

ENGINEERING PHARMACEUTICAL INNOVATION



Alarm Response Procedures – A Marriage of PCS and MES



Tarheel Capital Area



**Tarheel Capital Area
Section**

Setting the Standard for Automation™



**North Carolina
Biotechnology Center**



ENGINEERING
PHARMACEUTICAL
INNOVATION

**Carolina-South
Atlantic Chapter**

Agenda

- Alarm Standards and Basics
- PCS Landscape
- MES Basics and Document Management
- The Glue that Binds – ARP

Alarm Standards and Basics

- Engineering Equipment and Materials User Association
- EEMUA 191 – Alarm Systems, A Guide to Design, Management, and Procurement (1999)
- Alarm Rationalization

Alarm Standards and Basics

- Alarm rationalization includes:
 - Alarm settings
 - Alarm priority
 - Time required for operator to perform action
 - Operator action required
 - Consequence of inaction
 - Evaluation of alarm priority distribution for all configured alarms
 - Elimination of alarms with no known operator action



Tarheel Capital Area
Section

Setting the Standard for Automation™



North Carolina
Biotechnology Center



ENGINEERING
PHARMACEUTICAL
INNOVATION

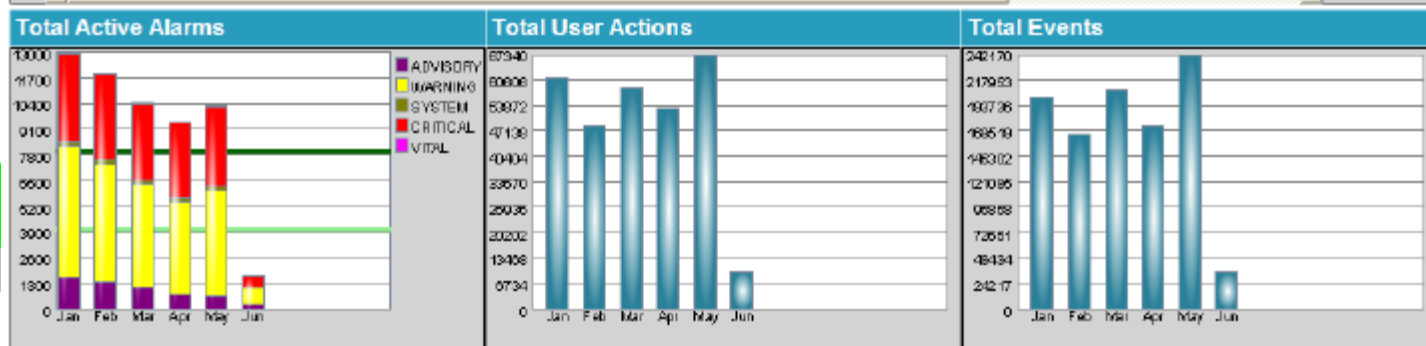
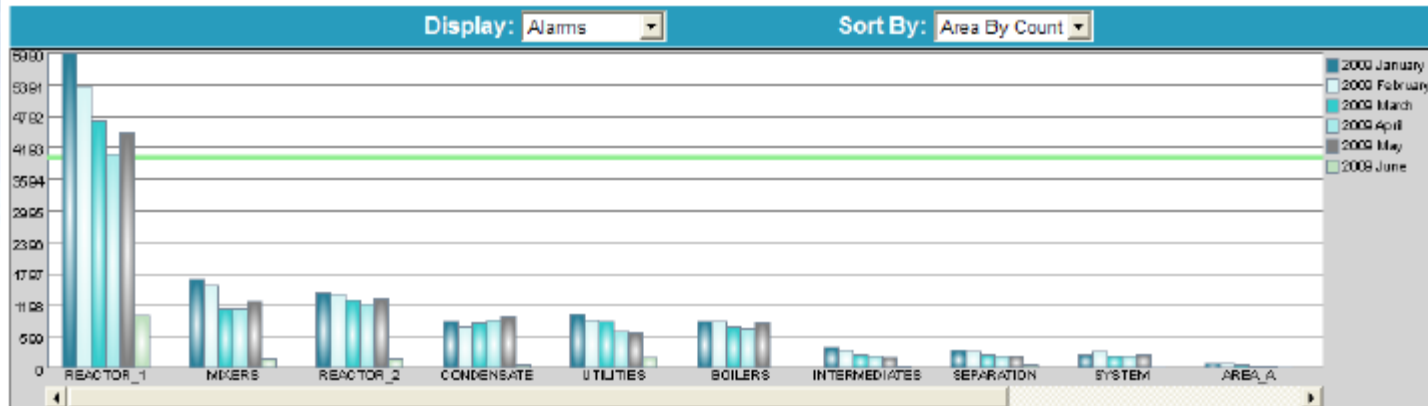
Carolina-South
Atlantic Chapter

