LONG INTERNATIONAL

# DOUGLAS A. KAGE, P.E., M.B.A.

Mr. Kage is a Principal with Long International, and has over 35 years of experience in the areas of construction claims, project control, project management, construction management, and engineering design services. He has expertise in cost evaluation, entitlement analysis, calculation of damages, and schedule delay analysis. While serving in various senior project management capacities, Mr. Kage worked on domestic and international EPC projects worth several billion dollars. He has served as Project Manager for design projects and studies in the power generation and telecommunications industries. During more than 14 years as a project control professional, Mr. Kage managed the project control departments for two different businesses, supervised 40 project control professionals, and developed an estimating department. He has directed the purchasing, warehousing, and distribution of millions of dollars of materials for construction projects and has managed a construction management field office. Mr. Kage also had pivotal involvement in process improvement initiatives, re-engineering efforts, and quality improvement programs. He brings extensive industry experience to the topics of industry practice and standard of care, and has authored several expert reports on the topic of damages.

## EDUCATION

M.S., Engineering Management studies, University of Kansas,
(all course work exclusive of thesis project completed), 1981–1988
M.B.A., University of Kansas, 1987
B.S., Civil Engineering, University of Colorado, 1979

## PROFESSIONAL REGISTRATIONS

Registered Professional Engineer, Colorado (No. 23815)

## PROFESSIONAL AFFILIATIONS

Association for the Advancement of Cost Engineering International

## TECHNICAL EXPERIENCE

Representative U.S. and international technical experience includes:

- Construction claims preparation, analysis, defense, and negotiation of settlements on industrial, utility, commercial, and residential projects
- Cost analysis and reconstruction
- Contract/entitlement analysis
- Direct and indirect damages calculations
- CPM schedule analysis of the impacts of delay, disruption, and loss of labor productivity
- Bid analysis and review
- Analysis of the impact of project changes on productivity
- Project management and program management of power generation and telecommunications projects

- Administrative positions as head of estimating, head of project control, and head of telecommunications design
- Proposal development and contract negotiation of engineering and construction projects leading to several hundred million dollars in revenue
- Contract administration and change order preparation and management
- Speaker on the subject of integrated project cost and schedule control
- Development of computerized database management systems
- Feasibility studies, pro-forma preparations, conceptual estimates, and risk analyses
- CPM schedule development and monthly progress reporting
- Structural steel design and reinforced concrete design of power facilities

## PROJECT EXPERIENCE

Mr. Kage has provided analysis and evaluation on construction claims for projects ranging from a single-family, luxury home to process and power plants worth several billion dollars. In addition, while working for leading firms in the engineering/construction industry, Mr. Kage held a variety of management positions on an extensive list of domestic and international design and turnkey projects. Mr. Kage began his career as a structural engineer working on coal and nuclear power plants. Representative projects include the following:

### Coal, Gas, Nuclear and Hydroelectric Power Plants, and Transmission and Distribution Facilities

- Performed cost analyses and quantum calculations in support of a multibillion-dollar ICC arbitration regarding a new nuclear power plant in Europe. The arbitration involved both affirmative owner claims as well as defense and rebuttal of contractor claims submitted in multiple tranches over several years. Contractor claims included both scope and delay-related claims involving contractor and subcontractor costs. As Lead Analyst, prepared affirmative owner claims and related reports. Owner claims were comprised primarily of time-related delay claims. Performed a review of planned budgets, analysis of cost records and payment data, segregation of time-related and non-time-related costs, allocation of time-related costs corresponding to specific delays, and isolation of other costs in respect of specific causation. Further coordinated a life-cycle economic loss claim prepared on the owner's behalf by another expert.
- Authored an expert report and was prepared to provide testimony on behalf of the contractor in rebuttal of the owner's request for damages as expressed in the case pleadings, and the expert report submitted by the owner's damages expert. The project involved the construction of a small hydroelectric plant in central Oregon. In addition to other relevant findings, provided opinions regarding the claimant's evidence in respect of causation and proof of quantum.
- Provided an analysis quantifying labor productivity losses due to extended overtime. The underlying work involved hurricane-related repairs to electric distribution systems located along the U.S. Gulf Coast.
- Provided analysis in defense of a $7.1 million claim brought by the mechanical erection subcontractor for increased scope, delay, extended overheads, and lost productivity. The project involved a $189 million simple cycle cogeneration plant in Connecticut.
- Developed the detailed schedule and project control system for a 2x400 MW coal fueled power plant in Virginia. Created and maintained an accounting and reporting system to track the financial participation of four consortium partners.
- Prepared the detailed schedule for a two unit "hybrid" power plant in Thailand consisting of fluidized bed boilers, steam turbines, combustion turbines, and heat recovery units. Also developed multi-currency project

