EXPERTISE OF THDCIL

With the expertise gained over the years with regard to planning, design, construction management, contracts management as well as in other disciplines and also the experience of rectifying problems, particularly those encountered during the construction of such unique and large underground works, a Consultancy Division, headed by a General Manager, has been established which utilizes the expertise gained in an integrated manner from concept to commissioning of the ongoing and future projects in public and private sectors.

Any consultancy work undertaken by THDCIL is completed by a team of experts of the following departments:

1. Civil Designs
   a. Topographical Survey
   b. Investigation
   c. Hydrology
   d. Geology & Geo-Technical
   e. Dam, Intake and Desilting
   f. Water Conductor System
   g. Power House- Surface & Underground
   h. Infrastructure Design
   i. Grouting

2. Hydro- Mechanical Designs
3. Electro-Mechanical Designs
4. Cost Engineering
5. Contracts and Material Management
6. OMS, Quality Assurance & Safety
7. Social and Environment
8. Human Resources Development
9. Sustainable Development
10. Corporate Social Responsibility
THDCIL’S SERVICE EXPERIENCE INCLUDES

1. Complete designs of Tehri Hydro Power complex covering civil works which includes earthen Dam, Power intakes, Water conductor systems, Gate shafts, Valve chamber, Pressure shafts, Power house complex (underground), Spillways and other allied works including protection and river training works for Tehri HPP and concrete gravity Dam With surface Power house and other allied structures.
2. Specifications for hydro mechanical works like Gates, Valves and hoists etc.
3. Specifications for Electro mechanical equipments i.e. Conventional generating units, Pump turbines, Generator Motor for Reversible Generating unit with Gas insulated switch gear system governing system, Transformers, Governing systems and Auxiliary Equipment, Automatic control and operation systems.
5. Specific and typical technical issues/problems encountered during construction of the various components of the project.

INNOVATIONS AND IN-HOUSE R & D ACTIVITIES

• 260.5 m high Earth and Rock fill dam-third highest dam in the World.
• Vertical Shaft spillways (230m high)-highest in the World.
• Butterfly valve of 5m diameter -largest in Asia.
• Chute spillway 220m high -highest in India.
• Regulating Radial Gate under the head of 130m -highest head operating gate.
• Spherical valve of 4 m diameter -largest in India.
• Provision of an inclined core in earth and rock fill dam -First time in India.
• Provision of the Gallery in earth and rock fill dam body -First time in India.
• Largest concrete monolithic block (80m x 100m) – Largest in India.
• Cranes in machine hall -2 nos. each of 375 ton capacity-biggest in size.
• 62.5 m Power house cavern -deepest in India.
• 670 m long, 400 kV, SF6 Gas insulated Bus Duct in underground switchyard having capacity of 2000MW (For Eight Units) for evacuation of power from transformer to
gantry -Largest in India.
• Variation in operation head of 90 m -Maximum in India.
• 3 phase 306 MVA transformer (15.75 /420 kV) -Largest in hydropower stations in India.
• Use of Silica fumes with Portland cement for the production of high performance concrete.
• For preventing the abrasion of Concrete surface lining of Intermediate Level Outlet (ILO) Elastomeric Polyurethane Coating popularly known as ‘Polyurea’ has been executed for the first time in India.

CONSTRUCTION MANAGEMENT, ERECTION AND COMMISSIONING

Construction Management system of THDC integrate co-ordination and dovetailing of inputs & resources, towards the prime objectives of completing the project on schedule, controlling cost and quality.
Service covered under Construction Management, Erection and commissioning include the following :
• Resources Identification and Acquisition
• Formulating responsive project organization structure
• Review of construction schedules
• Supervision during civil construction and Equipment Erection
• Conducting Construction Quality Audit, Monitoring and corrective actions.
• Identification and removal of bottlenecks
• Monitoring overall construction schedule and independent assessment
• Pre-commissioning and commissioning procedures and support
• Review of O&M manuals