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**James Douglas "Doug" Norris, BSc, PEng  
Engineering Manager**

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## Education

1982                      BSc Chemical Engineering,  
Louisiana State University

## Professional Experience

March 2003 -            **El Reno Municipal Authority**  
December 2005        Consulting Professional Engineer

- Construction Inspector for \$13 million, bond financed, paving, drainage, water softening and NFPA fire main improvements and construction program.
- Evaluate, approve or modify construction procedures, payment quantities, schedule milestones and implement Field Change Orders.

March 2003 -            **Mesteña Uranium LLC**  
December 2005        Consulting Professional Engineer

- Coordinated and approved the process, equipment, site, electrical and automation design work for a 5000 GPM ion exchange uranium extraction and processing plant.
- Specified, bid and purchased all Plant process equipment including 22- AWWA/ API tanks, 20- ANSI centrifugal pumps, 10- ASME pressurized sand filters, 8- ion exchange "columns", 1-115 Ft3 filter press and 2- ASME rotary vacuum dryer systems. Working budget is \$9.02 million.

1990 -  
2002

**BHP Billiton plc/Rio Algom Mining Corp**

Senior Project Engineer – Smith Ranch ISL Uranium Mine

- Managed, coordinated and controlled the \$14.4 million grass roots design and construction program for two (2) -3000 GPM ion exchange, uranium extraction circuits and a 2-million lbs. per year uranium oxide processing facility.
  - Compressed pre-production schedule by 6 months - added \$1.6 million to Project's Base Case NPV.
  - Supervised, coordinated, and approved the design and CAD work of 7 engineering and design firms.
  - Implemented incentive-based contracts and other cost saving strategies to complete the project \$500,000 under budget and on schedule.
  - Supervised and approved the daily activities of up to 50 construction personnel.
  - Enforced EHS Management System -91,500 man-hours -no LTA's.
  - Specified and installed 50,000 Ft<sup>2</sup> slab and buildings, 18-ASME vessels, 62-ANSI pumps, 30-AWWA/ API tanks, 2-HTF heaters, 2-rotary vacuum dryers and a Class I non-hazardous disposal well.
- Designed, specified and installed a \$440,000, NFPA compliant, 1000 GPM fire-fighting system.
- Organized and "fast-tracked" a \$67,000 emergency product dryer turnaround.
- Decommissioned and reclaimed a 1.4-acre byproduct material, 11e. (2), storage impoundment.
- Quantified decommissioning design/ amortization schedule, eliminating \$300,000 (22%) from accrual account.
- Designed and installed a 150 GPM x 1420 PSIG pumping facility (\$200,000) for a Class I non-hazardous disposal well.

1989 -  
1990

**Power Resources Inc**

Process Engineer – Highland Uranium Project

- Supervised operations/ process, equipment, instrumentation optimization, design, and EHS risk evaluations.
- Implemented automated operations at Highland's Satellite 1 and revised SOP's, reducing shift personnel requirements and saving approximately \$62,000 annually.
- Optimized ion exchange resin regenerate composition, increasing resin regeneration performance by 28% and decreasing waste generation by 25%, and saving \$69,000 yearly.
- Expanded pumping capacity of a Class I, non-hazardous, disposal well by 50 GPM.
- Provided first-line operations supervision over weekends and second-line operations supervision during operating emergencies.

1986 -  
1989

**Everest Minerals Corporation**

Process Engineer

- Assumed Project Engineering responsibilities during design and construction phases of Highland's Satellite 2 (1500 GPM ion exchange circuit and pumping facility), completing the \$1.8 million project under budget and on schedule.
- Supervised equipment installation, start-up and operation of a 150 GPM reverse osmosis based groundwater restoration program at Mt. Lucas.
- Coordinated burner and fuel supply piping retrofits, refractory rehabilitation, flue gas scrubber and ID fan replacement, and control system upgrades (\$83,000) for a six heat, 5.4 MMBTU/Hr gas fired dryer at Highland's Central Plant.
- Prepared and implemented logic and equipment designs for an Allen-Bradley PLC 5/20 based batch process control system at Highland's Central Plant.

1982 -  
1986

**Champlin Petroleum Company**

Process Engineer

- Responsible for refinery optimization and expansion projects, process simulations, evaluations and optimization studies.
- Designed and installed flow control valves on a 4-pass, 120 MMBTU/Hr. process heater for a cost of \$100,000.
- Designed and implemented heavy sour crude desalter modifications (\$700,000), increasing capacity from 125,000 BPD, 27o API to 127,000 BPD, 20o API.
- Designed and justified tower internals (atmospheric and vacuum) and vacuum ejectors modifications during a \$5.8 million heavy sour crude unit revamp.
- Identified liquid distributor plugging in a 66,000 BPD, packed bed, vacuum distillation tower. Implemented process and equipment modifications, enhancing product yields by \$25,000 per day at a cost of \$50,000.
- Provided safety audits and investigations for processing units and process modification.

**Professional Designations**

1980

Professional Engineer  
State of Oklahoma  
Registration #18104

2002

ISO-14001 Certified  
Compliant Audits and Risk Analyses

## Core Competencies

Site/ Drainage/ Roads (AC & PC Concrete)

Reinf. Concrete Foundations/ Buildings

Power Distribution/ Transformers/ MCC's

Piping / Pipelines (ASME B31.3, NFPA-24)

Centrifugal / Reciprocating Pumps

ASME Pressure Vessels / Separators

Filtration / Reverse Osmosis / Ion Exchange

Fired Process Heaters / Heat Exchangers

Automation/ Measurement Instrumentation

Fans / Mechanical and Thermal Compressors PLC / SCADA Systems

Pressure Relief Systems

Fractionation Packing / Trays / Distributors

CSTR / Plug Flow Reactors