

ROY BROWN

Senior Consultant



Brown is a Professional Engineer with almost forty years of experience working at multiple Canadian nuclear power plants on behalf of both the owner and contractor organizations. Brown has broad and diverse experience working in a variety of roles in reactor operations, inspection and maintenance and has

been the accountable director for the most complex and highest cost projects for the largest nuclear refurbishments in Canada.

EXPERTISE

- ▶ Project and Program Management
- ▶ Construction Management
- ▶ Contract Management and Commercial Strategy
- ▶ Reactor Operations, Inspections and Maintenance
- ▶ Reactor Engineering Analysis Automation
- ▶ Leadership and Nuclear Safety Culture

38+ YEARS OF EXPERIENCE

PAST POSITIONS

LOOKAHEAD DIRECTOR

CanAtom Power Group

2018-Present

- ▶ Lookahead Director of the Retube and Feeder Replacement (RFR) project, part of a 12.8B\$ refurbishment of the Darlington Nuclear Generation Station in Ontario, Canada. This project is currently the largest infrastructure project in Canada.
- ▶ Accountabilities include establishment and management of a Readiness Process to ensure all work, workers, tools and procedures are fit for deployment in line with the requisite budget and cost.
- ▶ Accountable for overall ownership of the training program for nearly 1000 craft workers employed by the contractor, many new to nuclear and requiring leadership and understanding of core nuclear safety values and culture.

SENIOR DIRECTOR

OPG – Retube Feeder Replacement (RFR)/ Fuel Handling (FH)/ Islanding Projects

2013-2018

- ▶ Accountable for the overall performance (Safety, Quality, Schedule and Cost) for the three most complex projects requiring extensive site integration and radiological waste processing and transfer operations.
- ▶ Led a collaborative team of OPG personnel to oversee and aid the EPC contractors assigned to these scopes of work, including the Joint Venture (JV) of Aecon and SNC Lavalin, Candu Energy, ES Fox, BWXT and Black and MacDonald.
- ▶ Fostered a collaborative and balanced approach to performing work in a commercial environment, performing planned oversight of construction work and contractual obligations.
- ▶ Performed all reporting and progress updates to the OPG executive team, and collaborative team reporting to contractor leadership where required.
- ▶ Executed lead role for the Retube and Waste Processing Building for radiological waste processing and volume reduction facility in a compressed timeline to ensure the construction and commissioning of the building and tooling systems in service to support the RFR demolition process.

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UNIT DIRECTOR REFURBISHMENT OUTAGE

OPG – Darlington Refurbishment

2012-2013

- ▶ Established and met the readiness criteria for commencing the Unit 2 refurbishment outage by managing, via a coordination and control schedule, all required engineering and pre-requisite work, including outage work preceding 2016 as well as overall coordination and control of the Unit 2 outage.
- ▶ Supported the establishment and definition of the outage scope, duration and cost.
- ▶ Developed the outage structure and metrics including development and management of a Level 2 Coordination & Control Pre-Outage Schedule
- ▶ Integrated vendor activities and scheduling considerations into the outage schedule and facilitated station, engineering, and vendor resources to collaborate and resolve issues to drive outage window alignment.

DIRECTOR OF ENGINEERING

Atomic Energy Canada Ltd. (AECL) / Candu Energy Inc. – Ontario

2010-2012

- ▶ Two-year assignment involving a secondment from OPG to AECL to assist the execution of the Point Lepreau Plant Life Extension Project in New Brunswick, Canada.
- ▶ Management of the overall engineering function for the project for both the Retube/Feeder Replacement and Balance of Plant Refurbishment scopes of work. This included, but was not limited to the following:
 - Establishment of Project Principles
 - Re-Organization and Alignment of Engineering Function
 - Establishment of a Level 1 Project Schedule
 - Re-establishment of a working Risk Register
 - Implementation of a Significant Issues Resolution process
 - Establishment of a Readiness Process
 - Establishment of graded Challenge Meetings
 - Comprehensive use of/documentation of Lessons Learned
 - Establishment of a War Room
 - Development of leading Project Metrics
 - Re-establish use of Corrective Action process
- ▶ Implemented all aspects of the project operation/integration with NB Power and AECL Energy in a project-centric fashion.

