

September 11, 2019

Bruce Power Supplier Forum 2019

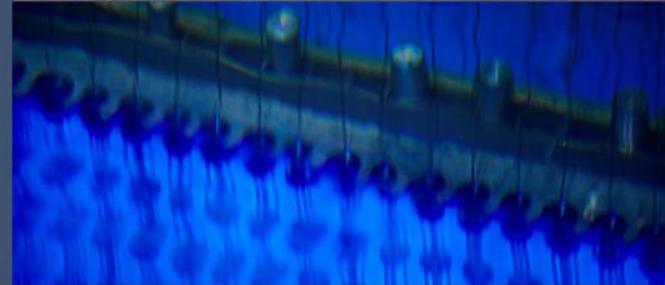
Alpine Ski Club
Blue Mountains, ON



Safety Message

Kevin Schmidt

Department Manager,
Construction Health & Safety

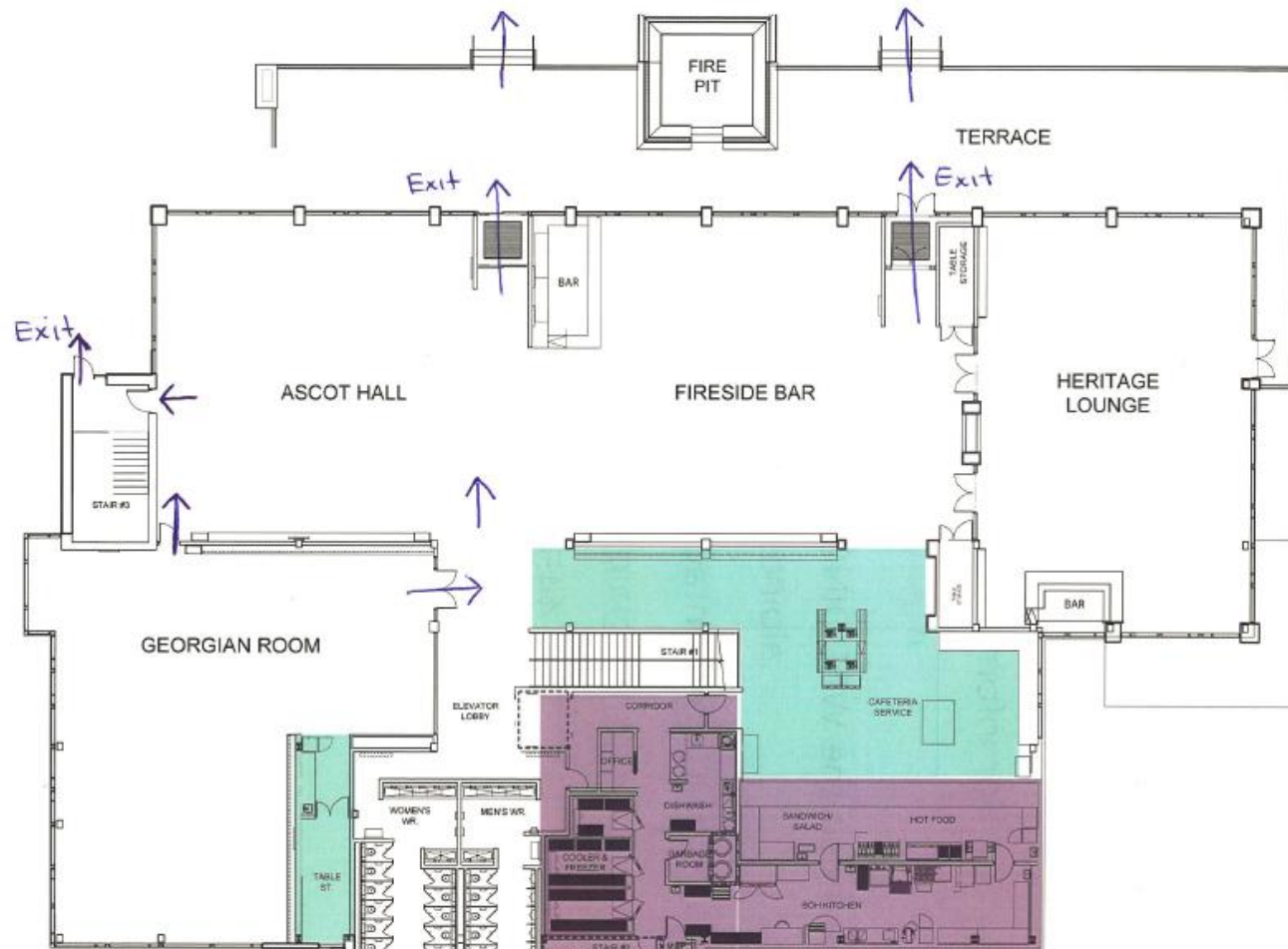


Safety Information

Fire: Evacuate the building using the nearest exit. See floor plan.

Severe Weather/Tornado: Follow the instructions of the Alpine event coordinator. All persons should make their way to the lower level using either stair # 3 or stair #1 and proceed to the Athletes' Room at the bottom of stair #3.

In case of emergency:
dial 911



Welcome – Today's Agenda

Richard Horrobin
VP & Managing Director, Supply Chain



Today's Agenda

Agenda Item	Presenter	Time	Duration
Safety Message	Kevin Schmidt	0845-0850	5
Welcome & Introductory Messages	Richard Horrobin Jane McKenna	0850-0905	15
Bruce Power – Updates <ul style="list-style-type: none"> • Corporate Update • Schedule Adherence For Excellence (S.A.F.E) • Operational Update • MCR Update 	Mike Rencheck Eric Chassard Dave Andrews Rob Hoare	0905-1005	60
Procurement Outlook	Richard Horrobin	1005-1020	15
Supplier Relations: <ul style="list-style-type: none"> • Supplier Performance • The Cost of Poor Quality 	Ian Rowley	1020-1040	20
Closing Comments	Mike Rencheck	1040-1055	15
Logistics – Lunch & Golf	Richard Horrobin	1055-1100	5

Opening Comments

Mike Rencheck,
President & CEO

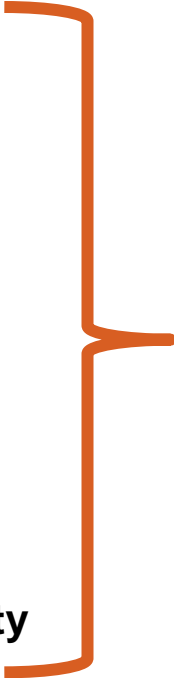


Context for our Suppliers

- **What's important to Bruce Power?**
- **What do we need from our supplier partners?**

Priorities:

1. **Operational Excellence**
 - i. **Safety**
 - ii. **Equipment Performance**
 - iii. **Managing Costs**
 - iv. **World-Class Schedule Adherence**
 - v. **Meeting our IESO Commitments**
2. **Supplier Excellence**
 - i. **Outstanding Supplier Performance**
 - ii. **Understanding the Cost of Poor Quality**



These are the messages you need to take away with you from today's session.

