



DEVELOPMENT CONSULTANTS PRIVATE LIMITED

ABOUT US

DCPL HEADQUARTER



DEVELOPMENT CONSULTANTS

Corporate Overview

- ◆ **PREMIER CONSULTANCY ORGANIZATION OF INDIA SINCE 1950**
- ◆ **AN ISO - 9001:2000 ACCREDITED COMPANY**
- ◆ **AROUND 850 IN-HOUSE PROFESSIONALS SPREAD OVER 140,000 SQ.FT OF OFFICE FLOOR**
- ◆ **COMPLETED ABOUT 1500 GRASS-ROOT PROJECTS**
- ◆ **EXECUTED CONTRACTS IN OVER 48 COUNTRIES**

GROUP STRUCTURE

DC GROUP

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graph TD; DC_GROUP[DC GROUP] --> KULJIAN[THE KULJIAN CORPN., USA]; DC_GROUP --> DCPL[DEVELOPMENT CONSULTANTS PRIVATE LIMITED (DCPL) KOLKATA, INDIA]; DC_GROUP --> DC_INTL[DEVELOPMENT CONSULTANTS INTL. LTD., HONGKONG]; DC_PL[DEVELOPMENT CONSULTANTS PRIVATE LIMITED (DCPL) KOLKATA, INDIA] --> DESIGN[BRANCH DESIGN OFFICES CHENNAI, MUMBAI, NEW DELHI]; DC_PL --> EXEC[BRANCH EXECUTIVE OFFICES SECUNDERABAD, VADODARA];
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THE KULJIAN CORPN., USA

DEVELOPMENT CONSULTANTS
INTL. LTD., HONGKONG

DEVELOPMENT CONSULTANTS
PRIVATE LIMITED (DCPL)
KOLKATA, INDIA

BRANCH DESIGN OFFICES
CHENNAI, MUMBAI, NEW DELHI

BRANCH EXECUTIVE OFFICES
SECUNDERABAD, VADODARA

RECOGNITION WITH INTERNATIONAL BODIES

- **International Bank for Reconstruction & Development [World Bank]**
- **Asian Development Bank [ADB]**
- **African Development Bank [AFDB]**
- **Kuwait Fund for Arab Economic Development**
- **United Nations Industrial Development Organization**
- **World Health Organization [WHO]**
- **Various other Government and special bodies of countries in the Middle East, Africa & Latin America also consider DC eligible to participate in their projects**

TRANSNATIONAL SPREAD

Development Consultants has the pride of leaving marks of its presence in as many as forty eight (48) countries around the globe.



ABU DHABI
AFGHANISTAN
ARGENTINA
AUSTRALIA
AUSTRIA

BANGLADESH
BHUTAN
BOLIVIA
BOTSWANA
BRITISH GUYANA

CHINA
COLOMBIA

DOMNICAN REPUBLIC

EGYPT
ESTONIA
ETHIOPIA

FRANCE

HAITI
HOLLAND

INDONESIA
IRAN
IRAQ
IRELAND

JORDAN

KENYA

LIBYA

MALAYASIA
MAURITIUS

NEPAL
NIGERIA

OMAN

PHILIPINES

SAUDI ARABIA
SINGAPORE
SOUTH KOREA
SRILANKA
SYRIA

TANZANIA
THAILAND

UAE
UK
USA
USSR
UZBEKISTAN

VENEZUELA
VIETNAM

WEST INDIES

YEMEN

DCPL

Partial Client List :

MULTINATIONALS	INDIAN GIANTS
ABB Ltd.	ACC Ltd.
ANSALDO	AIRPORT AUTHORITY of India
B & W	NUCLEAR POWER CORPORATION
DAELIM ENGINEERING	BHEL
DAEWOO CORPORATION	CESC Ltd,
ENEL POWER – ENEL GROUP	GRASIM INDUSTRIES Ltd.
FOSTER – WHEELER	HINDALCO Ltd.
GENERAL ELECTRIC	HINDUSTAN LEVER Ltd.
HITACHI Ltd.	HINDUSTAN PAPER CORPORATION
HYUNDAI HEAVY INDUSTRIES Ltd.	IFFCO

DCPL

Partial Client List : (Contd.)

MULTINATIONALS	INDIAN GIANTS
KAWASAKI HEAVY INDUSTRIES	INDIAN OIL CORPORATION
NRG ASIA – PACIFIC Ltd.	INDIAN SPACE RESEARCH ORGN.
PECTECH	LARSEN & TOUBRO Ltd.
PRICHARD AL-BASSAM CO Ltd.	NALCO Ltd.
PROTEC Ltd.	NEYVELI LIGNITE CORPORATION
PT INDORAMA	NTPC Ltd.
ROLLS – ROYCE	ORIENT CEMENT
SIEMENS Ltd.	PARADEEP PHOSPHATES Ltd.
TOYO ENGINEERING Ltd.	RELIANCE
VENTECH ENGG Inc.	STEEL AUTHORITY
YACHIO ENGG. CORPORATION	Most of the STATE ELECTRICITY BOARDS

And many more

SECTORS SERVED

➤ POWER

- FOSSIL
- NUCLEAR
- GAS TURBINE / COMBINED CYCLE PLANTS
- CO - GENERATION

➤ CEMENT

➤ PULP & PAPER

➤ CHEMICALS

➤ MINERAL BENEFICIATION

➤ PETROCHEMICALS

➤ ENVIRONMENTAL ENGINEERING

➤ MATERIAL HANDLING

➤ INFRASTRUCTURE

PERFORMANCE DEMONSTRATED

FIELDS OF INDUSTRY

Approx. no. of major Project Assignments Handled

Power	200
Chemical & Petrochemical	53
Pulp & Paper	65
Cement	47
Material Handling	46
Architecture	167
Environmental Engineering	150
Mining & Mineral Beneficiation	57
Fertilizer (Primarily Utilities & Offsites)	33

HUMAN RESOURCES

Technical

CATEGORY	STRENGTH
MECHANICAL	289
CIVIL / STRUCTURAL	266
ELECTRICAL	155
ARCHITECTURAL	24
C & I	42
PROCESS / MINING / CHEM / OTHERS	30
TRANSPORTATION	26
COMPUTER & OTHERS	2
MARINE	<u>1</u>
TOTAL:	835

HARDWARE & SOFTWARE RESOURCES

HARDWARE

●	PCs (Pentium – IV @2.6Ghz-3Ghz))	-	855
●	A0/E Size HP/HO Design Jet Plotters	-	8
●	A0/E Size Plotter, Scanner, Copier	-	1
●	A3/A4 Size Scanners	-	5
●	Printers Laser, Ink Jet Dot Matrix, Etc.	-	95
●	AUTO PLANT System	-	2
●	P – IV & XEON Based SERVERS	-	20
●	Video Conferencing System	-	1

HARDWARE & SOFTWARE RESOURCES

SOFTWARE

MECHANICAL:

- | | | |
|--------------------------|---|--|
| Heat & Mass Balance | - | GATECYCLE |
| Pipe Stress Analysis | - | CAESAR – II (Ver.- 4.5/5.0),
TRIFLEX, AUTOPIPE,
PIPE-STRESS, |
| Fluid Flow Analysis | - | PIPE NET, |
| Fluid Transient Analysis | - | SURGE 2000, |
| Belt conveyor Design | - | ESCONDES. |
| Insulation Sizing | - | INL ** |

(** indicates In-house Software)

HARDWARE & SOFTWARE RESOURCES

SOFTWARE (Contd.)

MECHANICAL:

- | | | |
|---------------------------------|---|--------------------------|
| HTRI | - | Heat Transfer Research |
| Steam Turbine Design | - | Steam Pro / Steam Master |
| Gas Turbine Design | - | G T Pro / G T Master |
| Tank Design Software | - | API TANK 650 |
| Pressure Vessel Design Software | - | P V Elite |

HARDWARE & SOFTWARE RESOURCES

SOFTWARE (Contd.)

ELECTRICAL:

Load Flow, Short Circuit ,
ETAP 300 Nodes DC BUS

- Mi-Power,
- ETAP (Ver. – 5.0.2)

- Base Modules
- Short Circuit Study
- Motor Acceleration Study
- Load Flow Analysis
- Battery Sizing
- Parameter Estimation
- Transient Stability Analysis
- Reliability Assessment
- Optimal Power Flow Analysis
- User Defined Dynamic Modules
- Device Coordination
- Harmonic
- Ground Grid System

HARDWARE & SOFTWARE RESOURCES

SOFTWARE (Contd.)

ELECTRICAL:

- | | |
|-----------------------|-------------------|
| Relay Coordination | - RELAY** |
| Illumination Design | - CGLUX, CALCULUX |
| Ni-Cad Battery Sizing | - SAFT |

(** indicates In-house Software)

HARDWARE & SOFTWARE RESOURCES

SOFTWARE (Contd.)

CONTROL & INSTRUMENTATION:

P & ID work

- INTOOLS
- PRODOK*

ENVIRO-PROTECTION:

Atmospheric Dispersion of
Stack Emission

- DISPER**

(* in the process of procurement)

HARDWARE & SOFTWARE RESOURCES

SOFTWARE (Contd.)

CIVIL & STRUCTURAL :

- | | |
|--|---|
| Static & Dynamic Analysis & Design code check | - STAAD- <i>Pro</i> 2004,
SAP 2000, GTSTRUDL |
| Finite Element Analysis | - Ansys (structural) V8.0 |
| Pushover Analysis | - SAP 2000 |
| Earth Structure Analysis
(Slope stability, Seepage,
Dynamic analysis & contaminant
transport) | - GEO-SLOPE |
| Road Geometry Design | - HEADS - 2000,
Mx Roads |
| Storm Design Software | - Storm Net |

HARDWARE & SOFTWARE RESOURCES

SOFTWARE (Contd.)

