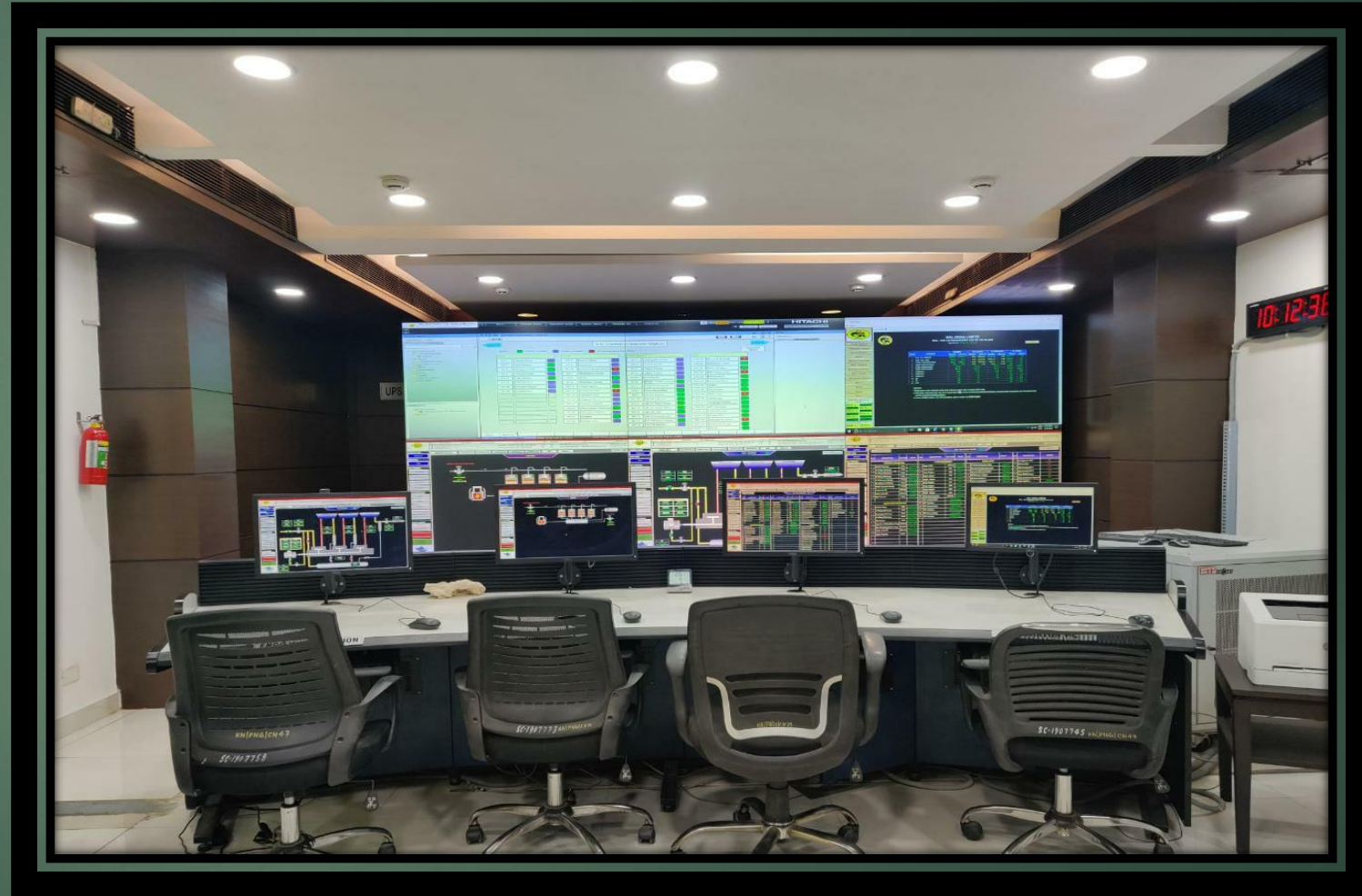




# SCADA IN CGD





# SCADA IN CGD



Supervisory Control and Data Acquisition (SCADA) system is a crucial operational technology (OT) in City Gas Distribution

Key objectives of implementing SCADA in CGD are

- Reliability of service
- Safe operation
- Cost effective solution



# SCADA SYSTEM COMPONENTS



## Remote Terminal Unit (RTU)

- Microprocessor based electronic device that receives data from local equipment's at remote site – CNG station, SV station, CGS, Odorizing unit etc