Schedule Adherence For Excellence (S.A.F.E.)

Eric Chassard

EVP, Projects & Field Services



The 5 Priorities

- Safety
- Operational Excellence
- Project Excellence
- Innovation & Sustainability
- People & Community



Project Excellence

- Safety / Quality / on budget / on schedule.
- Timely and accurate project controls input information (Schedule Y). 1 integrated schedule



S.A.F.E.

Schedule Adherence For Excellence

Innovation & Sustainability

- Cost saving target : 25%
 - Engineering
 - Procurement
 - Construction
 - Compare our performance to best practices (productivity/wrench time)
 - Simplify processes
 - Schedule Adherence

What good looks like? Examples

- Tools in hands 30 min after shift starts
 - 10-10-10 rule
 - 0700 - crew meets at location, including Greenman and Clearance Holder.
 - 0700 - 0710 - vendor VMB and station Alerts - Vendor is to review BP Weekly VMB and pull out what is valid
 - 0710 -0720 - task specific PJB
 - 0720 - Job Site Review
 - 0730 - Tools in Hand
- Foreman knows the schedule and what he has to accomplish during the shift, critical evolutions and QC hold points clearly identified and highlighted during PJB

Checked daily by Bruce Power Construction FLM

Operational Excellence

Dave Andrews

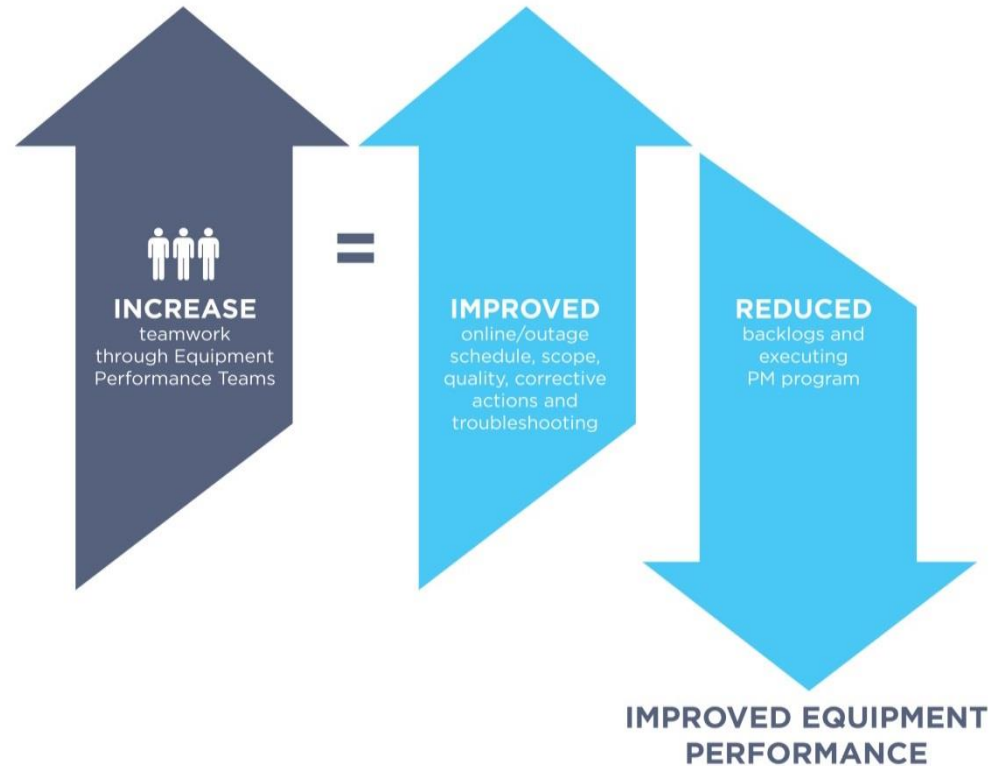
SVP, Equipment Performance



Forced Loss Rate Actions

List of factors to support a force loss rate of 1.5%:

- Force Lost Rate Analysis
- Backlog Reduction
- Outages Performance Improvements
- Asset Management



Outage Improvement Plan

Goal:

Deliver a top decile capability factor for Bruce Power through predictable outage performance. Achieve results in fall 2019 outages (U5 & U2)

Key Enablers:

Proficient Outage Staff

- Outage Control Centre training
- Industry expert mentorship

High Quality Preparation

- Integrated schedule development with Maintenance, Ops and Support groups
- Milestone quality

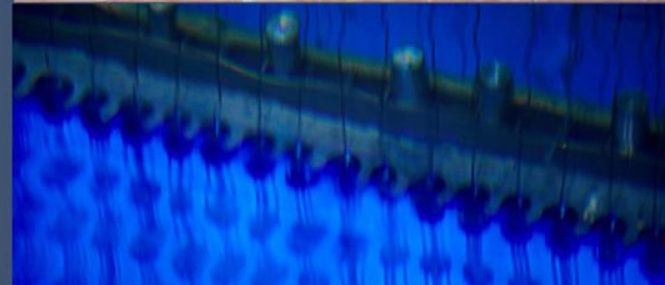
Effective Lessons Learned

- Top items impacting safety and productivity identified and corrective actions applied to the fall outages