CIVIL & STRUCTURAL :

- | | |
|---|-----------------------------|
| Multi-Flu Stack Design | - DCSTACK ** |
| Structural Steel Detail Design | - TEKLA
(X-Steel -V12.0) |
| Response Spectra &
Time History Generation | - RESPEC, SPECEQ |
| Simulation of Ground Motion | - SIMQKE |
| Statistical & Reliability Analysis | - MonteCarlo**
DCSTAT** |
| Fatigue Analysis (RLA studies) | - Rainflo** |

Besides the above, there are large numbers of in-house software available to design various RCC and Steel Sections taking output directly from STAAD-pro analysis

HARDWARE & SOFTWARE RESOURCES

SOFTWARE (Contd.)

PROJECT MANAGEMENT :

- Planning, Scheduling & Monitoring - PRIMAVERA,
(Ver. – 5.0.2)
MS Projects

CEMENT & MINING :

- Mining – underground &
Mine Plan - GEMCOM
- Design of Cement Raw Mix - RAWMIX**

SOFTWARE DEVELOPMENT :

- Basic Compilers - VB, FORTRAN,
C++, Dot-Net

- Data Base Systems - ORACLE, SQL

HARDWARE & SOFTWARE RESOURCES

SOFTWARE (Contd.)

DRAFTING :

2D drafting

- Auto-cad 2006 / 2007,
Microstation

P&IDs, PFDs, 3D Plant
& layout drafting

- Inter Graph PDS,
ISOGEN, Auto Plant
INTOOLS
- Avera PDMS

3D Modeling of Structure

- FRAMEWORK+,
X-Steel (V 12.0)

HARDWARE & SOFTWARE RESOURCES

SOFTWARE (Contd.)

DRAFTING :

Isometric Piping Layout

- I-SKETCH

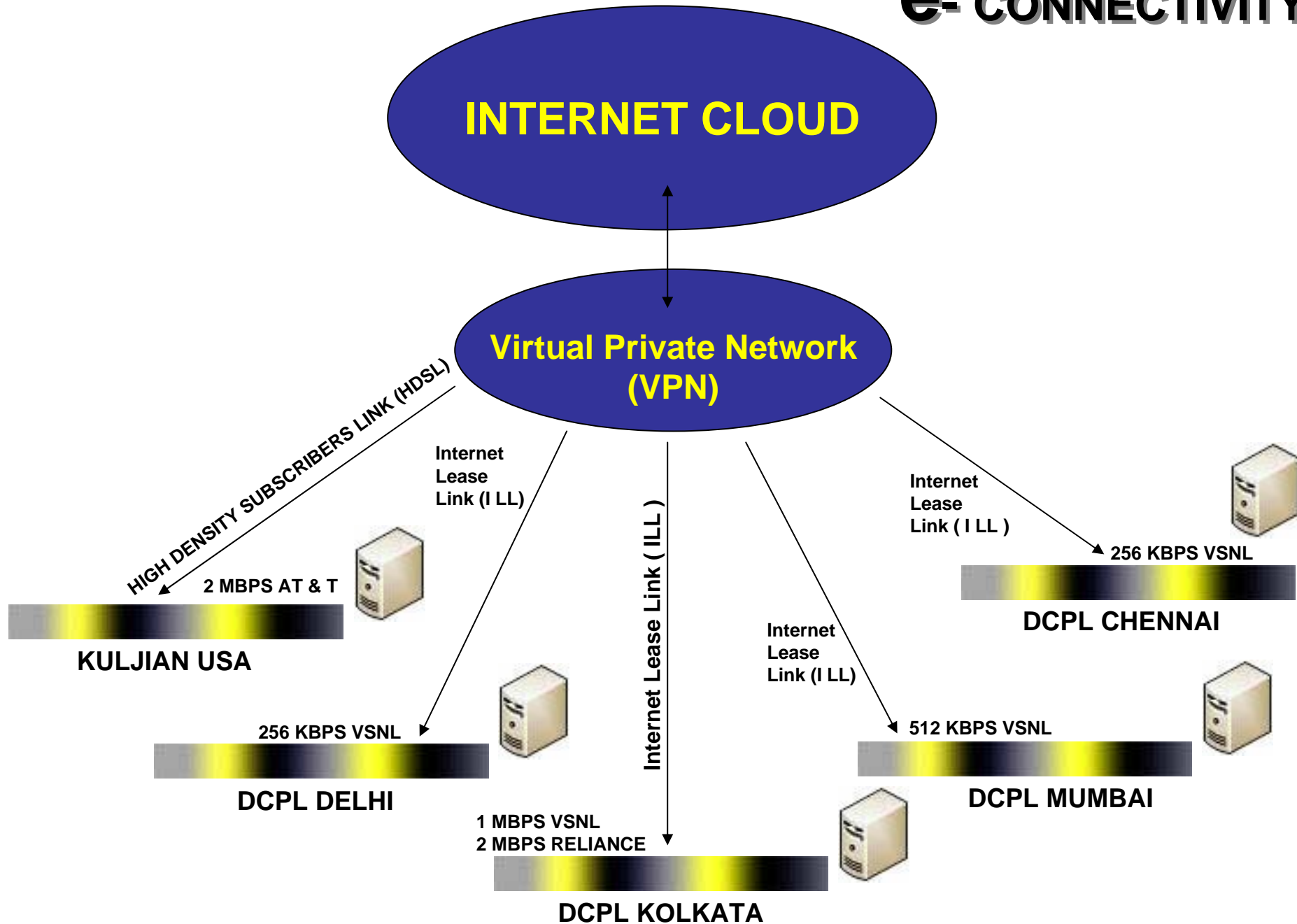
Review Tools

- Smart Plan Review

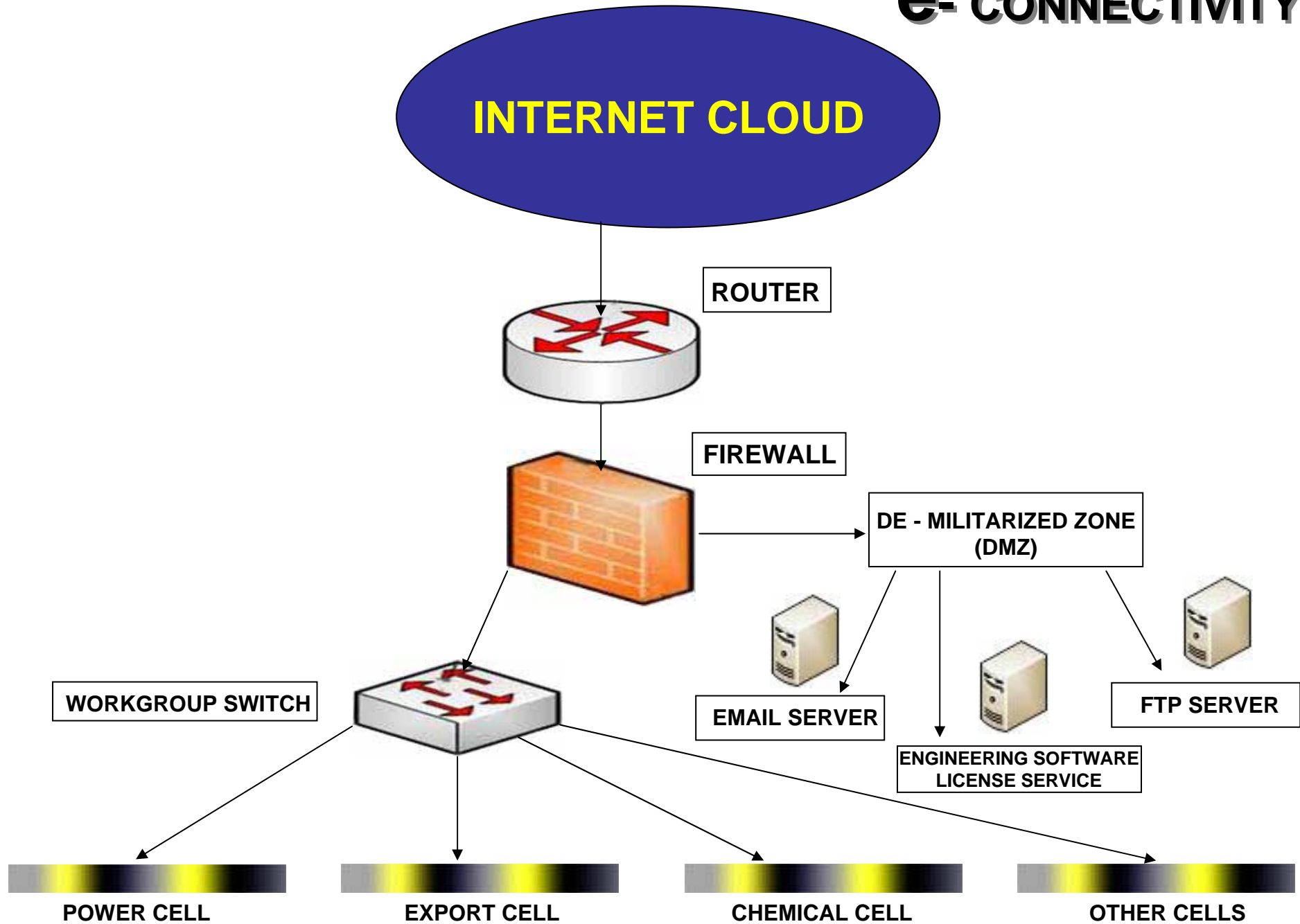
- Navis Works Review Reality

A number of Productivity Tools developed in-house using Auto Lisp, Visual Lisp and Visual Basic are available

e-CONNECTIVITY



e-CONNECTIVITY



OTHER RESOURCES

The Central Data Center :

