

FBC Annual Review of 2017 Rates

Workshop

October 12, 2016



Agenda

PBR Overview	<i>Diane Roy</i>	<i>Vice President, Regulatory Affairs</i>
Revenue Requirements & Rates	<i>Joyce Martin</i>	<i>Manager, Regulatory Affairs</i>
Z-Factor Mandatory Reliability Standards	<i>Curtis Klashinsky</i>	<i>Manager, Assets and Compliance</i>
Ruckles Substation Rebuild Project	<i>Paul Chernikhowsky</i>	<i>Director, Engineering Services</i>
Upper Bonnington Old Units Refurbishment Project	<i>Mike Leclair</i>	<i>Director, Generation</i>
AMI Project Overview	<i>Mark Warren</i>	<i>Director, Customer Service Technology & Systems</i>
Service Quality Indicators (SQIs)	<i>James Wong</i>	<i>Director, Strategic Initiatives and Budgeting</i>
	<i>Dawn Mehrer</i>	<i>Director, Customer Contact Centres</i>
	<i>Marko Aaltomaa</i>	<i>Manager, Network Services</i>
	<i>Dean Stevenson</i>	<i>Director, OH&S and Technical Training</i>
Open Question Period	<i>All</i>	

PBR Overview

Diane Roy, Vice President, Regulatory Affairs



FBC Annual Review

PBR Term from 2014 to 2019

2.76% Rate Increase for
2017

Service
Quality
Indicators

Formula-Driven
Items (Earnings
Sharing)

Forecast Items
(Flow-through
Deferral)

Responsiveness to
Customers Needs
Reliability and
Safety

Approvals Sought

- Rate increase of 2.76 percent
- Five new deferral accounts for regulatory proceeding costs:
 - ❑ Self-Generation Policy Stage II Application
 - ❑ Net Metering Program Tariff Update Application
 - ❑ BCUC Residential Inclining Block Report
 - ❑ 2017 Demand Side Management Expenditure Schedule
 - ❑ Transmission Tariff Review
- 2017 amortization of Celgar Interim Period Billing Adjustment deferral
- Z-Factor treatment for the Mandatory Reliability Standards Assessment Report No. 8
- Capital Expenditures for two projects under Section 44.2
 - ❑ Ruckles Substation Rebuild Project
 - ❑ Upper Bonnington Old Units Refurbishment Project

Summary of PBR Results

- Earnings Sharing Results Projection
 - ❑ O&M below formula by \$0.8 million
 - ❑ Capital expenditures above formula by \$3.2 million in 2016 (\$6.0 million cumulative)
 - ❑ Total 2016 earnings sharing of \$0.3 million
- 2016 Initiatives
 - ❑ Training and Development (Joint with FEI)
 - ❑ Sharing of Gas and Electric Contact Centre Staff
- Service Quality
 - ❑ All Service Quality Indicators were above threshold in 2015 except for AIFR

Revenue Requirements & Rates

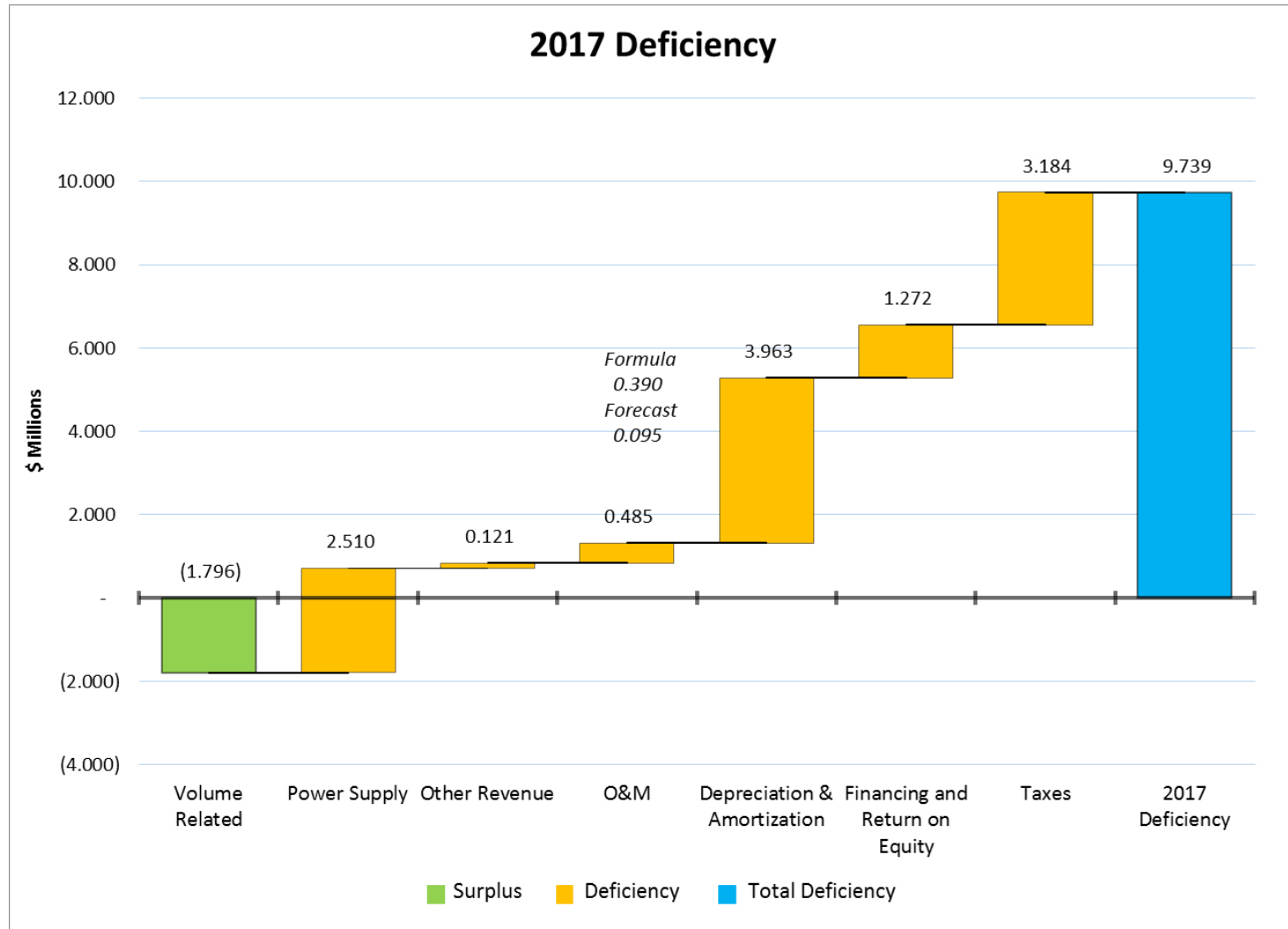
Joyce Martin, Manager, Regulatory Affairs