MCR Update

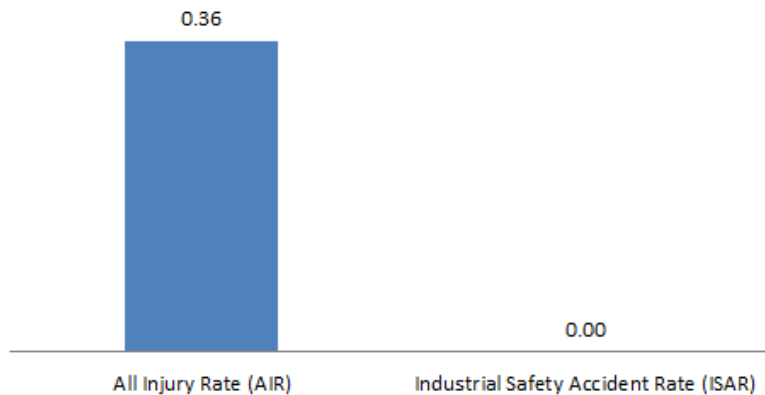
Rob Hoare

Construction Director, Major Projects

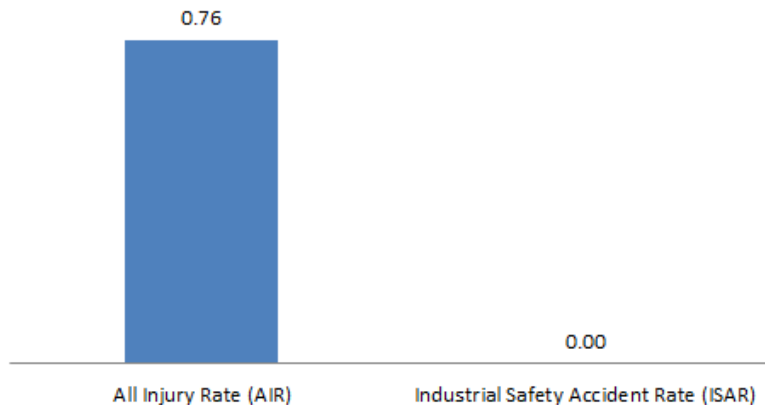


MCR – Safety Statistics

MCR Safety - Year to Date



MCR Safety - Project to Date

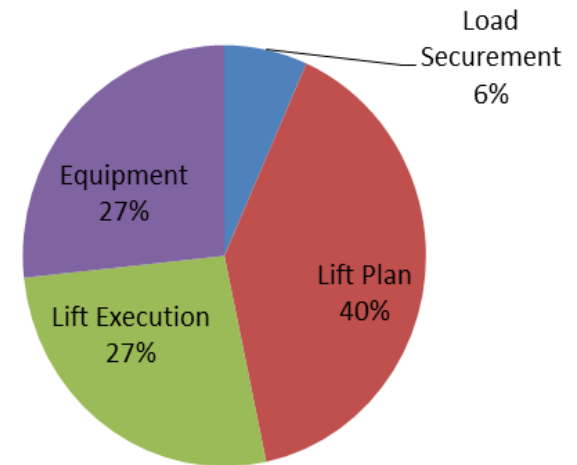


- Fire spray material fell in employee's eye (SCR#28734850)
- Beam tipped striking employee's shoulder (SCR#28743022)
- Drill bit struck employee's finger (SCR#28750948)
- Metal band struck employee's eye/face (SCR#28687744)
- Spud wrench struck employee's cheek (SCR#28694656)
- Employee tripped and lacerated thumb on impact (SCR#28696163)

Safety Focus

- **PAPR Selection**
 - Plan to move from Plastics to PAPRs
- **Lifting, Rigging and Load Securement is a focus for Bruce Power**
 - Plan to improve performance has been communicated to all vendors doing work on site.
- **Winter Readiness**

Lifting/Rigging/Load Securement



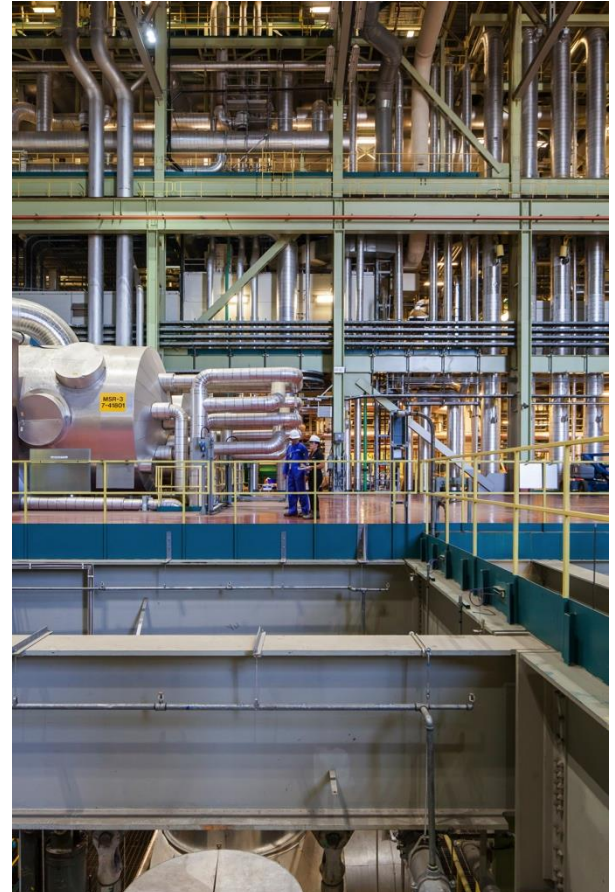
Schedule Adherence

- Critical Path Target 100%
- All remaining Activities – 90% Adherence



S.A.F.E.

