

Industrial Controls & Appliances P. Ltd.



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COMPANY PROFILE

Control Panel Division:

We are pleased to introduce ourselves as a leading manufacturer of instrument control panels. We have till date supplied a variety of control panels to a large cross section of industry. A few highlights are specified in the foregoing pages.

Factory Automation Division:

We are the Authorised Distributor for OMRON, Japan Products. All types of Relays, Timers, Counters, Proximity Switches, Photoelectric Sensors, Special Sensors, Encoders, Temperature Controllers, PLCs ranging from 10 I/Os to 6000 I/Os upwards. We also do full System Integration jobs, including SCADA Software etc.



OMRON
DISTRIBUTION
SYSTEM
INTEGRATION

Works : Dias Industrial Estate, Building No. 2, Gala No. 5(Part), 6, 7 & 8, Sativali Naka, Behind Dhanya Sativali Nagri, Sativali, Vasai (E) - 401 208, Dist - Thane

Introduction to control panel division.

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1)	Product range of instrument panel division.
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6)	Our contribution to Power plants.
7)	A) Our contribution to oil & gas sector. B) Our contribution to ONGC.
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9)	Our activities in the field of process gas compressors.
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13)	Our contribution to Synthetic Fibre Industry.

PRODUCT RANGE

Product range of our instrument panel division covers various types of control panels suitable for different degrees of protections. These are classified as follows :-

1. Simplex panels.
 2. Duplex panels with walk way.
 3. Curved graphic panels.
 4. Cubicle type panels.
 5. Desk type panels.
 6. Semi-graphic panels, with mimic on acrylic, fiberglass or mosaic tiles.
 7. Full graphic panels.
 8. Instrument racks.
 9. PLC panels.
 10. Relay based panels.
 11. Purged panels.
 12. Explosion proof panels.
 13. Analyzer shelter for hazardous location.
 14. Intrinsically safe systems.
 15. Weatherproof panels.
 16. Pneumatic interlock panels.
- A) Pneumatic well-head shutdown panels for off-shore oil platforms.
B) All types of pneumatic logic panels for diesel engine driven pumps, compressors and generators.

We have also supplied in past control room instrumentation panels for pneumatic controllers, recorders & indicators of reputed makes like Taylor, Foxboro, Kent etc.

SERVICES OFFERED BY US

1. For instrumentation purpose, our service include the following :-
2. Basic design & engineering.
3. Technical advice.
4. Selection/Sourcing of equipments & systems.
5. Detailed engineering.
6. Application software development.
7. Manufacture of panels.
8. Integrated testing of system.
9. Erection at sites.
10. Pre-commissioning checks.
11. Assistance in plant commissioning.
12. Post sales support.
13. Post warranty support.

We are approved suppliers of Instrument Control Panels of following leading consulting engineers through whom we have executed several projects.

Consultants	Industry Sector
Engineers India Ltd.	Oil & Gas, Petrochemicals & Refineries Occasionally fertilizer and non ferrous metals
John Brown	Oil sector - Off - shore.
Projects & Development India Ltd.	Fertilizer projects including Ammonia, Urea.
Halder Topsoe	Fertilizer projects
Snam Progetti	Fertilizer project.
Aker Kvaerner Power Gas Ltd.	Chemicals, synthetic fiber & others
Uhde India Ltd.	Ammonia plants, chemical plants.
Development Consultants Ltd.	Power plants
MECON	Steel Projects
TCE	Power plants.
Technimont-ICB Ltd.	Process industry, Petrochemicals
Jacobs H & G Ltd.	Process industry.
Chemtex India Ltd.	Chemical plants and Synthetic fiber plants
Toyo Engineering	Chemicals, Fertilizers, Petrochemicals & others
R. J. Associates	Chemicals & Process Industries
Dalal Consultants	Process Industries
IBI Chemataur Ltd.	Explosives

We have also executed projects involving M/s. Bechtel.

Public sectors with whom we are registered for supply of instrument control panels

- 1) Oil/Gas sector - ONGC, GAIL, HPCL, IOCL, BPCL, MRL, MRPL, CRL, NRL, HPL, IPCL etc.
- 2) Fertilizer - RCF, IFFCO, KRIBHCO, FACT, GSFC, GNFC, HFCL, CFCL.
- 3) Power - NTPC, BHEL, NPCL.
- 4) Steel - HSL & SAIL.