PCS Landscape

- Alarm Summaries
- Alarm and Event Logs/Databases
- Alarm Analysis

PCS Landscape

Alarm Priority	Recommended	Actual
High Priority	< 5%	10.61%
		89.39%
		0.00%



Unacceptable
0 or more alarms/hr*
per operator.



Tarheel Capital Area
Section

Setting the Standard for Automation™



North Carolina
Biotechnology Center



ENGINEERING
PHARMACEUTICAL
INNOVATION

Carolina-South
Atlantic Chapter

PCS Landscape

- Single Click Access
- Alarm Wiki's



**Tarheel Capital Area
Section**

Setting the Standard for Automation™



**North Carolina
Biotechnology Center**



ENGINEERING
PHARMACEUTICAL
INNOVATION

**Carolina-South
Atlantic Chapter**

PCS Landscape

Alarm Help - HAW-PDI-1762/LO_ALM

HAW-PDI-1762/LO_ALM

HAW-PDI-1762
Analog input monitor with alarms
LO_ALM - WARNING
Safety

00:24:46 (Less than 30 minutes)
Active for 5 minutes

Action: Severe
plant or environment

Recommended action

- 1) Contact maintenance foreman
- 2) Check MSDS for PPE requirements
- 3) Obtain proper clearances

Time to Respond: Less than 30 minutes
Consequence of Inaction: Severe

Probable cause

Plugged Impulse Lines

Design information

Column differential with overheads line

Faceplate

HAW-PDI-1762
Analog input monitor wit

-0.80
inH2O
1.00
-2.00

Unit:

ack Param Help
LO_ALM

Reset ... Save Download Close

North Carolina Biotechnology Center

ISPE
ENGINEERING PHARMACEUTICAL INNOVATION

Carolina-South Atlantic Chapter

PCS Landscape

- Tribal knowledge, while valuable, may not be acceptable in regulated industries
- Critical Alarms should have Standard Operating Procedures for Responses

PCS Landscape

- But do I have the right one?