Schedule Adherence For Excellence



Level 5 Schedule Development

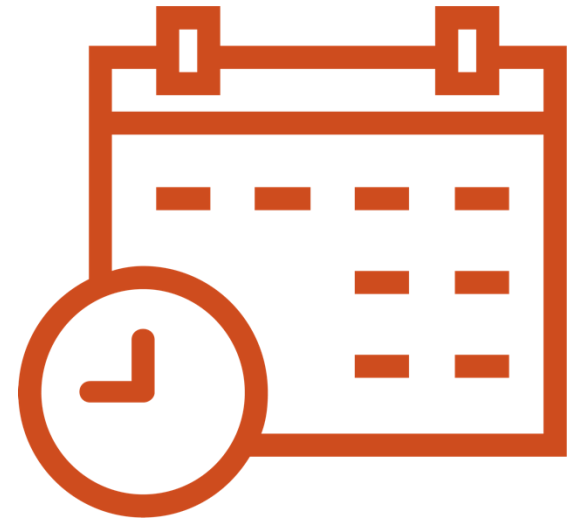
Thank you for your efforts to deliver the level 5 Schedule

NEXT STEPS

- Schedule integration with a focus on Project target duration and Project Interfaces
- Performance Schedule Baseline September 27, 2019

Schedule Metrics

- Daily Schedule Adherence against Baseline
- Progress of critical and near critical path activities against baseline
- Progress of activities in outage windows
- Daily Schedule adherence – starts and finishes
- Look ahead – upcoming critical activities



Vendor Readiness to Execute

- Engineering Complete
- Material on site
 - Staged and ready to go (Reviewed by FLM doing the work)
- Executable Schedule Baselined
 - All activities on the plan
- Comprehensive Work Packages Complete
- Trades trained and ready to work
- 30 minutes from start of shift to start work
- 60 minutes from start of shift to working in the vault

Facility Readiness

- ✓ Cooling Tent and laydown areas complete and transferred to MCR
- ✓ RCC / FCC and AVTS modular buildings complete
- ✓ Temporary Power Project Complete
- ✓ B07 warehouse turned over to MCR
- ✓ BBAB complete
- ✓ B16 additional storage buildings complete
- ✓ Additional parking at BB complete
- ✓ Additional BB Guardhouse completed
- ✓ MCR Training Facility completed
- ✓ BB Security Fence and crane pad extension complete
- ✓ Central Storage Facility – March 2020