OUR CONTRIBUTION TO FERTILIZER INDUSTRY

- 1) Hindustan Fertilizers - Haldia - Control room panel for eight plants including Ammonia, Urea, NPK etc.
- 2) IFFCO- Aonla - Urea plant shut down system with Omron redundant PLC and SCADA software.
- 3) IFFCO - Aonla -- DM water plant panel with SCADA software.
- 4) National Fertilizers Ltd., Vijaypur - Ammonia storage plant control panel using Tata Honeywell PLC.
- 5) IFFCO-Kalol Ammonia storage plant control panel using Tata Honeywell PLC.
- 6) Bindal Agro -through M/s.Toyo - Ammonia despatch pump control panel using ICA make PLC model LC2502.
- 7) RCF Thal - inspection by M/s. Toyo - Ammonia storage system control panel using ICA make PLC.
- 8) FACT - Caprolactum - 57 control panels for Yokogawa DCS (Centum).
- 9) Gujarat Narmada Valley Fertilizer Co. - ANP/CAN-DCS control panels for Yokogawa Centum.
- 10) Gujarat Narmada Vally Fertilizer Co.-34 section U shaped control panel with screen printed semigraphic for Ammonia plant with 50 nos. Rack type panels with interconnection piping, tubing and cabling-commissioned in 1981.
- 11) Gujarat State Fertilizer Co.-control panel for DCS system.
- 12) Gujarat State Fertilizer Co-control panel for Oxygen gas plant.
- 13) Deepak Fertilizers Ltd., Control panel in semicircle shape for Ammonia control room.
- 14) IFFCO - Phulpur - PLC based control panel for BMS.
- 15) Gujarat Narmada Valley Fertilizers Co. Ltd.
34 sections U shaped control panel with screen printed semi-graphic for ammonia plant.
50 nos. Back of panel racks.
Interconnection piping, tubing, cabling.
Commissioned : September 1981.
Consultants -Engineers India Ltd.

CONTRIBUTION TO POWER PLANTS

Main customers

- 1) BHEL
- 2) NTPC
- 3) NPC.
- 4) L & T.
- 5) ABB.
- 6) TBW.

Main consultants

- 1) TCE
- 2) DCL

Supplies made to M/s. Bharat Heavy Electricals Ltd.

1) M/s. Bharat Heavy Electricals Limited(BHEL) is an enterprise of Government of India engaged in manufacturing of Power plant equipment. We are associated with BHEL for more than two decades. Our supply includes the following :

- A) Boiler control desks supplied to RCF - Trombay through BHEL-Madras, around 1978.
- B) A large number of Turbine control panels for BHEL - Hyderabad. These panels generally include Bently Nevada vibration monitors, alarm annunciators, temperature monitoring equipment, trip circuit, trip bypass test signaling, recorders, controllers, sometimes Woodward governor. Besides the Turbine these panels included control of auxiliary pumps. Projects within India include 18.5MW at NALCO - Damanjodi - 2 units, 25MW at GSFC - 2 units, 14MW at FACT - Cochin and many more. TG panels include BHEL's **two projects in Africa.**
- C) CO--GEN plant DCS system panels through Yokogawa for ONGC - Hazira and BPCL - Bombay project of BHEL.
- D) Local gauge boards. This includes direct acting pressure gauges and mercury in steel capillary type thermometers. This also caters to measurement of 'Live Steam' and 'Wheel Chamber' pressure/temperature. We have supplied for large number of projects including Mathura refinery. Harihar polyfibres, Ashok Paper Mills, Mysore Paper Mills, Grasim,Rayalseema paper mills and many more including two projects in Kagera - Africa.
- E) Boiler feed water pump control panels for BHEL projects. This included instrumentation required for banks of pumps and is supplied to super thermal power plants of NTPC including Singrauli, Ramagundam, Dadri, order value varied from Rs.18,000/- to Rs.24,00,000/- approximately.
- F) Cooling water pump control panels.