- Literatures for around 25,000 engineering products and 3,000 Indian & Foreign manufacturers
- Around 20,000 codes & standards of Indian and
- International Standards Organizations & Bodies
- Over 6,000 Reference Books
- Subscribes to over 300 Journals / Publications in various Branches of Technology & Management

SERVICES OFFERED

- **Site Selection Study**
- **Techno-Economic Feasibility Study**
- **Detailed Project Reports**
- **Environmental Study & Management Planning**
- **Basic Engineering**
- **Detailed Engineering**
- **Review Engineering**
- **Procurement Assistance**
- **Project Planning, Scheduling & Monitoring**
- **Project Coordination**
- **Inspection & Expediting**
- **Project Management**
- **Supervision of Construction, Erection & Commissioning**
- **Plant Operation & Maintenance**

PURVIEW OF DETAILED ENGINEERING

◆ PROCESS / MECHANICAL

- P & I DIAGRAMS
- DESIGN BASIS & FINALISATION OF PARAMETERS
- EQUIPMENT LAYOUTS
- PIPING G.A. & COMPOSITE LAYOUT DRAWINGS
- ISOMETRIC DRAWINGS
- PIPING STRESS ANALYSIS
- BILL OF MATERIALS FOR PIPING, VALVES, FITTINGS
& SPECIALITIES
- EQUIPMENT LIST, LINE LIST, VALVE LIST
- DESIGN OF HANGERS & SUPPORTS

PURVIEW OF DETAILED ENGINEERING (Contd.)

◆ CIVIL, STRUCTURAL & ARCHITECTURAL

- DESIGN OF FOUNDATIONS**
- STRUCTURAL DESIGN**
- STRUCTURAL STEEL FABRICATION DRAWINGS**
- BUILDING & EQUIPMENT FDN. DRAWINGS**
- BAR BENDING SCHEDULE OF MAJOR EQUIPMENT FDN.**
- ARCHITECTURAL DRAWINGS**
- INTERIOR DESIGN**

PURVIEW OF DETAILED ENGINEERING (Contd.)

◆ ELECTRICAL

- SYSTEM OPTIMISATION
- SCHEMATICS
- G.A. DRAWINGS
- CABLE RACK/CONDUIT LAYOUTS
- ILLUMINATION LAYOUTS
- CABLE SCHEDULE & INTER CONN. DIAGRAMS
- GROUNDING DRAWINGS
- LIGHTNING PROTECTION
- INTERLOCK & PROTECTION LOGIC DIAGRAMS
- RELAY SETTING SCHEDULES
- BILL OF MATERIALS

PURVIEW OF DETAILED ENGINEERING (Contd.)

➤ CONTROL & INSTRUMENTATION

- P&ID & INSTRUMENT SCHEMATICS**
- SPECIFICATIONS**
- INSTRUMENT INDEX & DCS INDEX**
- INSTRUMENT LOOP DIAGRAMS**
- OPEN LOOP CONTROL SCHEMATICS**
- MATERIAL TAKE-OFFS**
- INSTRUMENT LAYOUTS/LOCATION DRAWINGS**
- CABLE SCHEDULE & INTERCONNECTION**
- HOOK-UP DRAWINGS**
- PANEL GENERAL ARRANGEMENT**
- SUB-SYSTEM GRAPHIC SCREENS**
- NETWORKING & SYSTEM ARCHITECTURE**
- LOGIC LADDERS**
- PERFORMANCE CALCULATION ALGORITHMS**

EXPERIENCE IN WORKSHARING

DCPL has rich experience in multi-agency execution of projects entailing extensive work sharing

❖ WORK SHARING AS PER DIVISION OF RESPONSIBILITIES

- ➔ One Time Input
- ➔ Sequential Input with Frequent Interaction
- ➔ Collaborator's Personnel Stationed in DCPL

❖ FIRM ORIGINS

- **USA**
 - KULJIAN CORPORATION
 - ALCOA
 - ALUTEC
 - ISSI / IROX – NKK JAPAN
 - STONE & WEBSTAR

EXPERIENCE IN WORKSHARING

(Contd.)

❖ FIRM ORIGINS

➤ GERMANY

- STARCOSA
- SIEMENS MATSHUSHITA

➤ AUSTRALIA

- ROBERTSON RESEARCH
- BHP - KINHILL

➤ UNITED KINGDOM

- PILKINGTON, BP MINERALS
- CROSSIFIED CHEMICALS

➤ FRANCE

- PECHINEY
- CETIG
- EUGIN

EXPERIENCE IN WORKSHARING

(Contd.)

❖ FIRM ORIGINS

➤ CANADA

- SANDWEL

➤ NETHERLANDS

- ABB LUMMUS

➤ JAPAN

- TOYO ENGINEERING
- HITACHI
- MITSUBISHI
- KAWASAKI

➤ BELGIUM

- BELOVO, BASSE – SANBRE - ERI

➤ KOREA

- HYUNDAI, DAELIM, HANJUNG

WORKSHARING

- A FEW REFERENCES

➤ KAWASAKI HEAVY INDUS. LTD., JAPAN

- DETAILED ENGINEERING WORK FOR 2x105 MW PROJECT IN PHILIPINES

➤ PITCHARD AL-BASSAM CO. LTD. OWNER : AL KHAFJI JOINT OPERATION

- DETAILED DESIGN ENGINEERING FOR 3x30 MW GT PLANT & 13.8 KV T&D SYSTEM IN DAMMAM

WORKSHARING

- A FEW REFERENCES (Contd.)

➤ PITCHARD AL-BASSAM CO. LTD., S.A.

- DESIGN & ENGINEERING FOR 100,000 CUM. DESAL PLANT AT JUBAIL

➤ DCIL, HONG KONG

- DETAILED ENGINEERING SERVICES FOR 400 MW TYNAGH CCPP IN IRELAND

WORKSHARING

- A FEW REFERENCES (Contd.)

➤ SALINE WATER CONVERSION CORPN AL JUBAIL

- TOTAL ENGINEERING CONSULTANCY FOR 25 MILL. CUM. / HR DESAL PLANT AND 1000 TR AC / VENT PLANT

➤ SIEMENS LTD.

- ENGINEERING SERVICES FOR SUBSTATIONS IN BANGLADESH

WORKSHARING

- A FEW REFERENCES (Contd.)

➤ SWEDISH POWER SERVICES

- LOAD SURVEY, PREPARATION OF DISTN. NETWORK DRAWING, FIELD SURVEY, FOR DISTN. OF SUBSTATIONS AND CABLE ROUTES IN 14 IRAQI TOWNS

➤ VOLTAGE ENGG. LTD., DOHA

- TRANSMISSION & DISTN. DESIGN WORK IN QATAR

WORKSHARING

- A FEW REFERENCES (Contd.)

➤ DAELIM ENGG. CO. LTD., KOREA

- DETAILED ENGINEERING FOR GT BASED POWER PLANT & CO-GENERATION PLANT

➤ PT. PEC-TECH INDONESIA

- DETAILED ENGINEERING FOR CAPTIVE POWER PLANT 650 T/HR. CFBC BOILER

PROCUREMENT CAPABILITIES

SALIENT FEATURES

- **MULTI-PACKAGE PROCUREMENT
ENTAILING**
 - **PROPER INTERFACING TO ENSURE**
 - **COMPLETENESS**
 - **OVERALL PLANT PERFORMANCE**
 - **EFFICIENT COORDINATION FOR ADHERENCE TO
STRINGENT SCHEDULE**
- **CLOSE COORDINATION BETWEEN EXECUTING
AGENCIES AT DIFFERENT LOCATIONS**

PROCUREMENT CAPABILITIES

(Contd.)

- **EXTENT OF PROCUREMENT SERVICES VARIES FROM SINGLE PIECE EQUIPMENT TO MULTI MILLION RUPEES PACKAGE CONTRACT**
- **SCOPE DEPENDING ON CLIENTS' SPECIFIC REQUIREMENT**
- **SCOPE OFTEN INCLUDES INSPECTION SERVICES AND CONTRACT PREPARATION/NEGOTIATION**

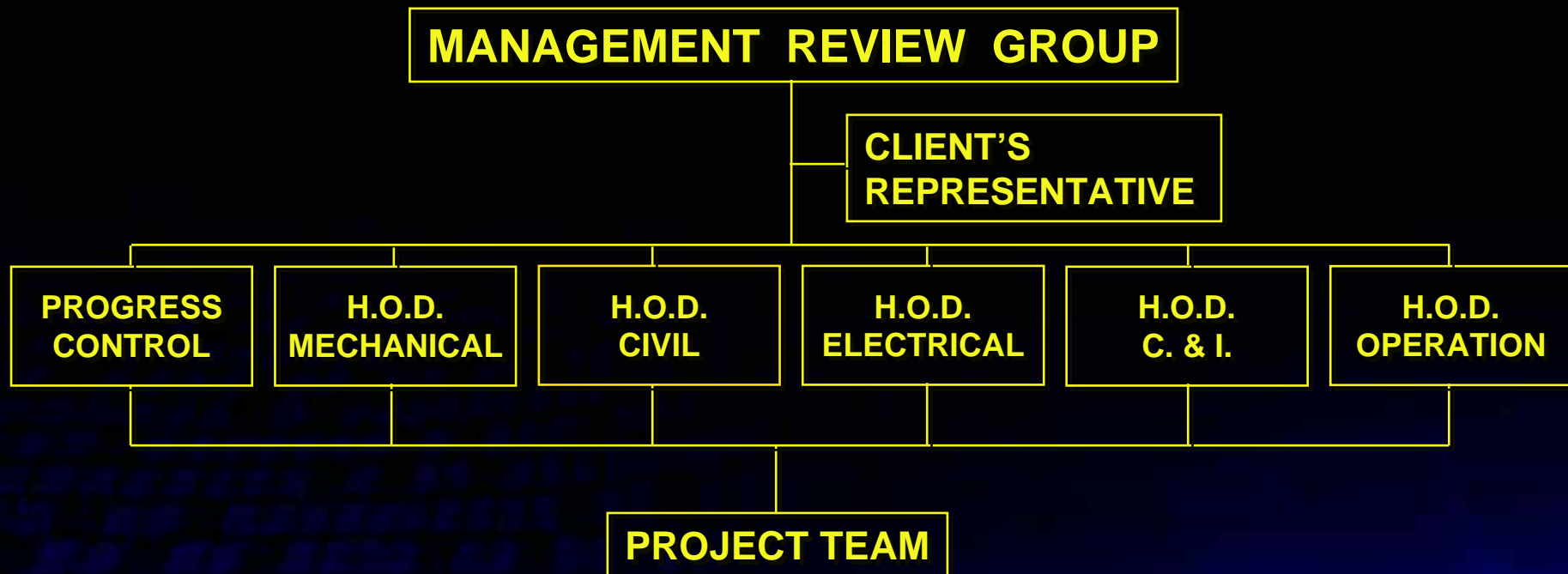
PROCUREMENT CAPABILITIES (Contd.)