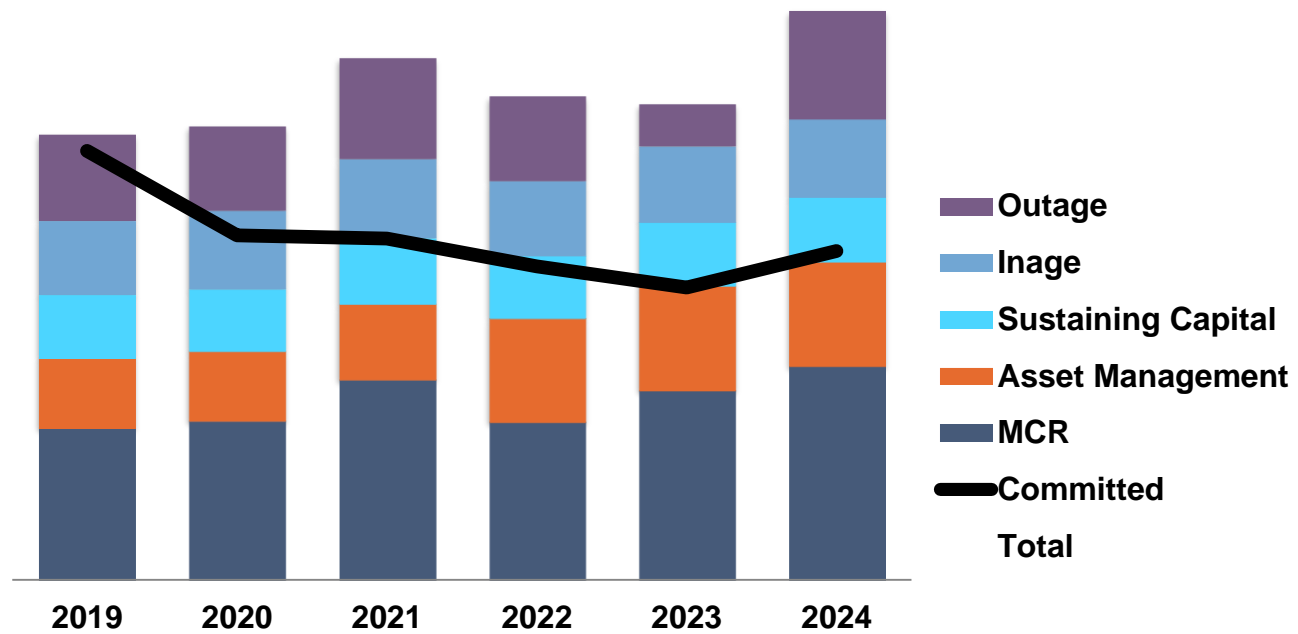


Procurement Outlook

Richard Horrobin
VP & Managing Director, Supply Chain

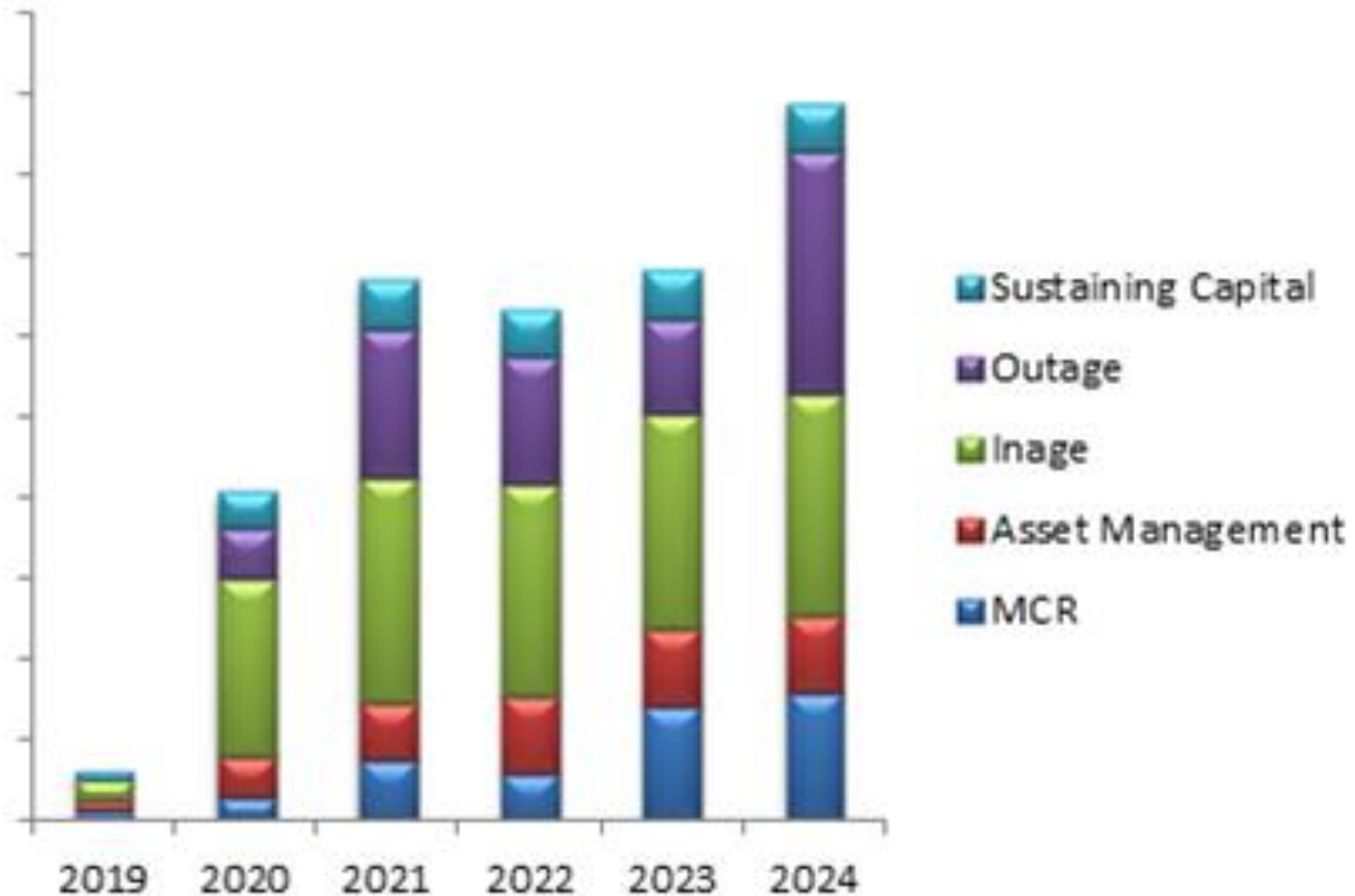


Investment at the Bruce Site



2020-2024:
 Committed: \$6.0B
 Uncommitted: \$3.3B

Summary of Uncommitted Spend by Budget



Sourcing Objectives

Five Core Principles

1. Encourage large, strategic relationships among suppliers.

- Significant capacity, including local capacity.

2. Protect Bruce Power's future success.

- Secure strong alternate suppliers for all key work programs for risk management purposes.

3. Bundle like work and focus on program success, safely, on time and on budget.

- Goal: to identify a shortlist of Tier 1 Supplier Partners for Bruce Power for a 6-year period. Opportunity for other Suppliers as subs to these Tier 1.

4. Drive 25% or greater reduction in project costs across site.

5. Drive local investment and supplier membership in the Nuclear Innovation Institute.

Prime Suppliers

Electrical

- Batteries – Kinectrics
- Circuit Breakers – Framatome
- Protective Relays – GE Multilin
- Transformers – ABB

Rotating Equipment

- Generators – GE
- Motors – BWXT-NEC, Toshiba
- Motors Refurbishment – Motion Electric
- Pumps – Flowserve, Hydro Aire
- Turbines – Siemens

Valves & Heat Exchangers

- Valves – Lakeside Controls
- Heat Exchangers – BWXT

Engineering

- BWXT, Kinectrics, Tetra Tech

Outage and Maintenance Services

- BWXT, Framatome, Kinectrics, Laveer Engineering,
- SNC-Lavalin

Maintenance, Repairs & Operations Consumables

- Canada Steel Service, Canadian Bearings, Charles Jones, Crane Supply, Ideal Supply, Levitt Safety Ltd., Niagara Fasteners, Praxair, Swagelok Southwestern Ontario

MCR – Major Component Replacement

- ATS Automation, Black & McDonald, Kinectrics, Shoreline Power Group, SNC-Lavalin, Steam Generator Replacement Team (SGRT)

Major Procurements from 2019

Program	Bundle
Design Engineering	Electrical I&C Fuel Handling Valves Rotating Equipment Mechanical Specialized Engineering Emergent Work
Enterprise Construction and Maintenance - Maintenance	Extended West Shift Plus Steam Generator Inspection Feeder Inspection
Enterprise Construction and Maintenance - Construction	Electrical I&C Valve Services Heat Exchangers Pumps and Motors Buried Piping High & Medium Voltage Cables, Switches & CBs Turbines and Generators

Major Procurements Upcoming

Material	Time Frame
Large Motors	2020-2024
Small Pumps & Motors (less than 200HP)	2020
PHT Motors	2022
PHT Rotating Assemblies	U3-8
PHT Pump Covers	U3-8
Turbine Hall Crane	U3 MCR
Valves	
Heat Exchanges	2021 - 2025
Transformers	2019-2033
Protective Relays	2019-2031

Material	Time Frame
Circuit Breakers	2019-2045
Fuel Handling Kits	2019-2023
Single Fuel Channel Replacement Kits	TBD
Cable	2020-2026
Calandria Relief Duct Tooling	2021
MCR - Feeder Cabinets	U3-8
MCR - Feeder Supports	U3-8
MCR - Feeder I&C	U3-8
Retube Waste Containers	U3-8
Feeder Pipe	U3-8
Closure Plugs	U3-8

Supplier Performance – 2017/2018/2019

Performance (Safety, Quality, Cost and Schedule)	2017 – Key Suppliers	2018 – Key Suppliers	2019 – Key Suppliers	Areas of Improvement
Consistently strong performance in all metrics	3	2	6	<ul style="list-style-type: none"> Maintain Stable Performance
Performance Improving	3	9	3	<ul style="list-style-type: none"> Quality Schedule Adherence
Needs Improvement	6	6* (Includes a Tier 3 Supplier)	10	<ul style="list-style-type: none"> Quality Manufacturing scheduling Schedule Adherence HU Performance Open Claims

