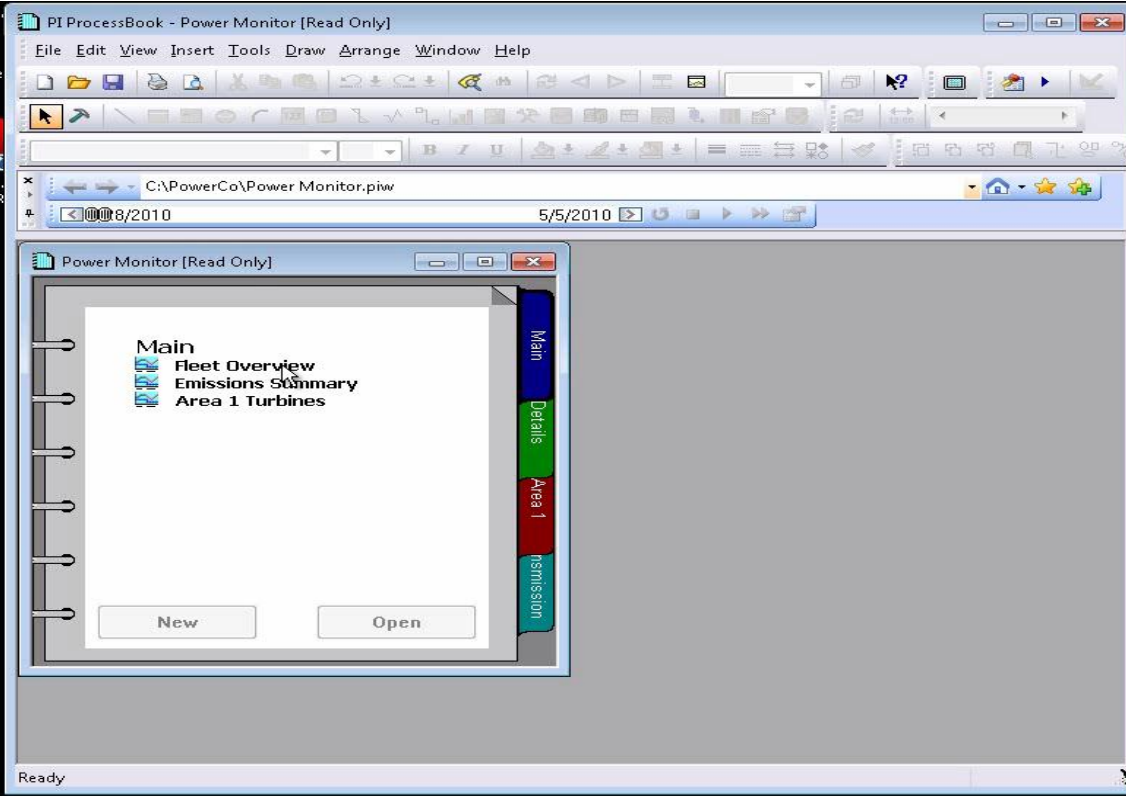
External Data or Applications



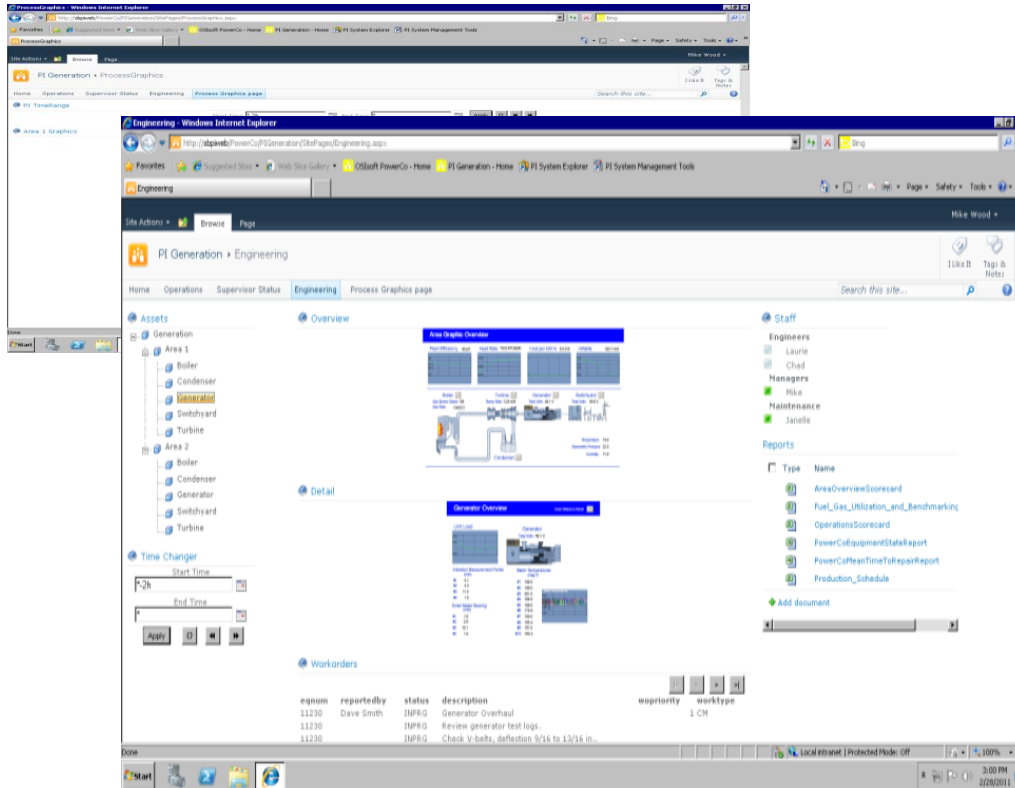
Publish Process Graphics



Preparing Process Graphics

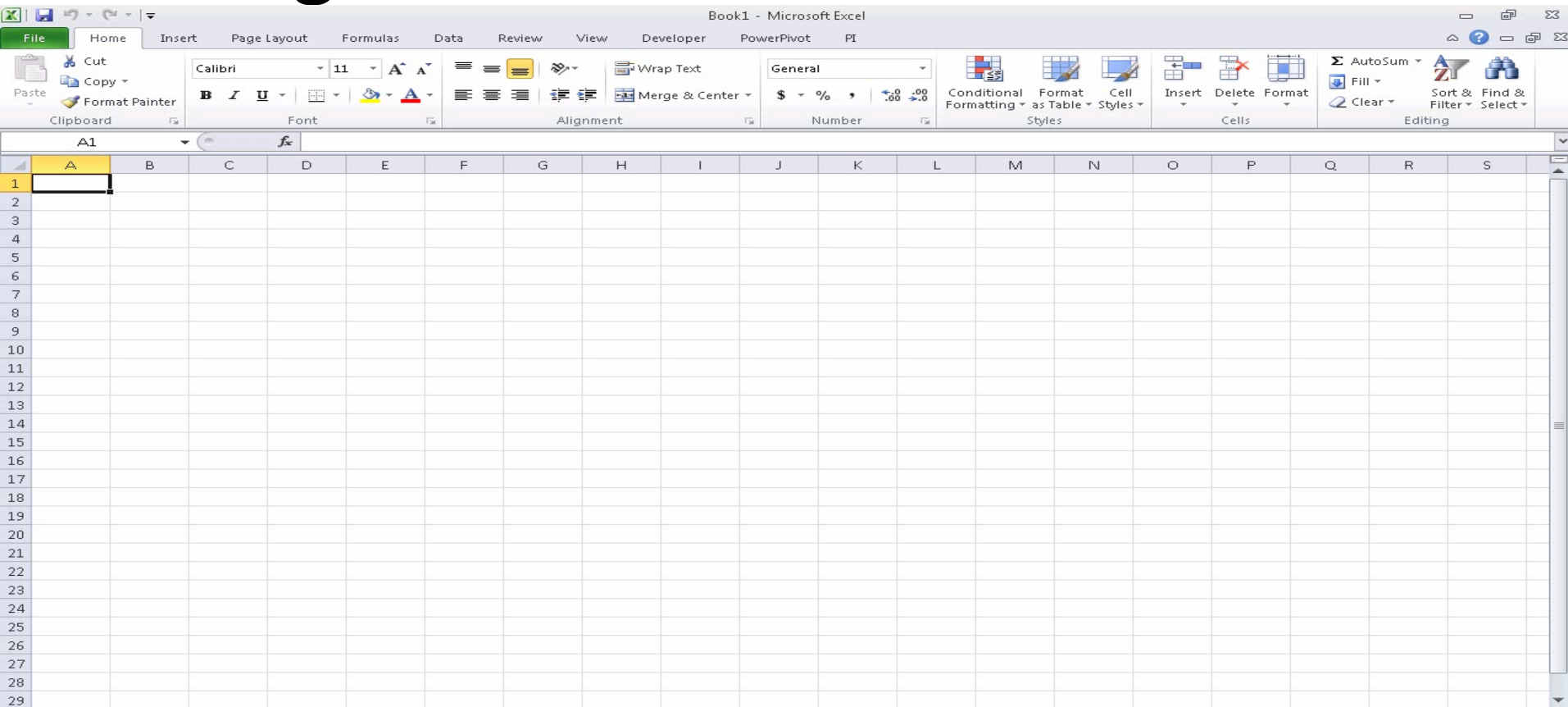