- G) Synchronizing metering panels for CO--GEN plant.
M/s. BHEL produces Gas Turbines of various frame sizes in collaboration with General Electric. We have supplied this kind of panels for their turbo sets. Our supply for ONGC Gandhar project was a 10 Mtr. long panel which includes a variety of English Electric relays. AB power monitor and control of a number of breakers, strip type mimic showing plant SLD and metering for monitoring import and export of power.
Smaller synchronising/breaker control and annunciations panels were supplied to other projects like ONGC-Hazira etc. We also supplied for **Malaysia project of BHEL with a repeat export order. (Connaught Bridge & Pasir Gudang).**
- H) We have supplied gauge cabinets to BHEL for mounting on skid of gas turbines. Some of the cabinets were supplied with Dragon - USA special purpose valves.
- I) BHEL PIPING CENTRE - CHENNAI : Control panels for chemical dosing system for Ammonia and Hydrazine.
- J) BHEL TIRUCHY: Soot Blower panels for hazardous area. We have supplied pressurized type of panels as well as flameproof PLC based panels.

Supplies made to M/s. National Thermal Power Corporation Ltd.

- 1) Around 60 nos. IP55 transmitter panels supplied to NTPC Ramagundam through Siemens. These were called as Local Instrument enclosures (L.I.E.).
- 2) Boiler feed pump panels for Super Thermal Power Plants through BHEL as stated earlier.
- 3) Supervisory control panel for LP Dosing Ammonia transfer pumps for 2X500MW (PCP) Vindhyachal Super Thermal power project of M/s. NTPC.
- 4) Supervisory control panel for Dosing system for 2X500MW (SGP) Vindhyachal super thermal power project of M/s. NTPC.
- 5) Supervisory control panel for Dosing system for 2X210MW (SGP), Firoze Gandhi Unchahar Thermal power project of M/s. NTPC.

Supplies made to M/s. Nuclear Power Corporation Ltd.

- 1) Contribution to Atomic power plants-
 - i) INSODIUM test facility for Indira Gandhi Centre for Atomic Research-Central control desk including data acquisition and control.
 - ii) Dryer control system including PLCs for Kakrapar.
 - iii) Beetle monitoring system including PLCs for Kaiga.
 - iv) D2O upgradation system control desks with PLC & MBOS controllers.
 - v) Reactor cooling systems control desk for MAPS & RAPS.

Supplies made to M/s. Larsen & Toubro Limited.

- 1) L & T power plant - Generator, metering and synchronizing panel supplied for 29MW power plant at Mangalore Refineries Limited. Consultants involved were Toyo, EIL, DCL. This included monitoring of various breakers, auto synchronizer of ABB, strip mimic showing plant SLD, metering of import and export of power, annunciation and control.
- 2) Similar project completed for 90MW power plant for GACL. Consultants are Fichtner & DCL. This included a separate panel for transducers.
- 3) Synchronizing, control and annunciation panel (SCAP) supplied to power plant of Awarpur Cement Works. This panel included mosaic of Symo-Switzerland with miniature control and discrepancy switches, Semaphore indicators etc. showing big SLD in a very small space.
- 4) SCAP panel supplied to IPCL - Gandhar project. This included synchronizing trolley with common synchronizing equipment. Various synchronizing circuits were selected by the trolley through detachable male-female plugs. Consultants:-TCE & L & T - Sargent & Lundy.
- 5) Mimic panel, Synchronizing trolley and transducer panel supplied to Haldia power plant.

Supplies made to M/s. Asea Brown Boveri Limited.

- 1) We have been supplied Relays and metering panels to ABB Vadodara & ABB-Bangalore. Projects included Budge - CSEC Calcutta. NALCO - Orissa etc. Gas based power plant of NTPC - Anta.
- 2) 11 mtrs. long mimic panel through ABB for Kota power station.

We have executed export order for networking division of ABB (for Turkish Railway). This involved Mosaic panel with Mosaic tiles from SYMO of Switzerland.

Supplies made to M/s. Thermax Babcock & Wilcox Limited.

- 1) Our supply to Thermax/Thermax Babcock & Wilcox includes boiler control panels, water treatment plant control & heat recovery systems and burner management systems.

We have supplied panel for their project at **Jordan and Russia.**

Miscellaneous Projects :-

- 1) Deutsche Babcock - Boiler control panel.
- 2) Paharpur cooling towers - Four control desks supplied for their project in IRAN.
- 3) Coal handling plant control panels supplied to Kathara & Moonidih projects of BHEL through M/s. Bulk System - Bangalore and through M/s. DE-MECH-Pune for NTPC project.