Supplier Performance

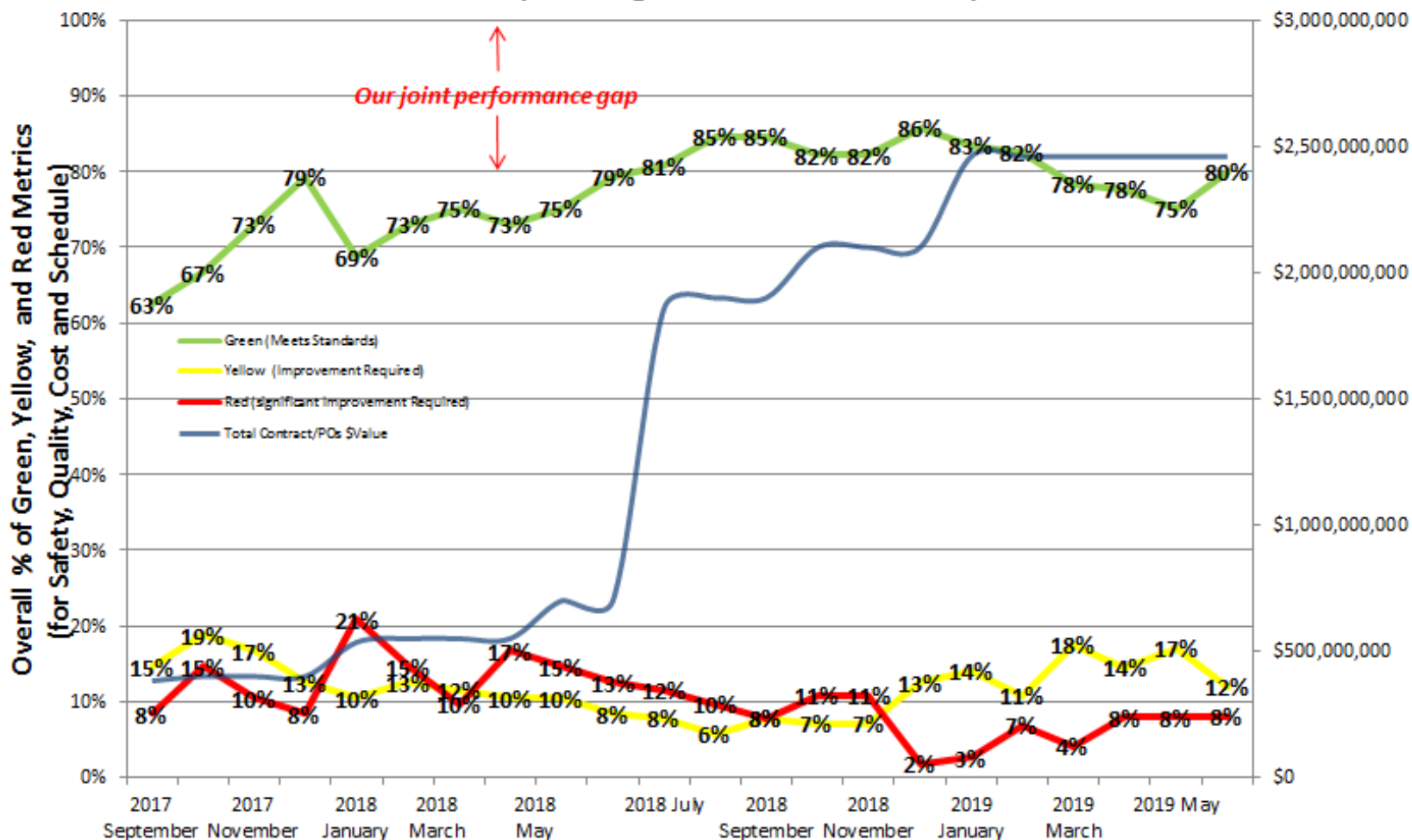
Ian Rowley

Executive Director, Supplier Performance

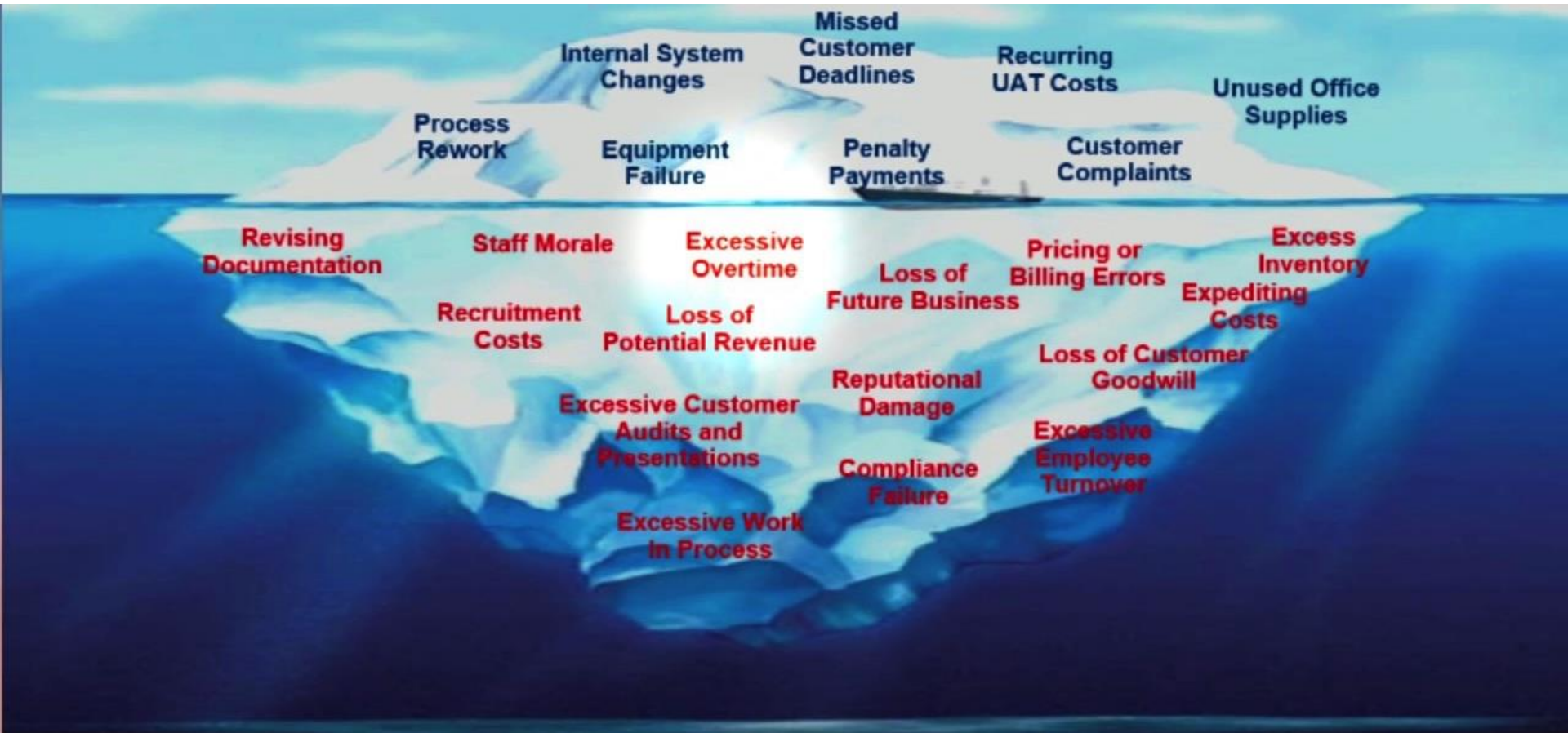




Performance Metric Trends For 19 Key Suppliers (13 Service & 6 Material) (covering ~145 contracts >\$750k)



Cost of Poor Quality (CoPQ)



Why?

Safety

- Supervision
- Adherence to standards
- Workforce transitions

Quality

- Manufacturing

Schedule

- Having a quality, resource loaded schedule with accurate forecasts
- Changing scope

Cost

- Cost certainty
- Overheads



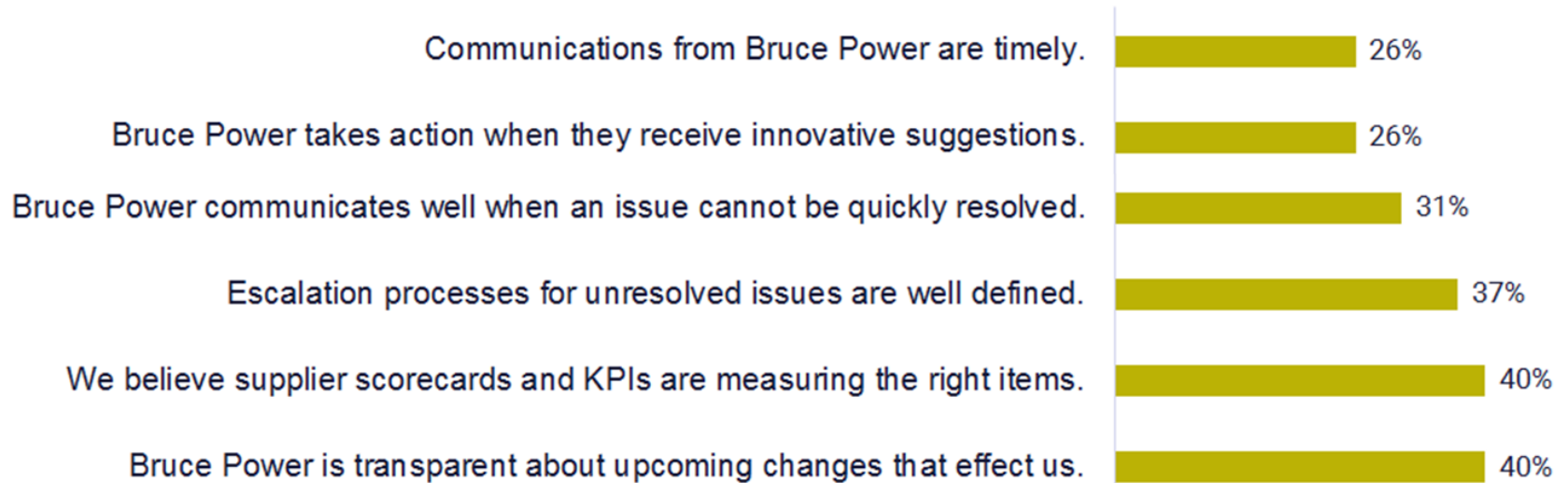
What Do You Think of Bruce Power's Performance?



What do the 2019 Survey Preliminary Results Show?



What do the 2019 Survey Preliminary Results Show?



What's not going well between your company and Bruce Power?



Common Themes

- **People**

- All want to perform their best for Bruce Power and understand the mission
- Limited understanding on Supplier/Bruce Power partnerships
- Limited support for supplier development – We are here to help
- Difficult to see your organizational improvement plans

- **Process**

- Scope Control
- Conditions Adverse to Quality
- Actions and Deliverables late or not escalated with limited follow up
- RFP process and definition – time required to provide a quality product
- Scorecards

Common Themes – Behaviour

Some Suppliers are not speaking up, saying no where required, challenging scope changes and accepting unrealistic requests

- “Customer first” behaviour
- Low confidence to challenge
- Escalation process not clearly established

**SPEAK UP
EVEN IF
YOUR VOICE
SHAKES**

