



Electrical Solutions Corporation

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Greetings,

The following pages are screen shots from a completed Wonderware, InTouch, application. The screens use a simple *P&ID* (Process and Instrumentation Drawing) approach to graphic design (i.e., the vessels, tanks, compressors, pumps, and motors are simple line drawings in shades of gray which de-emphasize the equipment while allowing alarm and shutdown conditions to stand out forcefully against the equipment and the window background).

Colors have been carefully chosen to provide useful information even to people who are color blind.* The most common type of color blindness, makes it difficult for people to distinguish certain shades of red, yellow, and green. Many applications use green to mean that a piece of equipment is running, or that everything is okay; red to mean that the equipment is off, or that there is a shutdown condition; and yellow to indicate alarm conditions. These colors must be used with caution, and always with additional context, to allow color blind people to understand what is happening.

In this application we use the following conventions:

Conventions:

Equipment:

On – Green

Off – Grey

Shutdown Valves:

Open – green

Closed – blinking red/white and rotated 90°

Conditions:

Alarm – black letters on a yellow background

Safety – white letters on a red background

Alarm Summary/History:

Unack'ed alarm – red

Ack'ed alarm – black

Alarm return – blue

Historical Trend:

Background – dark grey

Pen colors – cyan, green, yellow, magenta, red, blue, white, black

Check box – black X on yellow background when checked

Process line colors:

As shown on the “Color Window – Process Line” screen

Process Variable:

Blue

* Note: color blindness is not literally a blindness, but rather an inability to distinguish certain shades of color. The shades that one cannot see depend on the type of color deficiency. For more information, visit our website:
<http://www.frogstarenergy.com/html/colorStudy.html>.

Roughly 8% of all men and 0.4% of all women have some sort of color deficiency.

Oil Lines

0	0	0
153	0	77
102	0	102
0	102	51

Oil Lines

0	0	0
153	0	77
102	0	102
0	102	51

Shipping Oil
Test/Gross Oil
Well Clean
Sour Oil

Water Lines

0	77	153
153	0	153
0	102	204
128	0	255
0	128	255
204	0	204
255	0	255
204	102	204
0	153	153
255	0	128

Water Lines

0	77	153
153	0	153
0	102	204
128	0	255
0	128	255
204	0	204
255	0	255
204	102	204
0	153	153
255	0	128

Oily Water
Rich Amine, Methanol
Lean Amine
H2S Scavanger / HTM Return
Fire Water / Coolant, Liquid
Prelube
SO2, Sour Water
Drains
Coolant, Vapor / Reflux
HTM Supply

Gas Lines

153	0	0
153	77	0
204	0	0
204	102	0
255	128	0
255	255	0
153	102	102
204	102	102
255	102	102

Gas Lines

153	0	0
153	77	0
204	0	0
204	102	0
255	128	0
255	255	0
153	102	102
204	102	102
255	102	102

Acid Gas
Sour Gas
Shipping Gas
Vapor Comp Suction
Process Gas
Sales Gas, Fuel Gas
Relief Gas
Prelube + Gas
Make-up Gas

Air / Steam Lines

255	255	255
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Air Lines

255	255	255
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Pneumatic Control / Steam

To a with a person with a **red/green** color deficiency:

The Oil Lines all appear **blackish**.

The Water Lines all appear **bluish**.

The Gas Lines all appear **yellowish**.

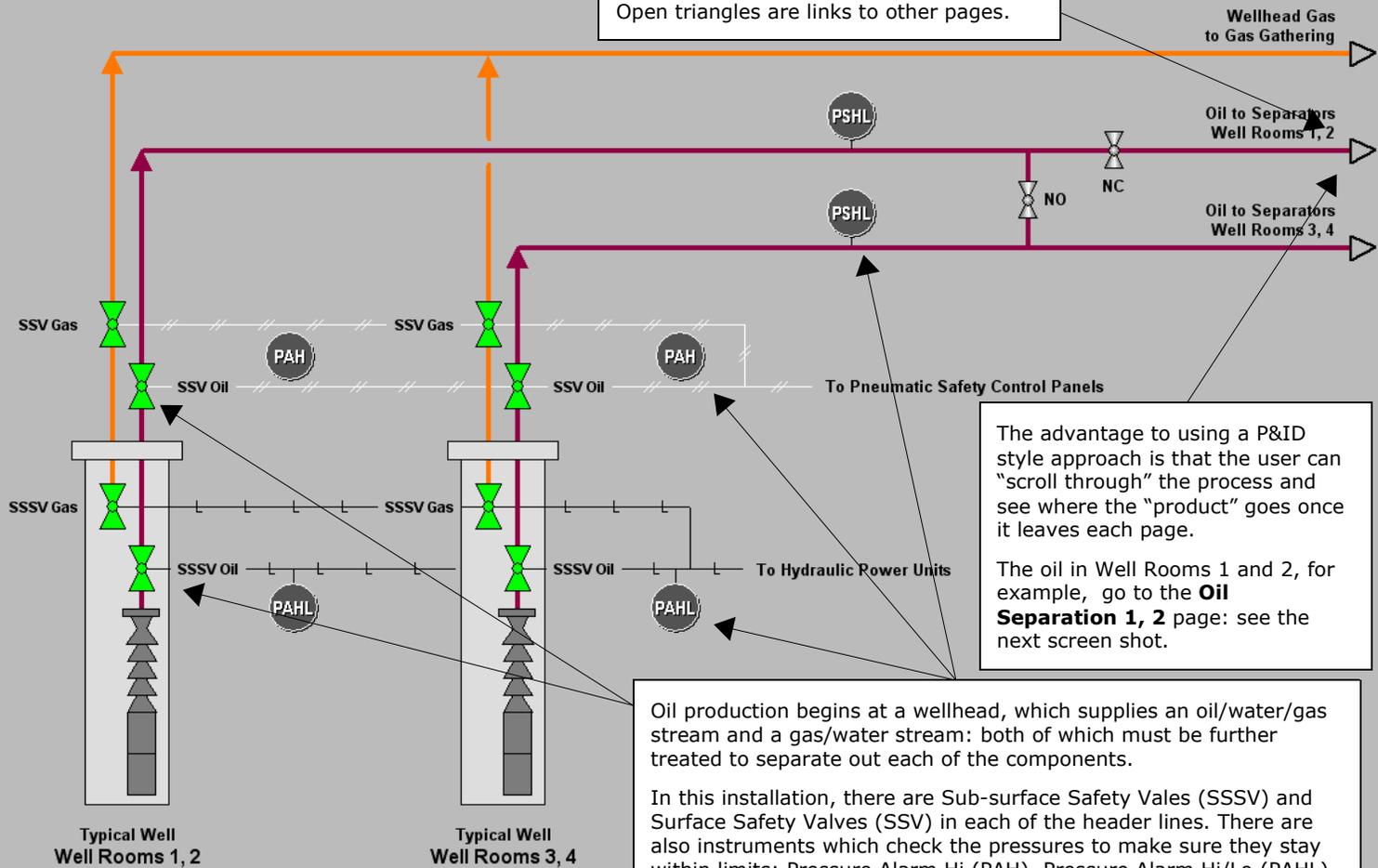
And the Air/Steam Lines appear **whitish**.

ESD	Headers	Oil Store/Ship	Gas Comp 2	Overview	Sour Gas	Acid Gas	Flare	Alarms	ACK
Em Supp Sys	Oil Sep 1, 2	Vapor Comp	LTS	<i>Log On</i>	Circulation	Water Inject	Vapor Rec	Trends	Bypass
VSDs	Oil Sep 3, 4	Gas Comp 1	Chiller	Sales Gas	HTM	Reset S/D	Air Comp		Print

Headers, SSVs, and SSSVs

Navigation buttons are visible at the top of every page.

Open triangles are links to other pages.



The advantage to using a P&ID style approach is that the user can "scroll through" the process and see where the "product" goes once it leaves each page.

The oil in Well Rooms 1 and 2, for example, go to the **Oil Separation 1, 2** page: see the next screen shot.

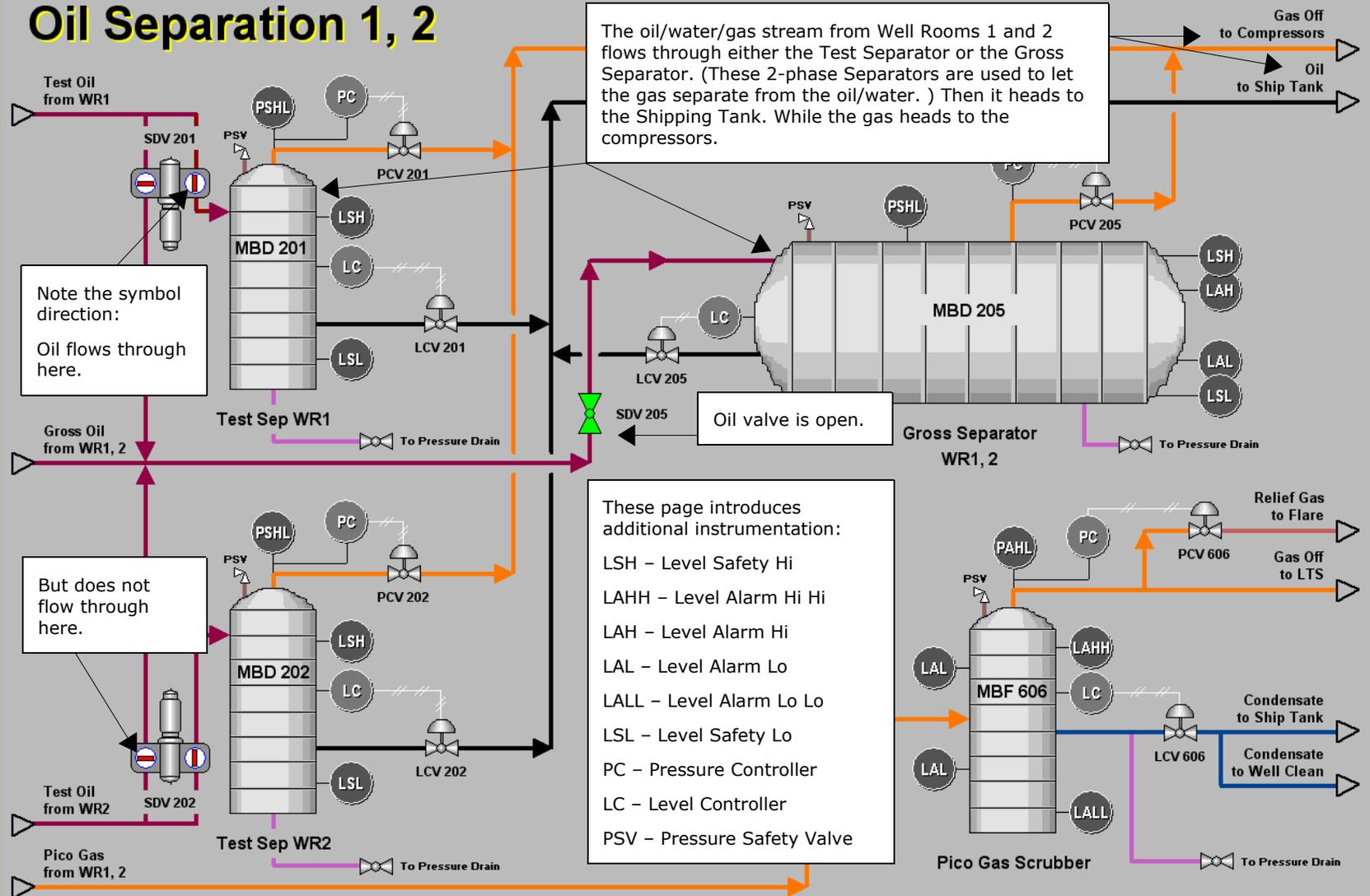
Oil production begins at a wellhead, which supplies an oil/water/gas stream and a gas/water stream: both of which must be further treated to separate out each of the components.

In this installation, there are Sub-surface Safety Vales (SSSV) and Surface Safety Valves (SSV) in each of the header lines. There are also instruments which check the pressures to make sure they stay within limits: Pressure Alarm Hi (PAH), Pressure Alarm Hi/Lo (PAHL), and Pressure Safety Hi/Lo (PSHL).

Operator	FROGSTAR	01/02/08 04:55:02		Air = 120.6 psig	ShipTk = 13.7 ft	H2S = 0.6 ppm	VR = 8.3 in wc	ShipRt = 12,323 bpd
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ESD	Headers	Oil Store/Ship	Gas Comp 2	Overview	Sour Gas	Acid Gas	Flare	Alarms	ACK
Em Supp Sys	Oil Sep 1, 2	Vapor Comp	LTS	<i>Log On</i>	Circulation	Water Inject	Vapor Rec	Trends	Bypass
VSDs	Oil Sep 3, 4	Gas Comp 1	Chiller	Sales Gas	HTM	Reset S/D	Air Comp		Print

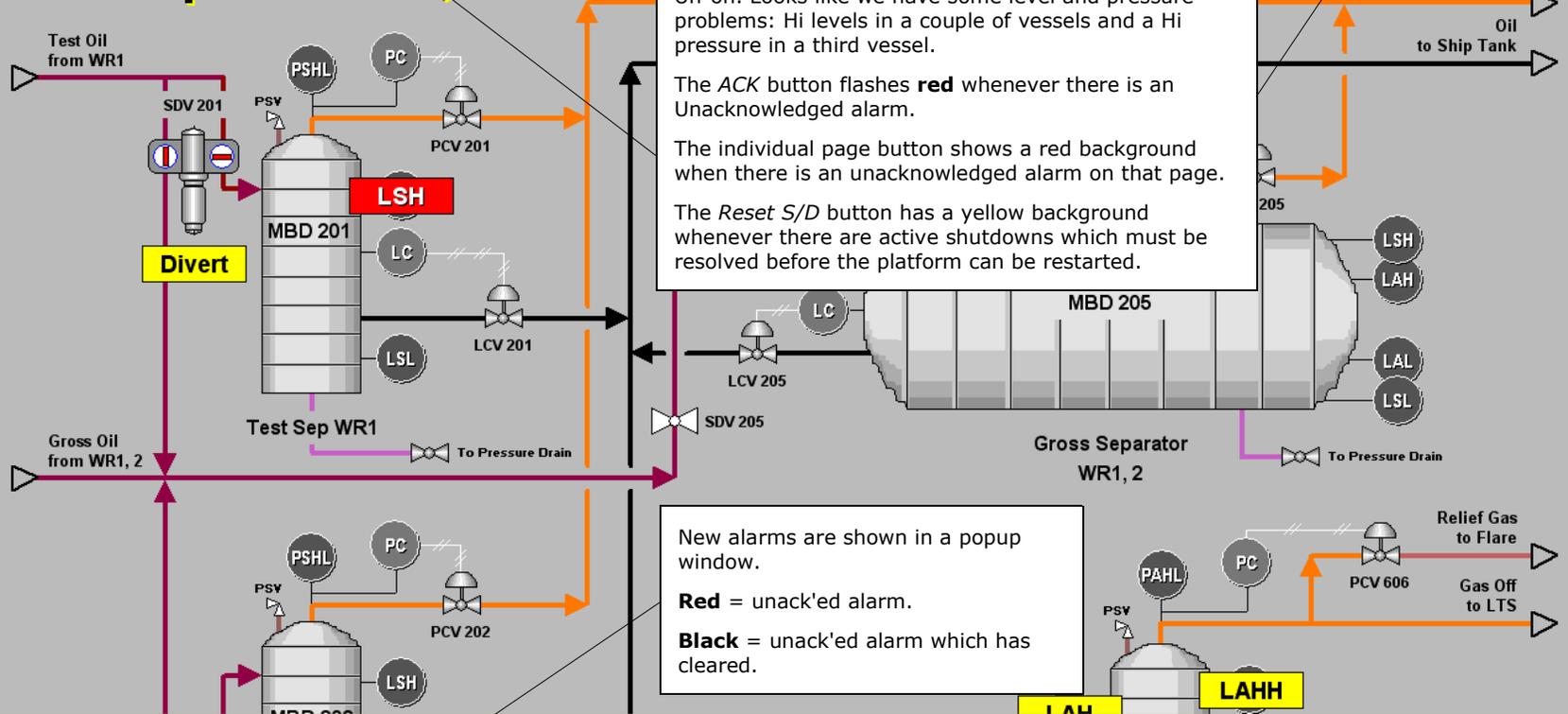
Oil Separation 1, 2



Operator	FROGSTAR	01/02/08 04:55:38	Air = 120.6 psig	ShipTk = 13.7 ft	H2S = 0.6 ppm	VR = 8.3 in wc	ShipRt = 12,323 bpd
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ESD	Headers	Oil Store/Ship	Gas Comp 2	Overview	Sour Gas	Acid Gas	Flare	Alarms	ACK
Em Supp Sys	Oil Sep 1, 2	Vapor Comp	LTS	Log On	Circulation	Water Inject	Vapor Rec	Trends	Bypass
VSDs	Oil Sep 3, 4	Gas Comp 1	Chiller	Sales Gas	HTM	Reset S/D	Air Comp		Print