**Tarheel Capital Area
Section**

Setting the Standard for Automation™



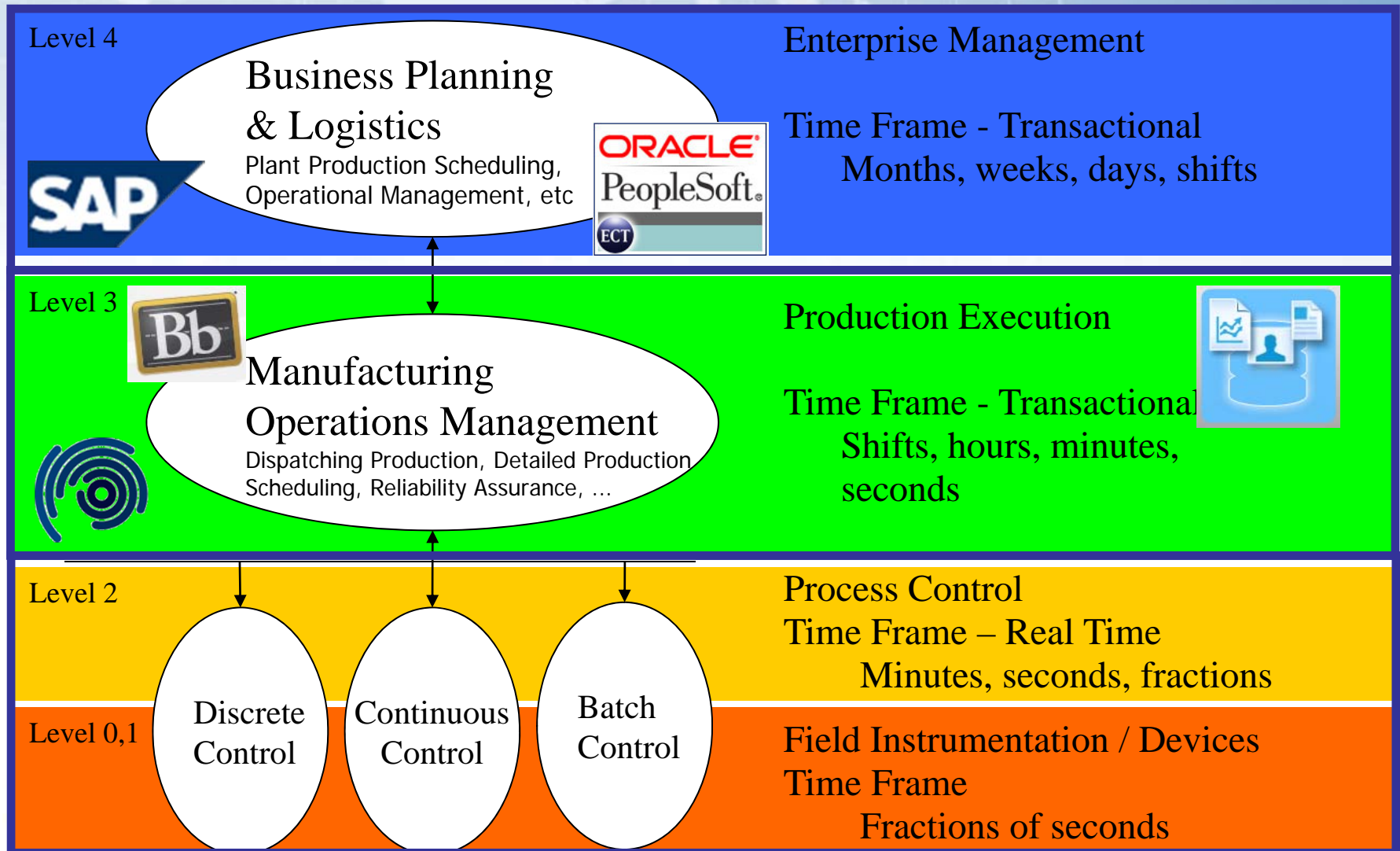
**North Carolina
Biotechnology Center**



**ENGINEERING
PHARMACEUTICAL
INNOVATION**

**Carolina-South
Atlantic Chapter**

MES Basics and Document Management





\$1.3 Billion =



**Tarheel Capital Area
Section**

Setting the Standard for Automation™



**North Carolina
Biotechnology Center**





ENGINEERING
PHARMACEUTICAL
INNOVATION

**Carolina-South
Atlantic Chapter**

MES Basics and Document Management

Enterprise Content Management







**221-F-ARP-DCS-GRA-2.3**

History
☐ Effective...
 [1 \(0\)](#)


Properties


Status: Effective	Version Label: 0
Author: Scott Thompson	Owner: Scott Thompson
Periodic Reviewer: Scott Thompson	Frozen: No
Locked: No	Locked By:
Description:	Version Number: 1

Milestones

Previous Review: 2010-04-22T11:52:15	Planned Review: 2011-04-22T11:52:15
<hr/>	
 Pending: 2010-04-22T11:51:08	Pending By: Scott Thompson
 Approved: 2010-04-22T11:52:15	Approved By: Scott Thompson
 Effective In: 2010-04-22T11:52:26	Effective In By: Scott Thompson
 Effective Out:	Effective Out By:
 Cancelled:	Cancelled By:
 Archived:	Archived By:

Repositories
<ALL>

- Repositories
 - Production
 - WSB_ARP
 - Example
 - 221-F-ARP-DCS-GRA-2.3
 -  221-F-ARP-DCS-GRA-2.3
 - 221-H-ARP-DCS-GRA-16.4
 - HAW
 - LAW

**Carolina-South Atlantic Chapter**
ENGINEERING
PHARMACEUTICAL
INNOVATION

MES Basics and Document Management

Kiosk Mode



- Zero Footprint (IE)
- No Login Required
- Deliver Only the Current and Effective Version

Repositories

<ALL>

Repositories

Production

WSB_ARP

Example

221-F-ARP-DCS-GRA-2.3

221-F-ARP-DCS-GRA-2.3

221-H-ARP-D

HAW

LAW

Copy

Cut

Delete Shortcut

Rename Version

Rename Document

Rename All

Archive

Suspend

Checkout

Get Copy

New Window

Print

100%

Get PDF

Pages

Classification

PRODUCTION QUALITY

Procedure:

