

# **Cogeneration in Action at Dart Container**

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Ray Ehrlich - Dart Container Corporation**





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COLLECTING TOMORROW'S ENERGY





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Conestoga Landfill Certified Wildlife Habitat



WILDLIFE HABITAT COUNCIL

Boling Environmental Education Center



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Main Menu



Condensate Rm.



Cond. Draining



Plant SP



Alarm SP



Overview



Curtailment



Dart Status



AFP Status



Tyson Status



Alarms

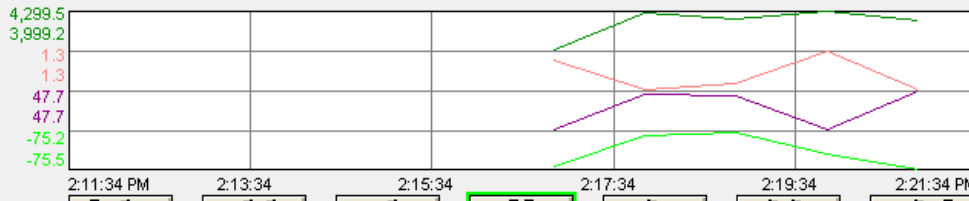
### Flare Setpoints & Alarms

	Setpoint	Actual
Minimum Flare Flow Setpoint (SCFM) - For Remote Limiter	0	0
Flare Sump Vacuum Transmitter Low-Low Level Alarm (-H2O')	-30	-30
Flare Sump Vacuum Transmitter High Level Alarm (-H2O')	-90	-90
Flare Sump Vacuum Transmitter High-High Level Alarm (-H2O')	-95	-95

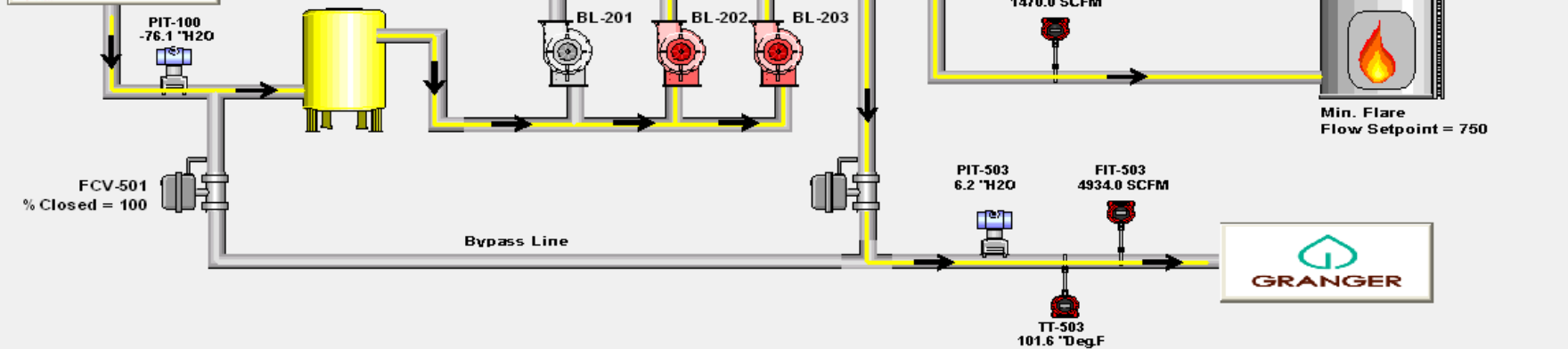
- # of Flare Starts= 1
- # of Flare Starts Allowed= 3
- Request for all LFG to Flares
- Request for all LFG Exceeded
- Comms Heartbeat Btwn Flare and Granger
- Plant Limiter To Maintain Flare Flow Status

SEND

Flare And Plant Data Monday, January 14, 2013



Caption	Value	Min	Max	Units
Plant Discharge Flow	3,999.2	3,999.2	4,299.5	SCFM
Plant Discharge Oxygen	1.3	1.3	1.3	O2%
Plant Discharge Methane	47.7	47.7	47.7	CH4%
Flare Inlet Vacuum Avg	-75.5	-75.2	-75.2	"H2O







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# of Flare Starts= 1  
 # of Flare Starts Allowed= 3  
 Request for all LFG to Flares  
 Request for all LFG E exceeded



Next Compressor On (secs)= 600  
 Next Compressor Off (sec)= 600  
 Next Priority To Start= 4