cost systems to report consistent financial information in U.S. dollars while individual contracts fluctuated in multiple currencies.

- Prepared a detailed schedule for a 500 MW coal fueled power plant in Arizona.
- Project Manager for a conceptual design study and cost estimate involving a 2,000 MW power plant in Japan. The project involved executing a combination of local specifications and international procurements.
- Prepared the detailed schedule for a multi-block combined cycle conversion project located in Indonesia.
- Prepared a power plant design study comparing various "reference" plant designs in order to illustrate American design philosophies for a Japanese client.
- Developed the project control system for a shunt capacitor retrofit on a power delivery system in California.
- Developed the project control system for a revenue metering retrofit on a power delivery system in California.
- Performed foundation design for various non-Category 1 Structures on a nuclear power plant in the U.S.

**Oil Refinery, Petrochemical, Upstream Oil & Gas, and Chemical Plant Facilities**

- Performed cost and quantity analyses, quantum calculations, and rebuttal support work regarding a multibillion-dollar arbitration involving an in situ steam-assisted gravity drainage oil sands extraction facility in Alberta, Canada. The assignment included analysis of the cost and quantity growth on the project in support of the contractor's claims for its unpaid costs, as well as analysis and argument in the rebuttal of the owner and its experts in respect of the more than CAD$1 billion in owner's claims against the contractor.
- Provided an independent assessment of potential claim issues for an owner considering disputing the cost of a methanol plant under construction in Louisiana. Reviewed the various issues and change orders encompassing the dispute, evaluated the merits of the claims, and prepared summary documentation to support settlement discussions with the EPCM contractor.
- Reviewed a project estimate for reasonableness, and performed a cost optimization analysis of various alternate construction scenarios in order to determine if the existing plan was the most efficient. The work was executed on behalf of an insurance consortium funding repairs from a fire to a precipitator complex located in northern Alberta, Canada.
- Authored an expert report and was prepared to provide testimony rebutting contractor cost claims resulting from alleged schedule delays. The project involved the construction of a natural gas compressor station located in Colorado.
- Provided analysis of the owner's damages resulting from the delayed installation of an oil production facility in the Gulf of Mexico due to defects in the fabrication of mooring shackles. Identified the owner's direct costs and time-related costs from its job cost project files.
- Provided change order analysis and negotiation support on behalf of the owner for an active refinery project involving multiple units and four prime contractors.
- Evaluated a claim by the operator of a chemical storage facility associated with delays and cost overruns caused by scope changes and hurricane impacts. Operator alleged that the cost of the facility significantly increased as a result of owner-caused changes and impacts from Hurricanes Katrina and Rita, and that the owner agreed to compensate the operator for the hurricane impacts. The owner alleged that the delays and cost increases were primarily caused by other problems, including mismanagement by the operator, which were not related to the hurricanes.
- On behalf of the owner, evaluated contractors' claims for delays and cost overruns associated with two offshore gas pipeline projects in Trinidad.

- Retained by the owner of a natural gas liquids extraction and fractionation plant in Illinois involved in arbitration with the electrical and instrumentation contractor. Analysis and opinions provided included contract review, determination of breach of contract, delay analysis, and calculation of cost reimbursements owed to the contractor and damages incurred by the owner. The original contract value was $10.2 million.
- Retained by the owner of a surfactants expansion project in West Virginia to defend a claim by the electrical contractor for increased costs and loss of productivity. Evaluated standard of care, schedule, causation, labor productivity (including loss productivity due to changes), and damages.
- Evaluated the owner's project management and cost and schedule control procedures for performing major capital projects in Trinidad. Prepared stage gate project development procedures, and developed cost and schedule control procedures.
- Project Control Manager for a major refinery expansion that included ultra-low sulfur diesel modifications and oil sands crude integration. The project involved relocating existing units and facilities, modifications and expansions to existing units, and several completely new units.
- Project Control Manager for a gas field development program that included well-site piping design, a gas collection system, as well as condensate and water collection, transport, treatment, and disposal.