What Actions Are We Taking?

Overall Performance

- Zippering Plans and Relationships
- JMCs
- SRMs
- Improved Collaboration
- Implement Improvement Plans
- Surveys
- Focused support missions (eg. Nuclear Safety)

COPQ

- Use standardized best practices for all Project Management on site
- Early involvement in scope definition
- Implement quality gates
- Review sub-contractors' deliverables and expectations
- Standardize reporting and escalation among suppliers
- Hire additional staff (QC, Health & Safety, Perf. Improvement)
- Improve training (Workers, FLMs, Managers)
- Employ Business Relationship Managers
- COPQ metric

Supply Chain 2018 Survey Improvements

The 2018 Supplier Survey gave a voice to our suppliers. The feedback received was turned into improvement areas over the last year.

Insufficient time to bid & scoping issues

- Integrated scheduling between Supply Chain and Projects
- LAMP Awards are Driving Awards Further in Advance of Work
- Modular MSA Improvement

Piecemeal awards are driving costs up

- By the end of 2019, Strategic Sourcing will have awarded \$6B since 01-Jan-2018 (incl. MCR spend)
- ECM is underway to bulk award

Bruce Power Organizational Misalignment

- Appointed a Director of Supplier Performance
- JMC/SRM Improvements
- Strengthened involvement with OCNI & COG
- Documentation of (joint) expectations and project team values

Supplier Opportunities

- Strategic awards are posted on MERX; we are soliciting participation from industry leaders – even if not a current supplier

The time frame to provide a response to RFX documents issued by Bruce Power has improved from last year.