A TYPICAL DIVISION OF SCOPE:

	<u>CLIENT</u>	<u>DCPL</u>
■ Vendor Shortlisting / Prequalification	★	★
■ Tender Specification	-	★
■ Issuance of Enquiries	-	★
■ Expediting Vendors	-	★
■ Receipt of bid & Evaluation	-	★
■ Negotiation	★	-
■ Order placement & Purchase Order preparation	★	★
■ Payment	★	-
■ Expediting drawings	-	★
■ Review & Approval of drawing	-	★
■ Review of QAP	-	★
■ Inspection	-	★
■ Despatch clearance	-	★

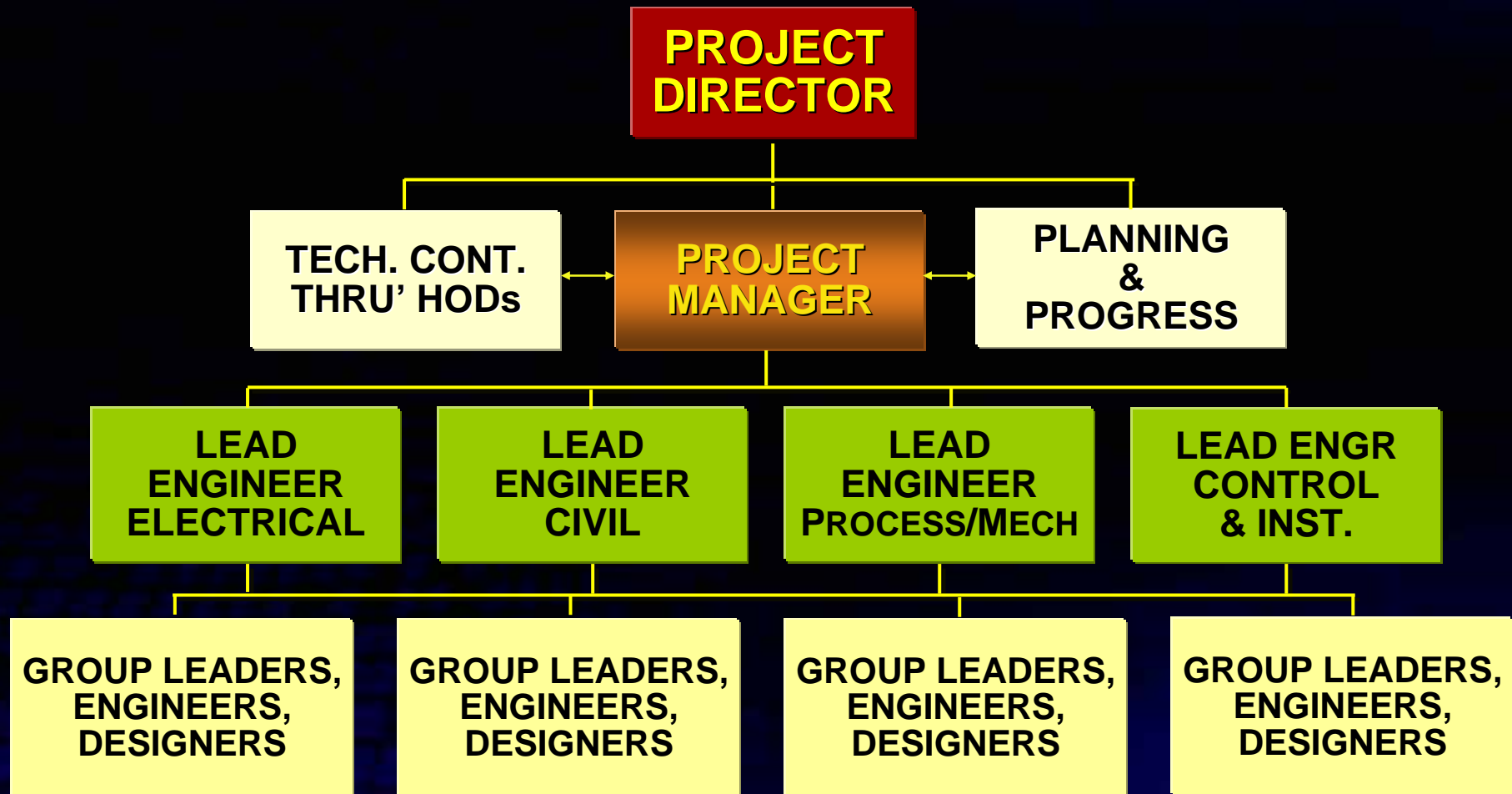
PROJECT QUALITY PROGRAMME THROUGH MANAGEMENT REVIEW

REVIEW SYSTEM STRUCTURE :



- FORTNIGHTLY → MONTHLY REVIEWS
- TWO MONTH LOOK-AHEAD PLANNING

PROJECT TEAM STRUCTURE (Typical)



PROJECT MANAGEMENT & CONTROL

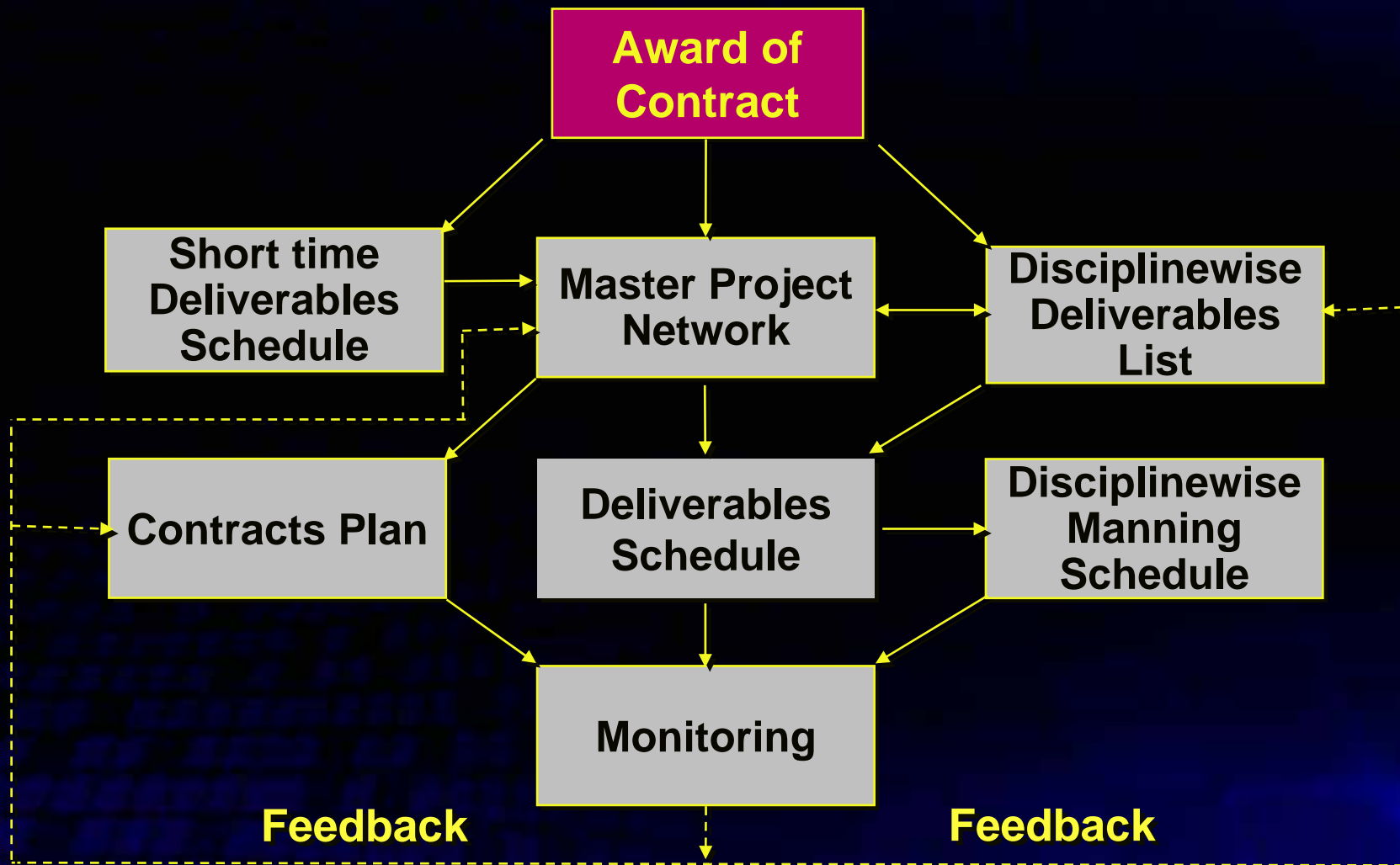
CONTROL SYSTEM -

- **Formulates & updates the plans**
- **Sets up performance yardsticks**
- **Sets up information channel for tracking progress**
- **Provides warning signals of impending adversities**
- **Provides quick-response control mechanism**

PROJECT MANAGEMENT & CONTROL

CONTROL NETWORK:

(Contd.)



