International Experts in Claims Analysis, Dispute Resolution, and Project Management for Process, Oil & Gas, Pipeline, Power, Industrial, Infrastructure, and Building Construction Projects

LONG INTERNATIONAL

Project Management Consulting Services

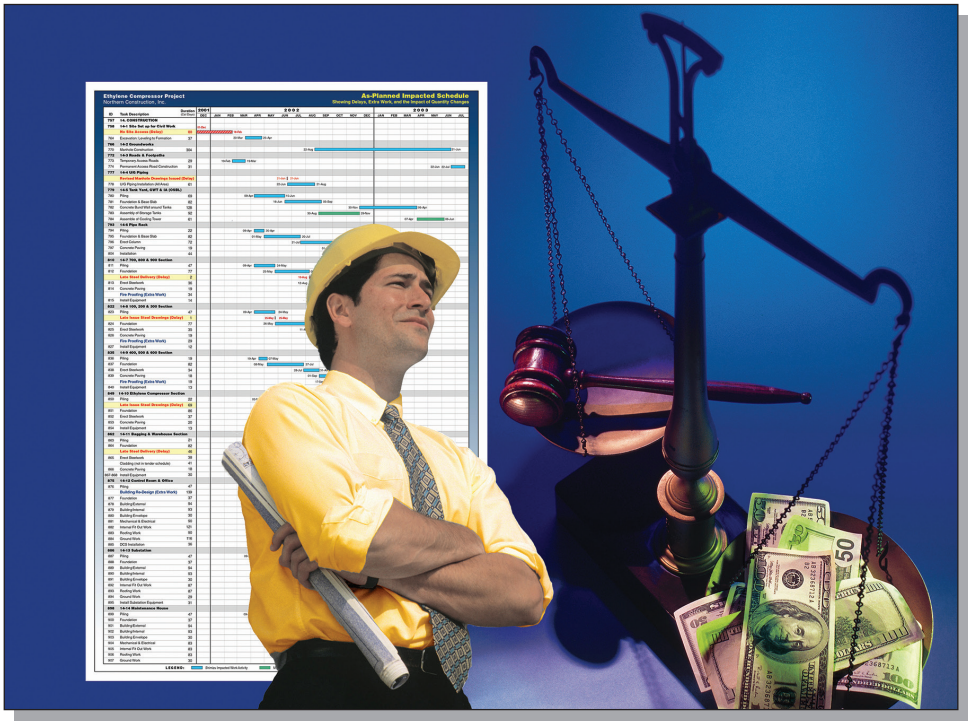
OVERVIEW

Long International assists in critical aspects of project management, cost and schedule control, contract administration, claims prevention, and dispute resolution. We establish an open and collaborative environment among all key parties to evaluate project planning and execution issues and facilitate solution identification.

Our experienced professionals are well versed in all aspects of project delivery. At our client's direction, we provide our services individually or collectively, tailored to fit each project's specific needs.



Our experts have managed, designed, and built projects and managed project cost and schedule control functions.

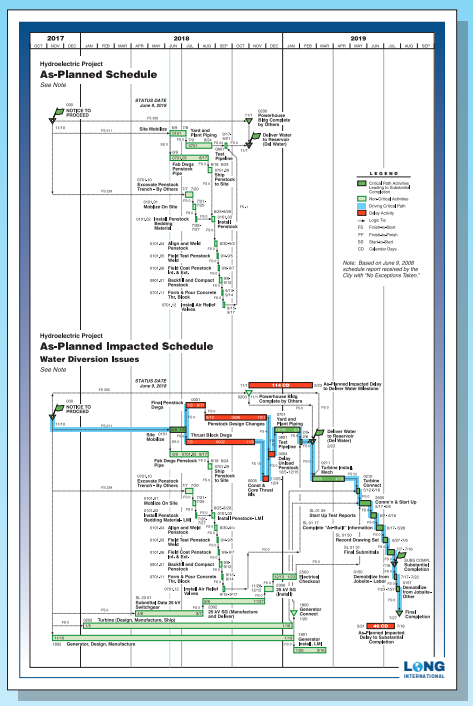


Project Management Plans, Project Controls, and Contract Administration Policies and Procedures

Long International provides guidelines for and assists with the development and review of our client's Project Management Plan to ensure that it provides the communication, management, control, and documentation policies, protocols, and procedures that our client intends. By thoroughly examining the plan, we ensure that it reflects the scope of work and responsibilities of each party engaged on a project. We determine owner and contractor responsibilities for project responsibility matrices that are consistent with our client's planned staffing assignments, contract terms and conditions, and job instructions, and we recommend an integration of the responsibilities with the Work Breakdown Structure to facilitate communication. A Project Management Plan should identify the following:

