

# **RESUME OF QUALIFICATION AND EXPERIENCE**

**ALLAN R. NELSON, P. ENG.**  
**17510 - 102 Avenue**  
**Edmonton, Alberta**  
**T5S 1K2**

## **EMPLOYMENT HISTORY**

**1966 - Present**     **ALLAN R. NELSON ENGINEERING (1997) INC., Edmonton, Alberta**  
**President and Senior Consulting Engineer**

- Started a Consulting Engineering Practice specializing in Machinery Design and Insurance Investigations regarding machinery, gas, oil and petro chemical plants. Investigate fires and explosions involving equipment and machinery.
- Designed modifications to a wide range of drilling derricks and rig substructures.
- Detailed designs of mast for drilling and service rigs up to 1,000,000 lbs. gross nominal and derricks with mating substructures.
- Layouts and assemblies of drilling rig components to form complete rigs.
- Carried out investigations and have been involved in the rebuilding of plants and machinery after losses.
- Involved in major losses at Suncor Inc. and Syncrude Canada at Fort McMurray, gas plants in many areas of Alberta and B.C., chemical plants, such as Celanese Canada Ltd., Alberta Gas Chemicals, Shell Canada Products Limited, Petro Canada Products and Consumers' Co-operative Refineries Ltd. in Regina, Saskatchewan, refinery at Come By Chance, Newfoundland, coal mines at Grande Cache, Luscar, Crowsnest, Kaiser (B.C. Coal) and Chetwynd, B.C., potash mines at Saskatoon and Esterhazy. This has included detailed cost analyses and reviews of rebuild cost for insurance claims in excess of \$100,000,000.00.
- Investigations and analyses of drilling strings and downhole tool failures.
- Attended seminars regarding the investigation of explosions, fires and structural failures.
- Court appearances as an expert witness in fires, explosions, machinery evaluations and machinery losses. Appeared in Federal court in relation to patent infringement and provided analysis on machine patents. Involved in negotiations and mediations regarding claim settlements.
- Extensive experience in the analysis of machinery failures, plant explosions and fires.
- In the design field, have extensive experience in dynamic structures, piping, equipment sizing, selection and redesign after failure investigation, as well as trouble shooting and modification of operating machinery. This has involved design fabrication and operation of machinery.
- Machinery design for a wide range of industries.
- Complete design of a top drive for double drilling rigs.
- Design and modifications to a number of downhole tools and special fishing tools.
- Failure analyses of drilling strings and downhole tools including drill pipe, Hevi-Wate pipe, stabilizers, jars, reamers, drill collars and stabilizers.
- Insurance evaluations on over 150 service rigs as well as a number of drilling rigs for Lloyd Underwriters.
- Design modification and certification of drilling and service rigs.
- Involved in insurance claims resulting in rig and rig component rebuilds.
- Evaluations of oilfield, industrial and heavy construction equipment for Bank Financing. Extensive experience dealing with gas compressors.
- Completed failure analysis, cause of loss, and evaluations on compressor and engine failures, including at least 30 natural gas compressor fires.

- Design work on sawmill equipment and have investigated a number of sawmill fires by preparing cause of loss and evaluation reports for settlement.
- Cost analysis on the Tolko Industries' sawmill at Lewis Creek, B.C. in 2003 that was destroyed in a forest fire. This was a modern computerized mill including a major planing mill and kiln drying. The mill is valued at \$53,000,000.00.
- Production machinery and processes used to manufacture and fabricate machinery and equipment. This includes a wide range of fabrication of machinery structures and machining of valves and fittings for the oil and gas industries.
- Analysis of wheel and axle assemblies on heavy hauling equipment.
- Investigated a number of boiler failures over a period of years.
- Investigated accidents and appeared in court in relation to the operation of machinery and equipment.

**1951 - 1966**

**CURTIS HOOVER LTD., Edmonton, Alberta**  
**Engineer - General Manager**

- Operated mechanical field servicing to oil, petro chemical construction, drilling and servicing industry.
- Carried out design and manufacture of machinery and equipment in construction of overhead loaders, pulp and paper (timber harvester), sawmill equipment, wide range of drawworks, pumps, derricks and transportation equipment in the drilling industry.
- In-plant maintenance and modification of equipment in steel mills; electric furnace, heavy cranes, scrap shears, hydraulics on continuous casting, cut off mechanism on continuous casting machinery and mechanisms, pilot plant iron ore reduction project and in the oil, gas and petro chemical area.
- Involved in rebuilding gas compressors to 2000 hp, rebuilding rotary compressors and turbines, rebuilding centrifugal multi-stage high pressure pumps, rebuilding and maintenance of machinery and valves in chemical plants.
- Carried out programs of manufacturing pipeline valves and pumps for FWI Canada.
- Nondestructive testing, ultrasonic and magnetic particle inspection, and inspection of welded structures.

**1950 - 1951**

**OILFIELD MACHINERY CO. LTD., Edmonton, Alberta**  
**Owned and Operated**

- Owned and operated field service shop for the drilling industry in central Alberta.

**1949 - 1950**

**BARBER MACHINERY, Edmonton, Alberta**  
**Engineer**

- Involved in repair, building and designing oilwell drilling equipment.

**1948 - 1949**

**DOMINION ENGINEERING WORKS, Lachine, Quebec**  
**Junior Engineer/Draftsman**

- Junior Engineer/Draftsman in the paper machinery division.

**PROFESSIONAL AFFILIATIONS**

Member, Canadian Society of Mechanical Engineers (CSME)

Member, Association of Professional Engineers, Geology and Geophysics of Alberta (APEGA)

Member, Association of Professional Engineers & Geoscientists of Saskatchewan (APEGS)

Member, Association of Professional Engineers & Geoscientists of British Columbia (APEGBC)

Licensee of the Association of Professional Engineers of Saskatchewan (APES)

Member, Society of Tribologists and Lubricating Engineers (STLE)

**EDUCATION**

P.Eng., McGill University, 1948

Attended high school in Alberta