

EDUCATION

B.Sc. Mechanical Engineering, University of Saskatchewan (Canada), 1968
Certificate, Operations Research / Management Sciences, University of Michigan, 1969
Certificate, Business Administration, University of Saskatchewan (Canada), 1972
Certificate in Technical Writing, Mount Royal College, 2003

ADDITIONAL COURSES AND SEMINARS

Probability and Statistics	Strategic Planning
Risk Analysis / Contingency Planning	Decision Making (Kepner - Tregoe)
Management by Objectives	Linear Programming for Refinery Optimization
Project Procurement Cycle	UOP Technical Conferences

PROFESSIONAL AFFILIATIONS

Association of Professional Engineers, Geologists and Geophysicists of Alberta
Association of Professional Engineers of Saskatchewan

EMPLOYMENT HISTORY

1984 - Present	President, Endeco International Ltd.
1996-2001	President, NANA/Colt Engineering LLC (a joint venture between Colt Engineering and the NANA Corp.)
1993-1994	President, CoAxia Inc. (a joint venture between Colt Companies and Axia Inc.)
1982 - 1984	Vice-President, Oil Sands Division, Techman International Ltd.
1981 - 1982	Senior Project Manager, Cord Projects Ltd.
1980 - 1981	Project Manager, Bechtel Canada Ltd.
1977 - 1980	Senior Manager, Project Management and Project Services, Associated - Pullman Kellogg Ltd.
1976 - 1977	Project Manager, Consumers' Co-Operative Refineries Ltd.
1973-1976	Project Manager, Associated Engineering Services Ltd. (seconded to Bechtel Inc. in San Francisco and Edmonton)
1958- 1973	Consumers' Co-Operative Refineries Ltd. - Senior Plant Engineer, Regina Refinery - Mechanical Superintendent / Interim Plant Manager, Saskatoon Chemical Plant - Operations Research Analyst, Saskatoon Home Office - Shift Operator, Regina Refinery

RELEVANT EXPERIENCE

Refinery Project Management Experience

Project Manager for Primary Upgrading on a major oilsands project. The scope of work encompassed all of the primary bitumen processing units, excluding hydrotreating, and included facilities with an estimated capital cost of \$2.2 billion Canadian.

Manager of Projects and Project Services for a major EPC company with operations in Edmonton, Calgary and Toronto. (I was responsible for project operations in all three operating centers).

Project Manager for a major expansion at a B.C. Oil Refinery. The scope of work included modifications to all refinery units including the Platformer, Unifiners, FCCU, Crude Distillation, and Plant Utilities and Offsites. Managed the process design in the Licensors' offices and then provided detailed engineering, procurement and direct-hire construction services.

Continued

Project Manager for a major expansion to a Saskatchewan Oil refinery. The scope of work included new Atmospheric and Vacuum Distillation units, a Saturate Gas Plant and modifications to all plant utility systems and offsite facilities.

Project Manager for a project to relocate a surplus Naphtha Hydrotreater and Catalytic Reformer Units from Corpus Christie, Texas, to Regina. The units were successfully dismantled, moved, re-erected and commissioned under my direction.

Project Manager responsible for co-ordinating and monitoring the work of Canadian engineering firms contracting to the Managing Contractor on a major oilsands project. The scope of work included the Sulfur and Amine Units, the Froth Treatment Plant, Waste Treatment and Disposal Facilities and the Athabasca River Bridge.

Project Engineer responsible for the design of the principal conversion units for a major oilsands project.

Project Director / Construction Manager responsible for the detailed design, fabrication and field construction of a project to convert a surplus Platformer to an Isomerization Unit. My responsibilities included co-ordination the Licensor's Schedule "A" package work, and all EPC activities for the Isomerization Unit and for required changes to ancillary units – the Naphtha Hydrotreater, and offsite facilities.

Project Manager for the process design phase of a project to construct an Isomerization unit at an Alberta refinery. We conducted the process selection studies, completed the process design of the Naphtha Hydrotreater unit and co-ordinated the Licensor's process design activities for the Isomerization unit.

Project Manager for process selection studies for a proposed heavy oil upgrading project for a major heavy oil upgrader.

International Consulting Services

In connection with a proposed project to relocate a surplus refinery from Naples, Italy to Pondicherry, India, I constructed an LP model of the refinery and used the model to evaluate proposed operations on various feedstocks. Also, I prepared cost estimate for the project and constructed an economic model to examine the expected economics of the project and assisted the proponents in making submissions to Indian financial agencies and licensing authorities.

Provided services to a Canadian company, operating in Nizhnevartovsk, Siberia, in connection with a proposed crude topping plant. I characterized the crude oil feedstock, simulated the topping operations and prepared a conceptual design and preliminary cost estimate for the facilities.

Assisted a large US-based client in evaluating a proposed investment in a facility to manufacture ammonia from a purge hydrogen stream at a location in the Gulf Coast.

Prepared a preliminary design and associated cost estimate and constructed an economic model of a facility to extract wax from vacuum gas oil for a refiner in Chile.

Provided consulting services to several groups in their evaluation of plans to relocate a surplus Canadian refinery to various third-world locations. Sites included Vietnam, India, Chile and China. Clients were investors and state oil companies.

Provided consulting services to a major Canadian energy company considering an investment in a proposed gas recovery project in the South China Sea offshore Vietnam. Our services included cost estimation, economic modeling and contract negotiations.

Provided consulting services to a company considering an investment in a lube oil / wax recovery refinery in Vietnam. Our services included the preparation of conceptual designs, cost estimates, optimization and economic modeling.

Provided consulting services to the Government of Vietnam and to the state oil company, PetroVietnam in soliciting and evaluating proposals from eighteen major international oil companies in connection with a proposed fuels refinery in Vietnam.