- Project scope and description
- Project parameters including design criteria, cost goals, quality objectives, schedule objectives, definition of terms, administrative protocols, and financial factors
- Permitting requirements and responsible governmental agencies
- Detailed criteria for the production and content of the design and construction documents
- Purchasing strategy and procurement plan
- Contracting strategy for the basic engineering package and the detailed construction contract, including subcontracting provisions
- Measurement and quantification conventions, constructability procedures, and value engineering
- Master project schedule with required milestones, owner's equipment procurement schedule, and the detailed engineering, procurement, construction, and start-up/occupancy schedules as they are developed
- Testing, turnover, start-up, and commissioning, or occupancy schedule requirements and procedures
- Estimating and project budget development procedures, budget reporting procedures, contingency utilization authority, and change control systems for total cost management
- Progress reporting requirements and progress review meetings for proper communication
- Management information systems including project cost and schedule controls, issue tracking, change management and control, procurement and material receiving logs, RFI logs, document control, and drawing tracking
- QA/QC procedures and inspection approach
- Construction strategy including site constraints, access, mobilization, staging, and ongoing operations

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As-Planned Schedules and Schedule Updates

Long International prepares or revises baseline CPM schedules, based on the contract scope of work requirements, contractual deadlines, resource loading and constraints, procurement plan, construction equipment availability, subcontracting plan, and the contractor's basic plan and sequence for performing the work. After preparing an initial draft, we review the baseline schedule with the contractor and owner to ascertain if it is consistent with their objectives. As work progresses, we may prepare schedule updates based on actual progress, including any change orders and other delays that may impact planned performance. We may also meet with the owner's representatives to discuss the baseline schedule and schedule updates, and we can prepare time impact analyses and requests for time extensions as a result of delays.

Schedule Quality Assurance

Many project schedules are poorly prepared and require extensive rebaselining during project execution to become useful project management tools to properly measure progress, determine the effect of changes in scope, and forecast the completion of contractual milestones and overall project completion dates. Poorly prepared schedules do not provide reliable tools to measure the number of and responsibility for delays to provide a basis for a time extension or to assess the need for acceleration. To rectify common problems with project schedules, Long International provides schedule quality assurance services. Our experienced scheduling experts evaluate the reasonableness of the scope, logic, and critical path of the baseline schedule and schedule updates. Our tools allow us to provide detailed comparisons of changes made to schedule updates and the effect of those changes on delay or acceleration of the work and resource utilization.

Cost Estimate and Forecast Reviews

We review cost estimates as they are prepared to determine if they include all of the work scope and reasonable engineering and project management costs, equipment and materials costs, labor rates and productivity factors, and design development and contingency allowances based on the completeness of the engineering and design upon which the estimate is based. We can then assist with cost forecasts as additional engineering is completed and field construction is performed to consider equipment and material cost trends, impact of changes, actual engineering and construction labor productivity, and delays that affect time-related costs.

Cost and Schedule Risk Analyses

Cost and schedule risk analysis is the process of associating a degree of confidence with each schedule activity or relationship lag duration or with line items of the cost estimate. Defining probability distributions for the schedule activity durations and cost estimate line items allows one to forecast the probability of achieving milestone target dates or cost forecasts at completion. Either as part of the baseline schedule preparation and initial cost estimate reviews, or as part of the schedule updating and cost forecast process, we provide risk analysis services that apply Monte Carlo probability determinations based on risk factors known for the project and based on our experience. Examples of risk factors that may affect schedule activity durations and costs include but are not limited to:

- Uncertainty in the scope of the work
- Uncertainty in quantities to be installed
- Extended design development effort for "first of a kind" projects
- Poor labor productivity
- Unusually severe weather and natural disasters
- Late governmental approvals, *e.g.,* permits, customs, regulatory
- Extended time required for procurement and delivery of equipment and materials
- Civil unrest and work stoppages
- Lack of qualified labor
- Late funding approvals
- Extended start-up period required to achieve full production
- Differing site conditions
- Unanticipated escalation of equipment and materials cost
- Contractor default
- Defective work

Project duration and cost forecast models that are derived from the schedule and cost risk analysis models strengthen management control by providing insight into the causes, degree of probability, and probable magnitudes of schedule slippage and cost overruns.