## SCADA Server

- Receives data from RTUs, send commands to sites, stores historical data

## SCADA HMI

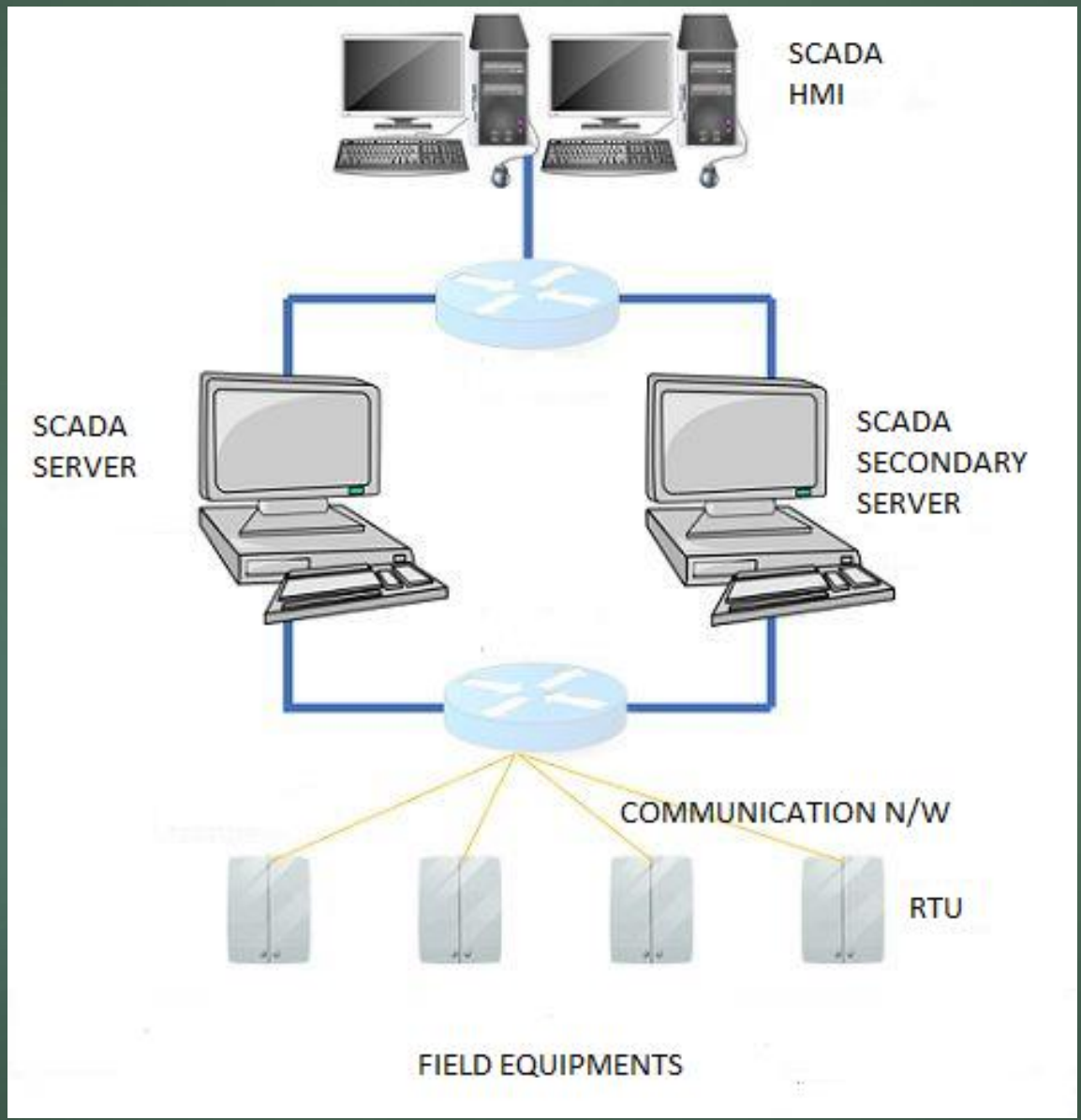
- Presents process data on screen for monitoring purposes and control actions

## Communication Network

- Provides link between RTU & SCADA server - dedicated landlines, wireless (VSAT, SIM based) etc



# TYPICAL SCADA ARCHITECTURE





## BRIEF ABOUT IGL



IGL is a city gas distribution company operating in areas of:

- Delhi NCR, Muzaffarnagar, Shamli, Meerut, Ajmer, Rewari, Karnal, Kaithal, Kanpur  
and more

IGL has two primary business area:

- **CNG** (Compressed Natural Gas)
- **PNG** (Piped Natural Gas)



# SCADA SYSTEM IN IGL



With its expanding geographical spread, IGL required an Centralized Automation & Control system for monitoring its critical assets

Inline with this view, SCADA systems are implemented initially for PNG segment and later on for its CNG segment

For PNG: Hitachi – HIACS

For CNG: Copa-data Zenon



## SCADA SYSTEM IN IGL – PNG



IGL has steel pipeline network spanning its business areas.

At regular intervals there are Sectioning Valves (SV's) on steel pipeline network for:

- Cutting of gas supply
- Carrying out maintenance activities

IGL has Odorizing units at City Gate Stations (CGS's)