The image features a dark silhouette of a power plant with two tall smokestacks and a central building with a small tower. The background is a bright blue sky with a faint world map overlay. The text "DCPL IN POWER PLANT ENGINEERING" is written in bold yellow letters with a black outline, centered over the image.

DCPL IN POWER PLANT ENGINEERING

EXPOSURE PROFILE IN POWER GENERATION

- Fossil Fueled Conventional Power Plant of capacity upto 500 MW.
- Gas Turbine based Combined Cycle Plant capacity upto 650 MW.

NUCLEAR POWER

- Boiling Water type Reactor upto 500 MW
- Fast Breeder Test Reactor-50 MW
- 'Candu' type Reactor upto 500 MW

DC was the FIRST in India to introduce new technologies in Power Generation projects

- ✧ **First pulverized fuel-fired power station, DVC, Bokaro**
- ✧ **First power station with large units of 62.5 MW, 100 MW, 120 MW & 210 MW**
- ✧ **First 500 MW - NTPC, Singrauli**
- ✧ **First 250 MW - BSES, Dahanu**
- ✧ **First 67.5 MW CFBC Boiler - INDAL, Hirakud**

FIRST in India (Contd.)

- ✧ **First Co-Generation plant of ONGC, Uran**
- ✧ **First large size Combined Cycle Power Projects at Kawas, Anta and Auriya**
- ✧ **First 650 MW Combined Cycle Project at Gandhar**

MAJOR PROJECTS WITH DC AS CONSULTANT

- ★ **2 x 500 MW Chandrapur TPS of MSEB**
- ★ **2 x 500 MW Singrauli TPS of NTPC**
- ★ **2 x 250 MW Dahanu TPS of BSES Ltd**
- ★ **2 x 250 MW Budge Budge TPS of CESC**
- ★ **4 x 250 MW Suratgarh TPS of RSEB**
- ★ **3 x 210 MW Bakreshwar TPS of WBPDC**

Major Projects (Contd.)

- ★ **1 x 210 MW Bandel TPS of WBSEB**
- ★ **4 x 210 MW Korba [West Bank] of MPEB**
- ★ **3 x 210 MW Korba STPS of NTPC**
- ★ **3 x 210 MW Kolaghat TPS of WBSEB**
- ★ **4 x 210 MW Sanjay Gandhi TPS of MPEB**
- ★ **4 x 210 MW Lignite-based Plant of NLC**

Total installed capacity 40,000 MW plus.

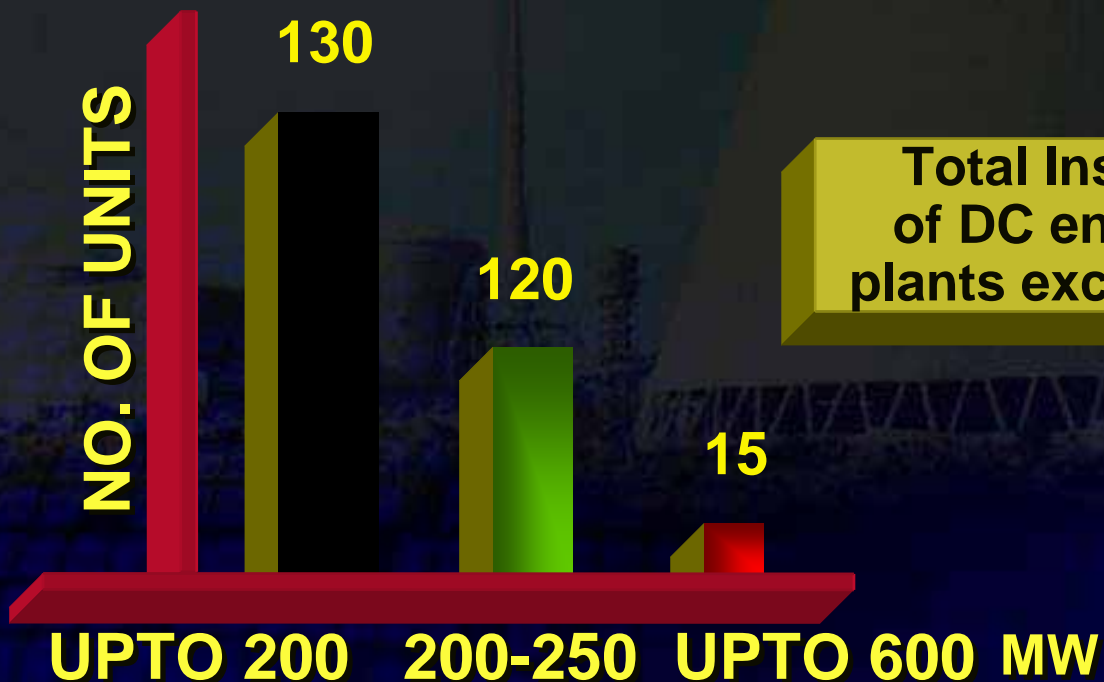
SELECTIVE PROJECT REFERENCES (Contd.)

COMBINED CYCLE PLANTS

<u>Project</u>	<u>Owner</u>
◇ 650 MW GANDHAR	NTPC
◇ 650 MW PAGUTHANE	GPEC
◇ 430 MW FARIDABAD	NTPC
◇ 330 MW KAYAMKULAM	NTPC
◇ 220 MW SAMALKOT	BSES
◇ 168 MW WELLAMPITEYA	AES Kelanitissa
◇ 3x30 MW MAITHON	GEC
◇ 4x30 MW AMGURI	ASEB
◇ 8x30 MW AMGURI	ASEB
◇ 1x106 MW DHUVARAN	GEB
◇ 406 MW TYNAG	For GE

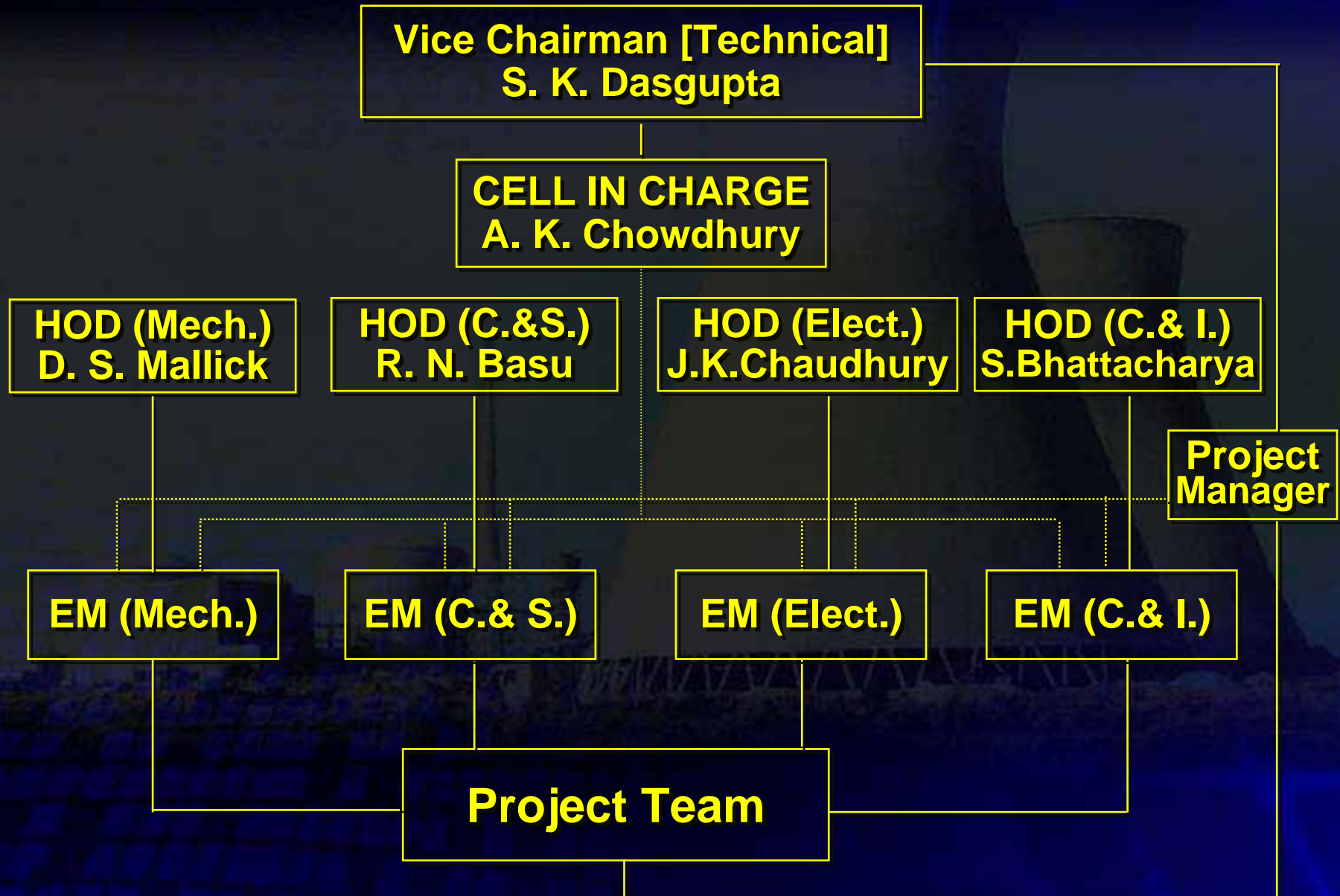
EXPERIENCE IN POWER PROJECTS

Utility & Captive Thermal Project	142
▪ Gas Turbine based Power Projects	58
▪ Nuclear Projects	10
▪ Utilities & Off-sites	38
▪ Transmission & Distribution Projects	41