Contract Documents, Proposals, and Bid Packages

Long International's staff of professionals has extensive U.S. and international experience on large, complex projects incorporating conventional phased, fast-track, EPCM, or EPC turnkey concepts. Our senior personnel have on average over 35 years of experience working for major oil and chemical companies, manufacturing companies, power generation companies, public owners, international engineering and construction companies, mechanical and electrical contractors, construction consulting firms, banks, insurance companies, and financial institutions. Our experts have managed, designed, and built projects and managed project cost and schedule control functions. Through independent, cold-eyes reviews of contract documents and bid packages, we identify and eliminate potential inconsistencies, ambiguities, conflicts, errors, and omissions that, if uncorrected, could lead to costly changes, delays, and claims during project execution.

Contract Language Analysis

By performing a technical review of a contract prior to its execution, with an eye toward how the owner's and contractor's project management personnel would administer and execute it, we can identify exculpatory clauses and risks requiring special attention to avoid costly disputes.

Standard of Care

Language in EPC and EPCM contracts defines the standards of care and excellence and good industry practice required of contractors. Multiple design changes and failures to perform contractual responsibilities, as defined by contract clauses, increase the time and cost to complete projects.

Our experts have analyzed claims on some of the largest construction disputes in the world involving owner allegations that contractors failed to perform their work according to good industry practice or the contractual standards of care and excellence.

We assess compliance with the Project Management Institute's Project Management Book of Knowledge and Construction Extension, the Construction Industry Institute's Knowledge Structure, AACE International's Professional Practice Guides, and Construction Management Association publications.

When a negotiated settlement of a standard of care or standard of excellence claim is not reached, our experts have testified in international arbitration proceedings. Topics we have analyzed and testified on include:

- Failure of a contractor to provide sufficient and qualified design personnel to complete work in a timely manner
- Failure of a contractor to perform procurement tasks, such as expediting of equipment, resulting in delays and cost overruns
- Design issues resulting in start-up and commissioning problems
- Assessment of problems associated with poor project management performance
- The importance of sound project management practices
- Project management practice generally accepted in the industry
- Measuring conformance to the project management requirements of the contract
- Measuring conformance to generally accepted project management practices
- Allocation of responsibility for delay and damages caused by project management problems

Project Management Consulting Services

On-Site Project Management Consulting

Long International provides on-site consulting for clients needing experts who are stationed at a project site. Using a structured approach for cost and schedule control, progress reporting, schedule development, and labor productivity assessment, our involvement in the early stages of a project provides the greatest opportunity to effectively control costs, schedule, and quality of work. We tailor our on-site services to meet a client's specific needs. A sample of these services includes:

- Development of procedures, standard reports, coding structures, metrics, and templates
- Controlling budget development and performing job cost control
- Development and coding of actual costs, coordination with accounting, and preparation of projected expenditures
- Updating and tracking of contingency budget
- Development and maintenance of change order logs and supporting documentation
- Development and maintenance of request for information logs and supporting documentation
- Development and maintenance of field change order logs and supporting documentation
- Preparation and review of cashflow reports
- Baseline schedule development, including work breakdown structures, activity identification, durations, responsibilities, and resources
- Development of project and construction management staffing requirements
- Verification of field progress and preparation of schedule updates
- Preparation of look-ahead schedules
- CPM scheduling training for client personnel
- Identification of risks and impact issues
- Analysis of schedule delays and impacts for extensions of time and compensable delay costs
- Tracking of purchased and installed quantities, and corresponding labor man-hours/ preparation of periodic labor productivity reports
- Preparation of daily reports
- Preparation and review of weekly reports and monthly progress reports
- Linkage of CPM schedule to project cost report

Technical Issues, Schedule Impact, and Change Order Pricing

Disputed change orders that go unresolved during project execution can lead to delay in the implementation of the work. A contractor's interpretation of the technical requirements of contract design documents and specifications may differ from that of the owner. With our extensive engineering, schedule analysis, and cost estimating experience, Long International analyzes the technical entitlement, schedule impact, and pricing of unresolved change orders to negotiate and settle change order claims and avoid costly disputes at project completion.

Contract Administration and Owner's Representative

Our clients often experience engineering, project management, change management, scheduling, and cost control resource availability issues. We provide qualified and experienced experts on a periodic or full-time basis to address these resource needs to help ensure proper contract administration and monitoring of project schedule, cost, and quality performance.