**SCADA is implemented on SV stations & Odorizing Units**



# SCADA SYSTEM – PNG

Key Features of implemented SCADA system

## SV stations

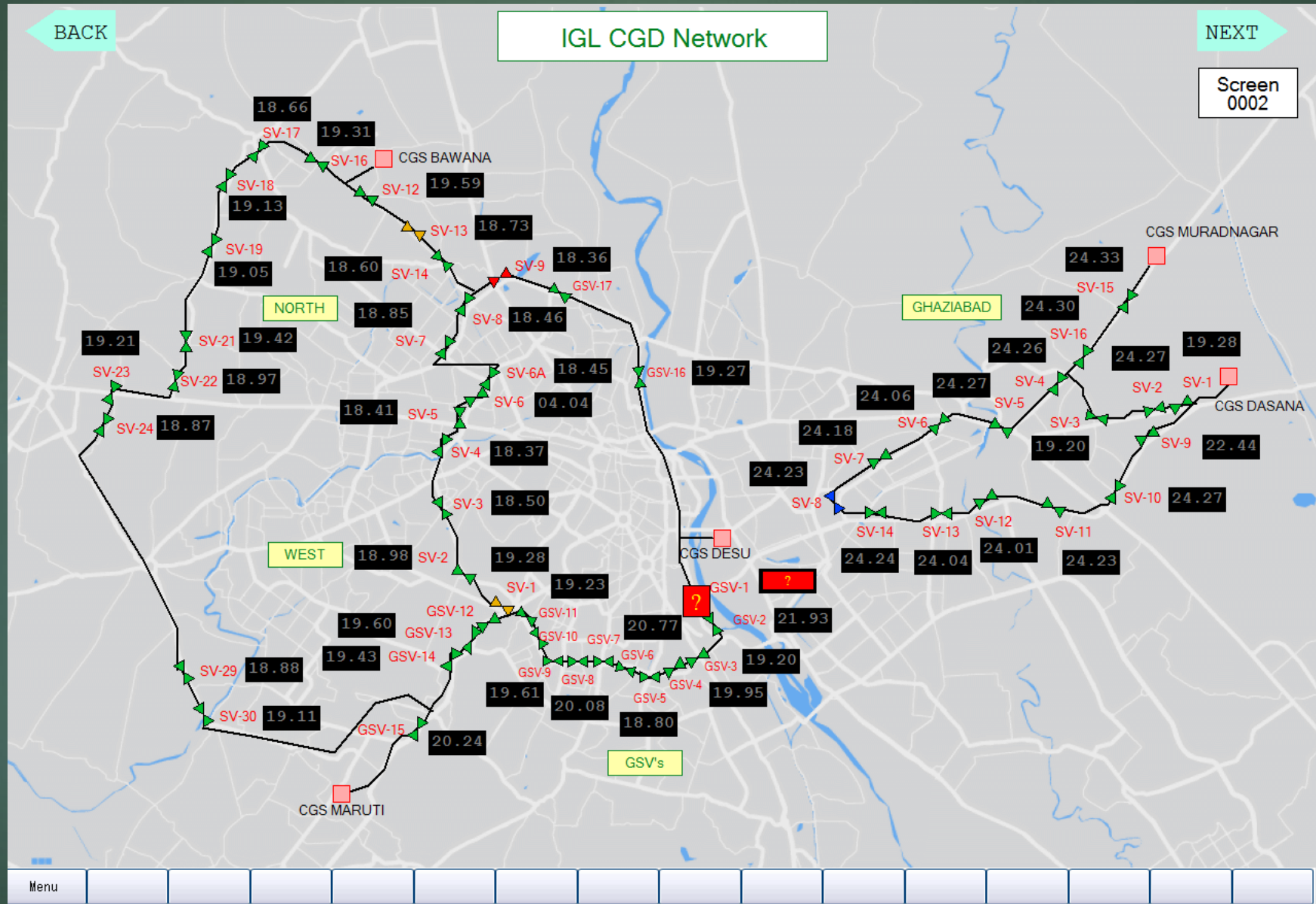
- Monitoring of pipeline pressure
- Monitoring of valve status (open/close)
- **Operating (open/close) sectioning valve remotely in case of exigency/maintenance; drastically reducing the response time as compared to manual operation**

## Odorizing units

- Monitoring of odorizing parameters – injection rate, total injection, tank level etc.
- Controlling the unit remotely
- ✓ Logging of Events and History
- ✓ Generation of Trends (Real-time / History)
- ✓ Alarms & Report generation



# SCADA SCREEN PIPELINE NETWORK - PNG





# SCADA SCREEN FOR PRESSURE TREND OF SV'S – PNG



# SCADA SCREEN FOR PRESSURE REPORTING OF SV'S – PNG

## GSM BASED REMOTE OPERATING SYSTEM OF SV STATIONS ALL DAY DATA - 3



SITE	Govindpuram	Hapur Chungi	Uttam Toyota	Sai Mandir	Mohan Nagar Railway X-ing	Vaishali Europark	Near Angel Mall	NH-24 Mehroli	NH-24 Lalkuan	NH-24 Vijay Nagar	NH-24 Rahul Vuhar	NH-24 CISF
PARAMETER	Pressure at SV-02	Pressure at SV-03	Pressure at SV-04	Pressure at SV-05	Pressure at SV-06	Pressure at SV-07	Pressure at SV-08	Pressure at SV-09	Pressure at SV-10	Pressure at SV-11	Pressure at SV-12	Pressure at SV-13
UNIT	Bar	Bar	Bar	Bar	Bar	Bar	Bar	Bar	Bar	Bar	Bar	Bar
14:12	22.51	22.52	22.53	22.50	22.32	22.45	22.51	20.85	22.52	22.49	22.25	22.30
14:13	22.51	22.53	22.53	22.50	22.32	22.45	22.51	20.85	22.52	22.49	22.25	22.30
14:14	22.51	22.53	22.53	22.50	22.32	22.46	22.51	20.85	22.52	22.49	22.25	22.30
14:15	22.51	22.53	22.53	22.50	22.32	22.46	22.52	20.85	22.53	22.49	22.25	22.31
14:16	22.51	22.53	22.53	22.50	22.33	22.45	22.52	20.85	22.53	22.49	22.26	22.31
14:17	22.51	22.53	22.53	22.51	22.33	22.46	22.52	20.86	22.53	22.49	22.26	22.31
14:18	22.51	22.53	22.53	22.51	22.33	22.46	22.52	20.86	22.53	22.49	22.26	22.31
14:19	22.51	22.54	22.53	22.51	22.34	22.47	22.52	20.87	22.53	22.49	22.26	22.31
14:20	22.51	22.54	22.53	22.52	22.34	22.47	22.52	20.87	22.53	22.49	22.27	22.31
14:21	22.51	22.54	22.53	22.52	22.34	22.47	22.52	20.87	22.53	22.51	22.27	22.32
14:22	22.51	22.54	22.53	22.52	22.34	22.47	22.52	20.86	22.53	22.50	22.27	22.31
14:23	22.51	22.54	22.53	22.52	22.34	22.47	22.52	20.87	22.53	22.50	22.27	22.31
14:24	22.51	22.54	22.53	22.51	22.34	22.47	22.52	20.87	22.54	22.50	22.27	22.31
14:25	22.51	22.54	22.53	22.52	22.34	22.47	22.53	20.87	22.54	22.51	22.27	22.31
14:26	22.51	22.54	22.53	22.51	22.32	22.46	22.52	20.87	22.52	22.50	22.27	22.31



