



**Written submission from  
Unified Engineering**

**Mémoire de  
Unified Engineering**

In the Matter of

À l'égard de

**Bruce Power Inc. – Bruce A and B  
Nuclear Generating Station**

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**Bruce Power Inc. - Centrale nucléaire de  
Bruce A et Bruce B**

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Request for a ten-year renewal of its Nuclear  
Power Reactor Operating Licence for the  
Bruce A and B Nuclear Generating Station

Demande de renouvellement, pour une période  
de dix ans, de son permis d'exploitation d'un  
réacteur nucléaire de puissance à la centrale  
nucléaire de Bruce A et Bruce B

**Commission Public Hearing – Part 2**

**Audience publique de la Commission –  
Partie 2**

**May 28-31, 2018**

**28-31 mai 2018**



Senior Tribunal Officer, Secretariat  
 Canadian Nuclear Safety Commission  
 280 Slater Street, P.O. Box 1046, Station B  
 Ottawa, ON K1P 5S9  
**Public Hearing Ref. 2018-H-02**

Unified Engineering strongly supports Bruce Power’s 10-year License Application and would like to share with the Commission an example of an improvement initiative, the Fast Acting Platform which was engineered and manufactured by Unified, which demonstrates the commitment to safety and innovation at Bruce Power.

For background, Unified Engineering is an integrated Manufacturing and Design Company with a primary focus on the power generation, nuclear and steel industries. Some examples include structural engineered and fabricated shielding canopies, lifting and obsolete auxiliary equipment to waste storage flasks and weldments.

The maintenance on the reactor face is a necessary task that, like every job, has its risk factors. Prior to the solution developed by Unified, scaffolding was erected to support refurbishment thirty feet above the pit of the fuel machine ducts right on the face of the reactor. While scaffolding is commonly used in the construction industry, in the nuclear industry with the requirement of hazmat (radiation protective) outfits, working on scaffolding is even a greater risk. Aside from the restricted motion inherent with hazmat outfits, the working at heights, foreign material exclusion (small connecting bolts and clamps and associated scaffold tooling) and dose for the scaffolders are just a few risk factors. The chart below compares the previous scaffolding system with the 'Fast Acting Platform' solution.

|                      | Working at Heights | Foreign Material Exclusion | Tooling to Deploy | Deployment Time | Radiation Exposure |
|----------------------|--------------------|----------------------------|-------------------|-----------------|--------------------|
| Scaffolding          | ✗                  | ✗                          | ✗                 | ✗               | ✗                  |
| Fast Acting Platform | ✓                  | ✓                          | ✓                 | ✓               | ✓                  |

Safety culture is paramount at Bruce Power and this is evident with senior management’s mandate to come up with a ‘better way’ and remove the need to use scaffolding. This mobile platform fits through the airlocks, capable of being lifted with slings to be lowered in place on the bridge rails. Unified together with Bruce Power personnel exceeded expectations in quality, function and delivery.

The Fast Acting Platform is an innovative Reactor Area Bridge Maintenance solution that Unified Engineering & Bruce Power jointly presented at the CNSC – CMNCC

2017 Conference. Along with the presentation a paper was submitted to highlight OPEX and the successful joint partnership.

This project is exemplary on multiple levels:

- Safety – Bruce Power safety culture is innovative

- Critical Path – Schedule has been reduced by at least 5 days
- Supply Chain – Bruce Power sources projects to the most appropriate companies based on specificity and ability to perform.

The Fast Acting Platform is a case study in innovation, emergency management and preparedness, waste management, local economic development and community investment and nurturing a strong sustainable supply chain network.

- Innovation – proactive obsolescence in retiring scaffolding with a more effective solution
- Emergency Management and Preparedness – removing the risk of working at heights altogether
- Waste Management – Scaffolding along with associated tooling increases waste and waste handling versus the Fast Acting Platform repeatable solution
- Local Economic Development – engaging a local supplier
- Community Investment – investing in a 'home grown' solution to keep safety paramount
- Sustainable Supply Chain – nurturing niche suppliers and create a collaborative environment

Finally, the ability to surface an immediate safety concern and engage key internal personnel to work in conjunction with Unified Engineering is a tangible example of Bruce Power’s strong nuclear safety culture.