Revision:

Effective Date:

Category:

Page:

221-F-ARP-DCS-GRA-2.3

0

4/22/10

Use Every Time

1 of 1

Link Options

Link Options

Device

OPER

1.0 A

2.0 A

3.0 C

Create a link which always points to this version of the document

Create a link which always points to the effective version of the document

Create a public link which always points to the effective version of the document

Create a public link which points to the selected version of the document (Approved or Effective only)

OK

Cancel

Untitled - Notepad

File Edit Format View Help

http://spock/DCA/ViewerExternalProcessor.aspx?DocumentUID=DA3CD54D-FA6E-4E93-8A94-6946178F7516&PublicView=1&KioskAccount=1&DocBase=WSB_ARP&Name=221-F-ARP-DCS-GRA-2.3

Setting the Standard for Automation™

Engineering

PHARMACEUTICAL

INNOVATION

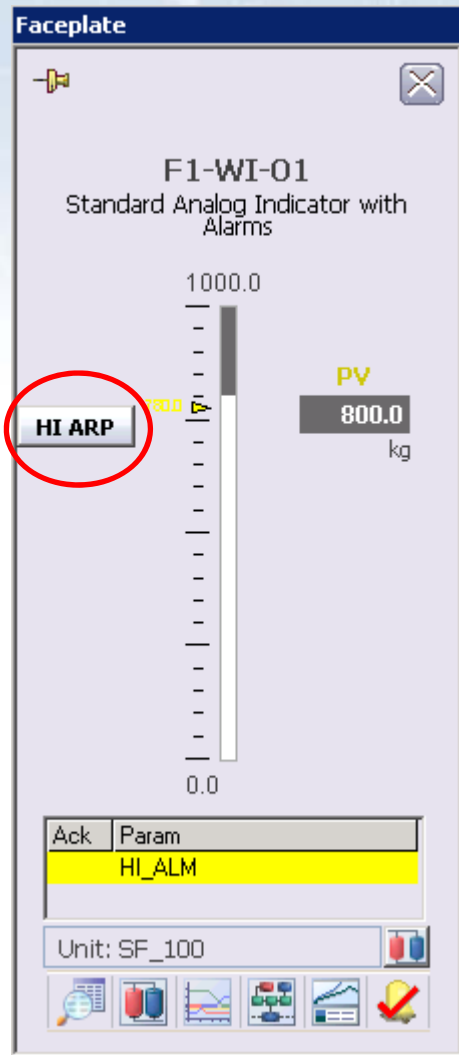
Our Global Reach

Atlantic Chapter

The Glue that Binds – ARP

- Store URL Buildup Within Control Module
- Use a Subroutine or Linked Composite to Allow for Multiple Buildups (LOLO, LO, HI, HIHI, etc) in a Single Module
- Use HMI to Deliver URL to IE (VBA, Scripting)

The Glue that



External Document Viewer - Windows Internet Explorer

You are viewing document 221-F-ARP-DCS-GRA-2.3 provided by Compliance Suite - Document Control

Go Back New Window Print 100% Get PDF

Classification	Procedure: 221-F-ARP-DCS-GRA-2.3
	Revision: 0
PRODUCTION QUALITY	Effective Date: 4/22/10
	Category: Use Every Time
	Page: 1 of 1

F1-WI-01	SF_100 Level High
----------	-------------------

Device: Tag ID: F1-WI-01 Setpoint: 780 kg

OPERATOR ACTIONS

1.0 Alarm Confirmation:

- Graphic SF_100N
- Tank Level HIGH at SF_100

2.0 Automatic Functions:

- None

3.0 Corrective Actions:

- Terminate any active transfer in operations.
- Close any open automatic valves that remain open into the tank.
- If level continues to climb close all manual valves leading into the tank and contact E&I to verify automatic valve functions
- If level continues to climb with manual valves closed, contact E&I to verify function of the transmitter F1-LIT-01.