CONTROL DESK FOR DCS SYSTEM OF YOKOGAWA FOR STATE ELECTRICITY BOARDS.

- 1) Central control room desk type panel for DCS of Yokogawa supplied to Vijaywada Thermal Power station of APSEB.
- 2) Central control room desk type panel for DCS of Yokogawa supplied to Raichur Thermal Power station of APSEB - 2 units for 2 phases.
- 3) Karnataka power corporation limited - Bangalore - 13 mtrs. Long control desk with associated metering panels for power plant.
- 4) Madhya Pradesh S.E.B -2 control desks, each of 10mtr.long and 2 generator recorder panels.

Control desk for Haryana Power Generation Corporation is under manufacturing Consultants-TCE.

PROJECTS FOR OTHER INSTRUMENT MANUFACTURERS -

- 1) Central control desks for 110MW power plant - 2 nos.of Haryana state electricity board through M/s. Keltron - Bailey.
- 2) Central control desk for 250MW power plant of Ropar thermal power station - Phase 5 & 6 - Punjab through M/s Electronic Systems Punjab Limited.
- 3) Order from Tata Honeywell Ltd., is under execution involving two control desks, each of 10 mtr. Long for Tata Electric Companies - Jojobera (Consultant - TCE). One is under commissioning.

OUR CONTRIBUTION TO OIL & GAS SECTOR

We have executed a number of control room panel supply jobs under consultancy of M/s. Engineers India Ltd. A few of them are as follows :-

- 1) Mathura Refinery of Indian Oil Corporation Ltd. -
42 sections central control panel with screen printed semi-graphic.
8 sections Bitumen control panel with screen printed semi-graphic.
10 nos. Back of panel racks.
Interconnection piping, tubing, cabling etc.
Temperature desks.
Commissioned : March 1982.
- 2) Bongaigaon Refinery & Petrochemicals Ltd., Assam -
2 nos. circular panels, each of 19 sections with screen printed.
Semi-graphic, 30 nos. Back of panel racks and cable duct work.
Interconnection piping, tubing, cabling.
We completed the installation and handed over the control room to the client in January 1983.
- 3) Bharat Petroleum Corporation Ltd., Mumbai.
14 sections central control panel, back of panel racks.
Interconnection piping, tubing, cabling etc.
Commissioned : March 1983.
- 4) Khammam Chemical Refinery - Heavy Water project of BARC.
48 sections central control panel each of 1.2 mtrs. length. Total length arranged in 'C' shape. In addition to this, we supplied 60 back of panel racks and 600 I/O PLC of HIMA, West Germany.
Interconnection cabling and functional checks.
Commissioned : March :1991.
- 5) Control room panel for Assam Petrochemicals Ltd.,-Assam.
- 6) DCS system panels for IPCL - Gandhar.
- 7) Water treatment plant panels for IPCL/GAIL.
- 8) We have executed several orders under consultancy from EIL for various refineries and ONGC/GAIL installations for **local panels**. These were general purpose panels as well as suitable for hazardous areas.

9) Panels for hazardous areas are classified under following categories :-

a) **Explosion protected (flameproof)** as per Gas group IIA/B of IS:2148/IEC or C & D as per NEC.

Generally these are the gas groups in Oil industry. In some cases, classification was under group IIC of is:2148 (Group B of NEC).

b) **Pressurised** panels as per NFPA 496. Depending upon area classification these are type X purged/type Z purged etc. and are used in class I, Div.I or Div. II areas.

We have supplied pressurized panels under International competitive bidding.

c) Systems with intrinsically safe circuits using passive and active type barriers.

10) DHDS - projects. We have supplied local panels for DHDS project of HPCL, BPCL, CRL, IOC. These were supplied through M/s. L & T and M/s. Petrofac of Sharjah.

Our clientele includes all major refineries and petrochemical industries as follows:-

a) Indian Oil Corporation Ltd.

b) Hindustan Petroleum Corporation Ltd.

c) Bharat Petroleum Corporation Ltd.

d) Madras Refineries Ltd.

e) Cochin Refineries Ltd.

f) Bongaigaon Refineries & Petrochemicals Ltd.

g) Indian Petrochemicals Corporation Ltd.

We have also contributed to Reliance Petrochemicals - Jamnagar.

Our panels are installed at various installations of M/s Gas Authority of India Ltd. These include control room as well as local panels.