## SCADA SYSTEM IN IGL – CNG



IGL has more than 600 CNG stations (including retail outlets and DTC)

There are multiple equipment's at a CNG station critical ones being:

- Compressors
- Dispensers
- Flowmeters

IGL is implementing SCADA system at its CNG stations for remote monitoring and control of these equipment's



## SCADA SYSTEM IN IGL - CNG

### Key Features of implemented SCADA system

- 'Online/Remote' Monitoring & Reporting of equipment(s) at CNG station
- **Dispenser retail price change**
- Generating process parameters' reports
- Logging of Events and History
- Generation of Trends (Real-time / History)
- Alarms
- Analysis based on logged process parameters

Additionally, a **web portal** for has also been developed for decentralized monitoring at individual control room level.



# SCADA SCREEN - CNG

>>09-02-2022 16:02:47<< NOIDA\_SEC\_32\_DELTA\_1200\_COMP\_ED\_REAL[0] 20 02 20 DELTA 1200 ED/COMP PIPE LINE PRESSURE HIGH HIGH

Alar...	Time received	Time cleared	Time acknowledged	Variable name	Value	Measurin...	Text	Alarm/event group
●	>>10-02-2022 16:42:03	<<	--	AR_BATRA_VIVEK_VIHAR_DNP	0		AR BATRA VIVEK VIHAR DNP3 STATUS DOWN	DNP_STS
●	>>10-02-2022 16:42:04	<<	--	PAUL_PETRO_MART_DNP	0		PAUL PETRO DNP3 STATUS DOWN	DNP_STS

CURRENT USER

Operator1

USER NAME

Operator1

CNG STATION's

STATION MAP

DELHI REGION

UP REGION

OTHER GA

SCADA FUNCTION's

ALARM

TREND

EVENTS

SCADA ROOM ARCH

DISPENSER RATE WRITE

PRIMARY SERVER

SERVER-A

SWITCH\_SERVER

LOGOUT

16:42:08  
10-02-2022
PNG

INDRAPRASTHA GAS LIMITED

PROJECT SCADA AT CNG STATIONS (INCLUDING DTC AND RETAIL OUTLET) AND PNG SEGMENT

OVERVIEW

IGL STATIONS

COMP OVERVIEW

COMP DATA

DISP DATA

GC DATA

RATE CHANGE





# SCADA SCREEN FOR OVERVIEW – CNG

>>09-02-2022 16:02:47 << - NOIDA, SEC. 82, DELTA\_1200\_COMP\_ED\_REAL[0] 20.02 Bar DELTA 1200 ED COMP PIPE LINE PRESSURE HIGH HIGH

Alar...	Time received	Time cleared	Time acknowledged	Variable name	Value	Measurin...	Text	Alarm/event group
●	>>10-02-2022 16:37:11	<<	--	CHILLA_2_DELTA_1200_COMP_REAL[4]	34.04	Bar	DELTA 1200 COMP STAGE 3 DISCHARGE PRESSURE LOW LOW	CHILLA_2
●	>>10-02-2022 16:37:12	<<	--	JFJ_DNP	5		JFJ_DNP3 STATUS UP	DNP_STS

**CURRENT USER**

Operator1

**USER NAME**

Operator1

**CNG STATION'S**

STATION MAP

DELHI REGION

UP REGION

OTHER GA

**SCADA FUNCTION'S**

ALARM

TREND

EVENTS

SCADA ROOM ARCH

DISPENSER\_RATEWRITE

**PRIMARY SERVER**

SERVER-A

SWITCH\_SERVER

LOGOUT

16:37:13  
10-02-2022

PNG

NH58 MURADNAGAR
STN OVERVIEW
COMPRESSOR1
COMPRESSOR2
COMPRESSOR3
DISPENSER'S
STATION ALARM

**OVERVIEW**

The diagram shows a CNG station suction flow meter on the left with a flow of 1904.12 Kg/Hr and a total of 46992100 Kg. This feeds into three compressors: BKT 1200 ED (Suction PR: 16.81 Bar, Disch PR: 175.03 Bar), TULIP 1200 ED (Suction PR: 17.42 Bar, Disch PR: 227.98 Bar), and DELTA 1200 ED (Suction PR: 5.44 Bar, Disch PR: 4.51 Bar). These compressors feed into a central Priority Panel, which then feeds into two LCV flow meters. LCV Flow Meter 1 has a flow of 983.27 Kg/Hr and a total of 1118380 Kg. LCV Flow Meter 2 has a flow of 0.00 Kg/Hr and a total of 9412050 Kg. A Cascade tank is also shown on the right side of the system.