PROBABLE CAUSES

- Invalid recipe parameter
- Failed automatic valve
- Failed level transmitter

REFERENCES

- NOP 221-F-2547
- NOP 221-F-5478

1 of 1

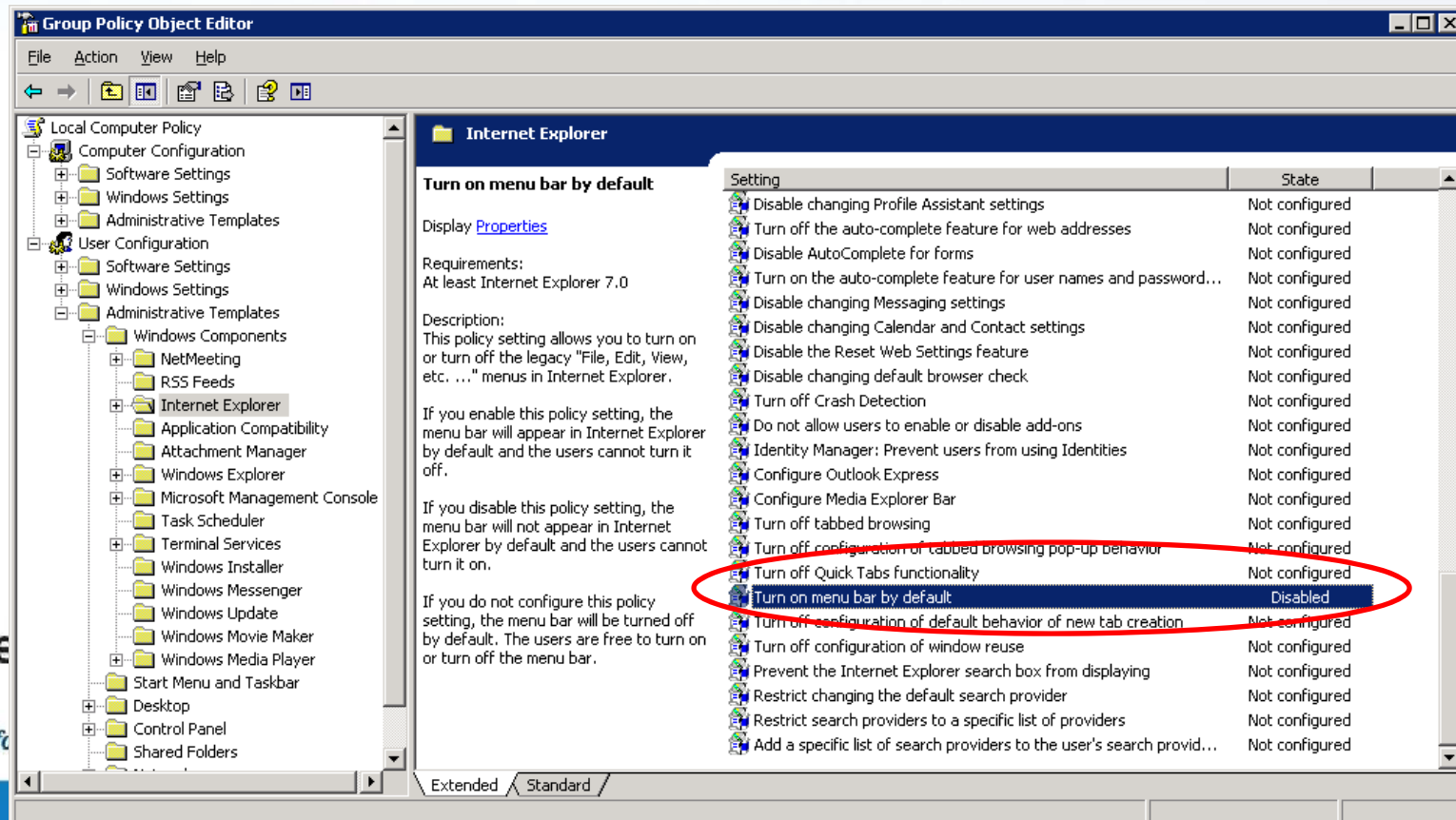
bmpReset2

```
Private Sub bmpReset2_Click()  
On Error GoTo ErrorHandler  
Dim Explore2  
Dim objPath2 As String  
  
objPath2 = "C:\Program Files\Internet Explorer\IExplore.exe" + " http://spock/dca/viewer.aspx?URLPath=http://spock/PDF/" +  
    firsreadvalue("DVSYS.@mod0/HI_ARP_PRT1.&_CV") + "&VersionUID=" + firsreadvalue("DVSYS.@mod0/HI_ARP_PRT2.&_CV") +  
    "&ViewMode=1&DocBase=Production&KioskAccount=1"  
Explore2 = Shell(objPath2, 3)  
Exit Sub  
ErrorHandler:  
    firsHandleError  
End Sub
```