DIRECTOR OF REACTOR MAINTENANCE, INSPECTION MAINTENANCE SERVICES

OPG Nuclear Fleet– Ontario

2007-2010

- ▶ Accountability for the development, commissioning and first use of inspection toolsets and execution of reactor safety and sustaining projects including:
 - Calandria Vault Inspection
 - Feeder Inspection
 - Upper Feeder Cabinet Robotics
 - Scrape
 - Calandria Tube Replacement



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- ▶ Significant achievements during this assignment included the successful replacement of both the pressure tube and calandria tube during the forced P871 outage.
- ▶ Consolidated all reactor-related maintenance activities and held accountability for the following work programs:
 - Universal Delivery Machine (UDM) Engineering and Maintenance
 - Scrape Services (Wet, Damp, Circumferential)
 - Channel Isolating Shield Plugs/Vented Closure Plugs
 - Single Fuel Channel Replacements
 - Calandria Tube Replacements
 - End Fitting Maintenance
 - Feeder Hub Refurbishment
 - Emergent Reactor Maintenance

DEPARTMENT MANAGER, FUEL CHANNEL MAINTENANCE PROJECTS

Bruce Power – Ontario

2006-2007

- ▶ Accountable for delivery of three main projects in this portfolio Bruce SFCR, Pickering SFCR and Bruce West Shift.
- ▶ Implemented a comprehensive reactor maintenance program, complete with dedicated staff to ensure safe, event-free performance of reactor maintenance.
- ▶ Successfully delivered the Bruce Power SFCR in the spring B761 outage. The level 1 plan required 10.5 days to complete. It was executed in 10.6 days, concurrent with the site being closed for close to 48 hours due to a severe winter storm. The project was completed on budget.
- ▶ Oversaw the successful transfer of irradiated components into the Road Runner Flasks and subsequent transport to Chalk River, AECL for analysis.
- ▶ Managed design and build of an enhanced set of tools to perform cutting and rewelding the stop collars on approximately 232 fuel channels.
- ▶ Other duties performed include being the Management Co-Chair for the IMS JHSC as well as championing safety improvement initiatives such as safe driving for IMS

DEPARTMENT MANAGER, DELIVERY AND MAINTENANCE SYSTEMS

OPG/Bruce Power

2001-2006

- ▶ Overall accountability for reactor maintenance for OPG/Bruce Power as well as management of Delivery Machines such as the fleet of 3 UDM's and the Bruce Minislar Machine.
- ▶ Implemented significant remedial work as well as organizational development for poorly performing tools and teams that resulted in excellent performance. Zero equipment failure outages have been demonstrated by all UDM's.
- ▶ Led several initiatives to identify gaps in IMS performance as it pertains to nuclear standards and regulatory requirements including conduct of engineering and conduct of maintenance for nuclear systems specifically as



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it pertains to IMS owned/operated equipment.

- ▶ Provided input to the Director's Conduct of Engineering program continues as well as preparation of a draft Conduct of Maintenance.

SECTION MANAGER, INSPECTION SERVICES DIVISION

OPG – Pickering, ON

1996-2001

- ▶ Accountable for setting up the organizational infrastructure for the Maintenance Manager's section within Outage Recovery Department (ORD).
- ▶ Developed a centralized fuel channel maintenance department for Ontario Hydro Nuclear including project management of design and manufacturing/procurement of all required fuel channel maintenance tooling, storage and handling, maintenance methodology and procedures, tool proving and functional testing, tool configuration management and tooling design change control.
- ▶ Trained personnel capable of performing fuel channel maintenance from each site to ensure effective mobilization of maintenance staff for evolving maintenance as well as planned maintenance during scheduled outages.

VARIOUS LEAD POSITIONS AT DARLINGTON AND PICKERING

1990-1996

EDUCATION

Bachelor of Science in Mechanical Engineering, University of Calgary, AB

PROFESSIONAL AFFILIATIONS

Member of Professional Engineers Ontario