**Telecommunications Facilities**

- Provided support services to the project settlement of a $100 million cable TV installation project. Responsibilities included the direct negotiation of terms.
- Assisted in the preparation of a multimillion-dollar claim for a $350 million cable TV installation project, including the justification both of additional overheads and productivity losses due to client impacts.
- Project Manager for several HFC (hybrid fiber/coax) design projects, with and without walkout services, located throughout the northwest U.S.
- Commercial Manager for an EPC telecommunications build out in Idaho and Montana involving program scheduling, materials procurement and warehousing, and contract administration.
- Provided program management for a multi-project fiber optic build out of over 2,000 miles throughout the 12 westernmost states.
- Assigned to close out field operations of a cable TV build out in the Grand Rapids, Michigan area. Tasks included inventory accounting and disposition, subcontract and vendor closeout, and preparation of final billings to contractor.

**Single Family Residential, Apartment/Condominium Facilities**

- Provided cost analysis and co-authored an expert report rebutting claims by a general contractor against multiple subcontractors and suppliers regarding the costs of repairs resulting from alleged material and installation defects. The project involved a condominium complex located in Denver, Colorado.
- Prepared a claim and performed total cost reconstruction and a damages analysis for a resort condominium complex in Colorado.
- Provided cost estimate analysis and contract analysis for a single family luxury custom home located on the Florida coast.

**Civil, Water Resources, Site Work, and Earth-Filled Dams**

- Authored an expert report in support of potential testimony. Assignment was to provide an independent review of subcontractor's primary and alternate claims for additional compensation in respect of a

subcontract to provide various types of aggregate for a mine tailings site remediation project in Manitoba, Canada.

- Authored a water supply study for a New Mexico county. Analysis included historical flows, study of water rights in place, and conceptual design and cost estimates for new storage options.
- Prepared a feasibility study evaluating over 50 potential power plant sites located throughout the northwest U.S. The study included comparative conceptual estimates of site-dependent factors for evaluation purposes.
- Provided conceptual design and a cost estimate for a dam and retention pond at a power plant in Kansas.

## PROFESSIONAL EXPERIENCE

**Long International, Inc.**
*Littleton, Colorado (2007 to Present)*

Mr. Kage is a Principal with Long International. He provides a variety of claims analysis and dispute resolution services including, but not limited to, change order analysis, cost and damages analyses, schedule delay and acceleration analyses, productivity analysis, and review of bids, estimates, and contract documents. Mr. Kage also provides project management consulting services focused on the development of project cost and schedule control systems.

**Jacobs Engineering Group**
*Golden, Colorado (2003 to 2007)*

Mr. Kage served in a variety of capacities, generally involving Project Control Manager and Project Engineer responsibilities. Projects included two ultra-low sulfur diesel modifications, a major oil sands crude integration project, and a crude unit yield improvement project. Assignments also included gas field development projects, a process steam line repair project for a brewery, and a small capital expenditure program for a photographic manufacturing facility.

**Douglas A. Kage**
*Littleton, Colorado (2001 to 2002)*

As an independent consultant, Mr. Kage provided claims analysis consulting involving cost variance analyses and determination of entitlement and damages in support of dispute resolution for several multimillion-dollar industrial and commercial projects. In addition, he performed total cost reconstructions and schedule delay analyses. Mr. Kage also reconstructed and reconciled the contractor's detailed cost records for an $18 million construction project in order to resolve over $1 million in cost accounting discrepancies in pursuit of a cost recovery claim.