Oil Separation 1, 2



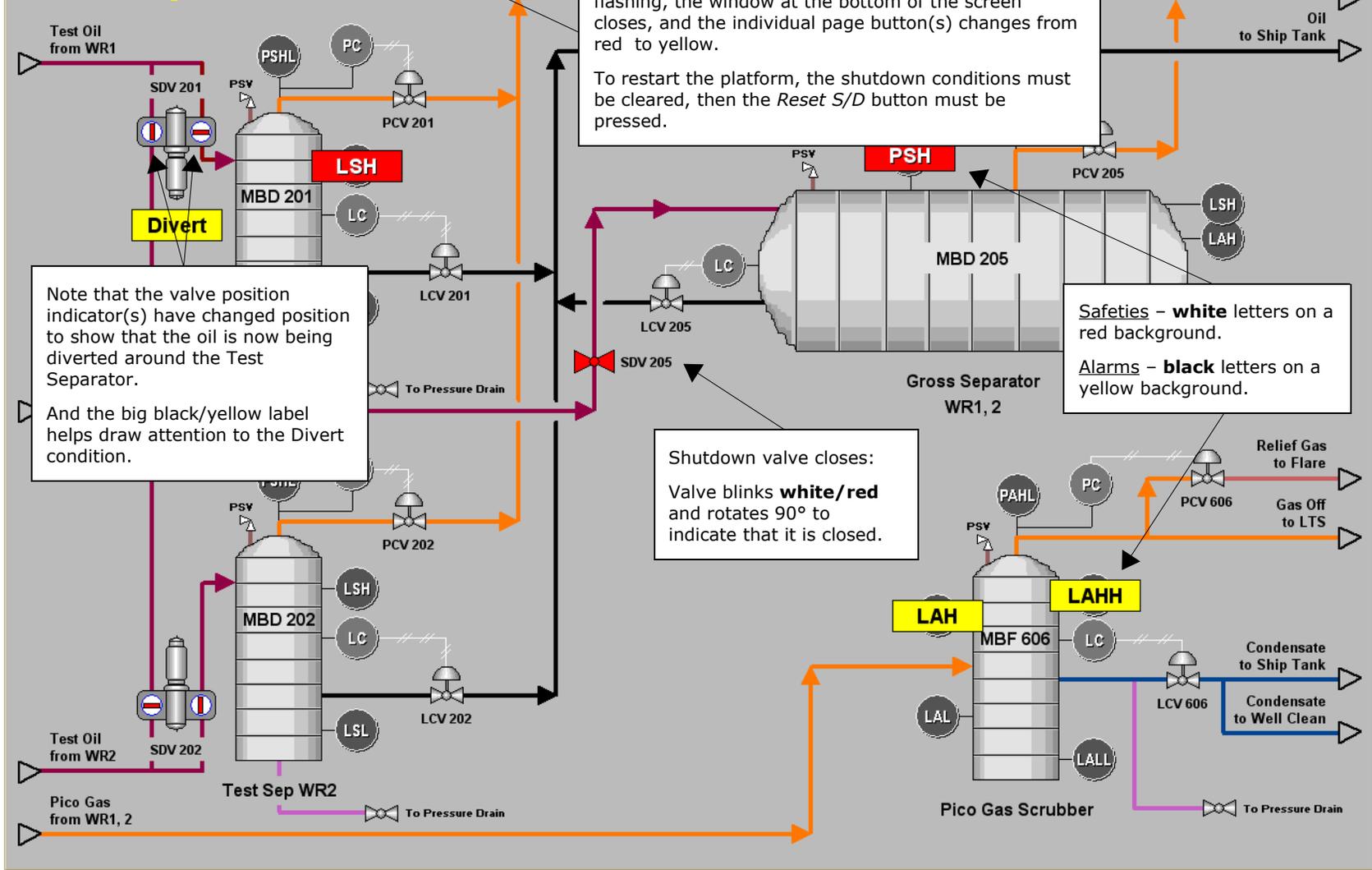
Common - Alarm Popup

Date	Time	State	Name	Comment	Group	Value
02 Jan	08:50:48	UNACK	MBF_606_LAH	Pico Scrubber - Level Alarm Hi	Oil_Sep_1_2	Alarm Hi
02 Jan	08:51:02	UNACK	MBF_606_LAHH	Pico Scrubber - Level Alarm Hi Hi	Oil_Sep_1_2	Alarm Hi Hi
02 Jan	08:51:25	UNACK	MBD_201_LSH	Test Separator - WR 1 - Level Safety Hi	Oil_Sep_1_2	Safety Hi
02 Jan	08:51:25	UNACK	MBD_201_SDV	Test Separator - WR 1 - SDV201 - Divert	Oil_Sep_1_2	Divert
02 Jan	08:51:35	UNACK	MBD_205_PSH	Gross Separator - WR 1/2 - Press Safety Hi	Oil_Sep_1_2	Safety Hi
02 Jan	08:51:35	UNACK	MBD_205_SDV	Gross Separator - WR 1/2 - SDV205 - Close Inlet	Oil_Sep_1_2	Closed

Operator: FROGSTAR 01/02/08 08:51:47 Air = 120.6 psig ShipTk = 13.7 ft H2S = 0.6 ppm VR = 1.4 in wc ShipRt = 12,323 bpd

ESD	Headers	Oil Store/Ship	Gas Comp 2	Overview	Sour Gas	Acid Gas	Flare	Alarms	ACK
Em Supp Sys	Oil Sep 1, 2	Vapor Comp	LTS	<i>Log On</i>	Circulation	Water Inject	Vapor Rec	Trends	Bypass
VSDs	Oil Sep 3, 4	Gas Comp 1	Chiller	Sales Gas	HTM	Reset S/D	Air Comp		Print

Oil Separation 1, 2



Once the ACK button has been pressed: it stops flashing, the window at the bottom of the screen closes, and the individual page button(s) changes from red to yellow.

To restart the platform, the shutdown conditions must be cleared, then the *Reset S/D* button must be pressed.

Note that the valve position indicator(s) have changed position to show that the oil is now being diverted around the Test Separator.

And the big black/yellow label helps draw attention to the Divert condition.

Safeties - **white** letters on a red background.

Alarms - **black** letters on a yellow background.

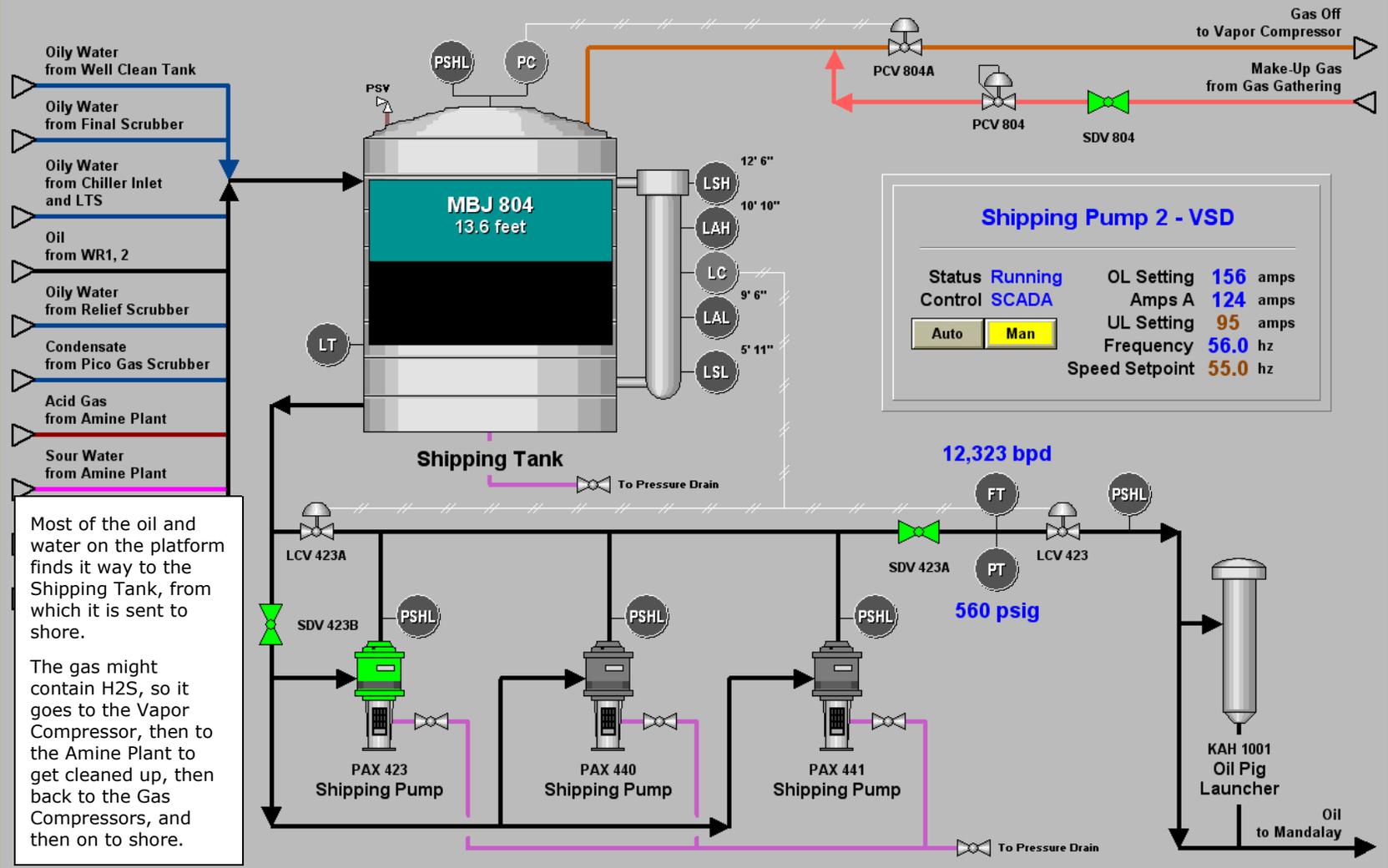
Shutdown valve closes:
Valve blinks **white/red** and rotates 90° to indicate that it is closed.

Operator	FROGSTAR	01/02/08 08:53:27		Air = 120.6 psig	ShipTk = 13.7 ft	H2S = 0.6 ppm	VR = 1.4 in wc	ShipRt = 12,323 bpd
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ESD	Headers	Oil Store/Ship	Gas Comp 2	Overview	Sour Gas	Acid Gas	Flare	Alarms	ACK
Em Supp Sys	Oil Sep 1, 2	Vapor Comp	LTS	<i>Log On</i>	Circulation	Water Inject	Vapor Rec	Trends	Bypass
VSDs	Oil Sep 3, 4	Gas Comp 1	Chiller	Sales Gas	HTM	Reset S/D	Air Comp		Print

Oil Storage and Shipping

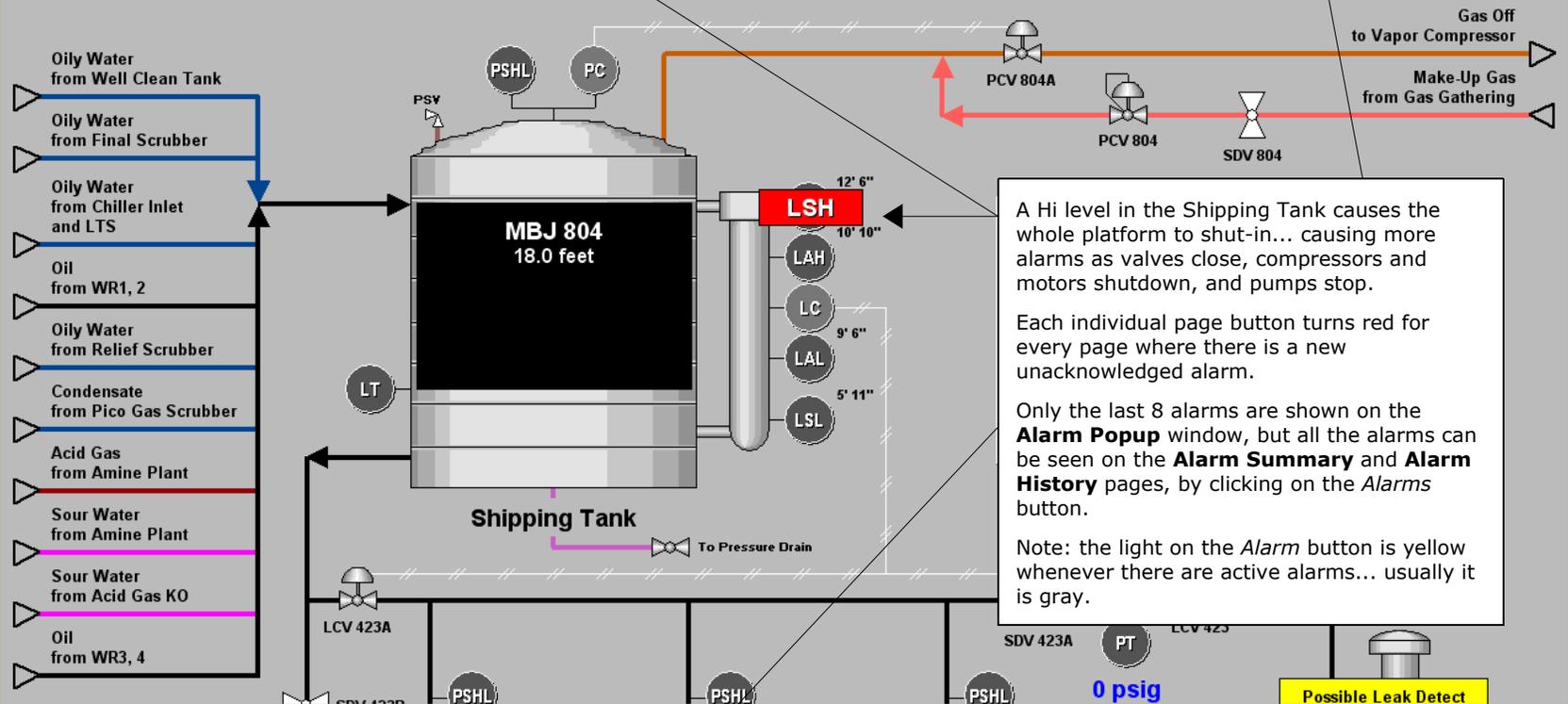
Goto Leak Detection Goto VSDs



Operator	FROGSTAR	01/02/08 05:15:43	Air = 120.6 psig	ShipTk = 13.7 ft	H ₂ S = 0.6 ppm	VR = 8.3 in wc	ShipRt = 12,323 bpd
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ESD	Headers	Oil Store/Ship	Gas Comp 2	Overview	Sour Gas	Acid Gas	Flare	Alarms	ACK
Em Supp Sys	Oil Sep 1, 2	Vapor Comp	LTS	Log On	Circulation	Water Inject	Vapor Rec	Trends	Bypass
VSDs	Oil Sep 3, 4	Gas Comp 1	Chiller	Sales Gas	HTM	Reset S/D	Air Comp		Print

Oil Storage and Shipping



A Hi level in the Shipping Tank causes the whole platform to shut-in... causing more alarms as valves close, compressors and motors shutdown, and pumps stop.

