



WORLDWIDE CONSULTANTS FOR 50 YEARS



PROJECT
&
CONSTRUCTION MANAGEMENT

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ELC Electroconsult was established in 1955, availing itself of the professional knowledge and human resources of three major Italian private firms leading and pioneering since 1905 in the planning, designing, construction and operation of hydropower projects in the Alps, Northern Italy.



The Company's activities were subsequently extended to other fields of engineering sectors and for more than three decades the company has been active also in thermoelectric and geothermal power generation, power transmission and distribution systems, agriculture and water supply, urban and rural development, groundwater exploitation, land reclamation, transport engineering, environment protection, social engineering, financial modelling and structuring, tariff analysis, public sector modernisation & privatisation, due diligence, owner engineering services and Project & Construction Management of large project, mainly in the energy field and financed by major international agencies like World Bank, EBRD, Asian Development Bank etc and/or by private banks.

Background **Background**

ELC offers a wide range of services to provide assistance at every stage of the project. These include: master plans, pre-feasibility and feasibility studies, site investigations, conceptual and basic design, contract and detailed design, procurement, ranging from a single package to material lists, assistance during fabrication and construction, commissioning, testing and acceptance tests, post-commissioning services. ELC services cover also refurbishment, re-powering and rehabilitation projects.



To achieve a close collaboration with Clients in all parts of the world, to assure the transfer of knowledge and to better understand local requirements, ELC assigns to site, if required, its own specialists for extended periods, host clients' engineers within design groups in its Milan head office and form associations with local engineering firms. In those countries, where ELC was and is most active, subsidiary professional companies were and are also formed.

The aim of ELC has always been that to provide engineering services of high standard and this has allowed the company to carry out most of its job with the major international agencies, sometimes in association with other leading international consulting companies.

ELC's capabilities and experiences in Project and Construction Management are summarized hereinafter.

Most of the projects developed by ELC were large projects, financed by international agencies that provided Owners with their financial support under the condition of acceptance of their Guidelines.

Concept ...

These Guidelines usually require the presence of an independent consultant, like ELC, having Project and Construction Management (PCM) responsibility, usually up to the commercial operation of the project, with the aim to reach the technical and economical objectives indicated in an approved feasibility study.

Objective of this PCM is to maintain a strong overall control of the project, maximizing the chances of bringing it on schedule, within budget, and to the specified quality. With the support of experienced managers, an effective overview of all activities related to the project is maintained, decisions to be taken are known with maximum advance warning and the available options and the likely consequences of each are known.

In short, the PCM team functions are an extension of the Owner organization. Limiting the attention to the Construction Management the main tasks are:



- to establish budgets and control costs;
- to manage and integrate planning and engineering work made by design firms;
- to procure equipment, services and supplies and provide contracts' administration, also maintaining appropriate records;
- to co-ordinate and manage the activities of construction, also developing safety programs and assuring their application;
- to monitor progress of all the activities and ensure adherence to schedules taking timely actions in case of delays;
- to carry out an effective quality control during fabrication, erection and construction;
- to supervise commissioning, testing and initial commercial operation ;
- to provide required reporting to Owner and financing agency;
- to provide the necessary coordination of all the documentation produced by all the actors for the project, providing criteria for proper filing and monitoring their application.



These Management functions, are additional to the conventional activities related to the project, engineering, supplying and construction and case by case are adapted to suit Owner needs and mainframe imposed by the financing agency.

PCM culture is part of ELC tradition and many of the developed projects, which were large and expensive, included these Management tasks as well as the others related to the pre-bidding stages of the project, from preliminary site investigations and pre-feasibility studies, through feasibility and preliminary design, to contract design. In many of these projects ELC was responsible to carry out directly part of the design work, having Management responsibility of some activities carried out by Others like site investigations,.



The relatively recent utilization of the Project Financing, with the project financed by Private Banks and the corresponding declining of the financing of large projects by international agencies does not change the above basic scenario and Owner Engineering tasks, typical of a Project Financing structure, usually correspond to simplified Management functions indicated above. Part of the simplification comes from the typical requirement of Private Banks to reduce their risks having a single general, EPC, contractor, while international agencies usually accepted higher risks requiring, to increase the competition, to have for a single project various Contractors to be coordinated by the independent consultant.

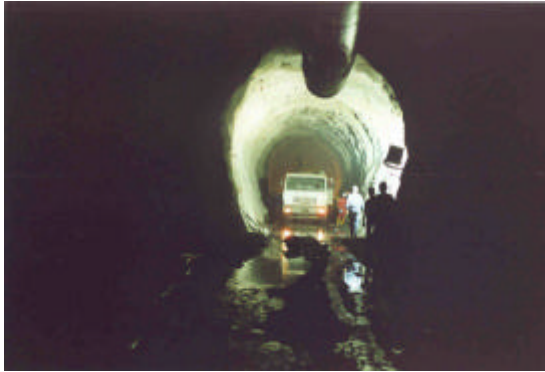
A remarkable difference between tasks imposed to the Owner Engineer and to the independent consultant of an International agency is also that never Owner Engineer has, in addition to Management functions, direct conventional tasks related to the project, while it is, or at least it was, usual for the independent consultant to have, in addition to Management functions also some design tasks which were not included in the Contractors' scope of work. A proper Quality Assurance structure allows and allowed to avoid conflict of responsibility.

Goals...

The PCM entails planning and then executing a variety of activities to control events in all phases of the project development. All appropriate project management functions in each area of work shall be identified and the appropriate division of responsibility between Owner, PCM team, engineer(s), suppliers and construction contractors shall be defined. The plan then must be turned into reality by a team of experienced personnel employing proven management systems and supported by a wide variety of capable specialists.

In carrying out its PCM assignment, ELC's goal is to ensure that:

- The owner's objectives are achieved and available resources are applied in an optimum manner
- Established budget and schedule goals are achieved
- Maximum working efficiency is attained and work products meet established quality criteria as well as the objectives of approved financial and operating plans.



Experience gained on many diversified projects within the ELC organization has resulted in the development of efficient project implementation methods, as well as a cadre of effective project managers and engineers. ELC's staff of technical personnel encompass engineers of many disciplines, experienced construction supervisors, schedulers and procurements specialists. It is supplemented by economists, financial advisors, specialists for procurement and administration.

Therefore personnel qualified to meet the Owner's needs are available for all type of projects, with the capability to work with and the availability of all the necessary working instruments for computer aided Management which is now usually carried out with portals through Internet allowing all actors to have available in real time all the necessary information including drawings.

Dedicated software is used for:

- work breakdown structure;
- organisation breakdown structure;
- proper classification and listing of all the project documentation;
- cost control;
- schedule control;