Supplies made to ONGC are described separately.

Pipeline projects.

1) C shaped desk type panel for flow computers and allied instrumentation for terminal automation in Control room at Sangroor station on Kandla-Bhatinda pipeline. Supply included back of control room marshalling racks & relay racks. Order was executed through M/s. Fisher Rosemount.

2) One more set was delivered to Rewari station on Kandla-Bhatinda pipeline similar to Singroor station.

3) We have executed terminal automation jobs through M/s. Advanced Spectra-Tek. Jobs generally involved monitoring, desks with annunciators, monitors and flow computers. Some of the projects - IOC - Mourigram. IOC - Patna. BRPL.

4) Around 22 cabinets supplied for SCADA through M/s. Tata Honeywell for various stations on Kandla-Bhatinda pipeline. Inspection was carried out by M/s. Bechtel UK and Olex Australia.

OUR CONTRIBUTION TO ONGC

Projects on land

- 1) CO-GEN plant main control room panel supplied through M/s. Yokogawa to ONGC - Hazira.
- 2) Around 10 mtr. long synchronizing control panel supplied through BHEL for power plant of ONGC - Gandhar.
- 3) Compressor control panels - 03 nos., partly flameproof and partly pressurized panels supplied to ONGC - Hazira through BHEL for their Centrifugal Compressors. These were supplied in eighties. Recently these were replaced by us as a part of ABB's DCS revamping contract by new pressurized panels.
- 4) ONGC - Uran - Control room panels for LPG, C2, C3 projects.
- 5) Flameproof compressor panel for ONGC - Uran for compressor of M/s.BPCL - Naini.
- 6) Mimic panel to ONGC - Uran through M/s. Tata Honeywell.
- 7) Main control panel of ONGC on shore facility supplied by NKK - Japan.
- 8) ONGC Mehsana -control room panel.
- 9) ONGC - Gandhar - control room panel through ABB Instruments and Lloyds steel.

.....and many more.

Off-shore Projects -

- 1) 26 nos. stainless steel pneumatic fire-water pump control panels for various off-shore platforms.
- 2) Modifications in number of old panels existing at Mumbai high during short shutdown periods. Contracts executed through NPCC- Abu Dhabi.
- 3) 4 nos. Stainless steel pneumatic/hydraulic wellhead shutdown panels. Each panel controlling TEN oil producing wells. These panels were installed and commissioned in 1994 in Neelam oil field. Subsequently similar panel was supplied for SH oil field. Control signals in such type of panels are pneumatic and logic interlocks are also implemented pneumatically. Power commands are transmitted hydraulically.
- 4) Stainless steel panels for fire water controls on seven platforms in Neelam oil field commissioned in 1994, supplied through M/s.Greaves Cotton - Pune.

OUR SUPPLY OF STAINLESS STEEL PANELS

We have been supplying these for :

- 1) Food Industry.
- 2) Offshore Oil Platforms.

A) Food Industry :

These are manufactured generally for Food division of M/s.Larsen & Toubro Limited, National Dairy Development Board (NDDB) etc. Recent supplies include 7 panels for L & T's project at Coca-Cola, 12 panels for Metro Dairy - Calcutta and NDDB dairies at Mehsana and other places. Straight vertical and desk type panels have been supplied. These are generally of SS304 quality.

B) OFFSHORE OIL PLATFORMS :

To withstand the sultry and corrosive environment of Offshore Oil Platforms, we have been manufacturing Control Panels made up of SS316L quality. A typical well Fire shutdown panel size is around 4 meters long, 2 meters high and 1.5 meters deep.

Control logic implementation is through pneumatic logic circuits using SS components. The final control elements Viz. The Well head valves are operated through hydraulic transmission of power which is controlled pneumatically. These are straight vertical panels.

Small panels for control of specific machinery are skid mounted or separately mounted on separate pedestal, e.g. Fire Water pump control, Test Separator Controls, Compressor Controls etc.

OUR ACTIVITIES FOR COMPRESSOR CONTROL INSTRUMENTATION

We regularly supply compressor control panels to following compressor manufacturers:

- 1) Bharat Heavy Electricals Limited, Hyderabad (BHEL).
- 2) Bharat Pumps & Compressors Limited, Naini-Allahabad (BPCL).
- 3) Ingersoll Rand India Ltd., Ahmedabad.
- 4) Kirloskar Pneumatic Co. Ltd., Pune.
- 5) K.G. Khosla Compressors Ltd., Faridabad. (Now KPC)
- 6) ABB Alfa Stahl Refrigeration Ltd., Pune.