Information for Engineers

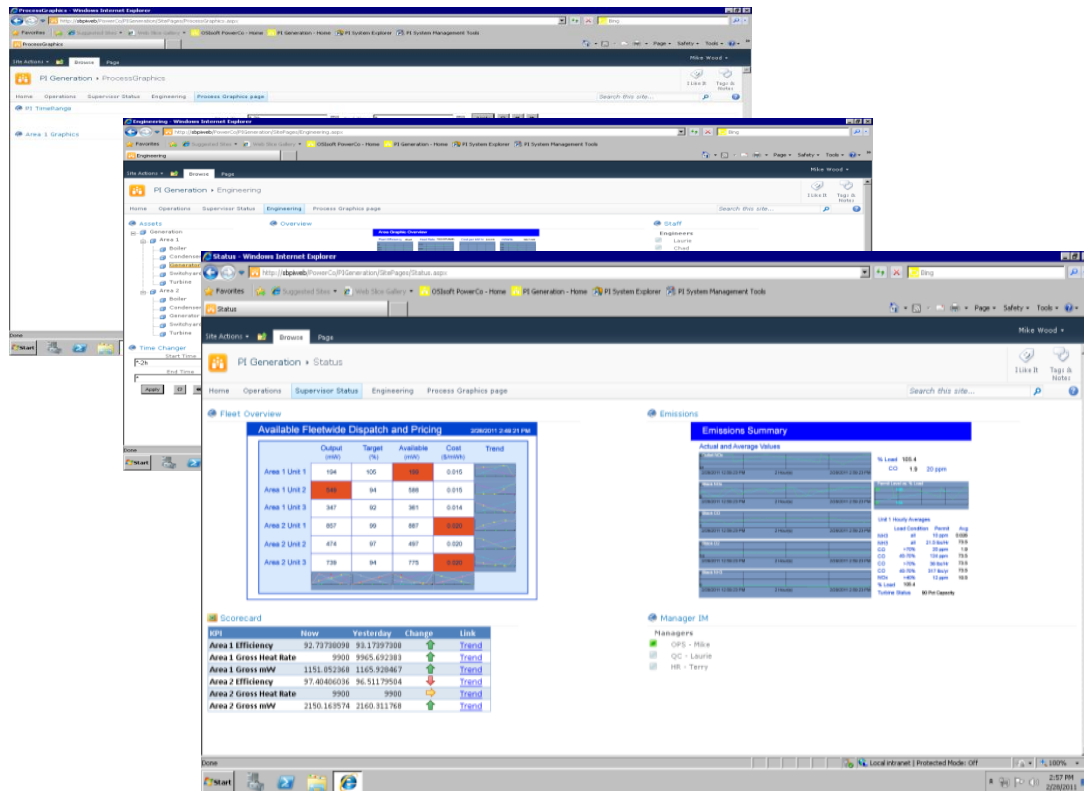


Engineering Dashboard of
Equipment Detail and
Plant Production KPIs

Setting Context



A Supervisor Dashboard



Plant level dashboard of
Fleet Dispatch,
Emissions, and
Area Scorecard

Interacting with Summary Information

Status - Windows Internet Explorer

http://sbpiweb/PowerCo/PIGeneration/SitePages/Status.aspx?PageView=Shared&InitialTabId=Ribbon.WebPartPage&VisibilityContext=WSSWebPartPa