# SCADA SCREEN FOR COMPRESSOR PROCESS FLOW DIAGRAM

>>09-02-2022 16:02:47 << - NOIDA\_SEC\_82\_DELTA\_1200\_COMP\_ED\_REAL(0) 20.02 Bar DELTA 1200 ED COMP PIPE LINE PRESSURE HIGH

Alar...	Time received	Time cleared	Time acknowledged	Variable name	Value	Measurin...	Text	Alarm/event group
<span style="color:red">●</span>	>>10-02-2022 16:39:00	<<	--	BEEGEE_MOTORS_DNP	0		BEEGEE MOTORS DNP3 STATUS DOWN	DNP_STS
<span style="color:red">●</span>	>>10-02-2022 16:39:02	<<	--	VISHWAS_SS_DNP	5		VISHWAS FS DNP3 STATUS UP	DNP_STS

**CURRENT USER**  
Operator1

**USER NAME**  
Operator1

**CNG STATION'S**  
STATION MAP  
DELHI REGION  
UP REGION  
OTHER GA

**SCADA FUNCTION'S**  
ALARM  
TREND  
EVENTS  
SCADA ROOM ARCH  
DISPENSER\_RATEWRITE

**PRIMARY SERVER**  
SERVER-A  
SWITCH\_SERVER

LOGOUT

16:39:04  
10-02-2022

**NH58 MURADNAGAR**    **STN OVERVIEW**    **COMPRESSOR1**    **COMPRESSOR2**    **COMPRESSOR3**    **DISPENSER'S**    **STATION ALARM**

TULIP1200 ED    COMPRESSOR ON

**PT101**  
17.45 Bar

**TE01**  
20.70 Deg C

**FLOW**  
966.12 Kg/hr

**TOT**  
6256200.00 Kg

**PT10**  
52.24 Bar

**TE05**  
108.80 Deg C

**PT20**  
120.11 Bar

**TE15**  
114.70 Deg C

**PT30**  
210.00 Bar

**TE25**  
87.70 Deg C

**PT110**  
217.27 Bar

**ENGINE**

<b>PTG140</b> 4.28 Bar	<b>TEG140</b> 50.70 Deg C
<b>TEW303</b> 87.50 Deg C	<b>TE101</b> 488.72 Deg C
<b>TEW150</b> 23.50 Deg C	<b>SEG140</b> 1285.65 RPM

**FLOW**  
28.90 Kg/hr

**TOT**  
212881.00 Kg

**DPT130**  
4.07 Bar

**PT03**  
11.51 Bar

**FLOW**  
966.02 Kg/hr

**TOT**  
6256170.00 Kg



# SCADA SCREEN FOR REAL TIME COMPRESSOR PARAMETERS/STATUS

>>09-02-2022 16:02:47 << - NOIDA\_SEC\_82\_DELTA\_1200\_COMP\_ED\_REAL[0] 20.02 Bar DELTA 1200 ED COMP PIPE LINE PRESSURE HIGH HIGH

Alar...	Time received	Time cleared	Time acknowledged	Variable name	Value	Measurin...	Text	Alarm/event group
●	>>10-02-2022 16:38:14	<<	-	VASANT_KUNJ_KPCL_2400_COMP_REAL[5]	0.05	Bar	KPCL COMP OIL PRESSURE LOW	VASANT_KUNJ
●	>>10-02-2022 16:38:15	<<	-	GANPATI_SS_DNP	5		GANPATI_SS DNP3 STATUS UP	DNP_STS