Each individual page button turns red for every page where there is a new unacknowledged alarm.

Only the last 8 alarms are shown on the **Alarm Popup** window, but all the alarms can be seen on the **Alarm Summary** and **Alarm History** pages, by clicking on the *Alarms* button.

Note: the light on the *Alarm* button is yellow whenever there are active alarms... usually it is gray.

Common - Alarm Popup

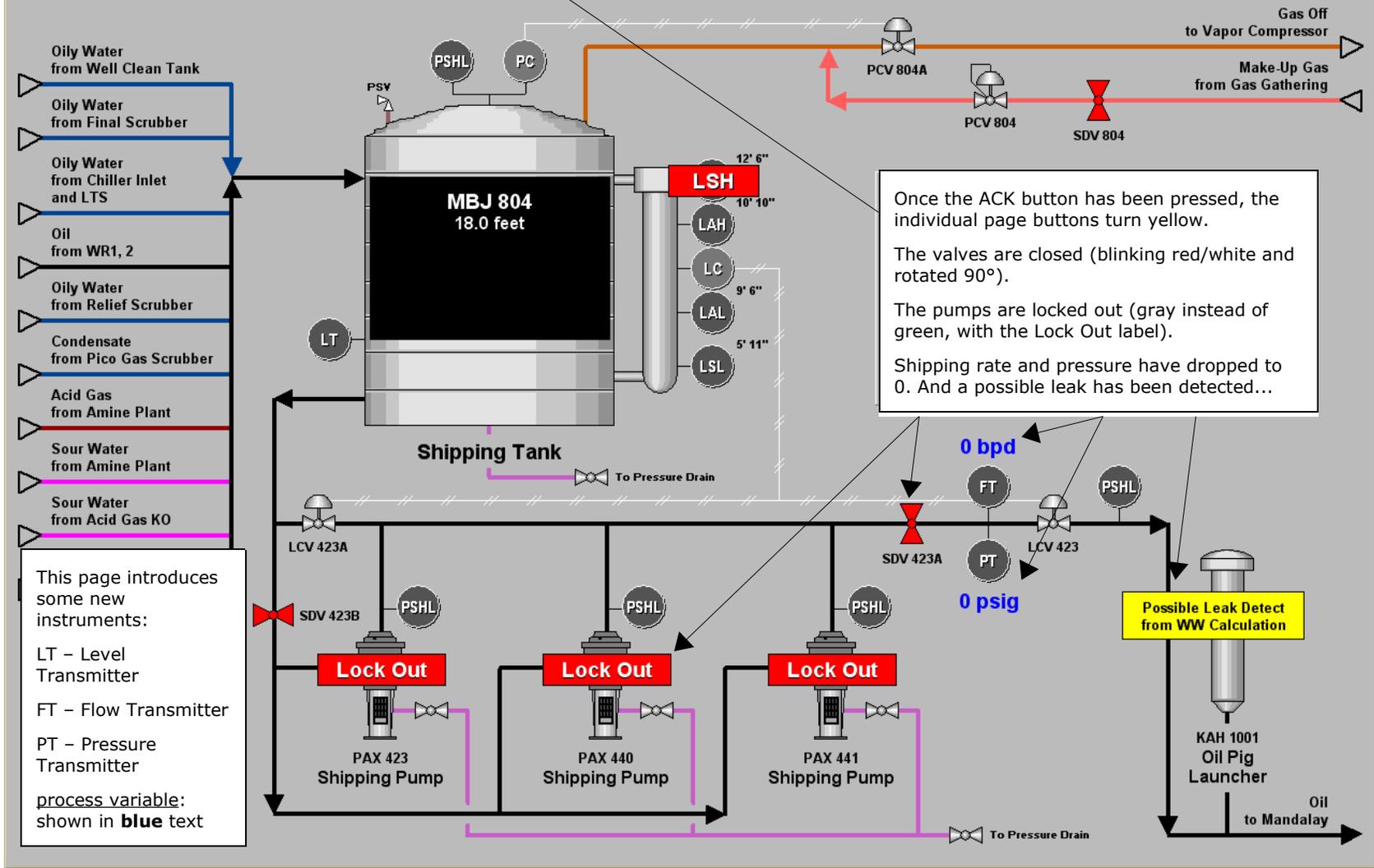
Date	Time	State	Name	Comment	Group	Value
02 Jan	09:11:24	UNACK	MBF_803_SDV803A	Well Clean Tank - SDV26 - Close Make-Up Gas	Vapor_Comp	Closed
02 Jan	09:11:24	UNACK	MBF_803_SDV803	Well Clean Tank - SDV21 - Close Inlet	Vapor_Comp	Closed
02 Jan	09:11:24	UNACK	CBA_439_SDV	Gas Comp #3 - SDV20 - Close Inlet Valve	Gas_Comp_2	Closed
02 Jan	09:11:24	UNACK	MBJ_804_SDV	Shipping Tank - SDV29 - Close Make-Up Gas	Oil_Storage_Ship	Closed
02 Jan	09:11:24	UNACK	SSSV_EOV9_10_403	SSSV WR#3/4; SSV WR#3/4 - SDV - Close	Headers	Closed
02 Jan	09:11:24	UNACK	MBD_202_SDV	Test Separator - WR 2 - SDV202 - Divert	Oil_Sep_1_2	Divert
02 Jan	09:11:24	UNACK	MBD_204_SDV	Test Separator - WR 4 - SDV204 - Divert	Oil_Sep_3_4	Divert
02 Jan	09:11:24	UNACK	SSSV_EOV7_8_401	SSSV WR#1/2; SSV WR#1/2 - SDV - Close	Headers	Closed

Operator: FROGSTAR 01/02/08 09:11:29 Air = 120.6 psig **ShipTk = 18.0 ft** H2S = 0.6 ppm VR = 1.4 in wc ShipRt = 0 bpd

ESD	Headers	Oil Store/Ship	Gas Comp 2	Overview	Sour Gas	Acid Gas	Flare	Alarms	ACK
Em Supp Sys	Oil Sep 1, 2	Vapor Comp	LTS	Log On	Circulation	Water Inject	Vapor Rec	Trends	Bypass
VSDs	Oil Sep 3, 4	Gas Comp 1	Chiller	Sales Gas	HTM	Reset S/D	Air Comp		Print

Oil Storage and Shipping

Goto Leak Detection Goto VSDs



Once the ACK button has been pressed, the individual page buttons turn yellow.

The valves are closed (blinking red/white and rotated 90°).

The pumps are locked out (gray instead of green, with the Lock Out label).

Shipping rate and pressure have dropped to 0. And a possible leak has been detected...

This page introduces some new instruments:

LT - Level Transmitter

FT - Flow Transmitter

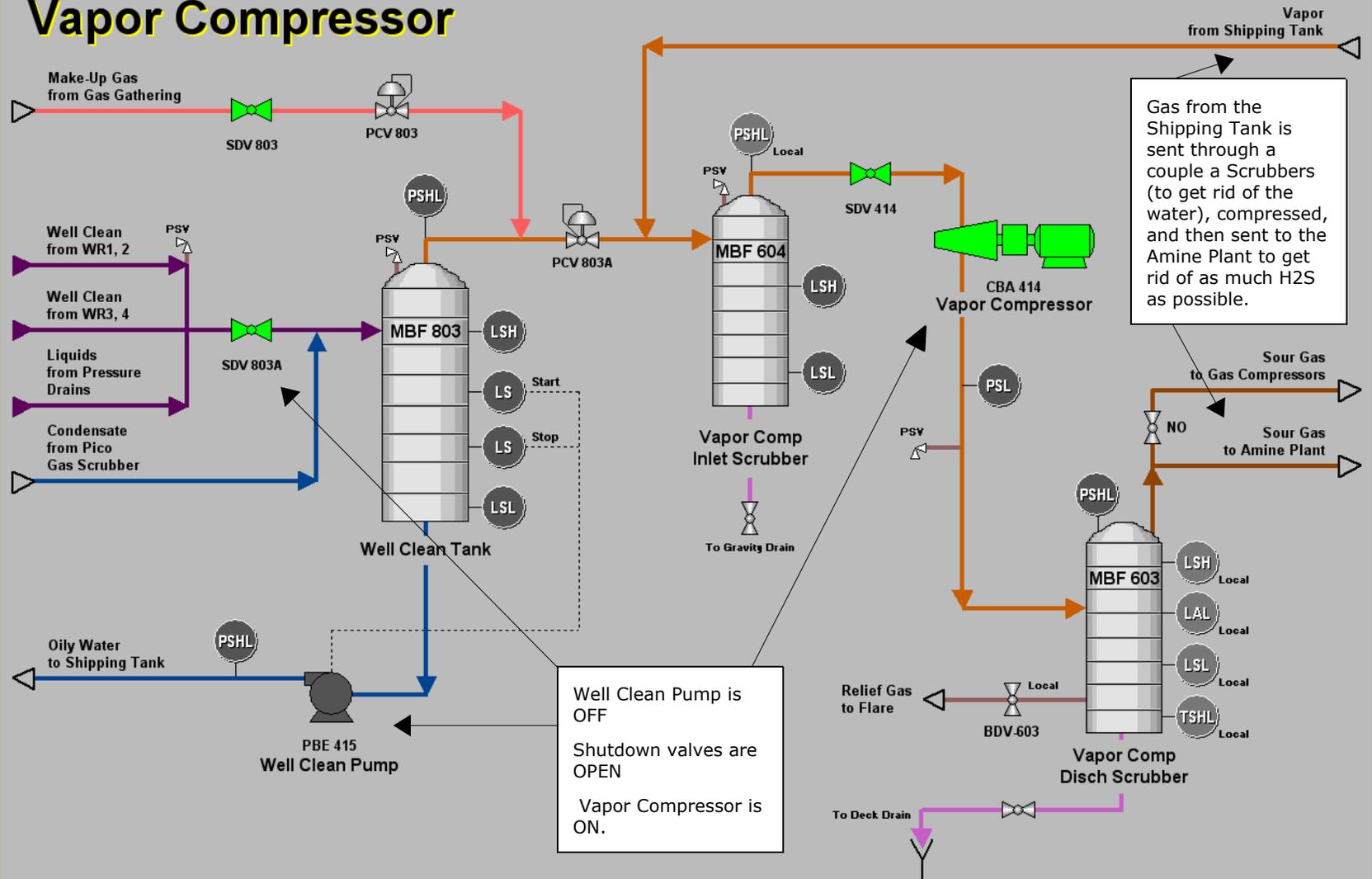
PT - Pressure Transmitter

process variable: shown in **blue** text

Operator	FROGSTAR	01/02/08 09:12:12	Air = 120.6 psig	ShipTk = 18.0 ft	H2S = 0.6 ppm	VR = 1.4 in wc	ShipRt = 0 bpd
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ESD	Headers	Oil Store/Ship	Gas Comp 2	Overview	Sour Gas	Acid Gas	Flare	Alarms	ACK
Em Supp Sys	Oil Sep 1, 2	Vapor Comp	LTS	<i>Log On</i>	Circulation	Water Inject	Vapor Rec	Trends	Bypass
VSDs	Oil Sep 3, 4	Gas Comp 1	Chiller	Sales Gas	HTM	Reset S/D	Air Comp		Print