Page Tools

Site Actions

Page

Insert

Stop Editing

Edit Properties

Permissions

Delete Page

E-mail a Link

Alert Me

Approve

Reject

Workflows

Edit Mobile Page

Make Homepage

Title Bar Properties

Page Actions

Left Column

Add a Web Part

Fleet Overview

Available Fleetwide Dispatch and Pricing 2/3/2011 1:26:51 PM

	Output (mW)	Target (%)	Available (mW)	Cost (\$/mWh)	Trend
Area 1 Unit 1	195	107	195	0.015	
Area 1 Unit 2	538	91	598	0.014	
Area 1 Unit 3	357	94	375	0.014	
Area 2 Unit 1	858	97	898	0.020	
Area 2 Unit 2	487	100	514	0.020	
Area 2 Unit 3	741	94	771	0.019	

Middle Column

Add a Web Part

Emissions

Emissions Summary

Actual and Average Values

Subnet Name	2/3/2011 11:30:15 AM	2 Hour(s)	2/3/2011 1:30:15 PM
Stack NOx			
Stack CO			
Stack CO2			
Stack NH3			

% Load 106.6

CO 2.2 20 ppm

Permit Level vs. % Load

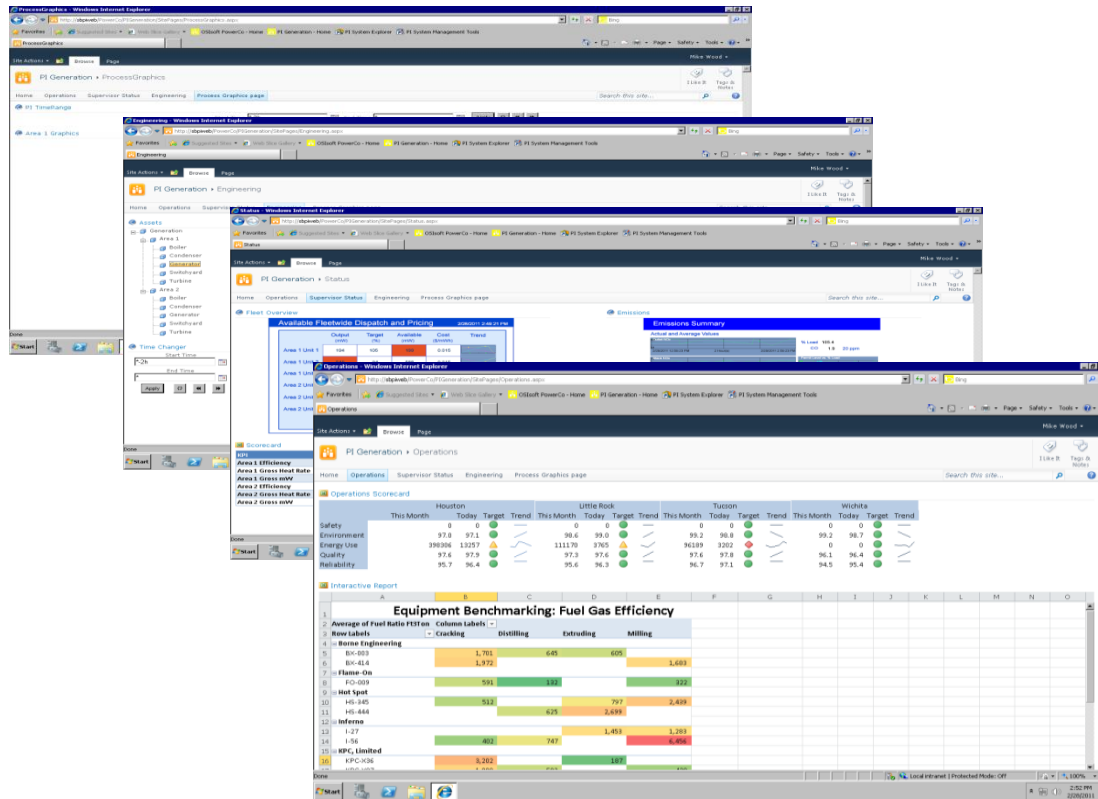
Unit	% Load
Unit 1	106.6

Unit 1 Hourly Averages

Load Condition	Permit	Avg
NH3 all	10 ppm	0.300
NH3	21.5 lbs/hr	81.1
CO	>70%	2.2
CO	40-70%	124 ppm
CO	>70%	36 lbs/hr
CO	40-70%	317 lbs/yr
NOx	>40%	12 ppm
% Load	106.6	10.5