Whereas, Compressors manufactured by BHEL and BPCL re large sized centrifugal type the others manufacture reciprocating and screw compressors. The panels supplied by us are both for control room installation as well as local installation including hazardous areas that requires purged type panels with explosion proof components to suit all gas groups - IIA, IIB and IIC as per CENELEC or IEC (NEC grouping B,C,D).

Our scope normally includes detailed engineering of the control system based on individual project requirement. The control system consists of alarm annunciator, temperature monitor, vibration and axial displacement monitor, key phase monitoring, Trip circuit with bypass and anti-surge control using indicating controllers etc., particularly for large size compressors, control systems include control of auxiliary pumps. These are implemented using relays of PLC in addition to measurement and monitoring of analog parameters.

All instrumentation and logic control drawings, panel general arrangement drawings, termination diagrams are prepared by us and submitted to clients for their/consultants approval before proceeding with the actual functions as part of final inspection before despatch of panels.

Our supplies have been for projects such as :

- 1) Rajasthan State Electricity Board (RSEB).
- 2) Bharat Petroleum Corpn.Ltd.,Mahul (BPCL). Train of 3 compressors.
- 3) FEDO, Cochin.
- 4) Indian Oil Corporation Ltd. (IOCL) Gujarat Hydro Cracker, Barauni - Panipat etc.
- 5) Cochin Refineries Ltd.
- 6) R C F, Trombay.
- 7) Finolex Cables, Ratnagiri.
- 8) Bhilai Steel Plant.
- 9) Sulzer Turbo GmbH's project at Bokaro Steel.
- 10) IHI - Japan project at ONGC - Gandhar.

13) ONGC URAN- Panels for compressors supplied by BOC/ KPC
Hazardous area compressor panels are generally pressurized type.

14) Gas Authority of India Ltd.- Vaghodia, Kheda & Hazira in Gujarat and installations in North India.

15) Andhra Petrochemicals Ltd.

We have supplied flameproof systems for compressors located in hazardous areas. These were for gas group IIA/B/C. For group IIC, we have supplied indigenously manufactured flameproof components and we have also been importing these from R.Stahl/Fanal of Germany. We have supplied systems involving intrinsically safe circuits, as well as pressurized control panels.

SOME OF THE PRESSURIZED PANELS SUPPLIED ARE AS FOLLOWS:

- 1) HPCL, Vizag - Two control panels supplied against international competitive bidding.
- 2) IPCL, Gandhar - Refrigeration plant - 4 control panels, Refrigeration plant of Kirloskar Pneumatic.
IPCL - Baroda - Detergent Alkylile Project.
- 3) FACT, Cochin - 6 nos. Compressor Panels.
- 4) I.O.C. Barauni - 2 nos. Compressor panels through Ingersoll Rand (I) Ltd.,
- 1 no. Compressor panel through BHEL.
- 5) Bharat Petroleum, Mahul - HC Gas Compressor Panel & Aromatics Plant-4 section panel.
- 6) Cochin Refineries Ltd. - Compressor Panels.
- 7) Rajasthan State Ele. Board - 3 section panel for two compressors.
- 8) GSFC, Baroda - 2 nos. Compressor Panels for Melamine Plant.
- 9) ONGC, Hazira - 3 nos. Compressor Panels.
- 10) Reliance, Hazira - 2 nos. Panels for Process Control.
- 11) RCF, Trombay - One panel for two air compressor.
- One panel for two Ammonia Compressor.
- One panel for Heat Recovery System.
- Turbine Control panels through Triveni Engineering.

12) HFC, Namrup - Compressor Control panels.

13) Rourkela Steel Plant - 3 section panel in hazardous area for Process Control.

14) Deepak Fertilizers - Ammonia plant - Compressor Panel.

15) Indian Oil Corpn. - Gujarat Refinery - Hydrocracker project - 4 nos. Compressor panels.

16) ATV Petrochem.

17) Finolex Industries Ltd.Ratnagiri - Panel for compressor chain of Kirloskar

18) KSB pumps- Panels for Vibration monitors-projects- IOC Panipat, Bharat Petroleum

19) Sulzer Pumps-Panels for Vibration monitors-IOC Mathura.
Pneumatics.