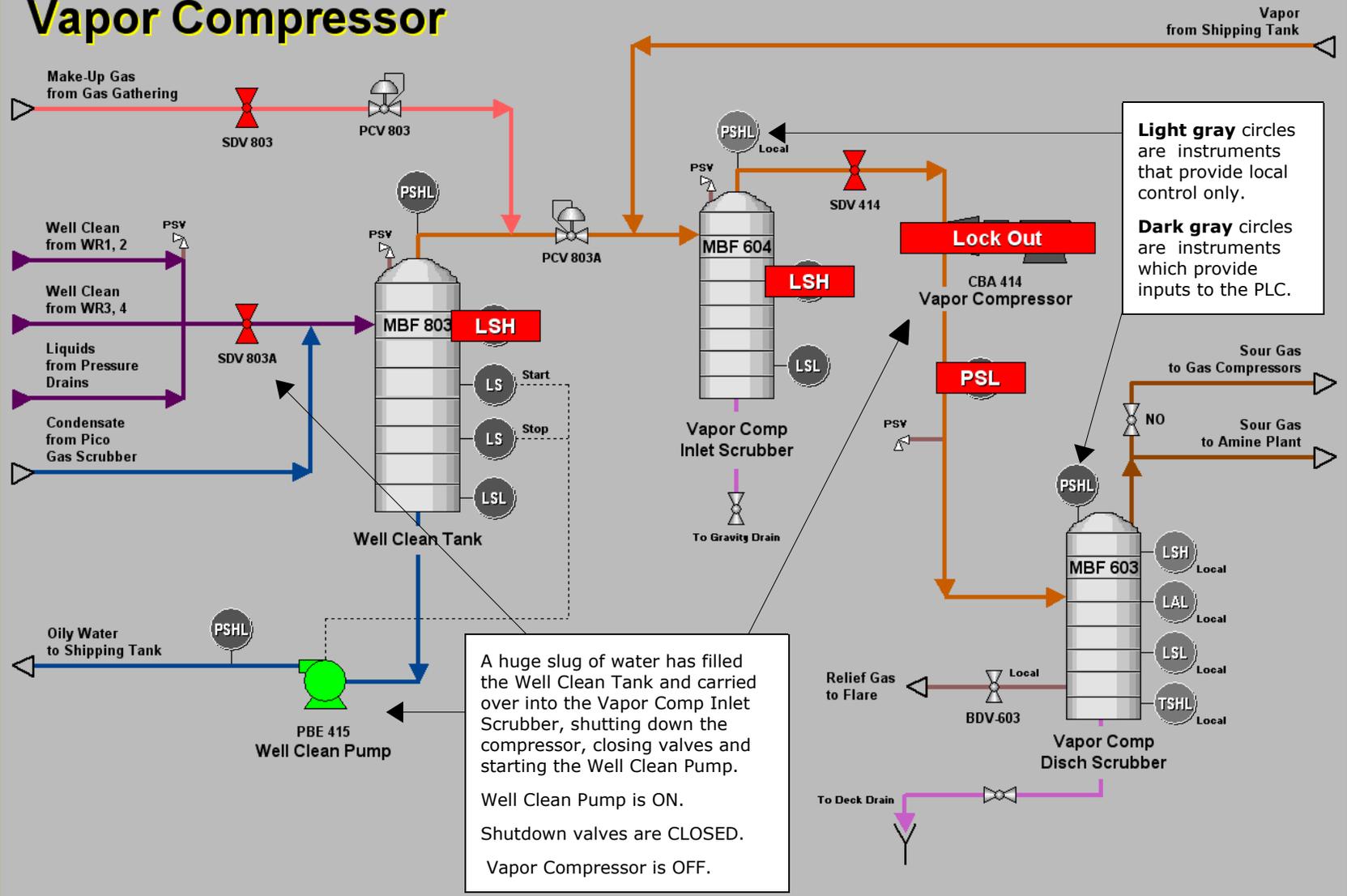
Vapor Compressor



Operator	FROGSTAR	01/02/08 05:17:38	Air = 120.6 psig	ShipTk = 13.7 ft	H2S = 0.6 ppm	VR = 8.3 in wc	ShipRt = 12,323 bpd
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ESD	Headers	Oil Store/Ship	Gas Comp 2	Overview	Sour Gas	Acid Gas	Flare	Alarms	ACK
Em Supp Sys	Oil Sep 1, 2	Vapor Comp	LTS	<i>Log On</i>	Circulation	Water Inject	Vapor Rec	Trends	Bypass
VSDs	Oil Sep 3, 4	Gas Comp 1	Chiller	Sales Gas	HTM	Reset S/D	Air Comp		Print

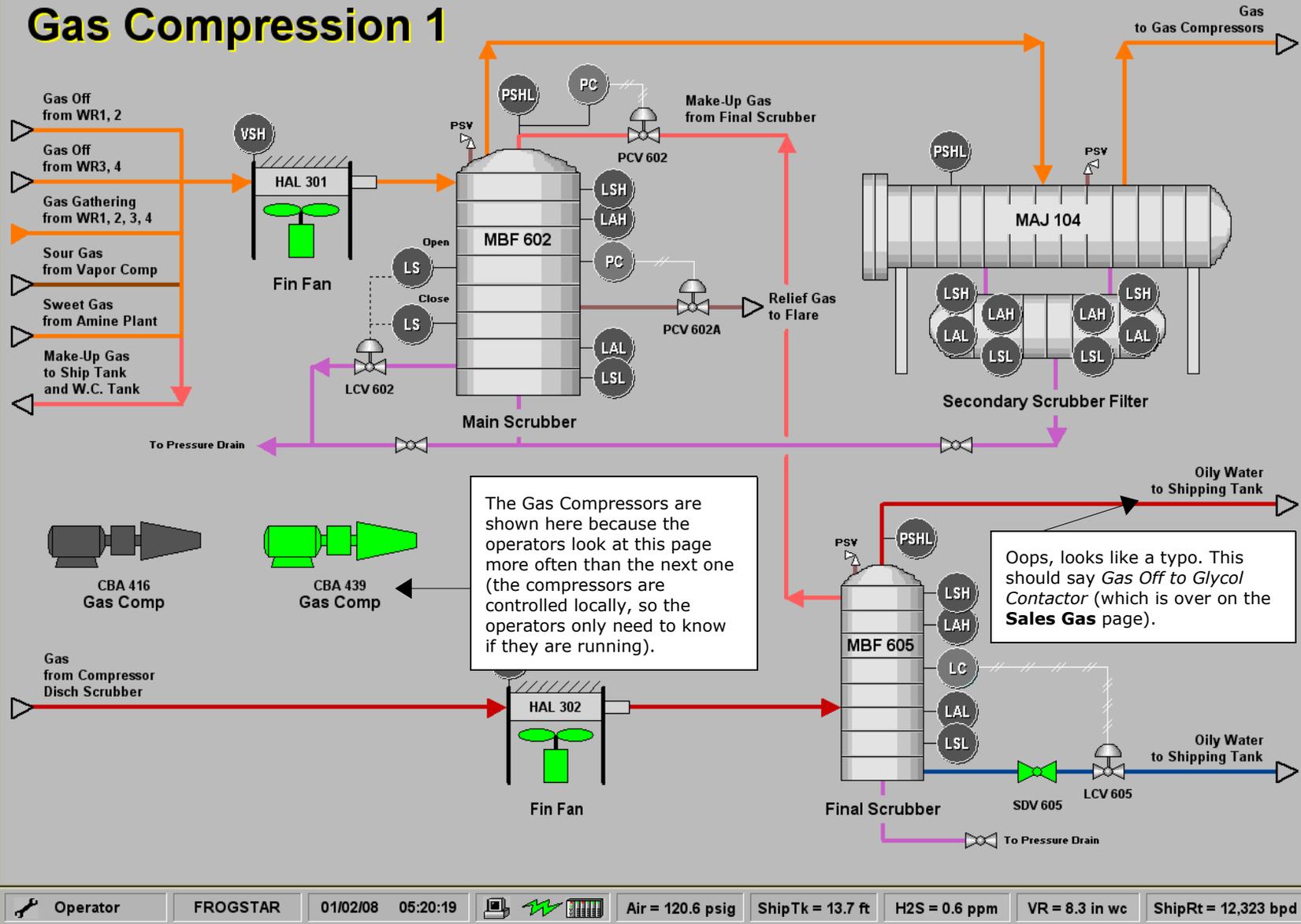
Vapor Compressor



Operator	FROGSTAR	01/02/08 09:40:24	Air = 120.6 psig	ShipTk = 13.7 ft	H2S = 0.6 ppm	VR = 1.4 in wc	ShipRt = 12,323 bpd
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ESD	Headers	Oil Store/Ship	Gas Comp 2	Overview	Sour Gas	Acid Gas	Flare	Alarms	ACK
Em Supp Sys	Oil Sep 1, 2	Vapor Comp	LTS	<i>Log On</i>	Circulation	Water Inject	Vapor Rec	Trends	Bypass
VSDs	Oil Sep 3, 4	Gas Comp 1	Chiller	Sales Gas	HTM	Reset S/D	Air Comp		Print

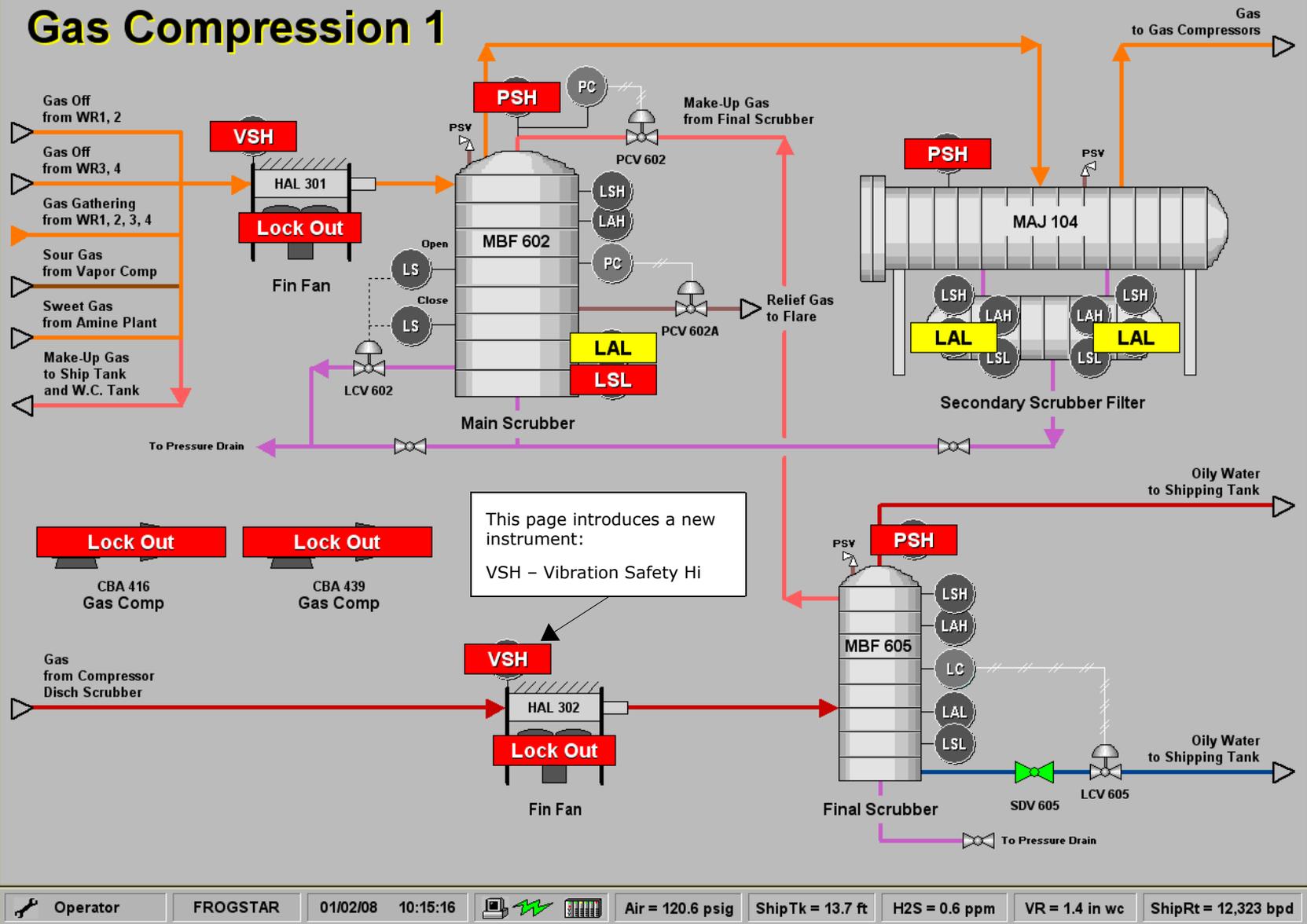
Gas Compression 1



Operator	FROGSTAR	01/02/08 05:20:19	Air = 120.6 psig	ShipTk = 13.7 ft	H2S = 0.6 ppm	VR = 8.3 in wc	ShipRt = 12,323 bpd
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ESD	Headers	Oil Store/Ship	Gas Comp 2	Overview	Sour Gas	Acid Gas	Flare	Alarms	ACK
Em Supp Sys	Oil Sep 1, 2	Vapor Comp	LTS	Log On	Circulation	Water Inject	Vapor Rec	Trends	Bypass
VSDs	Oil Sep 3, 4	Gas Comp 1	Chiller	Sales Gas	HTM	Reset S/D	Air Comp		Print

Gas Compression 1



Operator

FROGSTAR

01/02/08 10:15:16

Air = 120.6 psig

ShipTk = 13.7 ft

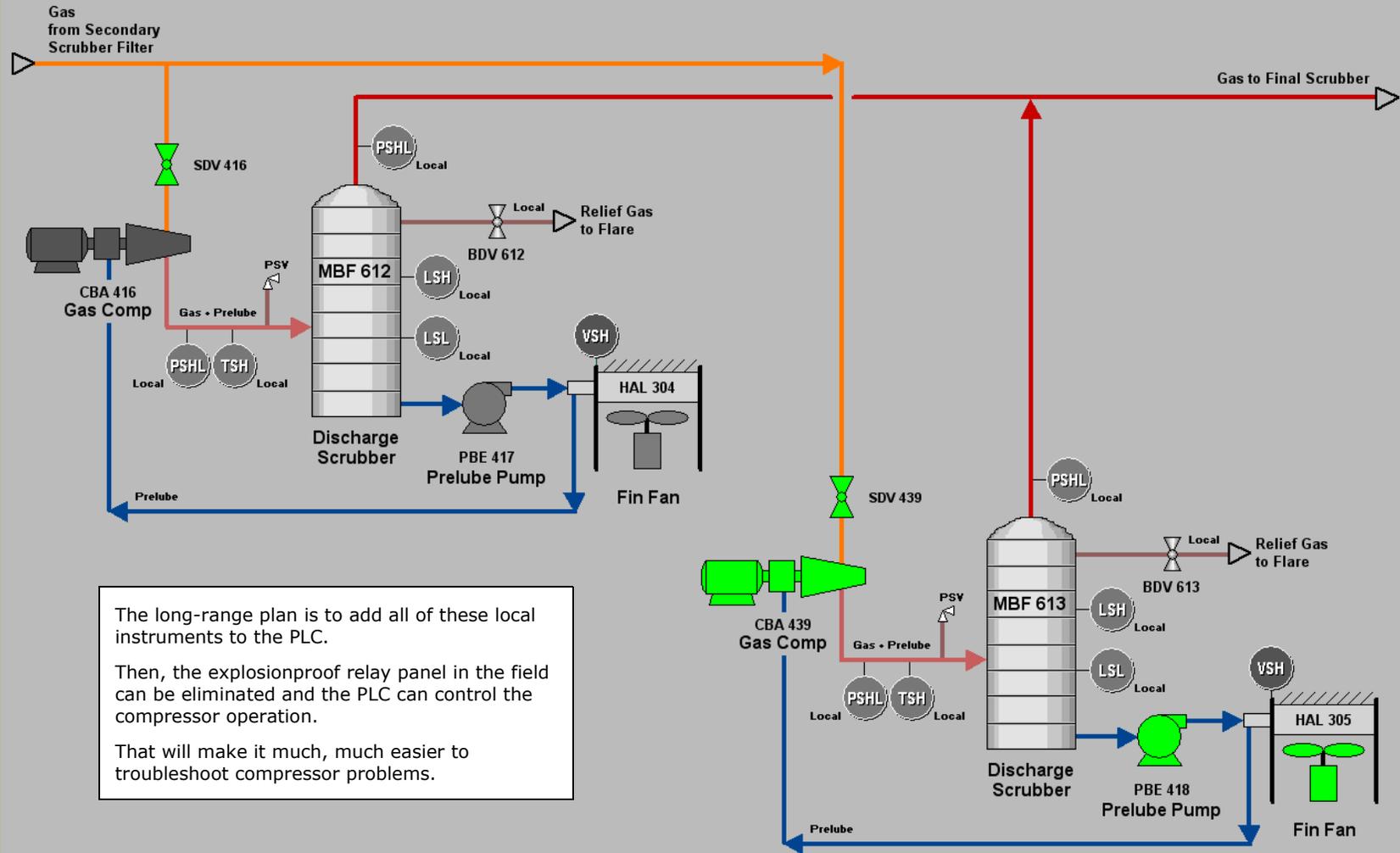
H2S = 0.6 ppm

VR = 1.4 in wc

ShipRt = 12,323 bpd

ESD	Headers	Oil Store/Ship	Gas Comp 2	Overview	Sour Gas	Acid Gas	Flare	Alarms	ACK
Em Supp Sys	Oil Sep 1, 2	Vapor Comp	LTS	<i>Log On</i>	Circulation	Water Inject	Vapor Rec	Trends	Bypass
VSDs	Oil Sep 3, 4	Gas Comp 1	Chiller	Sales Gas	HTM	Reset S/D	Air Comp		Print

Gas Compression 2



The long-range plan is to add all of these local instruments to the PLC.