### System Mode & Start/Stop

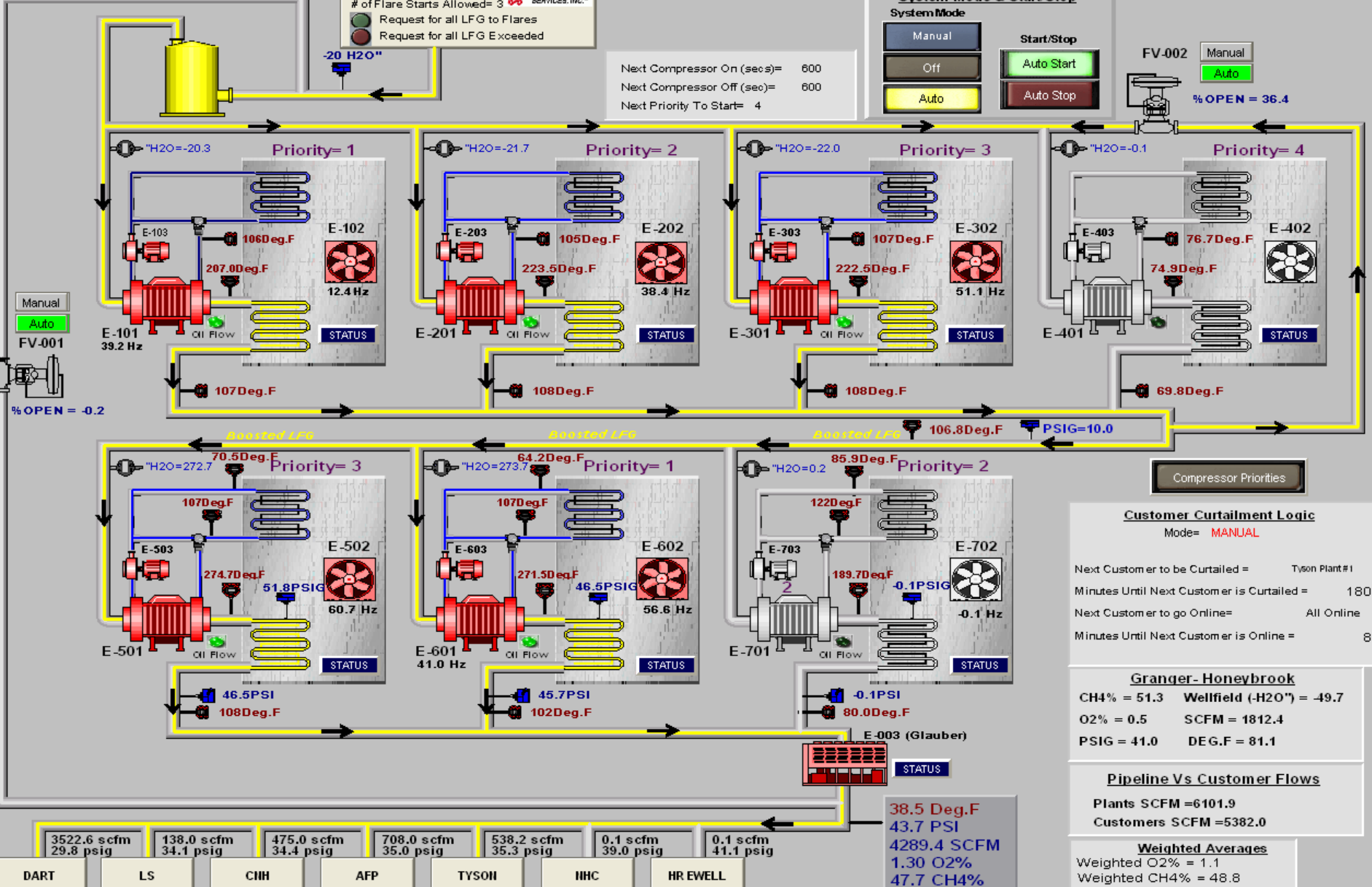
System Mode

Manual  
 Off  
 Auto

Start/Stop

Auto Start  
 Auto Stop

FV-002 Manual  
 Auto  
 % OPEN = 36.4



**Customer Curtailment Logic**  
 Mode= MANUAL

Next Customer to be Curtailed = Tyson Plant #1  
 Minutes Until Next Customer is Curtailed = 180  
 Next Customer to go Online = All Online  
 Minutes Until Next Customer is Online = 8

**Granger- Honeybrook**  
 CH4% = 51.3 Wellfield (-H2O") = -49.7  
 O2% = 0.5 SCFM = 1812.4  
 PSIG = 41.0 DEG.F = 81.1

**Pipeline Vs Customer Flows**  
 Plants SCFM = 6101.9  
 Customers SCFM = 5382.0

**Weighted Averages**  
 Weighted O2% = 1.1  
 Weighted CH4% = 48.8

DART	LS	CIH	AFP	TYSON	IHC	HR EWELL
3522.6 scfm 29.8 psig	138.0 scfm 34.1 psig	475.0 scfm 34.4 psig	708.0 scfm 35.0 psig	538.2 scfm 35.3 psig	0.1 scfm 39.0 psig	0.1 scfm 41.1 psig

1/11/2013 9:43:10 AM Vane Separator Vessel, V-601, For Compressor E-601 Hi Level- Check Liquids Immediately  
 1/9/2013 9:16:24 AM Compressor E-401 E-Stop is Active- Check all Lockout Tagout Devices and HMI reset prior to restarting- BE SAFE!