Total Installed Capacity
of DC engineered power
plants exceeds 40,000+ MW

POWER DIVISION ORGANIZATION STRUCTURE



SUGGESTIONS ON EXECUTION OF THE PROJECT

- Nomination of a Project Manager on behalf of the Client as **Single Point Contact** on all project related matters
- Setting up an **Online Coordination Network** thru' a dedicated website opened for the purpose

DCPL IN CEMENT PLANT ENGINEERING



SERVICES OFFERED - GEOLOGY & MINING

- Resource identification and evaluation by surveying, mapping, by drilling, physical and chemical testing and assessment of reserves and quality.
- Mine design and Detailed Project Reports adopting either opencast and underground method of mining.
- Selection of mining machinery and equipment.
- EIA and EMP Study and Mine site supervision, project and production management.

SERVICES OFFERED - CEMENT PLANT ENGINEERING

- Preparation of technical feasibility report starting from market survey, study of raw material resources, site selection, mine plan, EIA & EMP study, computation of capital cost and financial analysis.
- Basic & detailed engg comprising procurement services, selection of appropriate technology, raw mix design, specifications, design and drawings for mechanical, electrical, civil & architectural works.
- Inspection and site services comprising construction and erection supervision and commissioning services.
- Optimization of plant output, operation and management services.

SELECTIVE PROJECT REFERENCES - Indian

- Mawmluh Cherra Cement Ltd, Meghalaya
- Komorrah Limestone Mining Co Ltd
- Jammu & Kashmir Cements Ltd
- Hira Cement Works, Sambalpur, Orissa
- Industrial Development Corporation of Orissa
- Churk Cement Factory, UPSCC, Churk, Mirzapur
- Jalalabad Cement Co Ltd
- Assam Industrial Development Corporation
- Shree Cement Ltd, Beawar, Rajasthan

SELECTIVE PROJECT REFERENCES - Overseas

- Musulmiye, Hama, Adra in Syrian Arab Republic
- Tartous Cement Plant in Syrian Arab Republic
- El Homs Cement Plant in Libya
- Hetauda Cement Plant, Nepal
- 1600 TPD Capacity Cement Plant in Ethiopia
- COBOCE Cement Plant in Bolivia
- 1500 TPD Cement Plant in Mukalla, Yemen

SELECTIVE PROJECT REFERENCES - Overseas (Cont'd)

- Pagli Limestone Mine of Penden Cement Authority Ltd, Gomtu, Bhutan
- Limestone investigation near Atbara in Sudan for 1x4000 TPD Cement Plant
- International Cement Ltd, Bangladesh

SELECTIVE PROJECT REFERENCES - Indian

My Home Cements Detailed engineering for upgra-dation of both phases of the 3200 TPD Cement Plant at Nalgonda

Lafarge India Ltd Preparation of TEF Report for –

- 1 MTPA Fly Ash Cement Grinding Plant at Jojobera, Jamshedpur
- 1 MTPA Fly Ash Cement Grinding Plant at West Bengal at 3 location
- 2200 TPD Cement Plant in 2 phases in Meghalaya

SELECTIVE PROJECT REFERENCES - Indian

(Cont'd)

Zuari Cements Ltd Complete Plant Balancing Study & Basic Engineering of the expansion programme from 1800 TPD to 5000 Dry Process Cement Plant comprised installation of Crushing Plant, Raw Mill, Precalciner, Cooler, Coal Mill, Cement Grinding Mill, Packing & Despatch

Penden Cement
Authority Ltd

Engineering and Plant Optimization for 1200 TPD cement plant expansion at Gomtu, Bhutan

SELECTIVE PROJECT REFERENCES - Indian

(Cont'd)

Rajashree Cement -
Birla Group Co

System design for ash handling, storage and transport system for Rajashree Cement and Detailed Design Engineering for the same

Orient Cement
belonging to Birla
Group

Engineering & PLant Optimization Services for 3200 TPD plant at Devapur, AP and 1500 TPD cement grinding plant

Shree Cement Ltd

Detailed Engineering services for 2500 TPD Cement Plant in Ras, Rajasthan

SELECTIVE PROJECT REFERENCES - Indian

(Cont'd)

HM Cements Ltd	Detailed Engineering for 350 TPD Cement Plant, Meghalaya
Purbanchal Cement Pvt Ltd	Detailed Engineering for 500 TPD Cement Plant in Assam
Birla White – Birla Group Co	Engineering for upgradation of both of the White Cement Plant at Gotan, Rajasthan and Grasim Industries Ltd

SELECTIVE PROJECT REFERENCES - Overseas

- 2x1000 TPD Dry Process Cement Plants in Musulmiye, Syrian Arab Republic
- 3x1000 TPD Dry Process Cement Plants in Adra, Syrian Arab Republic
- 1x1000 TPD Dry Process Cement Plant in Hama, Syrian Arab Republic
- 4 units of 1600 TPD in Tartous of General Organization for Cement, Govt. of Syrian Arab Republic
- 2x1500 TPD Dry Process Cement Plant in Shaik-Said, Syrian Arab Republic

SELECTIVE PROJECT REFERENCES - Overseas

(Cont'd)

- 2x1000 TPD Dry Process Cement Plant in Ethiopian Building Materials Corporation
- 800 TPD Plant, Wazo Hills, 1600 TPD Plant, Tanga and 800 TPD Plant, Mbeya, all Dry Process Cement plants in Tanzania
- 750 TPD Hetauda Cement Plant in Hetauda, Nepal
- 1000 TPD Dry Process Cement Plant in Irpa Irpa, Bolivia
- 2500 TPD Cement Plant of Cementos Cibao, Dominican Republic
- 1300 TPD Cement Plant of Dragon Cement, USA

SELECTIVE PROJECT REFERENCES - Overseas

(Cont'd)

- 1x1500 TPD plus 1x1200 TPD Cement plants of Cementos Del Caribe, Columbia
- 3000 TPD Cement Project at Zliten with Pre-Calcliner
- 3000 TPD Cement Plant at Jufra in Libya without Pre-Calcliner
- 1600 TPD Cement grinding unit at Soboce, Santacruz, Bolivia
- Review Engineering services for 1000 TPD Cement Plant in Sudan

SELECTIVE PROJECT REFERENCES - Overseas

(Cont'd)

- Conversion of 2000 TPD cement plant from wet to dry process system in National Cement Co (PSC) Ltd, Dubai
- Plant balancing study and detailed engineering of 1000 TPD COBOCE Cement plant at Bolivia followed by operational consultancy during capacity optimization of the plant

SELECTIVE PROJECT REFERENCES

OPERATION & MAINTENANCE

- 1x3000 TPD plant in Libya for 10 years
- Two units of 3000 TPD Cement Plant in Jordan
- 750 TPD Clinker Grinding Plant at Ajman, UAE
- 1500 TPD Cement Plant at Fujairah in UAE

PETROCHEMICAL & CHEMICAL



PETROCHEMICAL

Reference 1

HAZIRA NAPHTHA CRACKER PROJECT

CLIENT : RELIANCE INDUSTRIES LIMITED

PROCESS LICENSOR : STONE & WEBSTER, USA.

PROJECT FEATURES : Reliance Petrochemical Complex :
Phase II at Hazira in Gujarat comprising
NGL/Naphtha Cracker & associated units.
700,000 MTPA Polymer grade Ethylene
350,000 MTPA Polymer grade Propylene

PETROCHEMICAL

HAZIRA NAPHTHA CRACKER PROJECT (Cont'd)

DC SCOPE OF WORK : Complete detailed engineering including review and modification of design/drawing, procurement assistance and project management services

PROJECT STATUS : Commissioned in March 1997

PROJECT COST : Around Rs. 15,000 Million
(US \$ 326 Million)

PETROCHEMICAL

HAZIRA NAPHTHA CRACKER PROJECT (Cont'd)

DELIVERABLES

PROCESS

No. of Drawings

P & ID	:	115
Line Schedule	:	365 Pages

EQUIPMENT

Requisitions	:	36
Vendor Drawings	:	4600

PIPING

GA Drawings	:	634
Isometrics	:	7210

PETROCHEMICAL

HAZIRA NAPHTHA CRACKER PROJECT (Cont'd)

CIVIL & STRUCTURAL

No. of Drawings

Piling & Fdn. Drawings :	385
Structural Drawings :	3970

ELECTRICAL

Power & Lighting :	120
Layout Designs	

INSTRUMENTATION

DCS Nos. of I/O's :	8000
Control Loop Diagrams :	500
PLC Nos. of I/O's :	3000
ESD Logic Diagrams :	400

PETROCHEMICAL

Reference 2

HALDIA ETHYLENE PROJECT

CLIENT : TOYO ENGINEERING CORPORATION,
JAPAN
TOYO ENGINEERING INDIA LTD.

PROCESS LICENSOR : ABB LUMMUS GLOBAL INC., USA.