Document Control and Tracking Procedures

Decision management is central to effective project management as well as cost and schedule control. Our project management experience has taught us to appreciate the necessity of an organized document control system and responsive and accurate issue and event tracking system to support the needs of managers at each level of responsibility. We assist in the development and maintenance of document control systems and issue and event tracking logs that are designed to suit each project's specific needs with respect to issue and/or event identification, follow-up, and expeditious resolution. Unresolved items should be reviewed at regular progress meetings, and resolution of each issue should be recorded in the log to document project history.

Project Reviews and Audits

Long International reviews and audits project management, contract administration, and project cost and schedule performance of active projects. We recommend audits at these project milestones:

- Completion of basic design or FEED, and development of detailed design procurement and construction bid packages
- Thirty percent detailed design completion
- Start of construction
- Start of piping erection or start of building interior buildout

A project manager can be entrenched in project details and optimistically believe a project is in better shape than it really is. The primary purpose of reviews and audits is to verify that project personnel are following recommended practices for:

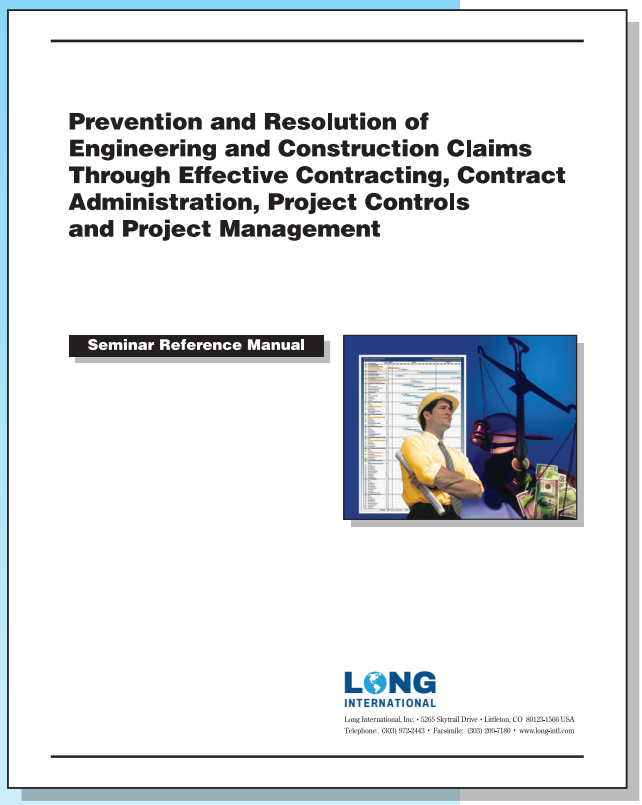
- Cost control
- Change management and control
- Schedule reviews and approvals
- Documentation control and maintenance
- Timely responses to contractor requests for information
- Contract administration
- Invoice reviews and approvals

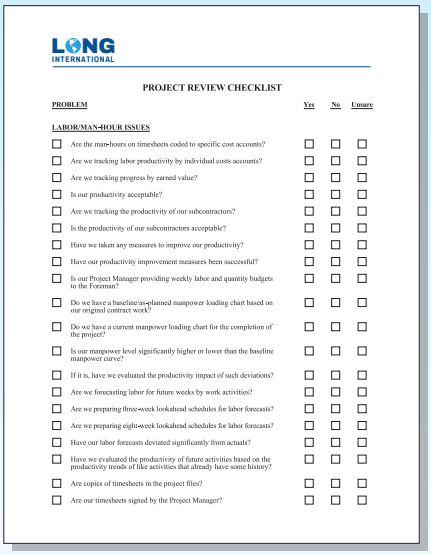
Long International's experience in project problem analysis allows us to identify potential problems that may evolve into delays and cost overruns and recommend mitigation measures before problems escalate into major disputes. We recommend practical solutions to problems that are based on cause-effect analysis. If an audit is performed early in a project, recommendations can be implemented to improve project execution and reduce time and cost overruns.



We apply a structured approach to cost and schedule control, progress reporting, schedule development, and labor productivity assessment. Our involvement in the early stages of a project provides the greatest opportunity to most effectively control costs, schedule, and quality of work.