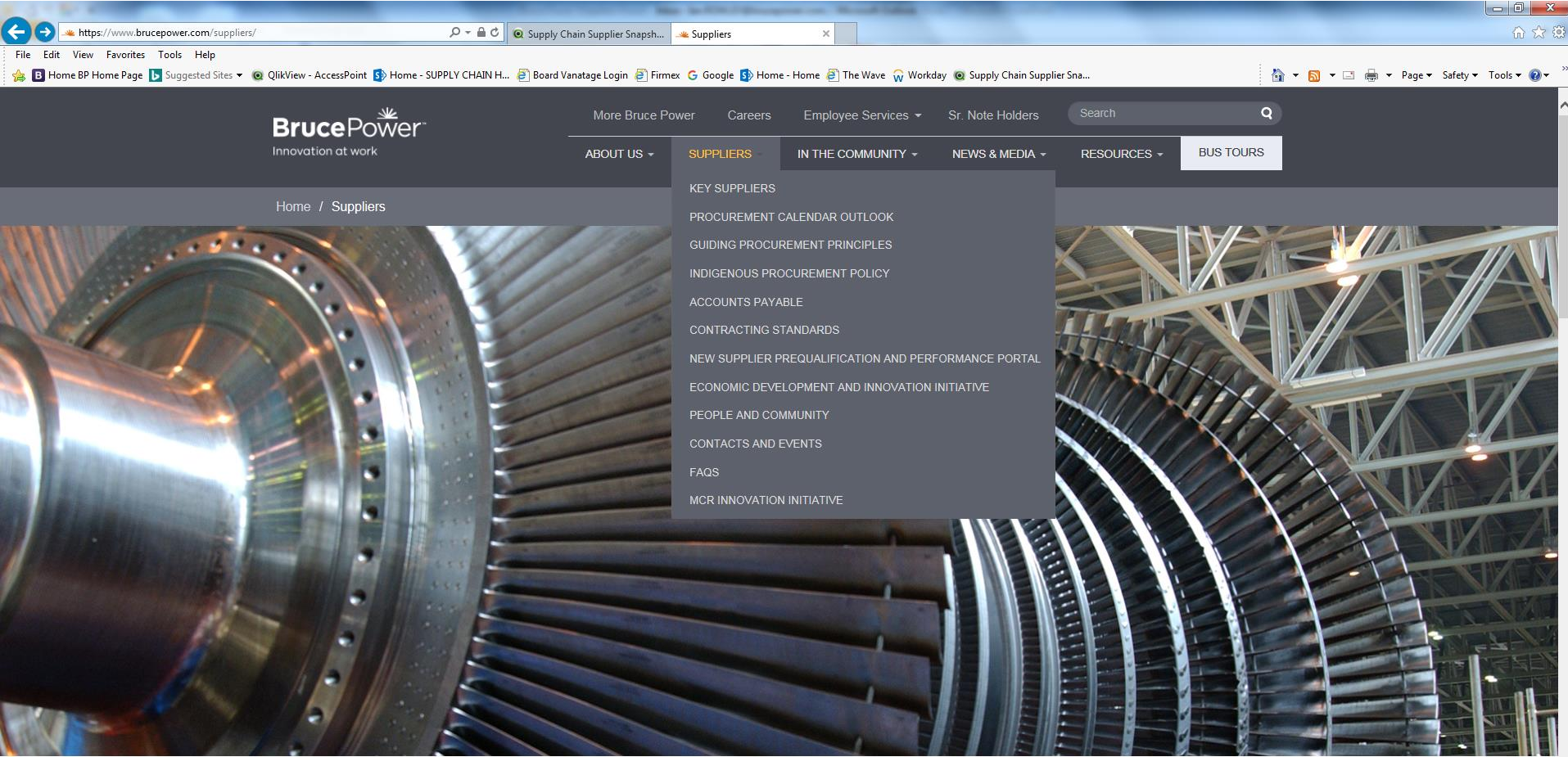


The scope of work in RFX documents issued by Bruce Power has improved from last year.





Bruce Power website



INPO Resources

INPO[®]

Principles

INPO 14-005
October 2014

Principles for Excellence in Nuclear Supplier Performance

INPO[®]

Good Practice

INPO 15-008
July 2015

Achieving High Levels of Human Reliability

A practical approach to human performance

INPO[®]

Document

INPO 12-012, Addendum I
April 2013

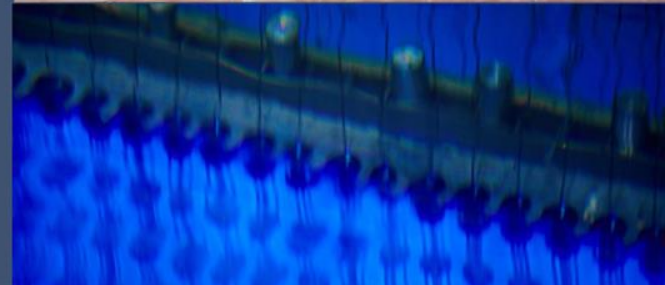
Traits of a Healthy Nuclear Safety Culture

Addendum I:
Behaviors and Actions That
Support a Healthy Nuclear Safety
Culture, by Organizational Level



Closing Remarks

Mike Rencheck,
President & CEO



Context for our Suppliers

- What's important to Bruce Power?
- What do we need from our supplier partners?

Priorities:

1. Operational Excellence
 - i. Safety
 - ii. Equipment Performance
 - iii. Managing Costs
 - iv. World-Class Schedule Adherence
 - v. Meeting our IESO Commitments

2. **Supplier Excellence**
 - i. **Outstanding Supplier Performance**
 - ii. **Understanding the Cost of Poor Quality**

Challenges and Opportunities

- Declining performance from suppliers
- Cost of poor quality – min \$83M in 2017/18
- Challenges in cost management
- Challenges in schedule adherence

How can Bruce Power and our supplier partners work together to improve performance?

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Lunch & Golf - Logistics

Richard Horrobin
VP & Managing Director, Supply Chain