**CURRENT USER**

Operator1

**USER NAME**

Operator1

**CNG STATION'S**

- STATION MAP
- DELHI REGION
- UP REGION
- OTHER GA

**SCADA FUNCTION'S**

- ALARM
- TREND
- EVENTS
- SCADA ROOM ARCH
- DISPENSER\_RATEWRITE

**PRIMARY SERVER**

- SERVER-A
- SWITCH\_SERVER

LOGOUT

16:38:16  
10-02-2022 PNG



NH58 MURADNAGAR STN OVERVIEW COMPRESSOR1 COMPRESSOR2 COMPRESSOR3 DISPENSER'S STATION ALARM

PREVIOUS **TULIP1200 ED COMPRESSOR ON** NEXT

S.No	DESCRIPTION	TAG NAME	VALUE	HI HI LIMIT	LO LO LIMIT	S.No	DESCRIPTION	TAG NAME	VALUE	HI HI LIMIT	LO LO LIMIT	S.No	DESCRIPTION	STATUS	S.No	DESCRIPTION	STATUS
<b>PRESSURE PARAMETERS</b>						<b>OTHER PARAMETERS</b>						<b>DIGITAL INPUT</b>			13	Bus Dispenser SOV	ON
1	Suction Pressure	PT01	17.43 Bar	+25	+6	1	Engine RPM	SEG140	1399.65 RPM	+1850	+1050	1	DP Switch Comp Suc Filter	HEALTHY	14	BDV Line SOV	OFF
2	1st Stage Discharge	PT10	52.80 Bar	+57		2	Comp. Region	FD1	0.32 %	+75%		2	Eng Jack Cooling Tank Level	HEALTHY	15	CO2 Flooding SOV 1	OFF
3	2nd Stage Discharge	PT20	129.92 Bar	+137		3	Comp. Region	FD2	0.28 %	+75%		3	Eng Lube Oil Level Switch	HEALTHY	16	CO2 Flooding SOV 2	OFF
4	3rd Stage Discharge	PT30	221.76 Bar	+250		4	Engine Region	FD3	0.35 %	+75%		4	CO2 Pressure Switch	HEALTHY	17	Comp ON/OFF Lamp	ON
5	Car Dispenser Priority	PT110	219.44 Bar	+250		5	Engine Region	FD4	0.21 %	+75%		5	CO2 Limit Switch 1	HEALTHY	18	Comp Unload/Load Cycle ON	OFF
6	Bus Dispenser Priority	PT111	217.15 Bar	+250		6	Comp. Region	GD1	0.21 %	+75%		6	CO2 Limit Switch 2	HEALTHY	19	Engine Ignition Grounding	HEALTHY
7	Mobile Cascade Priority	PT112	216.41 Bar	+250		7	Comp. Region	GD2	0.07 %	+75%		7	Call Point For CO2	INACTIVE	20	Comm Fault	OFF
8	Comp Lube Oil	DPT130	4.09 Bar		+2	8	Engine Region	GD3	-0.04 %	+75%		8	Emergency Shutdown	RELEASE	21	Engine AFR	ON
9	Engine Lube Oil	PTG140	4.24 Bar		+2	9	Engine Region	GD4	-0.15 %	+75%		9	Bypass CO2	INLINE			
10	BDV Pressure	PT03	11.11 Bar	+35		10	Running Hour	RUNHR	7291 Hr			10	Vibration Switch Comp.	HEALTHY			
<b>TEMPERATURE PARAMETERS</b>						11	FIT1 Current Flow		922.51 Kg/Hr			11	Vibration Switch Engine	HEALTHY			
1	Suction Temp.	TE01	20.30 Deg C	+50		12	FIT1 Totalizer		6256190.00 Kg			<b>DIGITAL OUTPUT</b>					
2	1st Stage Discharge	TE05	109.80 Deg C	+150		13	FIT2 Current Flow		956.17 Kg/Hr			1	Suction Solenoid Valve	ON			
3	2nd Stage Discharge	TE15	114.00 Deg C	+150		14	FIT2 Totalizer		6258160.00 Kg			2	Load/Unload SOV	LOAD			
4	3rd Stage Discharge	TE25	87.80 Deg C	+150		15	FIT3 Current Flow		29.60 Kg/Hr			3	Eng Fuel Suction SOV	ON			
5	After Cooler	TE35	42.50 Deg C	+60		16	FIT3 Totalizer		212681.00 Kg			4	Eng Pneumatic Starter SOV	OFF			
6	Eng Aux. Cooling Water	TEW303	87.30 Deg C	+99								5	High Bank Car Cascade SOV	ON			
7	Eng Jkt Cooling Water	TEW150	33.80 Deg C	+65								6	Med Bank Car Cascade SOV	OFF			
8	Engine Lube Oil	TEG140	50.70 Deg C	+107								7	Low Bank Car Cascade SOV	OFF			
9	Engine Exhaust	TE101	460.72 Deg C	+650								8	Car Dispenser SOV1	ON			
												9	Car Dispenser SOV2	ON			
												10	Car Dispenser SOV3	ON			
												11	Mobile Bank SOV	ON			
												12	Bus Cascade SOV	ON			



# SCADA SCREEN FOR REAL TIME DISPENSER PARAMETERS/SALE

>>09-02-2022 16:02:47 << -- NOIDA\_SEC\_82\_DELTA\_1200\_COMP\_ED\_REAL[0] 20.02 Bar DELTA 1200 ED\_COMP PIPE LINE PRESSURE HIGH HIGH

Alar...	Time received	Time cleared	Time acknowledged	Variable name	Value	Measurin...	Text	Alarm/event group
	>>10-02-2022 16:40:00	<<	--	BEEGEE_MOTORS_DNP	0		BEEGEE MOTORS DNP3 STATUS DOWN	DNP_STS
	>>10-02-2022 16:40:02	<<	--	PAUL_PETRO_MART_DNP	5		PAUL PETRO DNP3 STATUS UP	DNP_STS

**CURRENT USER**  
Operator1

**USER NAME**  
Operator1

**CNG STATION'S**

STATION MAP

DELHI REGION

UP REGION

OTHER GA

**SCADA FUNCTION'S**

ALARM

TREND

EVENTS

SCADA ROOM ARCH

DISPENSER\_RATE\_WRITE

**PRIMARY SERVER**

SERVER-A

SWITCH\_SERVER

LOGOUT

MAYAPURI OL    STN OVERVIEW    COMPRESSOR1    **DISPENSER'S**    STATION ALARM

### DISPENSERS

**SIDE-A**    17K-14576601-16    **SIDE-B**

TOTAL	1360150.00 Kg	TOTAL	1361020.00 Kg
Batch Kg	2.00 Kg	Batch Kg	2.00 Kg
Unit Price	55.01 Rs	Unit Price	55.01 Rs