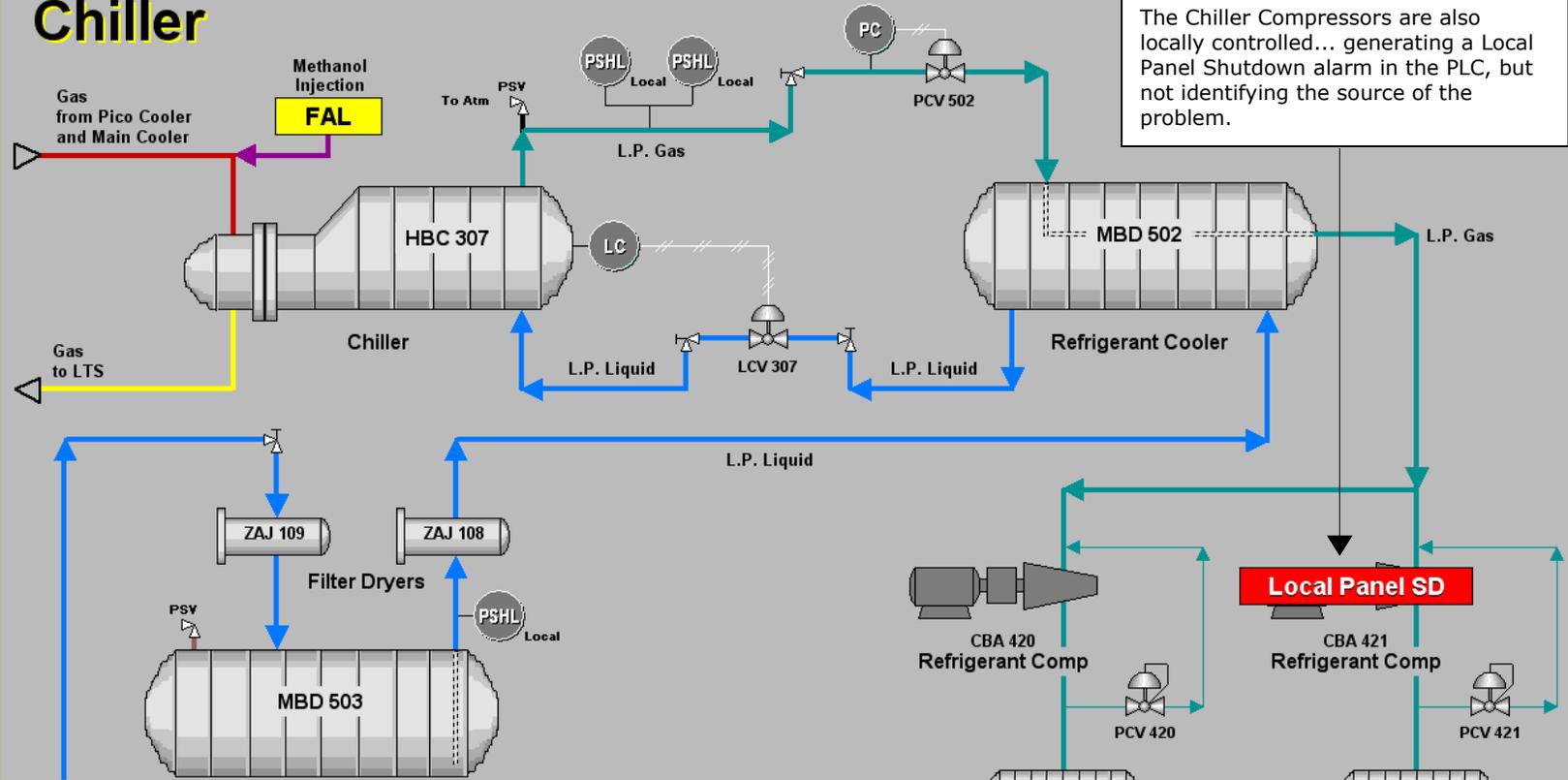
Then, the explosionproof relay panel in the field can be eliminated and the PLC can control the compressor operation.

That will make it much, much easier to troubleshoot compressor problems.

Operator	FROGSTAR	01/02/08 05:27:02	Air = 120.6 psig	ShipTk = 13.7 ft	H2S = 0.6 ppm	VR = 8.3 in wc	ShipRt = 12,323 bpd
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ESD	Headers	Oil Store/Ship	Gas Comp 2	Overview	Sour Gas	Acid Gas	Flare	Alarms	ACK
Em Supp Sys	Oil Sep 1, 2	Vapor Comp	LTS	<i>Log On</i>	Circulation	Water Inject	Vapor Rec	Trends	Bypass
VSDs	Oil Sep 3, 4	Gas Comp 1	Chiller	Sales Gas	HTM	Reset S/D	Air Comp		Print

Chiller



Common - Alarm Popup

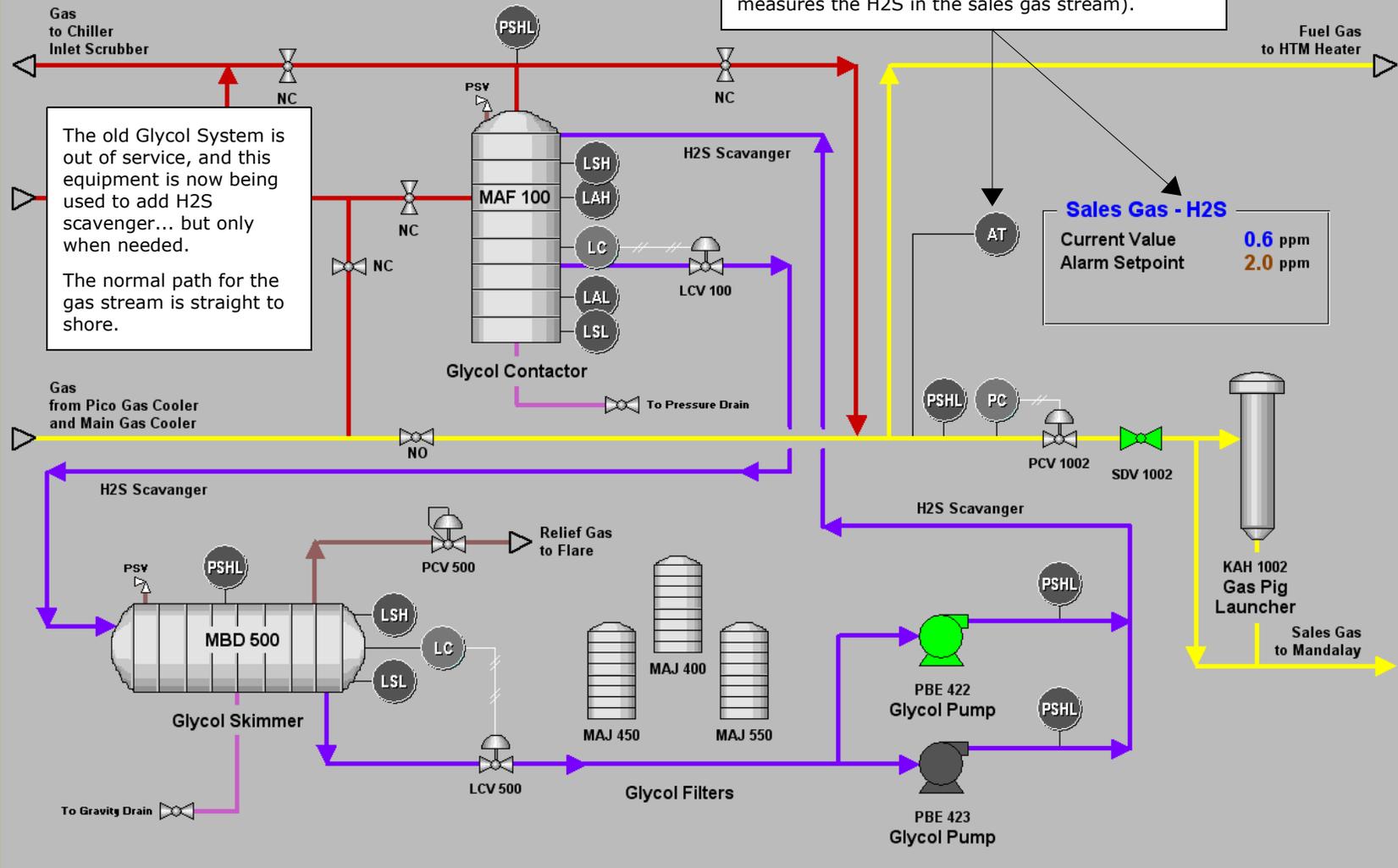
Date	Time	State	Name	Comment	Group	Value
02 Jan	10:47:19	UNACK	CBA_420_421_FAL	Chiller Methanol Pump - Flow Alarm Lo	Chiller	Alarm Lo
02 Jan	10:47:35	UNACK	HAL_303_VSH	Fin Fan - Chiller - Vibration Safety Hi	Chiller	Safety Hi
02 Jan	10:47:59	UNACK	CBA_421_SD	Chiller Comp #2 - Shutdown	Chiller	Shutdown

Operator |
 FROGSTAR |
 01/02/08 10:48:10 |
 Air = 120.6 psig |
 ShipTk = 13.7 ft |
 H2S = 0.6 ppm |
 VR = 1.4 in wc |
 ShipRt = 12,323 bpd

ESD	Headers	Oil Store/Ship	Gas Comp 2	Overview	Sour Gas	Acid Gas	Flare	Alarms	ACK
Em Supp Sys	Oil Sep 1, 2	Vapor Comp	LTS	<i>Log On</i>	Circulation	Water Inject	Vapor Rec	Trends	Bypass
VSDs	Oil Sep 3, 4	Gas Comp 1	Chiller	Sales Gas	HTM	Reset S/D	Air Comp		Print

Sales Gas & H2S Scavenger

This page introduces another new instrument:
 AT – Analysis Transmitter (this particular AT measures the H2S in the sales gas stream).



The old Glycol System is out of service, and this equipment is now being used to add H2S scavenger... but only when needed.
 The normal path for the gas stream is straight to shore.

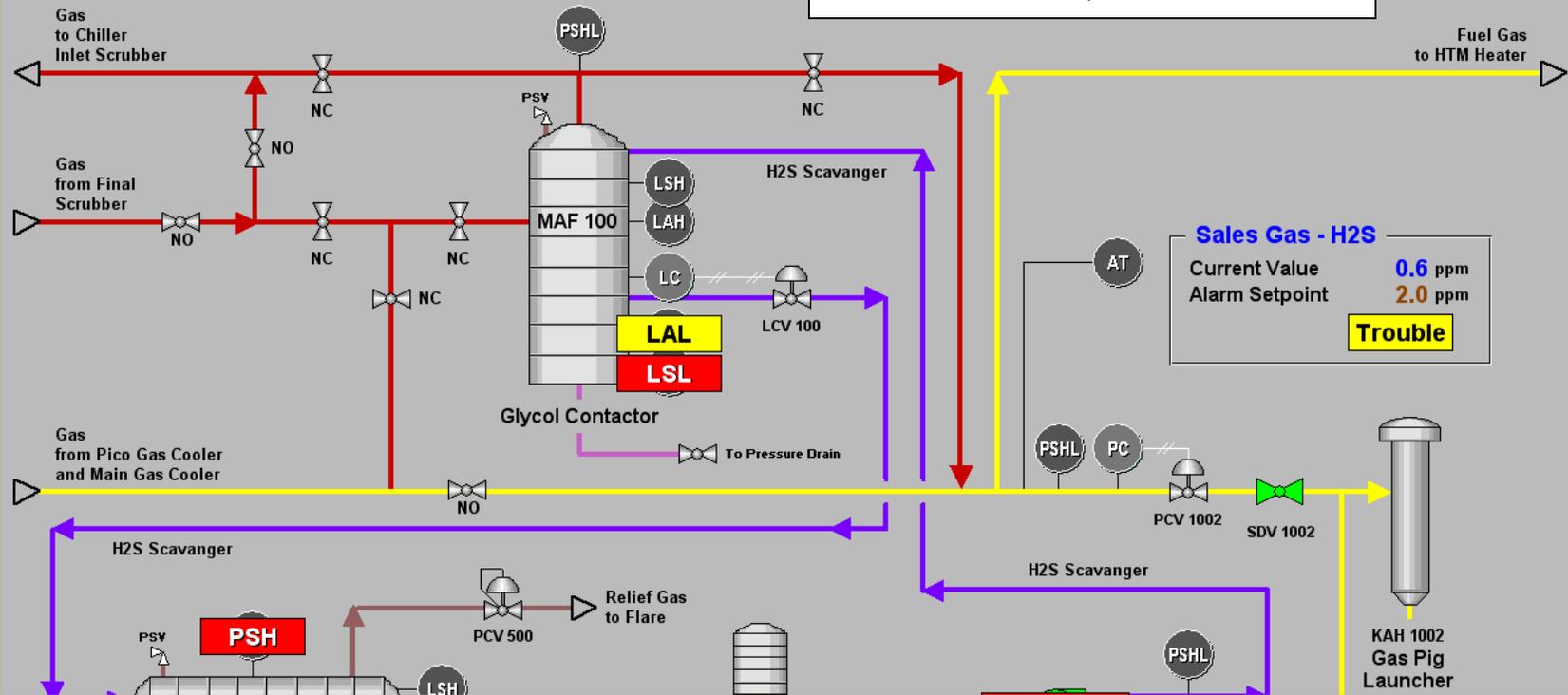
Sales Gas - H2S
 Current Value: 0.6 ppm
 Alarm Setpoint: 2.0 ppm

Operator	FROGSTAR	01/02/08 05:33:01	Air = 120.6 psig	ShipTk = 13.7 ft	H2S = 0.6 ppm	VR = 8.3 in wc	ShipRt = 12,323 bpd
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ESD	Headers	Oil Store/Ship	Gas Comp 2	Overview	Sour Gas	Acid Gas	Flare	Alarms	ACK
Em Supp Sys	Oil Sep 1, 2	Vapor Comp	LTS	<i>Log On</i>	Circulation	Water Inject	Vapor Rec	Trends	Bypass
VSDs	Oil Sep 3, 4	Gas Comp 1	Chiller	Sales Gas	HTM	Reset S/D	Air Comp		Print

Sales Gas & H2S Scavenger

A low level in the Contactor has led to gas blow by, which has created a Hi pressure in the Skimmer which has shut down the platform.