Turbine Status: 90 Pct Capacity

An Operations Dashboard

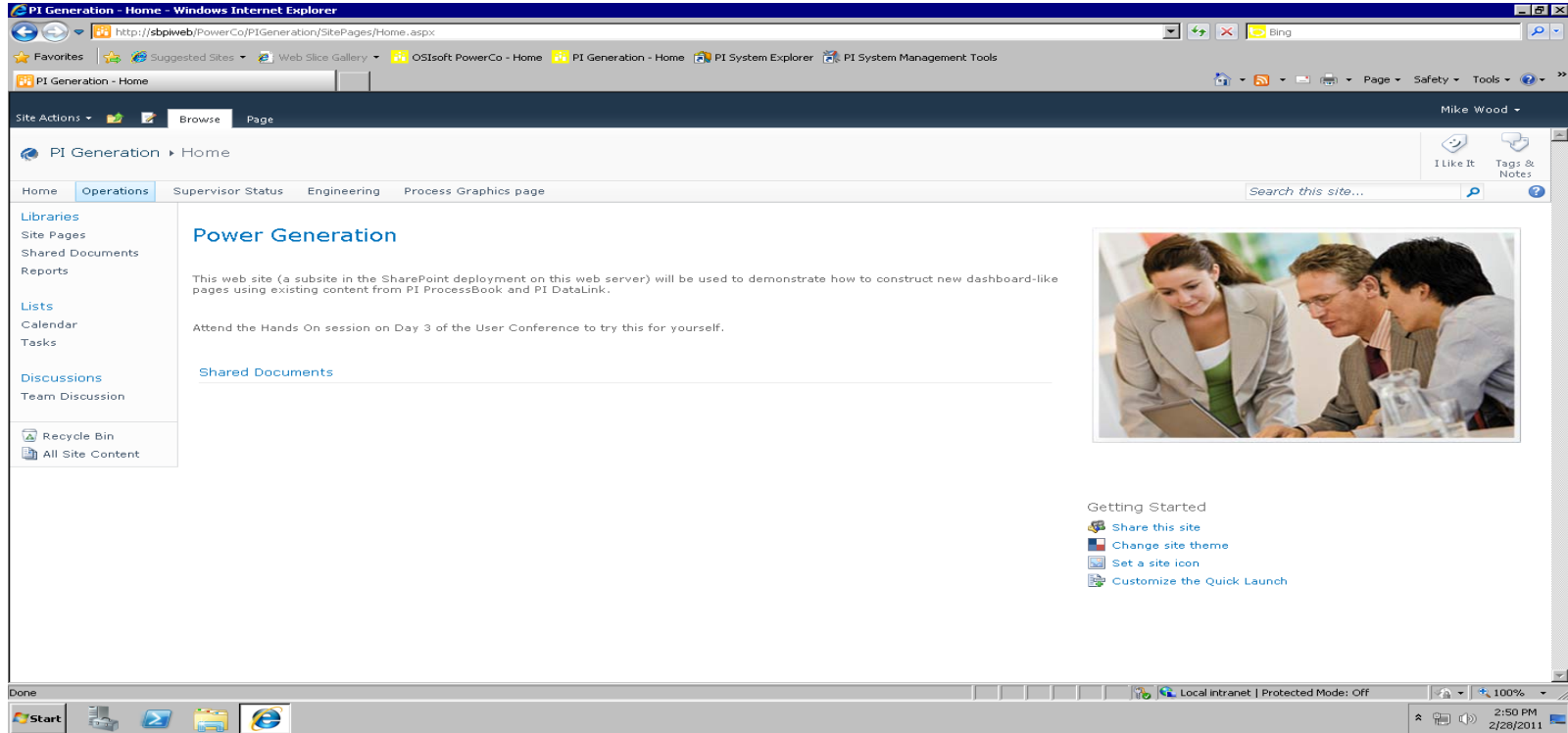


Operational Dashboard of corporate KPIs and reports

Reviewing High Level Status

The screenshot shows a web browser window with the address bar displaying the URL: `http://sbpiweb/PowerCo/PIGeneration/SitePages/Operations.aspx?PageView=Shared&DisplayMode=Design&InitialTabId=Ribbon.WebPartPage&Visib`. The browser's address bar also shows the Bing logo and a search icon. Below the address bar, there are tabs for 'Favorites', 'Suggested Sites', and 'Web Slice Gallery'. The main content area is titled 'Operations' and features a ribbon interface with the following tabs: 'Site Actions', 'Browse', and 'Page'. The 'Page' tab is currently selected, revealing a ribbon with various actions: 'Stop Editing', 'Edit Properties', 'Delete Page', 'Versions', 'Permissions', 'E-mail a Link', 'Alert Me', 'Approve', 'Reject', 'Workflows', 'Edit Mobile Page', 'Make Homepage', and 'Title Bar Properties'. The main content area is divided into four columns: 'Header', 'Left Column', 'Middle Column', and 'Right Column'. Each column contains a large rectangular box with the text 'Add a Web Part'. A mouse cursor is hovering over the 'Add a Web Part' text in the 'Middle Column' box. The 'Footer' section at the bottom of the page also contains a large rectangular box with the text 'Add a Web Part'. The user's name, 'Laurie Dieffenbach', is visible in the top right corner of the ribbon area.

Providing Navigation



Providing Navigation

Status - Windows Internet Explorer
http://sbpiweb/PowerCo/PIGeneration/SitePages/Status.aspx?PageView=Shared&InitialTabId=Ribbon.WebPartPage&VisibilityContext=WSSWebPartPa

Search this site...

Laurie Dieffenbach

Site Actions

Home

Fleet Overview

Available Fleetwide Dispatch and Pricing

2/3/2011 1:33:51 PM

	Output (mW)	Target (%)	Available (mW)	Cost (\$/mWh)	Trend
Area 1 Unit 1	196	107	195	0.015	