SHIFT WISE SALE

Shift A Total	487.0 Kg	Shift B Total	185.1 Kg	Shift C Total	0.0 Kg
---------------	----------	---------------	----------	---------------	--------

**SIDE-A**    17K-14576601-17    **SIDE-B**

TOTAL	203053.00 Kg	TOTAL	462476.00 Kg
Batch Kg	2.00 Kg	Batch Kg	0.00 Kg
Unit Price	55.01 Rs	Unit Price	55.01 Rs

SHIFT WISE SALE

Shift A Total	0.0 Kg	Shift B Total	145.4 Kg	Shift C Total	0.0 Kg
---------------	--------	---------------	----------	---------------	--------

**SIDE-A**    17K-14576601-18    **SIDE-B**

TOTAL	1379160.00 Kg	TOTAL	880727.00 Kg
Batch Kg	4.00 Kg	Batch Kg	0.00 Kg
Unit Price	55.01 Rs	Unit Price	55.01 Rs

SHIFT WISE SALE

Shift A Total	236.0 Kg	Shift B Total	185.1 Kg	Shift C Total	0.0 Kg
---------------	----------	---------------	----------	---------------	--------

**SIDE-A**    17K-14576601-19    **SIDE-B**

TOTAL	1300280.00 Kg	TOTAL	1000490.00 Kg
Batch Kg	4.00 Kg	Batch Kg	0.00 Kg
Unit Price	55.01 Rs	Unit Price	55.01 Rs

SHIFT WISE SALE

Shift A Total	482.0 Kg	Shift B Total	216.3 Kg	Shift C Total	0.0 Kg
---------------	----------	---------------	----------	---------------	--------

**SIDE-A**    17K-14576601-20    **SIDE-B**

TOTAL	880000.00 Kg	TOTAL	961480.00 Kg
Batch Kg	3.00 Kg	Batch Kg	0.00 Kg
Unit Price	55.01 Rs	Unit Price	55.01 Rs

SHIFT WISE SALE

Shift A Total	849.1 Kg	Shift B Total	137.7 Kg	Shift C Total	0.0 Kg
---------------	----------	---------------	----------	---------------	--------

16:40:04  
10-02-2022    PNG



# SCADA SCREEN FOR COMPRESSOR ALARMS

MAHIPALPUR GAS CHROMIUM 1200 COMP ENGINE LUBE OIL PRESSURE LOW LOW

Alar...	Time received	Time cleared	Time acknowledged	Variable name	Value	Measurin...	Text	Alarm/event group
<span style="color: red;">●</span>	>>08-04-2020 11:21:05	<<	--	SHAKURPUR_COMP_REAL[6]	6.03	Bar	INTERMECH 2400 COMP NON DRIVE END PRESSURE HIGH HIGH	SHAKURPUR_ALARM
<span style="color: red;">●</span>	>>08-04-2020 11:25:00	<<	--	MAHIPALPUR_BKT_1200_COMP_REAL[26]	0.03	Bar	BKT 1200 COMP LUBE OIL PRESSURE LOW LOW	MAHIPALPUR_ALARM

ALARM SCREEN

Acknowledge
Acknow. All
Filter...