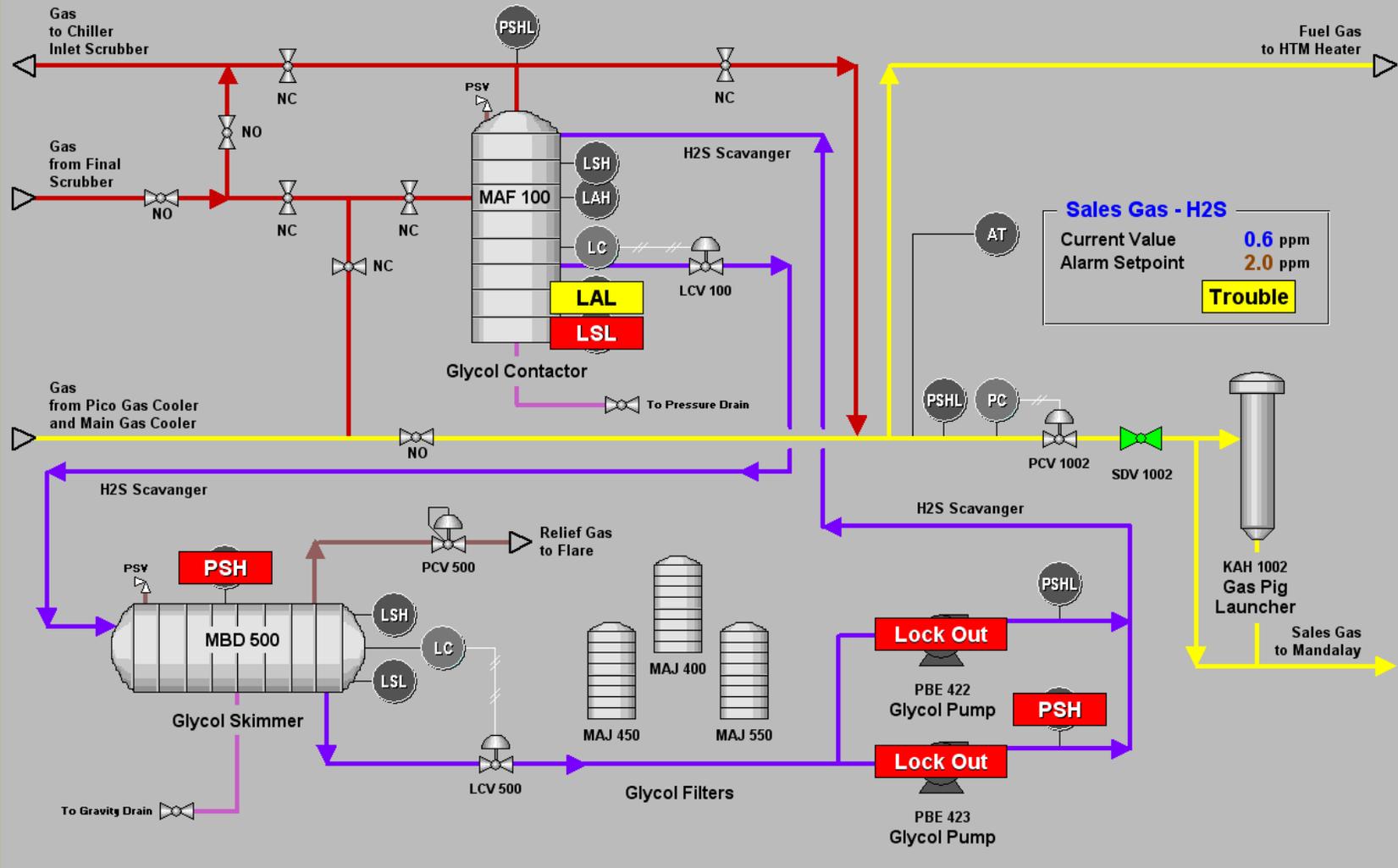
Common - Alarm Popup

Date	Time	State	Name	Comment	Group	Value
02 Jan	11:16:17	UNACK	PAX_423_SDV423A	Shipping Pump Disch - SDV16 - Close Outlet	Oil_Storage_Ship	Closed
02 Jan	11:16:17	UNACK	PAX_423_SDV423B	Shipping Pump Suction - SDV15 - Close Inlet	Oil_Storage_Ship	Closed
02 Jan	11:16:17	UNACK	CBA_439_SDV	Gas Comp #3 - SDV20 - Close Inlet Valve	Gas_Comp_2	Closed
02 Jan	11:16:17	UNACK	SSSV_EOV9_10_403	SSSV WR#3/4; SSV WR#3/4 - SDV - Close	Headers	Closed
02 Jan	11:16:17	UNACK	MAF_100_LAL	Glycol Contactor - Level Alarm Lo	Sales	Alarm Lo
02 Jan	11:16:17	UNACK	SSSV_EOV7_8_401	SSSV WR#1/2; SSV WR#1/2 - SDV - Close	Headers	Closed
02 Jan	11:16:17	UNACK	MAF_100_LSL	Glycol Contactor - Level Safety Lo	Sales	Safety Lo
02 Jan	11:16:31	UNACK	MBD_500_PSH	Glycol Skimmer - Press Safety Hi	Sales	Safety Hi

Operator: FROGSTAR 01/02/08 11:16:49 Air = 120.6 psig ShipTk = 13.7 ft H2S = 0.6 ppm VR = 1.4 in wc ShipRt = 12,323 bpd

ESD	Headers	Oil Store/Ship	Gas Comp 2	Overview	Sour Gas	Acid Gas	Flare	Alarms	ACK
Em Supp Sys	Oil Sep 1, 2	Vapor Comp	LTS	<i>Log On</i>	Circulation	Water Inject	Vapor Rec	Trends	Bypass
VSDs	Oil Sep 3, 4	Gas Comp 1	Chiller	Sales Gas	HTM	Reset S/D	Air Comp		Print

Sales Gas & H2S Scavenger

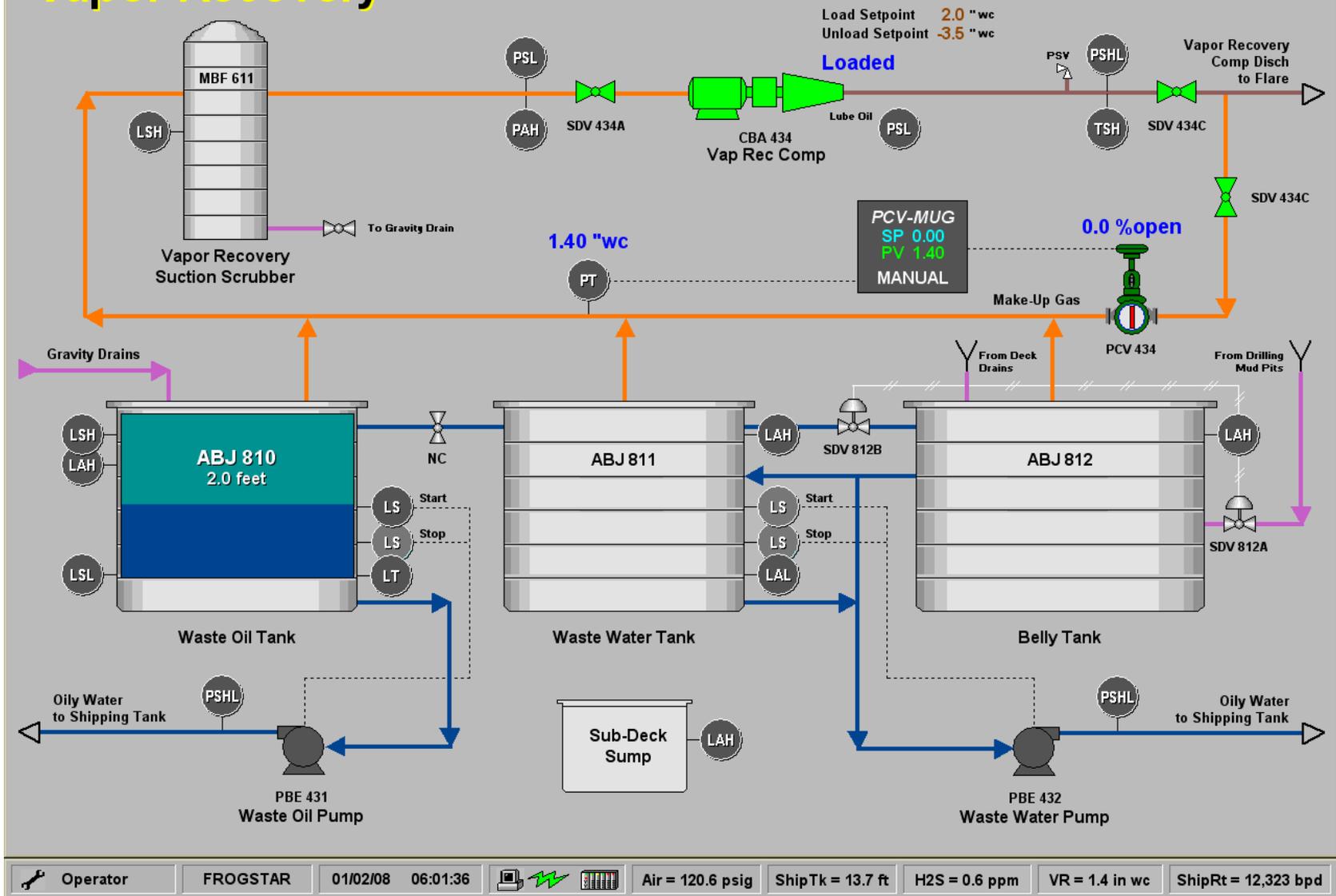


Sales Gas - H2S
 Current Value 0.6 ppm
 Alarm Setpoint 2.0 ppm
Trouble

Operator	FROGSTAR	01/02/08 11:23:04	Air = 120.6 psig	ShipTk = 13.7 ft	H2S = 0.6 ppm	VR = 1.4 in wc	ShipRt = 12,323 bpd
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ESD	Headers	Oil Store/Ship	Gas Comp 2	Overview	Sour Gas	Acid Gas	Flare	Alarms	ACK
Em Supp Sys	Oil Sep 1, 2	Vapor Comp	LTS	<i>Log On</i>	Circulation	Water Inject	Vapor Rec	Trends	Bypass
VSDs	Oil Sep 3, 4	Gas Comp 1	Chiller	Sales Gas	HTM	Reset S/D	Air Comp		Print

Vapor Recovery



ESD	Headers	Oil Store/Ship	Gas Comp 2	Overview	Sour Gas	Acid Gas	Flare	Alarms	ACK
Em Supp Sys	Oil Sep 1, 2	Vapor Comp	LTS	<i>Log On</i>	Circulation	Water Inject	Vapor Rec	Trends	Bypass
VSDs	Oil Sep 3, 4	Gas Comp 1	Chiller	Sales Gas	HTM	Reset S/D	Air Comp		Print

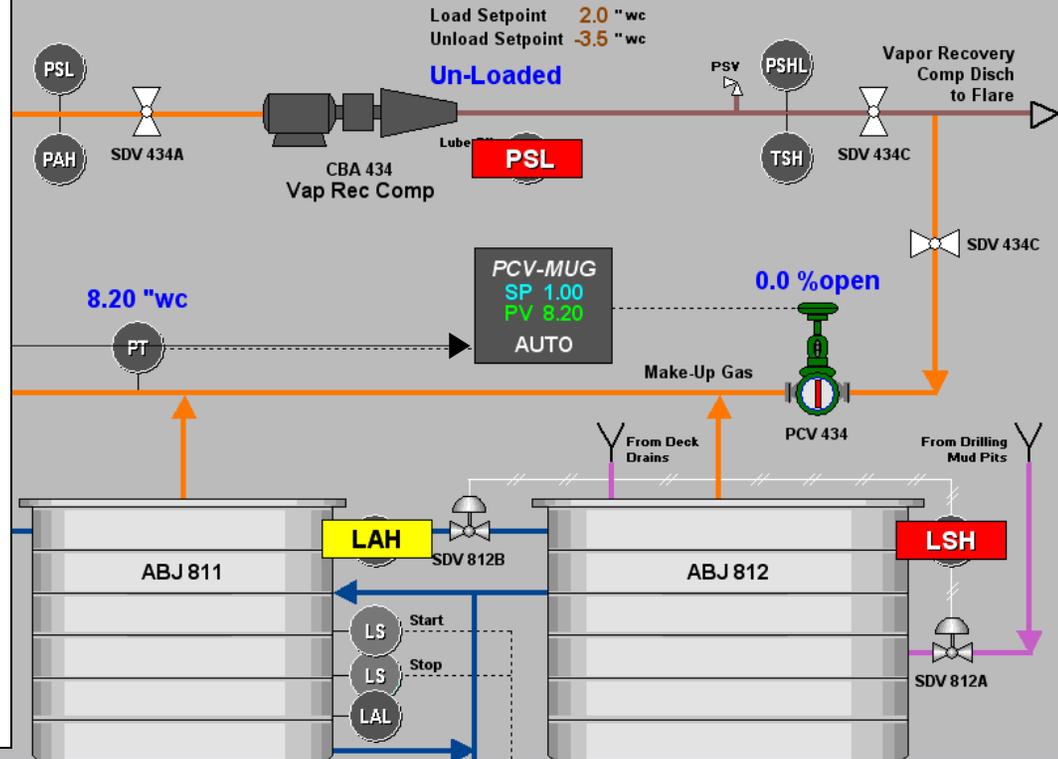
Vapo

This page introduces a new instrument:
TSH - Temperature Safety Hi

It also shows our first PID loop controlling a valve (PCV 434).
The loop is in **Auto** (with a setpoint of 1.0 inches of water column) and, since the compressor is shut down, there is no need for any make-up gas. So the control valve is fully closed.

The PID loop controller can be accessed by clicking on the PID block.

The Waste Water, Waste Oil and Belly Tanks have filled, creating some alarms and shutdowns, and pumps have kicked on to drop the level... but to make things worse, the Vapor Recovery Compressor has shut down on low lube oil pressure... not really a good day.