And many more

Consultants involved were :

1) Engineers India Limited.

2) Projects & Development (I) Ltd.

3) Davy (now Kvaerner) Power Gas.

4) Tata Consulting Engineers.

Our Contribution to Water treatment

We have supplied control panels/desks to various leading companies involved in water treatment and have executed several projects for them. These are as follows :

- 1) M/s. Thermax Ltd. - Pune. We have supplied to Thermax for their various projects from the time that they were earlier Wansion India Ltd.
- 2) M/s. ION Exchange (I) Ltd. - Mumbai for their various projects over last several years.
- 3) M/s. Paramount Pollution Control Ltd. - Vadodara for their projects at IPCL, MRPL, GAIL etc.
- 4) M/s. Indocan - Pune for their various projects of GAIL.
- 5) M/s Geo Miller-New Delhi.
- 6) M/s. Enviro Control Associates - Surat for various projects of Reliance & Fertilizer plants.
- 7 M/s. Gammon Dunkerley.
- 8 M/s. Driplex India Ltd. - New Delhi for Vaizag Steel Project.

Some of our projects for water treatment panels involved a number of solenoid valves inside the panel with extensive tubing. We have also executed water treatment plant projects with Omron PLC to operate as sequencer.

OUR CONTRIBUTION TO THE FIELD OF CHEMICALS/PHARMACEUTICALS

- 1) National Peroxide Ltd. - Kalyan - Manufacturers of Hydrogen Peroxide. -
Consultants - Davy (now Kvaerner) Powergas Ltd., Multisection desk type control panel with pneumatic instruments. Back of control room relay panels, marshalling & commissioning.
- 2) Volrho Ltd., Patancheru - Hyderabad. Consultants :- Tata Consulting Engineers.
Multisection control panel for their Organo pesticides project. Our scope included supply installation, erection, commissioning.
- 3) Hindustan Fluoro Carbon Ltd., - Medak, A.P.
Consultants :- KPG.
Multisection control room panel & number of auxiliary panels.
- 4) Ciba-Geigy(I) Ltd., - Goa. Multisection control desk for control room.
- 5) Hoechst Marion Roussel - Ankleshwar.
FC1 - 3 section panel.
FC2 - 4 section panel.
FC3 - 4 section panel.
FC4 - 3 section panel.
DM water plant - 4 sec. panel & many single section panels.
PLC based incinerator control panel.
- 6) Gujarat Alkalies & Chemicals Ltd. -Consultants - Fichtener -Chennai - Process control panel.
- 7) Haldia Petrochemicals - LLDP plant - General purpose & pressurized control panels through Tecnimont ICB Ltd.
- 8) Polychem Ltd., -Nira - 6 section control panels.
- 9) Fibreglass Pilkington - Process control panel.
- 10) Saudi Formaldehyde Co. Ltd., - Al-Jubel-Kingdom of Saudi Arabia.
PLC based control panel for Rotary vacuum dryers.

OUR CONTRIBUTION TO MANUFACTURING OF SYNTHETIC FIBRE

- 1) Bombay Dyeing & Weaving Mills Ltd.,- Patalganga - Main control desk for Yokogawa system. Consultants - Davy) Kvaerner) Powergas.
- 2) Jagatjit Cotton Textile Mills Ltd., (JCT)-Hoshiarpur straight vertical mimic cum control panel for control room.
- 3) Raymond Synthetics Ltd., -Allahabad.
A number of mimic control desks including that for control room Yokogawa system. Our supply included PLCs of Omron.
- 4) Indian Acrylics Ltd.
Consultants :- M/s. Chemtex.
- 5) Xylene & DMT plants of Bongaingaon Refineries Ltd., 19 mtr. long circular panels for each plant. A turnkey job which included erection commissioning.
- 6) Reliance Industries Ltd.
We have supplied a large number of panels to Reliance against their direct orders as well as through package suppliers. These include panels with electronic instrumentation as well as pneumatic panels. Supplies were made to their plant at Hazira in Gujarat as well as at Patalganga near Mumbai. We have also made supplies to their sister companies viz. Reliance Power Ltd., Reliance Industrial Infrastructure Ltd., & their refinery at Jamnagar in Gujarat.