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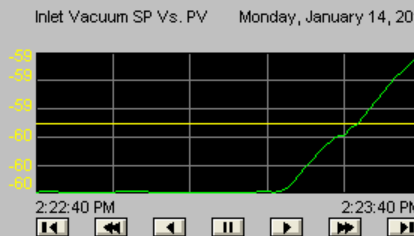
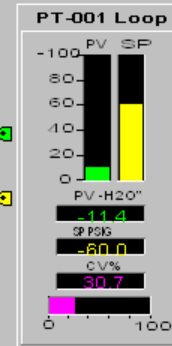
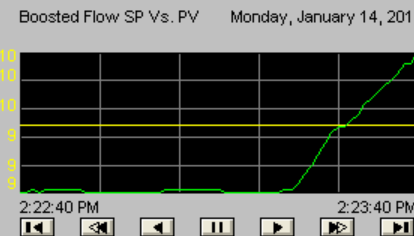
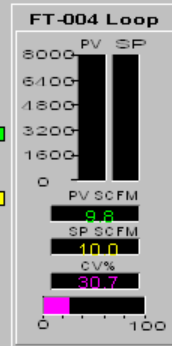
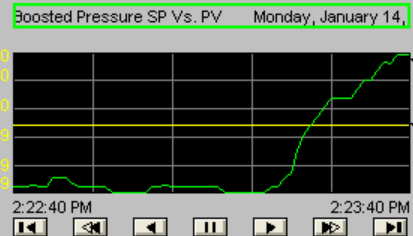
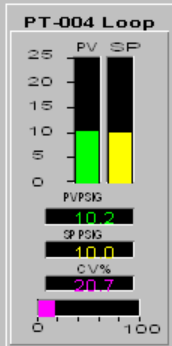


Alarms

### PLANT PID CONTROLLERS

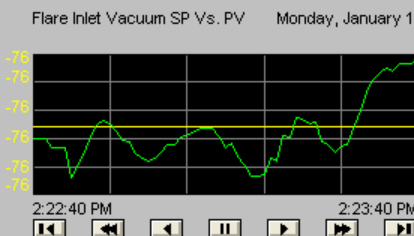
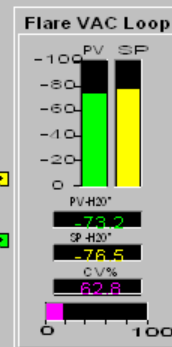
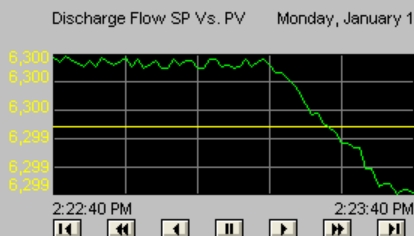
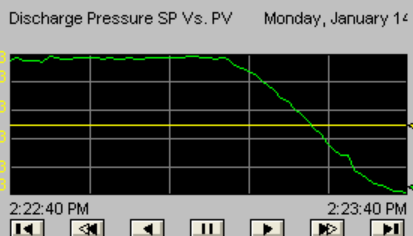
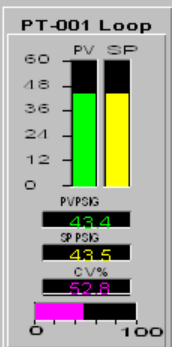
#### 1st Stage- Controls E-101 VFD, FV-002 and Cycling of Compressors E-101 thru E-401

Whichever CV% is the lowest in any of the Loops, the PLC will control off that value to limit the output to the Variable Frequency Drive, E-101 and to the Recycle Valve, FV-002.



#### 2nd Stage- Controls E-601 VFD, FV-001 and Cycling of Compressors E-501 thru E-701

Whichever CV% is the lowest in any of the Loops, the PLC will control off that value to limit the output to the Variable Frequency Drive, E-601 and to the Recycle Valve, FV-001.



1/11/2013 9:43:10 AM  
1/9/2013 9:16:24 AM

Vane Separator Vessel, V-601, For Compressor E-601 Hi Level- Check Liquids Immediately  
Compressor E-401 E-Stop is Active- Check all Lockout Tagout Devices and HMI reset prior to restarting- BE SAFE!