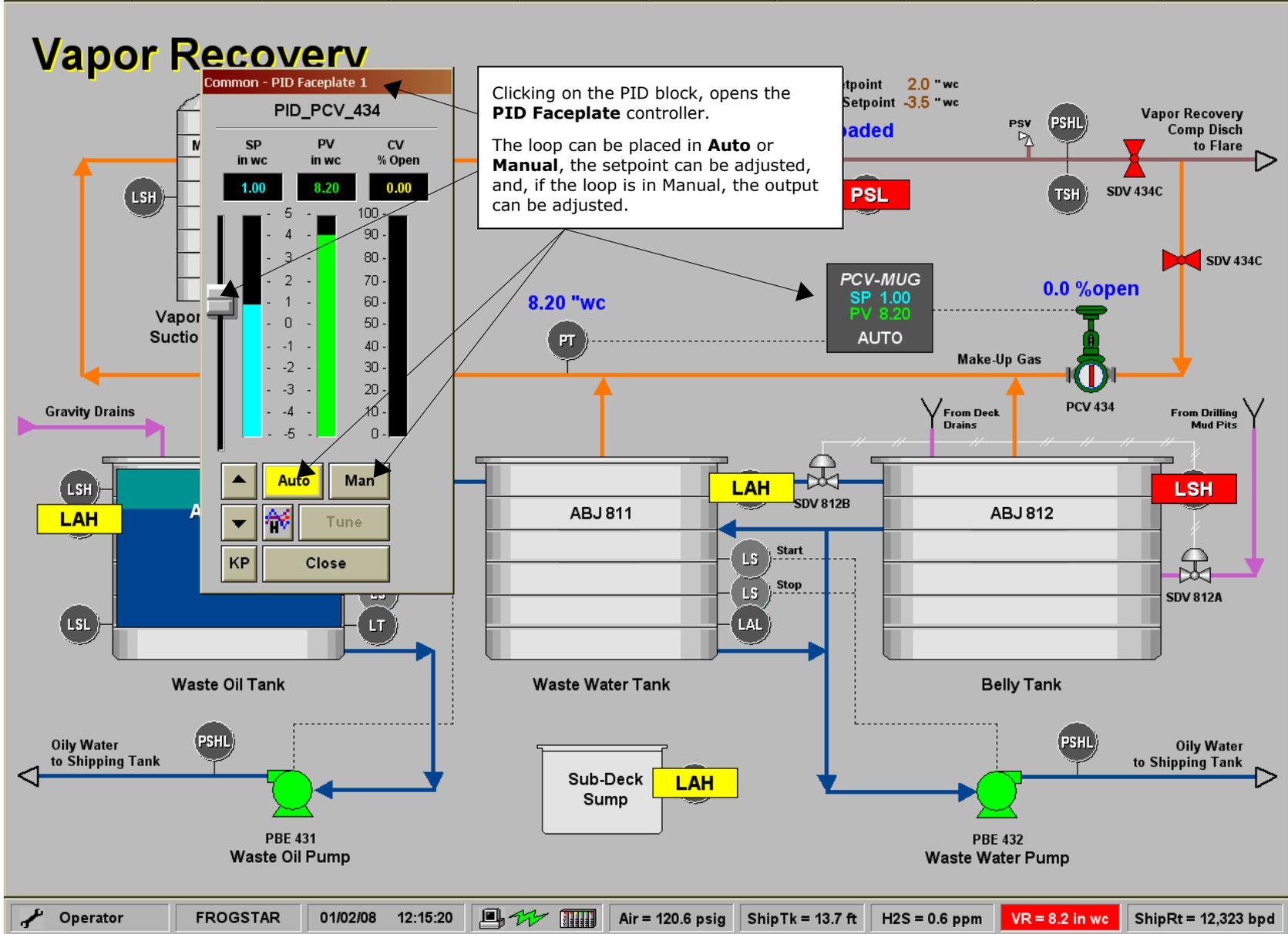


Common - Alarm Popup

Date	Time	State	Name	Comment	Group	Value
02 Jan	12:10:55	ACK	AnalogTag3	This is an Example Alarm Comment 3	\$System	8.2
02 Jan	12:13:00	UNACK	Sump_LAH	Sump - Float Deck - Level Alarm Hi	Waste_VR	Alarm Hi
02 Jan	12:13:06	UNACK	ABJ_810_LAH	Waste Oil Tank - Level Alarm Hi	Waste_VR	Alarm Hi
02 Jan	12:13:25	UNACK	ABJ_811_LAH	Waste Water Tank - Level Alarm Hi	Waste_VR	Alarm Hi
02 Jan	12:13:28	UNACK	ABJ_812_LSH	Belly Tank - Level Safety Hi	Waste_VR	Alarm Hi

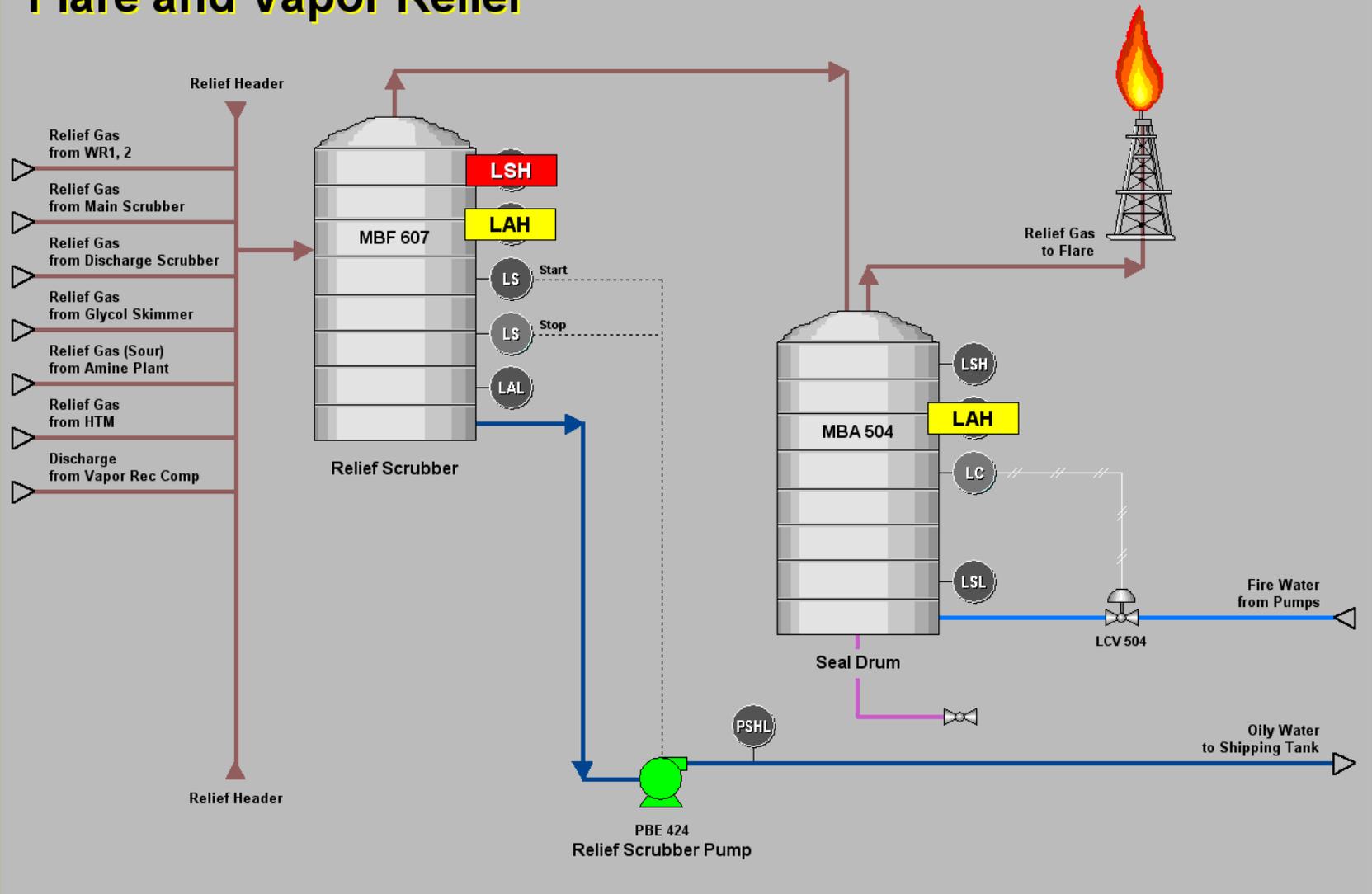
Operator: FROGSTAR 01/02/08 12:14:17 Air = 120.6 psig ShipTk = 13.7 ft H2S = 0.6 ppm **VR = 8.2 in wc** ShipRt = 12,323 bpd

ESD	Headers	Oil Store/Ship	Gas Comp 2	Overview	Sour Gas	Acid Gas	Flare	Alarms	ACK
Em Supp Sys	Oil Sep 1, 2	Vapor Comp	LTS	<i>Log On</i>	Circulation	Water Inject	Vapor Rec	Trends	Bypass
VSDs	Oil Sep 3, 4	Gas Comp 1	Chiller	Sales Gas	HTM	Reset S/D	Air Comp		Print



ESD	Headers	Oil Store/Ship	Gas Comp 2	Overview	Sour Gas	Acid Gas	Flare	Alarms	ACK
Em Supp Sys	Oil Sep 1, 2	Vapor Comp	LTS	<i>Log On</i>	Circulation	Water Inject	Vapor Rec	Trends	Bypass
VSDs	Oil Sep 3, 4	Gas Comp 1	Chiller	Sales Gas	HTM	Reset S/D	Air Comp		Print

Flare and Vapor Relief



Operator	FROGSTAR	01/02/08 11:39:14	Air = 120.6 psig	ShipTk = 13.7 ft	H2S = 0.6 ppm	VR = 1.4 in wc	ShipRt = 12,323 bpd
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ESD	Headers	Oil Store/Ship	Gas Comp 2	Overview	Sour Gas	Acid Gas	Flare	Alarms	ACK
Em Supp Sys	Oil Sep 1, 2	Vapor Comp	LTS	<i>Log On</i>	Circulation	Water Inject	Vapor Rec	Trends	Bypass
VSDs	Oil Sep 3, 4	Gas Comp 1	Chiller	Sales Gas	HTM	Reset S/D	Air Comp		Print

VSDs

WPH - Centrigard - UL

Goto Oil Shipping

S-1 VSD 11 Running OL/UL Normal Alarm Enabled Alarm Disable	S-2 VSD 18 Running OL/UL Normal Alarm Enabled Alarm Disable	S-3 VSD 1 Stopped OL/UL Normal Alarm Enabled Alarm Disable	S-7 VSD 20 Running OL/UL Normal Alarm Enabled Alarm Disable	S-8 VSD 17 Running OL/UL Normal Alarm Enabled Alarm Disable	S-9 VSD 8 Running OL/UL Normal Alarm Enabled Alarm Disable	S-19 VSD 16 Running OL/UL Normal Alarm Enabled Alarm Disable
S-21 VSD 6 Running OL/UL Normal Alarm Enabled Alarm Disable	S-27 VSD 15 RunStatus OL/UL Normal Alarm Enabled Alarm Disable	S-28 VSD 3 Running OL/UL Normal Alarm Enabled Alarm Disable	S-39 VSD 4 Running OL/UL Normal Alarm Enabled Alarm Disable	S-48 VSD 19 Running OL/UL Alarm Alarm Enabled Alarm Disable	S-61 VSD 5 Running OL/UL Normal Alarm Enabled Alarm Disable	S-62 VSD 10 Running OL/UL Normal Alarm Enabled Alarm Disable
S-79 VSD 7 Stopped OL/UL Alarm Alarm Enabled Alarm Disable	S-87 VSD 12 Running OL/UL Normal Alarm Enabled Alarm Disable	S-89 VSD 13 Running OL/UL Normal Alarm Enabled Alarm Disable				PAX 440 VSD 14 Running OL/UL Normal Alarm Enabled Alarm Disable

Operator	FROGSTAR	01/02/08 06:21:33		Air = 120.6 psig	ShipTk = 13.7 ft	H2S = 0.6 ppm	VR = 1.4 in wc	ShipRt = 12,323 bpd
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ESD	Headers	Oil Store/Ship	Gas Comp 2	Overview	Sour Gas	Acid Gas	Flare	Alarms	ACK
Em Supp Sys	Oil Sep 1, 2	Vapor Comp	LTS	Log On	Circulation	Water Inject	Vapor Rec	Trends	Bypass
VSDs	Oil Sep 3, 4	Gas Comp 1	Chiller	Sales Gas	HTM	Reset S/D	Air Comp		Print

Shutdown Bypass 4

[Bypass 1](#)
[Bypass 2](#)
[Bypass 3](#)
[Bypass 4](#)
[Bypass 5](#)
[Bypass 6](#)

You must be logged on to Bypass plant safeties!

[Previous](#)
[Next](#)

Scrubbers

Main Scrubber

- MBF 602 - PSH - Press Safety Hi
- MBF 602 - PSL - Press Safety Lo
- MBF 602 - LSH - Level Safety Hi
- MBF 602 - LSL - Level Safety Lo

Vapor Comp Disch Scrubber

- MBF 603 - PSH - Press Safety Hi
- MBF 603 - PSL - Press Safety Lo

Vapor Comp Inlet Scrubber

- MBF 604 - LSH - Level Safety Hi
- MBF 604 - LSL - Level Safety Lo

Final Scrubber

- MBF 605 - PSH - Press Safety Hi
- MBF 605 - PSL - Press Safety Lo
- MBF 605 - LSH - Level Safety Hi
- MBF 605 - LSL - Level Safety Lo

Pico Scrubber

Relief Scrubber

- MBF 607 - LSH - Level Safety Hi

Scrubbers (cont)

Amine Plant Inlet Gas Scrubber

Contactor Disch Gas Scrubber

Vapor Rec Comp Suct Scrubber

Gas Comp Disch Scrubber

Well Clean Tank

- MBF 803 - PSH - Press Safety Hi
- MBF 803 - PSL - Press Safety Lo
- MBF 803 - LSH - Level Safety Hi
- MBF 803 - LSL - Level Safety Lo

Pressure Tanks

Backwash Tank

- MBJ 802 - Safeties

Shipping Tank

- MBJ 804 - PSH - Press Safety Hi
- MBJ 804 - PSL - Press Safety Lo
- MBJ 804 - LSH - Level Safety Hi
- MBJ 804 - LSL - Level Safety Lo

Amine Flash Tank

Lean Amine Surge Tank

HTM Expansion Tank

Instrument Air Receivers

All safety devices require periodic testing.

The **Shutdown Bypass** pages allow the shutdown function of a device to be bypassed while the alarm function is still active. This allows the device to be tested without repeatedly shutting down and restarting the equipment.

These devices can be Bypassed only when the user has logged on with a correct password. The user name is logged, as is the time the device was Bypassed, and the time it was taken back out again.

The **blue** text are links to the process pages where these safeties can be found.

Operator	FROGSTAR	01/02/08 06:03:46		Air = 120.6 psig	ShipTk = 13.7 ft	H2S = 0.6 ppm	VR = 1.4 in wc	ShipRt = 12,323 bpd
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ESD	Headers	Oil Store/Ship	Gas Comp 2	Overview	Sour Gas	Acid Gas	Flare	Alarms	ACK
Em Supp Sys	Oil Sep 1, 2	Vapor Comp	LTS	<i>Log On</i>	Circulation	Water Inject	Vapor Rec	Trends	Bypass
VSDs	Oil Sep 3, 4	Gas Comp 1	Chiller	Sales Gas	HTM	Reset S/D	Air Comp		Print

Shutdown Bypass 4

You must be logged on to Bypass plant safeties!