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PROJECT REVIEW CHECKLIST

PROBLEM	Yes	No	Unsure
LABOR/MAN-HOUR ISSUES			
Are the man-hours on timesheets coded to specific cost accounts?	☐	☐	☐
Are we tracking labor productivity by individual costs accounts?	☐	☐	☐
Are we tracking progress by earned value?	☐	☐	☐
Is our productivity acceptable?	☐	☐	☐
Are we tracking the productivity of our subcontractors?	☐	☐	☐
Is the productivity of our subcontractors acceptable?	☐	☐	☐
Have we taken any measures to improve our productivity?	☐	☐	☐
Have our productivity improvement measures been successful?	☐	☐	☐
Is our Project Manager providing weekly labor and quantity budgets to the Foreman?	☐	☐	☐
Do we have a baseline/as-planned manpower loading chart based on our original contract work?	☐	☐	☐
Do we have a current manpower loading chart for the completion of the project?	☐	☐	☐
Is our manpower level significantly higher or lower than the baseline manpower curve?	☐	☐	☐
If it is, have we evaluated the productivity impact of such deviations?	☐	☐	☐
Are we forecasting labor for future weeks by work activities?	☐	☐	☐
Are we preparing three-week lookahead schedules for labor forecasts?	☐	☐	☐
Are we preparing eight-week lookahead schedules for labor forecasts?	☐	☐	☐
Have our labor forecasts deviated significantly from actuals?	☐	☐	☐
Have we evaluated the productivity of future activities based on the productivity trends of like activities that already have some history?	☐	☐	☐
Are copies of timesheets in the project files?	☐	☐	☐
Are our timesheets signed by the Project Manager?	☐	☐	☐

PROJECT REVIEW CHECKLIST
(Sample Page)

Project Management and Controls Seminars

It is vital for contractors and owners alike to keep current on a project's schedule and cost by maintaining a reliable cost and schedule control system. Scope changes, changes in labor costs, qualified labor shortages, increased equipment and materials costs, delays, and other foreseeable and unforeseeable events can disadvantage a project's cost and schedule. Maintaining a reliable schedule and cost control system enables an owner, engineering firm, and contractor to analyze design development and engineering progress, labor productivity, construction equipment performance and efficiency, material and equipment cost, and the proper allocation of overhead expenses. Improving cost, schedule, and quality performance is key to improving project execution efficiency. A reliable cost and schedule control system allows for changes as a project progresses. If construction costs run too high, corrections can be implemented.

To this end, Long International reviews existing project management and project controls procedures, develops recommendations for establishing or improving project management and cost and schedule control functions, and develops effective project management methodologies in all areas of a company's operations. This involves collecting industry standard procedures and sample stage gate processes and developing various project tracking tools, templates, and checklists. We design processes and procedures to be consistent with our client's needs and capacity to better manage projects. We then provide on-site training to the staff who are responsible for implementation.

Long International is experienced in project cost and schedule control and understands common systems and practices. We have assisted with the implementation of cost and schedule control systems, trained individuals and companies in cost and schedule controls practices, advised on cost and schedule control policies and procedures, and analyzed costs and delays on troubled projects worldwide.

Claims Prevention Training Seminars

Our experts have extensive claims analysis and dispute resolution experience encompassing over 400 projects worldwide. This experience has taught us many lessons to avoid the costly problems that claims create. We believe that essential elements of a claims prevention program include:

- Understanding the contract
- Knowing the basic claim entitlements and avoiding them
- Reviewing and approving as-planned schedules and understanding schedule administration
- Utilizing independent biddability and constructability reviews
- Preparing quality contract documents
- Implementing timely contract administration
- Integrating cost and schedule control
- Adhering to the contractual change management system
- Requiring proper and thorough documentation
- Documenting cause and effect of delays and increased costs
- Mitigating claims during engineering and construction
- Implementing periodic project reviews by senior management
- Analyzing risks before signing contracts
- Implementing an effective dispute resolution process

Long International has significant experience providing claims prevention training seminars to address these elements for our clients' management, engineering, and construction staff. We tailor our seminar, "Prevention and Resolution of Engineering and Construction Claims Through Effective Contracting, Contract Administration, Project Controls and Project Management," to each client's organizational structure, project execution styles, and level of experience and provide it in one- or two-day formats, depending on the level of detail that suits our client's availability and needs. Topics typically include the following:

- Why claims occur—the red flags
- Claim types
- Contract clauses
- Documentation
- Scheduling and delay analysis
- Quantification of damages
- Claims prevention
- Dispute resolution

In addition to training, we offer detailed checklists for:

- Bid preparation issues
- Reviews and approvals of as-planned schedules and schedule updates
- Site inspections prior to bidding
- Project documentation
- Problem identification and analysis
- Contractor's risk analysis

Using these checklists during project execution can help our clients' management teams manage and control their projects.

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