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Dart Container- Leola

### Building 1- Boiler Status

Seconds In Hr Timer= 1398

Flow 1940.1 SCFM Pressure 30.6 PSIG LFG mmBtu = 1016944.0

**Boiler 1**

- LFG Selected
- Firing LFG
- Firing Nat.Gas
- Firing Fuel Oil
- Idle
- In Light Off
- Tripped
- In Alarm

**Boiler 3**

- LFG Selected
- Firing LFG
- Firing Nat.Gas
- Firing Fuel Oil
- Idle
- In Light Off
- Tripped
- In Alarm

**Boiler 4**

- LFG Selected
- Firing LFG
- Firing Nat.Gas
- Firing Fuel Oil
- Idle
- In Light Off
- Tripped
- In Alarm

**Boiler 5**

- LFG Selected
- Firing LFG
- Firing Nat.Gas
- Firing Fuel Oil
- Idle
- In Light Off
- Tripped
- In Alarm

Plant Total LFG mmBtu = 2814561.0

Plant Total Flow (SCFM) = 3643.7

### Building 2- Boiler Status

Seconds In Hr Timer= 3340

Flow 326.6 SCFM Pressure 29.8 PSIG LFG mmBtu = 135898.0

**Boiler 1**

- LFG Selected
- Firing LFG
- Firing Nat.Gas
- Firing Fuel Oil
- Idle
- In Light Off
- Tripped
- In Alarm

**Boiler 2**

- LFG Selected
- Firing LFG
- Firing Nat.Gas
- Firing Fuel Oil
- Idle
- In Light Off
- Tripped
- In Alarm

### Building 6- Boiler Status

Seconds In Hr Timer= 2945

Flow 1142.1 SCFM Pressure 30.4 PSIG LFG mmBtu = 999193.0

**Boiler 1**

- LFG Selected
- Firing LFG
- Firing Nat.Gas
- Firing Fuel Oil
- Idle
- In Light Off
- Tripped
- In Alarm

**Boiler 2**

- LFG Selected
- Firing LFG
- Firing Nat.Gas
- Firing Fuel Oil
- Idle
- In Light Off
- Tripped
- In Alarm

**Boiler 3**

- LFG Selected
- Firing LFG
- Firing Nat.Gas
- Firing Fuel Oil
- Idle
- In Light Off
- Tripped
- In Alarm

### Building 5- OPS Oven Status

Seconds In Hr Timer= 580

Flow 23.2 SCFM Pressure 7.0 PSIG LFG mmBtu = 35887.2

**Oven 1**

- Firing LFG

**Oven 2**

- Firing LFG

### Building 18- Unit Heaters Status

Seconds In Hr Timer= 17

Flow 77.7 SCFM Pressure 9.6 PSIG LFG mmBtu = 44292.2

**Heater 1**

- LFG Selected
- Firing
- Nat. Gas Selected
- Flame Failure
- Low Dischg. Air Temp

**Heater 2**

- LFG Selected
- Firing
- Nat. Gas Selected
- Flame Failure
- Low Dischg. Air Temp

**Heater 3**

- LFG Selected
- Firing
- Nat. Gas Selected
- Flame Failure
- Low Dischg. Air Temp

**Heater 4**

- LFG Selected
- Firing
- Nat. Gas Selected
- Flame Failure
- Low Dischg. Air Temp

### Building 13- RTO Status

Seconds In Hr Timer= 3519

Flow 134.0 SCFM

Pressure 4.0 PSIG

Flow 0.0 SCFM

RTO#1 LFG mmBtu = 73628.0

RTO#2 LFG mmBtu = 79622.0

**RTO 1**

- Firing LFG

**RTO 2**

- Firing LFG

### Turbines- Status

Seconds In Hr Timer= 873

LFG mmBtu = 429097.0

CTP Meter Flow= 0.0 SCFM

CTP Meter Pressure= -2.5 PSIG

CTP Meter Temperature= -7.5 Deg.F

Turbine#1 Flow= 0.0 SCFM

Turbine#2 Flow= 0.0 SCFM

Dart Historical Flow Data

Dart Historical Pressure Data

1/11/2013 9:43:10 AM

Vane Separator Vessel, V-601, For Compressor E-601 Hi Level- Check Liquids Immediately

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Compressor E-401 E-Stop is Active- Check all Lockout Tagout Devices and HMI reset prior to restarting- BE SAFE!



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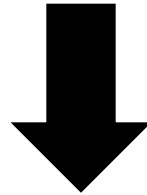
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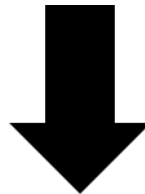


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