PROJECT FEATURES : 420,000 TPA of Ethylene
210,000 TPA of Propylene

PETROCHEMICAL

HALDIA ETHYLENE PROJECT (Cont'd)

DC SCOPE OF WORK : Complete detailed engineering of Naphtha Cracker Unit involving Process Engg, Piping, Mechanical Equipment, Instrumentation, Civil & Structural and Electrical Engg

PROJECT COST : Around Rs. 12,000 Million
(US \$ 260 Million)

PETROCHEMICAL

HALDIA ETHYLENE PROJECT (Cont'd)

DELIVERABLES

PROCESS

No. of Drawings

P & ID	:	73
Line Schedule	:	221 Pages

EQUIPMENT

Engineering Drawings	:	475
Vendor Drawings	:	2000

PIPING

GA Drawings	:	185
Isometrics	:	8200

PETROCHEMICAL

HALDIA ETHYLENE PROJECT (Cont'd)

DELIVERABLES

CIVIL & STRUCTURAL

No. of Drawings

Design Dwgs.	:	561
Fabrication Dwgs.	:	522

ELECTRICAL

Layout Dwgs. (Cable, Grounding, Lighting etc.)	:	159
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INSTRUMENTATION

Layout Dwgs.	:	109
Hook-up Dwgs.	:	640

REFINERY

ATMOSPHERIC UNITS OF GUJARAT REFINERY

CLIENT : BRIDGE & ROOF COMPANY INDIA LTD.

PROJECT FEATURES : Revamping of Atmospheric Units III & IV at Gujarat Refinery, Vadodara of Indian Oil Corporation Ltd

DC SCOPE OF WORK : Basic and complete detailed engineering Involving Process Engineering, Piping, Fired Heaters, Instrumentation, Electrical and Civil & Structural Engineering

PROJECT COST : Around Rs. 330 Million
(US \$ 7.2 Million)

CHEMICAL / POLYMERS

➤ INORGANIC

- GLASS
- CEMENT
- CAUSTIC SODA - CHLORINE
- PRECIPITATED CALCIUM CARBONATE
- SYNTHETIC FERRIC OXIDE
- MOLECULAR SIEVE

CHEMICAL/POLYMERS (Cont'd)

➤ ORGANIC & MISCELLANEOUS

- ★ ACEPHATE PESTICIDE
- ★ LUBE ADDITIVE
- ★ CARBON BLACK
- ★ CALCINED PETROLEUM COKE
- ★ DETERGENT POWDER
- ★ DI AMMONIUM PHOSPHATE

CHEMICAL/POLYMERS (Cont'd)

➤ ORGANIC & MISCELLANEOUS

- ★ SEMI CONDUCTOR
- ★ NUCLEAR FUEL PELLET (UO₂)
- ★ ADVANCED MATERIAL
- ★ SOFT FERRITE
- ★ WHITE TABULAR ALUMINA

➤ POLYMERS

- ★ PTA
- ★ PET RESIN

DCPL IN TRANSMISSION & DISTRIBUTION



EXPERTISE PROFILE

- Outdoor AIS - upto 400 KV
- Indoor AIS - upto 230 KV
- Outdoor GIS - upto 230 KV
- Indoor GIS - upto 110 KV
- Transmission Line - upto 400 KV
- HVDC Station
- Power System Studies
- Utility Distribution System

SELECTIVE PROJECT REFERENCES - NATIONAL

➤ DABHOL POWER CO

- DESIGN ENGINEERING (CIVIL, STRUCTURAL, ARCHITECTURAL & AUXILIARY ELECTRICAL & MECHANICAL SYSTEMS) OF 400 KV SWITCHYARD (THRU' ABB).

➤ WBSEB

- DESIGN ENGINEERING FOR TRANSMISSION SYSTEM STRENGTHENING PROJECT CONSISTING OF 13 NOS. 220 KV, 132 KV & 33 KV SUB-STATIONS, JBIC FUNDED (THRU' ABB).

SELECTIVE PROJECT REFERENCES – NATIONAL (Contd.)

➤ MSEB/KSEB/ASEB/GRIDCO

- REVIEW ENGINEERING FOR 220/132/33 KV SUBSTATIONS & LINES UNDER SYSTEM IMPROVEMENT PROJECTS OF RECL, JBIC FUNDED.

➤ NTPC/PGCIL/MSEB

- DESIGN ENGINEERING (ARCH, CIVIL, STRUCTURAL, AUXILIARY POWER DISTRIBUTION & MECHANICAL WORK) OF HVDC STATIONS.

SELECTIVE PROJECT REFERENCES – NATIONAL (Contd.)

➤ GRIDCO/KEB

- DESIGN ENGINEERING OF 400 KV AND 400/220 KV SUB-STATIONS (THRU' SIEMENS).

➤ VARIOUS STATE ELECTRICITY BOARDS

- DESIGN ENGINEERING OF 400 KV, 220 KV, 132 KV SWITCHYARDS.

SELECTIVE PROJECT REFERENCES – NATIONAL (Contd.)

➤ NTPC

- DESIGN ENGINEERING OF 220 KV OUTDOOR GIS SUB-STATIONS.

➤ AERB/NPCL/IGCAR/NFCL

- DESIGN ENGINEERING OF 220 KV INDOOR AIR INSULATED SUB-STATIONS.

➤ JINDAL POWER LTD

- DESIGN ENGINEERING OF 400 KV, 220 KV, 33 KV SWITCHYARDS.

SELECTIVE PROJECT REFERENCES – INTERNATIONAL

➤ ZAMBIA ELECTRIC SUPPLY CORPN., ZAMBIA

- DESIGN ENGINEERING (ARCH. & CIVIL) OF 380 KV LUSAKA SUB-STATION (THRU' BHEL).

➤ BANGLADESH POWER DEVELOPMENT BOARD, BANGLADESH

- DESIGN ENGINEERING OF 220 KV AND 132 KV SUB-STATIONS.

➤ QATAR PETROLEUM, QATAR

- DESIGN ENGINEERING OF 33 KV ABU SAMRA OVERHEAD LINE PROJECT INCLUDING 33 KV & 11 KV INDOOR SUB-STATIONS (THRU' VOLTAGE ENGG., DOHA).

SELECTIVE PROJECT REFERENCES – INTERNATIONAL (Contd.)

➤ QATAR GENERAL ELECTRICITY & WATER CO., QATAR

- DESIGN ENGINEERING OF 33 KV ABU SAMRA OVERHEAD LINE PROJECT INCLUDING 33 KV & 11 KV INDOOR SUB-STATIONS (THRU' VOLTAGE ENGG., DOHA).

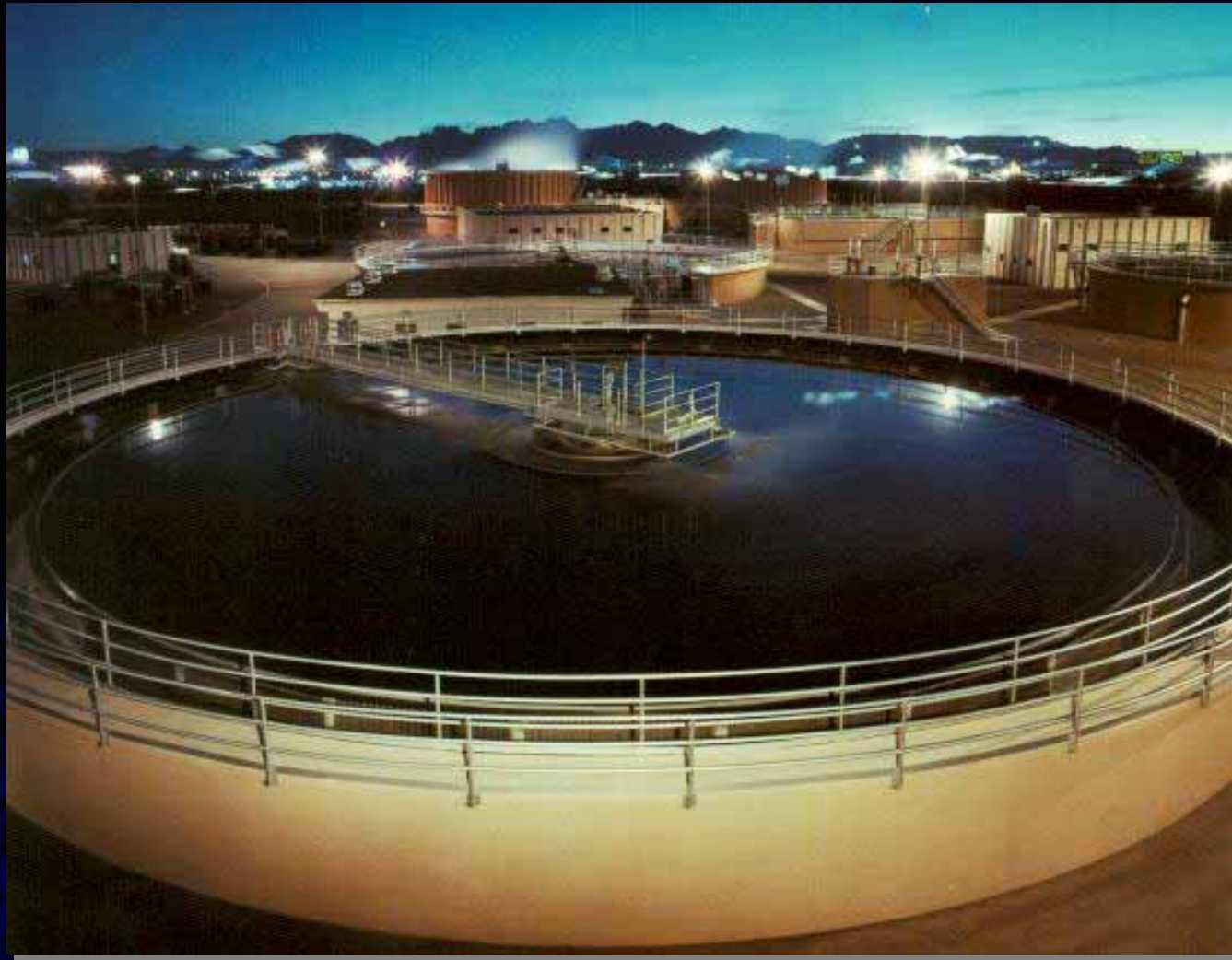
➤ SAUDI ELECTRIC CO., SAUDI ARABIA

- 110 KV MOHAMMADIA GIS SUB-STATION AT JEDDAH (THRU' KULJIAN, USA)

➤ MINISTRY OF ELECTRICITY & WATER, YEMEN

- 400 KV/132 KV SUB-STATIONS AND ASSOCIATED OVERHEAD TRANSMISSION LINES (THRU' KULJIAN, USA)

DCPL IN ENVIRONMENTAL ENGINEERING



ENVIRONMENTAL ENGINEERING

Services Offered

- Environmental Impact Assessment (EIA), Environmental Management Plan (EMP), Environmental Monitoring and Reports.