The Glue that Binds – ARP

Securing IE

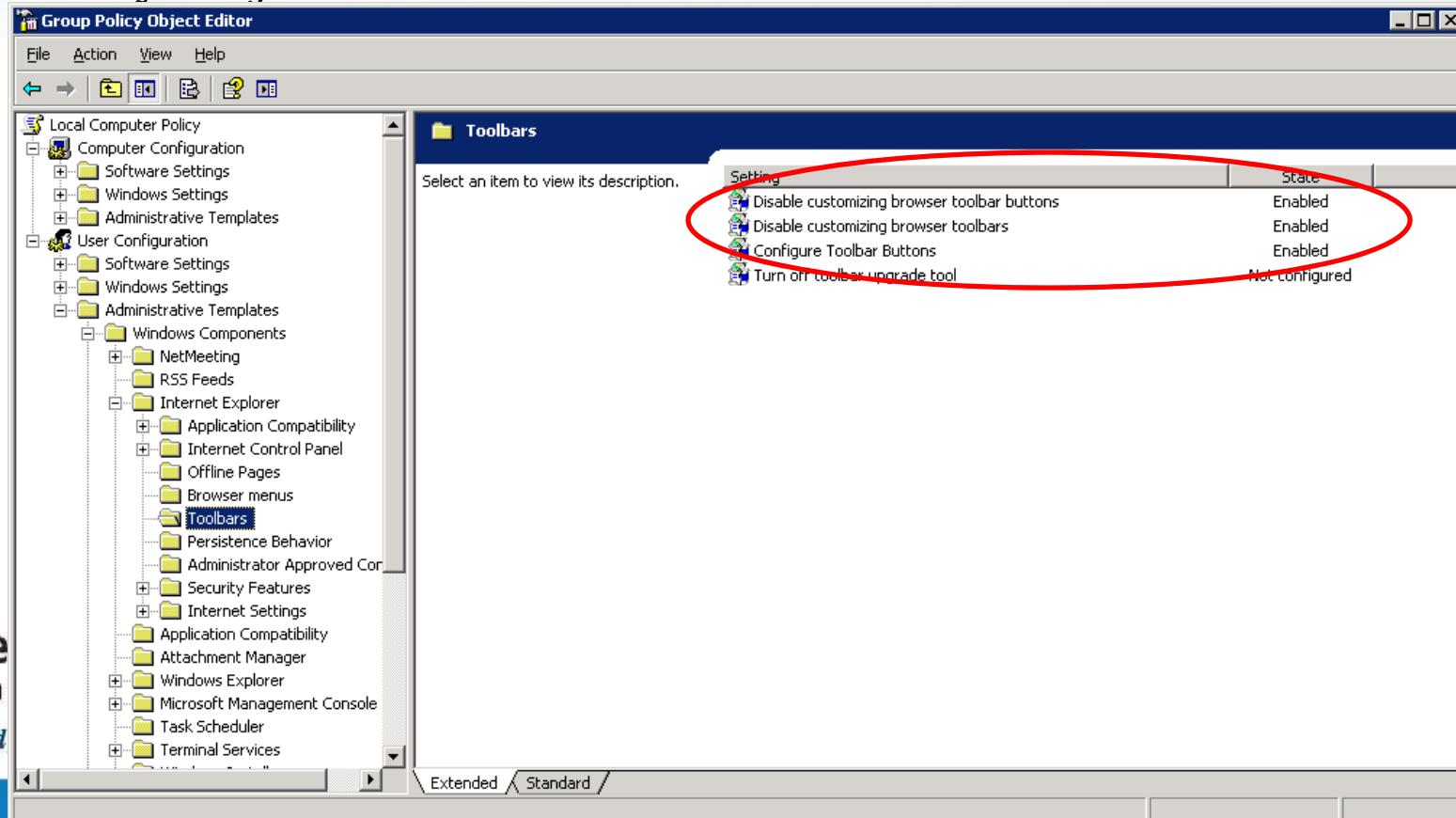
- Group Policy Object Editor – Menu Bar



The Glue that Binds – ARP

Securing IE

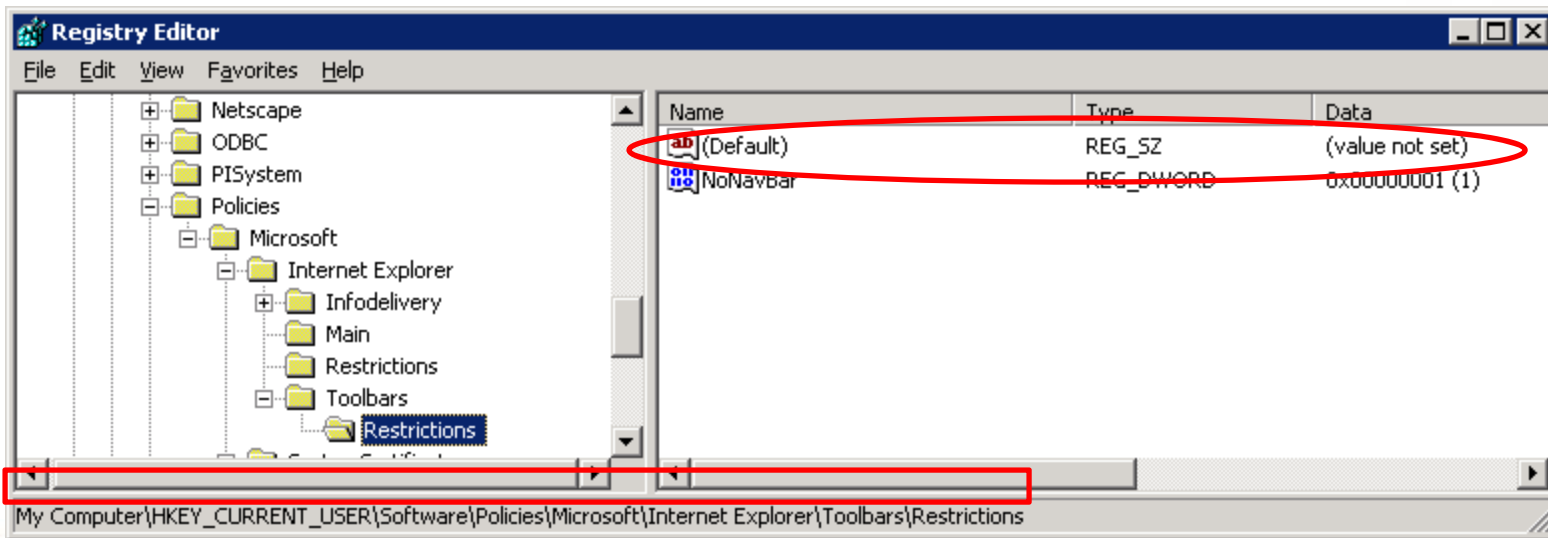
- Group Policy Object Editor – Toolbars



The Glue that Binds – ARP

Securing IE

- Registry Change – Address Bar
 - Add NoNavBar DWORD



Tarheel Capital Area
Section

Setting the Standard for Automation™



North Carolina
Biotechnology Center



ENGINEERING
PHARMACEUTICAL
INNOVATION

Carolina-South
Atlantic Chapter

The Glue that Binds – ARP

Securing IE

External Document Viewer - Windows Internet Explorer

http://spock/DCA/ViewerExternalProcessor.aspx?DocumentUI

File Edit View Favorites Tools Help

External Document Viewer

You are viewing document 221-F-ARP-DCS-GRA-2.3 provided by Compliance Suite - Document Control

New Window Print 100% Get PDF

Classification	Procedure:	221-F-ARP-DCS-GRA-2.3
PRODUCTION QUALITY	Revision:	0
	Effective Date:	4/22/10
	Category:	Use Every Time
	Page:	1 of 1
F1-WI-01		
SF_100 Level High		
Device: Tag ID: F1-WI-01 Setpoint: 780 kg		
OPERATOR ACTIONS		
1.0 Alarm Confirmation: <ul style="list-style-type: none">Graphic SF_100NTank Level HIGH at SF_100		
2.0 Automatic Functions: <ul style="list-style-type: none">None		
3.0 Corrective Actions: <ul style="list-style-type: none">Terminate any active transfer in operations.Close any open automatic valves that remain open into the tank.If level continues to climb close all manual valves leading into the tank and contact E&I to verify automatic valve functionsIf level continues to climb with manual valves closed, contact E&I to verify function of the transmitter F1-LIT-01.		
PROBABLE CAUSES <ul style="list-style-type: none">Invalid recipe parameterFailed automatic valveFailed level transmitter		
REFERENCES <ul style="list-style-type: none">NOP 221-F-2547NOP 221-F-5478		