Scrubbers

Main Scrubber

MBF 602 - PSH - Press Safety Hi

MBF 602 - PSL - Press Safety Lo

MBF 602 - LSH - Level Safety Hi

MBF 602 - LSL - Level Safety Lo

Vapor Comp Disch Scrubber

MBF 603 - PSH - Press Safety Hi

MBF 603 - PSL - Press Safety Lo

Vapor Comp Inlet Scrubber

MBF 604 - LSH - Level Safety Hi

MBF 604 - LSL - Level Safety Lo

Final Scrubber

MBF 605 - PSH - Press Safety Hi

MBF 605 - PSL - Press Safety Lo

MBF 605 - LSH - Level Safety Hi

MBF 605 - LSL - Level Safety Lo

Pico Scrubber

Relief Scrubber

Common - Alarm Bypass Alert

Some safety or control devices are currently in Bypass !

Well Clean Tank

MBF 803 - PSH - Press Safety Hi

MBF 803 - PSL - Press Safety Lo

MBF 803 - LSH - Level Safety Hi

MBF 803 - LSL - Level Safety Lo

Pressure Tanks

Backwash Tank

MBJ 802 - Safeties

Shipping Tank

MBJ 804 - PSH - Press Safety Hi

MBJ 804 - PSL - Press Safety Lo

MBJ 804 - LSH - Level Safety Hi

MBJ 804 - LSL - Level Safety Lo

Amine Flash Tank

Lean Amine Surge Tank

HTM Expansion Tank

Instrument Air Receivers

When safeties are Bypassed, an alarm is generated and a window pops up to remind the operator that some safety or control devices are still in Bypass.

The **Alarm Bypass Alert** window will pop up every 5 minutes as long as devices are Bypassed.

Common - Alarm Popup

Date	Time	State	Name	Comment	Group	Value
02 Jan	11:42:05	UNACK	MBF_803_PSH_BP	Well Clean Tank - Press Safety Hi - Bypass	Bypass4	Bypass
02 Jan	11:42:09	UNACK	MBJ_804_PSL_BP	Shipping Tank - Press Safety Lo - Bypass	Bypass4	Bypass
02 Jan	11:42:14	UNACK	MBF_602_PSL_BP	Main Scrubber - Press Safety Lo - Bypass	Bypass4	Bypass

administrator

 01/02/08 11:42:47

 Air = 120.6 psig
 ShipTk = 13.7 ft
 H2S = 0.6 ppm
 VR = 1.4 in wc
 ShipRt = 12,323 bpd

ESD	Headers	Oil Store/Ship	Gas Comp 2	Overview	Sour Gas	Acid Gas	Flare	Alarms	ACK
Em Supp Sys	Oil Sep 1, 2	Vapor Comp	LTS	Log On	Circulation	Water Inject	Vapor Rec	Trends	Bypass
VSDs	Oil Sep 3, 4	Gas Comp 1	Chiller	Sales Gas	HTM	Reset S/D	Air Comp		Print

Shutdown Bypass 4

You must be logged on to Bypass plant safeties!

Scrubbers

Main Scrubber

MBF 602 - PSH - Press Safety Hi

MBF 602 - PSL - Press Safety Lo

MBF 602 - LSH - Level Safety Hi

MBF 602 - LSL - Level Safety Lo

Vapor Comp Disch Scrubber

MBF 603 - PSH - Press Safety Hi

MBF 603 - PSL - Press Safety Lo

Vapor Comp Inlet Scrubber

MBF 604 - LSH - Level Safety Hi

MBF 604 - LSL - Level Safety Lo

Final Scrubber

MBF 605 - PSH - Press Safety Hi

MBF 605 - PSL - Press Safety Lo

MBF 605 - LSH - Level Safety Hi

MBF 605 - LSL - Level Safety Lo

Pico Scrubber

MBF 607 - PSH - Press Safety Hi

MBF 607 - PSL - Press Safety Lo

MBF 607 - LSH - Level Safety Hi

MBF 607 - LSL - Level Safety Lo

Scrubbers (cont)

Amine Plant Inlet Gas Scrubber

Contactora Disch Gas Scrubber

Vapor Rec Comp Suct Scrubber

Gas Comp Disch Scrubber

Well Clean Tank

MBF 803 - PSH - Press Safety Hi

MBF 803 - PSL - Press Safety Lo

MBF 803 - LSH - Level Safety Hi

MBF 803 - LSL - Level Safety Lo

Pressure Tanks

Backwash Tank

MBJ 802 - Safeties

Shipping Tank

MBJ 804 - PSH - Press Safety Hi

MBJ 804 - PSL - Press Safety Lo

MBJ 804 - LSH - Level Safety Hi

MBJ 804 - LSL - Level Safety Lo

Amine Flash Tank

Lean Amine Surge Tank

HTM Expansion Tank

Instrument Air Receivers

Log On

Please enter your name and password

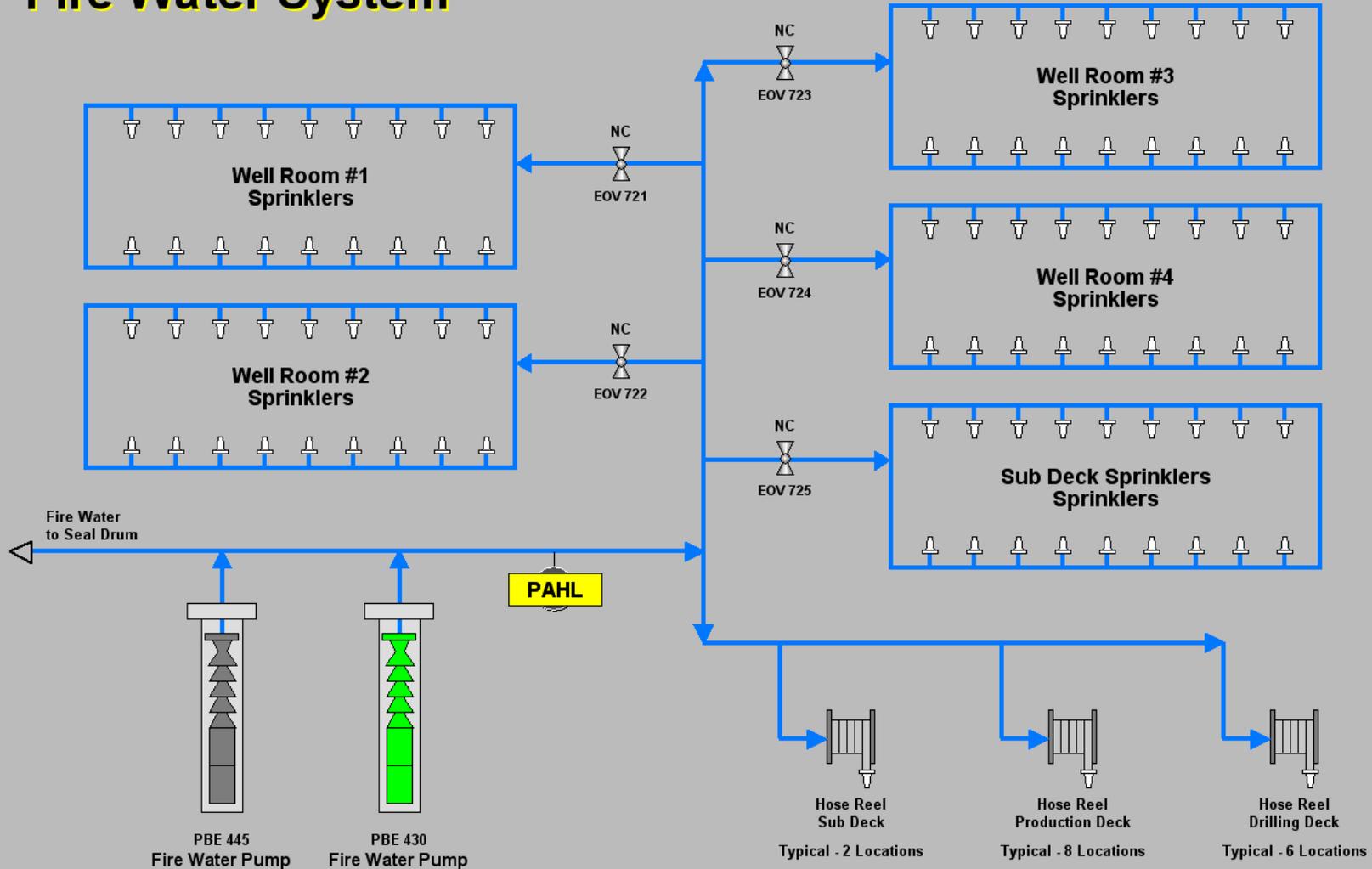
Operator:

Password:

Clicking on the *Log On* button, allows an operator to log on or change his password or (with the proper permissions) to bypass safety devices for testing.

ESD	Headers	Oil Store/Ship	Gas Comp 2	Overview	Sour Gas	Acid Gas	Flare	Alarms	ACK
Em Supp Sys	Oil Sep 1, 2	Vapor Comp	LTS	<i>Log On</i>	Circulation	Water Inject	Vapor Rec	Trends	Bypass
VSDs	Oil Sep 3, 4	Gas Comp 1	Chiller	Sales Gas	HTM	Reset S/D	Air Comp		Print

Fire Water System



Operator	FROGSTAR	01/02/08 06:12:36		Air = 120.6 psig	ShipTk = 13.7 ft	H2S = 0.6 ppm	VR = 1.4 in wc	ShipRt = 12,323 bpd
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ESD	Headers	Oil Store/Ship	Gas Comp 2	Overview	Sour Gas	Acid Gas	Flare	Alarms	ACK
Em Supp Sys	Oil Sep 1, 2	Vapor Comp	LTS	<i>Log On</i>	Circulation	Water Inject	Vapor Rec	Trends	Bypass
VSDs	Oil Sep 3, 4	Gas Comp 1	Chiller	Sales Gas	HTM	Reset S/D	Air Comp		Print

Alarm History

Alarm Group:

Alarm Summary	
Previous	Next

Date	Time	State	Name	Comment	Group	Value
02 Jan	12:10:05		\$Operator	\$Operator	\$System	None
02 Jan	12:10:05	UNACK	AnalogTag3	This is an Example Alarm Comment 3	\$System	8.2
02 Jan	12:10:06		\$OperatorName	\$OperatorName	\$System	None
02 Jan	12:10:06		\$OperatorDomain	\$OperatorDomain	\$System	InTouch
02 Jan	12:10:06		\$OperatorEntered	Logon failed.	\$System	Operator
02 Jan	12:10:07		\$AccessLevel	\$AccessLevel	\$System	5000
02 Jan	12:10:07		\$OperatorName	\$OperatorName	\$System	Operator
02 Jan	12:10:07		\$Operator	\$Operator	\$System	Operator
02 Jan	12:10:07	UNACK	ABJ_812_LSH	Belly Tank - Level Safety Hi	Waste_VR	Alarm Hi
02 Jan	12:10:07	UNACK	ABJ_810_LAH	Waste Oil Tank - Level Alarm Hi	Waste_VR	Alarm Hi
02 Jan	12:10:07	UNACK	ABJ_811_LAH	Waste Water Tank - Level Alarm Hi	Waste_VR	Alarm Hi
02 Jan	12:10:07	UNACK	Sump_LAH	Sump - Float Deck - Level Alarm Hi	Waste_VR	Alarm Hi
02 Jan	12:10:55	ACK	Sump_LAH	Sump - Float Deck - Level Alarm Hi	Waste_VR	Alarm Hi
02 Jan	12:10:55	ACK	ABJ_811_LAH	Waste Water Tank - Level Alarm Hi	Waste_VR	Alarm Hi
02 Jan	12:10:55	ACK	ABJ_810_LAH	Waste Oil Tank - Level Alarm Hi	Waste_VR	Alarm Hi
02 Jan	12:10:55	ACK	ABJ_812_LSH	Belly Tank - Level Safety Hi	Waste_VR	Alarm Hi
02 Jan	12:10:55	ACK	AnalogTag3	This is an Example Alarm Comment 3	\$System	8.2
02 Jan	12:11:22	ACK_RTN	ABJ_812_LSH	Belly Tank - Level Safety Hi	Waste_VR	Normal
02 Jan	12:11:22	ACK_RTN	ABJ_811_LAH	Waste Water Tank - Level Alarm Hi	Waste_VR	Normal
02 Jan	12:11:29	ACK_RTN	ABJ_810_LAH	Waste Oil Tank - Level Alarm Hi	Waste_VR	Normal
02 Jan	12:11:47	ACK_RTN	Sump_LAH	Sump - Float Deck - Level Alarm Hi	Waste_VR	Normal
02 Jan	12:13:00	UNACK	Sump_LAH	Sump - Float Deck - Level Alarm Hi	Waste_VR	Alarm Hi
02 Jan	12:13:06	UNACK	ABJ_810_LAH	Waste Oil Tank - Level Alarm Hi	Waste_VR	Alarm Hi
02 Jan	12:13:25	UNACK	ABJ_811_LAH	Waste Water Tank - Level Alarm Hi	Waste_VR	Alarm Hi
02 Jan	12:13:28	UNACK	ABJ_812_LSH	Belly Tank - Level Safety Hi	Waste_VR	Alarm Hi
02 Jan	12:14:53	ACK	Sump_LAH	Sump - Float Deck - Level Alarm Hi	Waste_VR	Alarm Hi
02 Jan	12:14:53	ACK	ABJ_810_LAH	Waste Oil Tank - Level Alarm Hi	Waste_VR	Alarm Hi
02 Jan	12:14:53	ACK	ABJ_811_LAH	Waste Water Tank - Level Alarm Hi	Waste_VR	Alarm Hi
02 Jan	12:14:53	ACK	ABJ_812_LSH	Belly Tank - Level Safety Hi	Waste_VR	Alarm Hi
02 Jan	12:16:12	ACK_RTN	ABJ_810_LAH	Waste Oil Tank - Level Alarm Hi	Waste_VR	Normal
02 Jan	12:16:12	ACK_RTN	ABJ_812_LSH	Belly Tank - Level Safety Hi	Waste_VR	Normal
02 Jan	12:16:12	ACK_RTN	ABJ_811_LAH	Waste Water Tank - Level Alarm Hi	Waste_VR	Normal
02 Jan	12:16:27	ACK_RTN	Sump_LAH	Sump - Float Deck - Level Alarm Hi	Waste_VR	Normal

Update Successful

All Alarms	Em Supp Sys	Oil	Gas	Water	Bypass	PLC	Utilities	Shutdowns
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Operator	FROGSTAR	01/02/08 12:17:05		Air = 120.6 psig	ShipTk = 13.7 ft	H2S = 0.6 ppm	VR = 8.2 in wc	ShipRt = 12,323 bpd
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