Accomplished around 70 Assignments

- Safety Audit, Hazard Analysis, Consequence Analysis, Emergency Planning.

Accomplished 11 assignments

Chemicals Handled :

- Hydrocarbons
- Chlorine
- Hydrogen

ENVIRONMENTAL ENGG (Cont'd)

Services Offered

- Waste Water Management including Recycle & Reuse in some cases.

Accomplished 64 such assignments.

- Environmental Due Diligence Study.

Accomplished 3 assignments.

- Water Supply

Accomplished 28 assignments.

SELECTIVE PROJECT REFERENCES

Central Pollution Control Board of India

- Gas based Thermal Power Plants – Environmental Study

Daelim Engineering Company Ltd.

- Waste Water Management Project at Sibolga Thermal Power Station in Indonesia

Nagarjuna Fertilizer & Chemicals Ltd.

- 9 MLD Effluent Treatment Plant in Andhar Pradesh

SELECTIVE PROJECT REFERENCES

(Contd.)

National River Conservation Directorate

- Control of waste inflow into the river at 15 urban centres in Haryana, Uttar Pradesh and bank of river Yamuna

Ganga Project Directorate

- Sewerage treatment and other civic amenities of the cities/ towns of West Bengal, Bihar under Ganga Action Plan

Nuclear Fuel Complex

- Effluent Treatment Plant for New Uranium Oxide Fuel Project in Andhra Pradesh

DCPL IN PULP & PAPER



OUR ACHIEVEMENTS

Total No. Of Assignments (PULP & PAPER)
Handled Till Date 125

No. of Engineering Assign'ts (PULP & PAPER)
Handled Till Date 45

Total Capacity Engineered by DCPL in India, '000 TPA

NEWSPRINT 350

CULTURAL VARIETIES 900

INDUSTRIAL PAPER & BOARD 100

DETAIL ENGINEERING DELIVERABLES PROCESS & MECHANICAL (TYPICAL FOR A PAPER PROJECT)

- **Project Engineering Standards**
- **P&I Diagrams**
- **Interconnection Piping Diagram**
- **Detailed Interlock Diagrams**
- **Plot Plan**
- **Detailed Equipment Layout & GA Drawings**
- **Layout Plan for underground services including route layout for piping, cables, sewers etc.**
- **Piping Drawings (Orthographic & Isometric)**
- **Tank Basic Dimension Drawings**
- **Line List**

DETAIL ENGINEERING DELIVERABLES PROCESS & MECHANICAL (TYPICAL FOR A PAPER PROJECT) (Contd.)

- **Valve Schedule**
- **Master Equipment List**
- **Metering and Control Schedule of Motors**
- **Piping Bill of Material**
- **Stress Reports of Pipelines**
- **Seismic Analysis of Critical Pipelines (if required)**
- **Stability analysis of Turbine**
- **Optimization Study Reports**
- **Statutory Documentation**

DETAIL ENGINEERING DELIVERABLES CONTROL & INSTRUMENTATION (TYPICAL FOR A PAPER PROJECT)

- **Project Engineering Standards**
- **DCS Architecture**
- **Instrument Installation Standards**
- **Instrument Loop Diagrams**
- **Graphics Layouts**
- **Panel Layouts**
- **Instrument & Location Drawings**
- **Master Instrument List**
- **I/O List**
- **Instrument Data Sheets**
- **Cable Schedule & Interconnection Chart**
- **Air Manifold List**

SPECIFICATIONS/ DRAWINGS WE GENERATE FOR A TYPICAL 300 MTD GRASS ROOT PULP & PAPER PROJECT

	<u>SPECIFICATIONS</u>	<u>DRAWINGS</u>
CIVIL & STRUCTURAL	15	450
PROCESS & MECHANICAL	90	500
ELECTRICAL	25	200
INSTRUMENTATION	10	90

GRASS ROOT PROJECTS EXECUTED PULP & PAPER

Hindustan Newsprint Ltd.

- 250 TPD Newsprint Mill

Nowgong Paper Project

- 300 TPD Ptg.-Wtg. Paper Mill

Cachar Paper Project

- 300 TPD Ptg.-Wtg. Paper Mill

Nagaland Pulp & Paper

- 100 TPD Ptg.-Wtg. Paper Mill

Rama Newsprint & Papers Ltd.

- 400 TPD Newsprint & Ptg.-Wtg. Paper Mill

GRASS ROOT PROJECTS EXECUTED

PULP & PAPER (Contd.)

Brooke Bond Paper Project

- 50 TPD Packaging Paper Mill

Ballarpur Ashti Unit

- 100 TPD Extensible Kraft Paper Mill

Global Boards Ltd.

- 100 TPD Chromo & Art Board Mill

Bina Sarana Pengembang

- 3300 TPD Wood based Pulp Mill

Tamilnadu Newsprint & Papers Ltd.

- 300 TPD Newsprint & Ptg.-Wtg. Paper Mill

MAJOR EXPANSION PROJECTS RECENTLY COMPLETED

Arab Paper Mfg. Co. Ltd. (WARAQ) - 500 TPD Recycled Fibre based Packaging (Fluting, Test Liner / Kraft Liner) Paper Project. Addition of 300 TPD PM#2 line along with 500 TPD Waste Paper Processing Line.

Horizon Pulp & Paper – 200 TPD High Strength/ Extensible Kraft Paper Mill in Estonia

BILT Sewa Unit – 250 TPD Bamboo & Wood based Ptg/Wtg. Paper Project.

Addition of 100 TPD Paper M/c with auxiliaries incl. on-line Coater.

MAJOR EXPANSION PROJECTS RECENTLY COMPLETED (Contd.)

BILT Yamunanagar Unit – Addition of 100 TPD Bamboo & Wood based Ptg.-Wtg. Paper Project in India

Bina Sarana Pengembang – Expansion of Fibre Line 1 upto 2,850 TPD & addition of Fibre Line 2 of 3,000 TPD wood based Pulp Mill in Indonesia

Andhra Pradesh Paper Mills – Expansion upto 300 TPD Wood based Ptg.-Wtg. Paper Mill in India

Century Pulp & Paper – Addition of 200 TPD Bagasse Continuous Kraft Pulping for Ptg.-Wtg.& Coated Paper Project

MAJOR PULP & PAPER PROJECTS UNDER EXECUTION

Client	The Mysore Paper Mills Ltd.
Project	Newsprint & Printing-Writing Paper Project at Bhadravati, Karnataka, India
Major Features	<p>Plant Capacity : 240 TPD Status of Project : Under Execution Plant Features :</p> <ul style="list-style-type: none">- Energy Conservation in Chemical Recovery Loop by way of Modernization/ Up gradation in following plants :- Replacement of age-old long tube vertical evaporators with Falling Film Free Flow Tubular Evaporators (7-effect) 100 TPH water evaporation capacity- Modernization of existing Soda Recovery Boiler with incorporation of long vertical economizer replacing cascade evaporator.- Augmentation of existing Reausticizing Plant- Augmentation of TG Cooling Water Circuit for better output from Turbo-Generators.

MAJOR PULP & PAPER PROJECTS UNDER EXECUTION (Contd.)

Client	Panafrican Paper Mills (E.A) Ltd.
Project	Printing-Writing Paper Project at Webuye, Kenya
Major Features	Plant Capacity : 300 TPD Status of the Project : Under Execution Plant Features : - New Blow Heat Recovery Plant at Digester House

MAJOR PULP & PAPER PROJECTS UNDER EXECUTION (Contd.)

Client	Ballarpur Industries Ltd., Unit SGU
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Project Printing/ Writing Paper Project – Up gradation & Installation of PM # 8

Major Features	Plant Capacity : 90 TPD Status of Project : Under Execution Plant Features : 1,600 mm trim at Reel Wet end with Triple Wire
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MAJOR PULP & PAPER PROJECTS UNDER EXECUTION (contd.)

Client **Horizon Pulp & Paper Ltd., Estonia**

Project **Packaging Paper Project**

Major Features **Up gradation, Modernization & Expansion of
Pulp Mill & Centrifugal Cleaners for
PM#1 & PM#2**

MAJOR PULP & PAPER PROJECTS UNDER EXECUTION (Contd.)

Client **Middle East Paper Co.**

Project **450 TPD Packaging Paper Project in Jeddah,
KSA**

Major Features **Addition of a Co-Generation Plant of
15 MW capacity.**

Thank you



DEVELOPMENT
CONSULTANTS