Done Trusted sites 100%

External Document Viewer - Windows Internet Explorer

External Document Viewer

You are viewing document 221-F-ARP-DCS-GRA-2.3 provided by Compliance Suite - Document Control

New Window Print 100% Get PDF

Pages

Classification	Procedure:	221-F-ARP-DCS-GRA-2.3
PRODUCTION QUALITY	Revision:	0
	Effective Date:	4/22/10
	Category:	Use Every Time
	Page:	1 of 1
F1-WI-01		
SF_100 Level High		
Device: Tag ID: F1-WI-01 Setpoint: 780 kg		
OPERATOR ACTIONS		
1.0 Alarm Confirmation: <ul style="list-style-type: none">Graphic SF_100NTank Level HIGH at SF_100		
2.0 Automatic Functions: <ul style="list-style-type: none">None		
3.0 Corrective Actions: <ul style="list-style-type: none">Terminate any active transfer in operations.Close any open automatic valves that remain open into the tank.If level continues to climb close all manual valves leading into the tank and contact E&I to verify automatic valve functionsIf level continues to climb with manual valves closed, contact E&I to verify function of the transmitter F1-LIT-01.		
PROBABLE CAUSES <ul style="list-style-type: none">Invalid recipe parameterFailed automatic valveFailed level transmitter		
REFERENCES <ul style="list-style-type: none">NOP 221-F-2547NOP 221-F-5478		

Attachments

Comments

1 of 1

More Information...

<http://www.youtube.com/acmebiotech>

**Acme Biotech's DeltaV Videos**
AcmeBiotech's Channel

[Subscribe](#)

[Uploads](#)

[Favorites](#)





0:00 / 1:38

360p

[Info](#) [Favorite](#) [Share](#) [Playlists](#) [Flag](#)

Batch Process Analytics HD
From: [AcmeBiotech](#) | October 05, 2010 | 87 views
This short video highlights the DeltaV Batch Process Analytics app specifically designed for the Apple iPad.

[Like](#) [Dislike](#)

[Search](#)

[Date Added](#) | [Most Viewed](#) | [Top Rated](#)

**Batch Process Analytics HD**
87 views - 1 month ago

**DeltaV Batch Analytics iPad App**
34 views - 2 months ago

**Filling Line Solution**
22 views - 2 months ago

**DeltaV to Maximo Integration for**
457 views - 11 months ago


**DeltaV to SAP Integration for Work**
709 views - 11 months ago

**Alarm Response Procedure Integration**
316 views - 7 months ago

-South Chapter

More Information...

<http://acmebiotech.blogspot.com>



Process Control Musings

Random Opinions From A Passionate Controls Engineer

Monday, October 4, 2010

Update: Prime Time Batch Analytics

I thought it was worth mentioning that at the Awards Luncheon last Thursday at Emerson Exchange, Steve Sonnenberg, President Emerson Process Management, awarded the PlantWeb Excellence Award to The Lubrizol Corporation and Robert Wojewodka's paper entitled "Batch Process Analytics (PA) – An In Depth Update".

It was kind of neat to hear Mr. Sonnenberg give an explanation of the technology and reiterate that Batch Process Analytics will be part of the standard DeltaV product offering in version 12. I believe this will be the next big game changer in Batch Process Control.

Perhaps I'll have a paper to present at next year's Exchange in Nashville on Batch Process Analytics...

Posted by Bruce Greenwald at 6:42 AM 0 comments

Labels: [Batch Process Analytics](#), [DeltaV](#), [Emerson Exchange](#), [Lubrizol](#), [Robert Wojewodka](#), [Steve Sonnenberg](#)

Thursday, September 30, 2010

Prime Time Batch Analytics

Search My Posts

Search

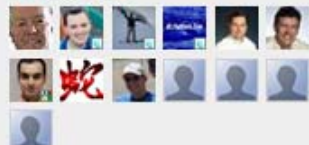
powered by Google

Fans of Process Control


Follow


With Google Friend Connect

Followers (13)




Already a member? [Sign in](#)





ISA Tarhe Section

Setting the Standard



SPE

NEERING
ACEUTICAL
OVATION

Carolina-South
Atlantic Chapter