**Black & Veatch Telecommunications, Inc.**
*Aurora, Colorado (1998 to 2000)*

Mr. Kage served as Project Manager, and oversaw all Denver-based telecommunications projects. He also was group supervisor of the firm's HFC design group. His responsibilities included bidding of work, negotiation of contracts, execution of the work, cost control, and billings/collections. While in this position, he managed the Telecommunications Design Department into profitability, accelerated receivables, and established work production controls.

As Assistant Project Manager and Project Commercial Manager, Mr. Kage managed all Denver office telecommunications projects, including a $100 million EPC cable television upgrade project. Moreover, he served as the Division Office Control Manager responsible for all project control and commercial activity for the office. With procurement and materials responsibility for the EPC project, Mr. Kage managed the purchasing, warehousing, and distribution of over $8 million in materials and equipment. He also directly negotiated with the owner concerning major portions of a multimillion-dollar project termination agreement.

**Black & Veatch**
*Overland Park, Kansas (1995 to 1998); Orlando, Florida (1993 to 1995); Overland Park, Kansas (1981 to 1993); Kansas City, Missouri (1980); Overland Park, Kansas (1979)*

Mr. Kage served as Project Control Manager. In this role, he oversaw major projects including a 400 MW EPC power plant project in Thailand that involved both fluidized bed and combined cycle technologies. He successfully managed complexities pertaining to global contracting and multiple currencies. More specifically, he developed the first application of multi-currency accounting methods, and maintained consistent and reliable controls, accounting, and risk analysis during a collapse of the Thai economy. Mr. Kage also served on the Commercial Management Task Force, the Estimating Process Improvement Team, and the Process Improvement Facilitator Team.

Mr. Kage served as Project Field Control Manager, Office Manager, and Field Control Manager for the construction management office of a 490 MW coal fueled power plant project in Florida. He hired and supervised office staff and was responsible for office facilities. In addition, Mr. Kage oversaw all project control and contract administration functions. He was also responsible for sensitive programs for craft training, community involvement, and minority business participation.

As Estimating Unit Leader, Mr. Kage was responsible for all power division estimating work as well as the hiring and supervision of staff. He led the division through a major growth and improvement period by tripling personnel, developing historical databases and library, and overhauling and standardizing procedures. Moreover, he served on the firm's Total Quality Management Steering Committee.

As Project Control Manager, Mr. Kage was involved in significant projects including a 2x390 MW EPC coal fueled power plant project in Virginia and a multi-project 2,000-mile fiber optic network installation program. He developed and maintained complex accounting records and control systems to reflect the financial participation and performance interaction of four consortium partners. Moreover, he served as the lead scheduler for a 500 MW coal fueled power plant in Arizona.

Mr. Kage served as Project Engineer. In this role, he was responsible for the design of 200 miles of long distance fiber optic network installation in Arizona.

As Civil/Structural Design Engineer, Mr. Kage was responsible for the structural steel and concrete design for major components of a 2x850 MW coal fueled power plant in Utah, and a nuclear power plant in Oklahoma.

## PUBLICATIONS AND SPEAKING ENGAGEMENTS

"World Class Project Control," delivered at the *Association for the Advancement of Cost Engineering Annual Meeting*, Vancouver, British Columbia, June 1996.

**EXPERT REPORT PREPARATION**

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| 2020 | Authored an expert report in support of potential testimony. Assignment was to provide an independent review of subcontractor's primary and alternate claims for additional compensation in respect of a subcontract to provide various types of aggregate for a mine tailings site remediation project in Manitoba, Canada. |
| 2016 | Authored an expert report and was prepared to provide testimony on behalf of the contractor in rebuttal of the owner's request for damages. The project involved the construction of a small hydroelectric plant in central Oregon. In addition to other relevant findings, provided opinions regarding the claimant's evidence in respect of causation and proof of quantum. |
| 2008 – 2009 | Provided cost analysis and co-authored an expert report rebutting claims by a general contractor against multiple subcontractors and suppliers regarding the costs of repairs resulting from alleged material and installation defects. The project involved a condominium complex located in Denver, Colorado. |
| 2008 | Authored an expert report and was prepared to provide testimony rebutting contractor cost claims resulting from alleged schedule delays. The project involved the construction of a natural gas compressor station located in Colorado. |