Figure 1: Infographic Fast Acting Platform



Figure 2: Deployment of Fast Acting Platform

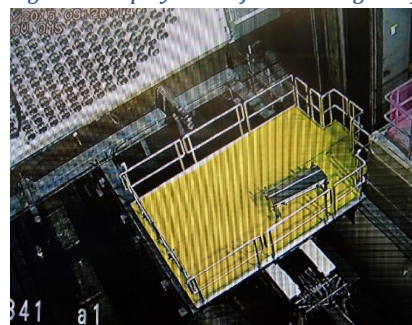


Figure 3: Fast Acting Platform in use

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# Fast Acting Platform (FAP)

Reactor Area Bridge Maintenance Solution

**Case Study: 'Safety First' Culture at Bruce Power**





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# Fast Acting Platform

A foldable ♦ Multi-height ♦ workplatform



Figure 3: Infographic Fast Acting Platform



Figure 1: Deployment of Fast Acting Platform

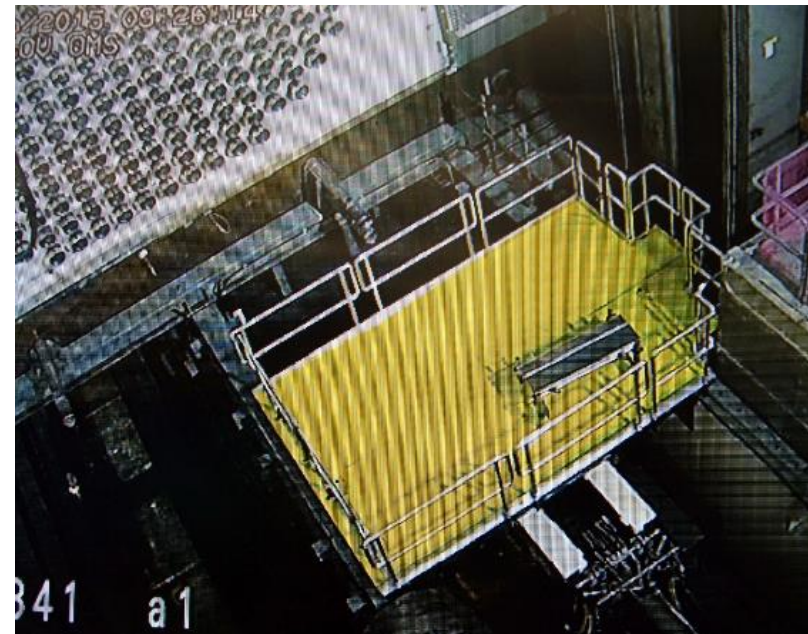


Figure 2: Fast Acting Platform in use



# Comparison Chart

|                      | Working at Heights | Foreign Material Exclusion | Tooling to Deploy | Deployment Time | Radiation Exposure |
|----------------------|--------------------|----------------------------|-------------------|-----------------|--------------------|
| Scaffolding          | ✗                  | ✗                          | ✗                 | ✗               | ✗                  |
| Fast Acting Platform | ✓                  | ✓                          | ✓                 | ✓               | ✓                  |

## Features FAP

- On casters for maneuverability
- Lockable hinge rated for application
- Pick-point off center
- No holes for parts to fall through
- No scaffolding
- Minimal deployment time



# Recap



Bruce Power's ability to surface an immediate safety concern and engage key internal personnel to work in conjunction with Unified Engineering is a tangible example of Bruce Power's strong nuclear safety culture.

- **Innovation** – proactive obsolescence in retiring scaffolding with a more effective solution
- **Emergency Management and Preparedness** – removing the risk of working at heights altogether
- **Waste Management** – Scaffolding along with associated tooling increases waste and waste handling versus the Fast Acting Platform repeatable solution
- **Local Economic Development** – engaging a local supplier
- **Community Investment** – investing in a 'home grown' solution to keep safety paramount
- **Sustainable Supply Chain** – nurturing niche suppliers and create a collaborative environment