Total

24

Not acknowledged

24

Alarm st.	Time received	Time cleared	Time acknowledged	Variable name	Value	Measurin.	Text	User - full name	Comment
<span style="color: red;">●</span>	>>07-04-2020 16:11:53	<<	--	ROHINI_MEGA_STN5_DELTA_1200_COMP2_RE...	34.26	Bar	DELTA 1200 COMP STAGE 1 DISCHARGE PRESSURE LO...		
<span style="color: red;">●</span>	>>07-04-2020 19:07:26	<<	--	ROHINI_MEGA_STN5_DELTA_1200_COMP2_RE...	5.38	Bar	DELTA 1200 COMP INLET PRESSURE LOW LOW		
<span style="color: red;">●</span>	>>07-04-2020 19:08:00	<<	--	ROHINI_MEGA_STN5_DELTA_1200_COMP2_RE...	1.96	Bar	DELTA 1200 COMP STAGE 1 LUBRICATION PRESSURE L...		
<span style="color: red;">●</span>	>>07-04-2020 19:08:16	<<	--	ROHINI_MEGA_STN5_DELTA_1200_COMP2_RE...	12.96	Bar	DELTA 1200 COMP FINAL DISCHARGE PRESSURE LOW ...		
<span style="color: red;">●</span>	>>07-04-2020 19:08:49	<<	--	ROHINI_MEGA_STN5_DELTA_1200_COMP2_RE...	0.95	Bar	DELTA 1200 COMP CARTER OIL PRESSURE LOW LOW		
<span style="color: red;">●</span>	>>08-04-2020 05:36:22	<<	--	NOIDA_SEC_122_TULIP_1200_COMP_REAL[33]	10.77	Bar	BKT 1200 COMP BDV PRESSURE HIGH		
<span style="color: red;">●</span>	>>08-04-2020 07:17:21	<<	--	ROHINI_MEGA_STN5_DR_1200_COMP_REAL[6]	0.04	Bar	DR 1200 COMP ENGINE LUBE OIL PRESSURE LOW LOW		
<span style="color: red;">●</span>	>>08-04-2020 07:17:38	<<	--	ROHINI_MEGA_STN5_DR_1200_COMP_REAL[7]	0.21	Bar	DR 1200 COMP LUBE OIL PRESSURE LOW LOW		
<span style="color: red;">●</span>	>>08-04-2020 07:49:57	<<	--	MAHIPALPUR_DELTA_1200_COMP_REAL[2]	26.81	Bar	DELTA 1200 COMP STAGE 1 DISCHARGE PRESSURE LO...		
<span style="color: red;">●</span>	>>08-04-2020 07:50:44	<<	--	MAHIPALPUR_DELTA_1200_COMP_REAL[4]	21.48	Bar	DELTA 1200 COMP STAGE 3 DISCHARGE PRESSURE LO...		
<span style="color: red;">●</span>	>>08-04-2020 07:50:44	<<	--	MAHIPALPUR_DELTA_1200_COMP_REAL[3]	27.09	Bar	DELTA 1200 COMP STAGE 2 DISCHARGE PRESSURE LO...		
<span style="color: red;">●</span>	>>08-04-2020 07:52:08	<<	--	MAHIPALPUR_DELTA_1200_COMP_REAL[8]	0.02	Bar	DELTA 1200 COMP CARTER OIL PRESSURE LOW LOW		
<span style="color: red;">●</span>	>>08-04-2020 08:25:44	<<	--	ROHINI_MEGA_STN5_DR_1200_COMP_REAL[1]	22.50	Bar	DR 1200 COMP FIRST STAGE SUCTION PRESSURE HIG...		
<span style="color: red;">●</span>	>>08-04-2020 10:15:06	<<	--	ROHINI_MEGA_STN5_DR_1200_COMP_BOOL[50]	1		DR 1200 COMP CO2 FLOODING SYSTEM SOV 2 FAULT		
<span style="color: red;">●</span>	>>08-04-2020 10:46:51	<<	--	IFC3_GAZIPUR_DELTA_1200_COMP_REAL[0]	23.09	Bar	DELTA 1200 COMP PIPE LINE PRESSURE HIGH HIGH		
<span style="color: red;">●</span>	>>08-04-2020 10:46:51	<<	--	IFC3_GAZIPUR_DELTA_1200_COMP_REAL[1]	4.44	Bar	DELTA 1200 COMP INLET PRESSURE LOW LOW		
<span style="color: red;">●</span>	>>08-04-2020 10:46:51	<<	--	IFC3_GAZIPUR_DELTA_1200_COMP_REAL[3]	72.22	Bar	DELTA 1200 COMP STAGE 2 DISCHARGE PRESSURE LO...		
<span style="color: red;">●</span>	>>08-04-2020 10:46:51	<<	--	IFC3_GAZIPUR_DELTA_1200_COMP_REAL[2]	21.89	Bar	DELTA 1200 COMP STAGE 1 DISCHARGE PRESSURE LO...		
<span style="color: red;">●</span>	>>08-04-2020 10:49:09	<<	--	ROHINI_MEGA_STN5_TULIP_1200_COMP_REA...	0.29	Bar	BKT 1200 COMP BDV PRESSURE HIGH		
<span style="color: red;">●</span>	>>08-04-2020 10:49:50	<<	--	IFC3_GAZIPUR_DELTA_1200_COMP_REAL[4]	6.00	Bar	DELTA 1200 COMP STAGE 3 DISCHARGE PRESSURE LO...		
<span style="color: red;">●</span>	>>08-04-2020 10:49:50	<<	--	IFC3_GAZIPUR_DELTA_1200_COMP_REAL[8]	0.17	Bar	DELTA 1200 COMP CARTER OIL PRESSURE LOW LOW		
<span style="color: red;">●</span>	>>08-04-2020 10:49:50	<<	--	IFC3_GAZIPUR_DELTA_1200_COMP_REAL[7]	0.17	Bar	DELTA 1200 COMP STAGE 1 LUBRICATION PRESSURE L...		
<span style="color: red;">●</span>	>>08-04-2020 11:21:05	<<	--	SHAKURPUR_COMP_REAL[6]	6.03	Bar	INTERMECH 2400 COMP NON DRIVE END PRESSURE HI...		
<span style="color: red;">●</span>	>>08-04-2020 11:25:00	<<	--	MAHIPALPUR_BKT_1200_COMP_REAL[26]	0.03	Bar	BKT 1200 COMP LUBE OIL PRESSURE LOW LOW		

**CURRENT USER**

Administrator

**USER NAME**

Admin

**CNG STATION'S**

STATION MAP

RO STATIONS

IGL OWNED

DTC DEPOTS

**SCADA FUNCTION'S**

ALARM

TREND

EVENTS

SCADA ROOM ARCH

DISPENSER RATE WRITE

**PRIMARY SERVER**

SERVER-A

SWITCH\_SERVER

LOGOUT

11:32:17  
08-04-2020



# SMART DATA CENTER



1

**Increases  
IT Infra  
Efficiency**

**Space  
Optimization**

2

**Reduce  
Maintenance  
Cost**

3

**Saves  
Energy**

4



## CHALLENGES

- Inconsistent wireless communications
- Integration of legacy / proprietary systems
- Cybersecurity



## FUTURE ENDEAVORS

With high frequency process data available through the SCADA system. IGL may derive further benefits from the system.

- Asset optimization through data analytics
- Predictive maintenance
- Further increasing uptime of equipment's



**THANK YOU**