Area 1 Unit 2	537	91	598	0.014	
Area 1 Unit 3	357	94	376	0.014	
Area 2 Unit 1	857	97	897	0.020	
Area 2 Unit 2	486	99	514	0.020	
Area 2 Unit 3	744	95	771	0.019	

Scorecard

KPI	Now	Yesterday	Change	Link
Area 1 Efficiency	97.10470581	93.17397308	↓	Trend
Area 1 Gross Heat Rate	9975	9965.692383	↓	Trend
Area 1 Gross mW	1166.727051	1165.928467	↓	Trend
Area 2 Efficiency	97.19825745	96.51179504	↓	Trend
Area 2 Gross Heat Rate	9900	9900	→	Trend
Area 2 Gross mW	2186.438965	2160.311768	↓	Trend

Emissions

Emissions Summary

Actual and Average Values

Unit	Load Condition	Permit	Avg
NH3	all	10 ppm	0.300
NH3	all	21.5 lbs/hr	81.1
CO	>70%	20 ppm	2.2
CO	40-70%	124 ppm	81.1
CO	>70%	36 lbs/hr	81.1
CO	40-70%	317 lbs/hr	81.1
NOx	>40%	12 ppm	10.5

Unit 1 Hourly Averages

% Load 106.7
CO 2.2 20 ppm

Permit Level vs. % Load

Unit 1 Hourly Averages

Load Condition Permit Avg

NH3 all 10 ppm 0.300

NH3 all 21.5 lbs/hr 81.1

CO >70% 20 ppm 2.2

CO 40-70% 124 ppm 81.1

CO >70% 36 lbs/hr 81.1

CO 40-70% 317 lbs/hr 81.1

NOx >40% 12 ppm 10.5

% Load 106.7

Turbine Status Derating

Manager IM List

Managers

- OPS - Mike Wood
- QUALITY - Laurie Dieffenbach
- HR - Terry Wilson

Summary

- Dashboards do not require creating extra content
 - Leverage what you have already built
- WebParts, both from OSIssoft and Microsoft combine to easily present content from many sources
 - With only configuration
- SharePoint provides a practical platform to support global, thin-client distribution
 - Quick to deploy
 - One place to maintain and update

More Information

Please consider attending the following talks:

- Migrating to an Asset-Centric PI System
- Asset-Based Visualization with PI WebParts
- Business Intelligence with PI System and PowerPivot

Day 3 – Hands On Training

Recreate today's application in a training lab

Course: **Your Turn to Put it all Together**



Thank you

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into **action.**