Evidentiary Update October 5, 2016

Evidentiary Update - 2017 Rates			
Line Item	Reference	Revenue Deficiency Impact (\$ millions)	Rate Impact
August 8, 2016 Filing		\$ 12.701	3.60%
Power Purchase Expense	CEC IR 1.15.1	(2.463)	-0.69%
Flow-Through Deferral Account	CEC IR 1.14.1 and Application, Page 100	(0.537)	-0.15%
AFUDC on Formula Capital Expenditures	BCUC IR 1.11.3	0.024	0.01%
Update May/June AWE-BC	Application, Page 11	0.009	0.00%
Correction to Customer Growth Factor	Application, Page 12	0.005	0.00%
October 5, 2016 Evidentiary Update		\$ 9.739	2.76%

Summary of Revenue Deficiency



Change in Depreciation and Amortization

	(\$ millions)
Depreciation	\$ 1.693
Amortization	
2014 Interim Rate Variance	\$ (7.547)
Celgar Interim Billing Adjustment	6.301
Flow-Through	6.612
Other	(3.096)
	<hr/> 2.270
Total	<hr/> <hr/> 3.963

Mandatory Reliability Standards (MRS)

Curtis Klashinsky, Manager, Assets and Compliance



MRS Update

- Assessment Report 8
 - Some Critical Infrastructure and Protection Version 5 Changes
 - Protect information “in transit”
 - Preservation of information in the event of a cyber attack
 - Protection against use of physical ports on devices
 - Apply software security patches in 35 days
 - Log reviews every 15 days (currently 90 days)
 - Login attempts, network traffic, status of service changes
 - Proactive verification of logging
 - Monitor changes to cyber assets every 35 days (currently annually)

MRS Update

- Assessment Report 8
 - 2016
 - Operations & Planning (O&P) standards
 - One time work complete by end of year
- Critical Infrastructure and Protection (CIP) Version 5
 - Reviewed requirements and held internal workshops
 - Worked with consultant/vendors on possible solutions
 - Automate repetitive tasks where possible
 - Limit impact on corporate networks and minimize v5 footprint
 - Obtained budgetary pricing on hardware and software
 - Evaluated Critical Infrastructure and Protection Transition Plan

MRS Update

- Assessment Report 8

- 2017

	O&M	Capital
Initial forecast	\$500,000	\$445,000
Current estimate	\$50,000	\$1,350,000

- Operations & Planning (O&P) standards

- Ongoing compliance efforts

- Critical Infrastructure and Protection (CIP) Version 5

- Continue with transition to meet the effective date
 - Complete RFP Process and implement infrastructure
 - Prepare 2018 estimate for next Annual Review

- 'Eye' on audits in the USA

MRS Update

- Future changes on the horizon
 - Next version of Critical Infrastructure and Protection
 - Operational Assessments and Analysis
 - Planning Coordinator function resolution

Ruckles Substation Rebuild Project

Paul Chernikhowsky, P.Eng., Director, Engineering Services

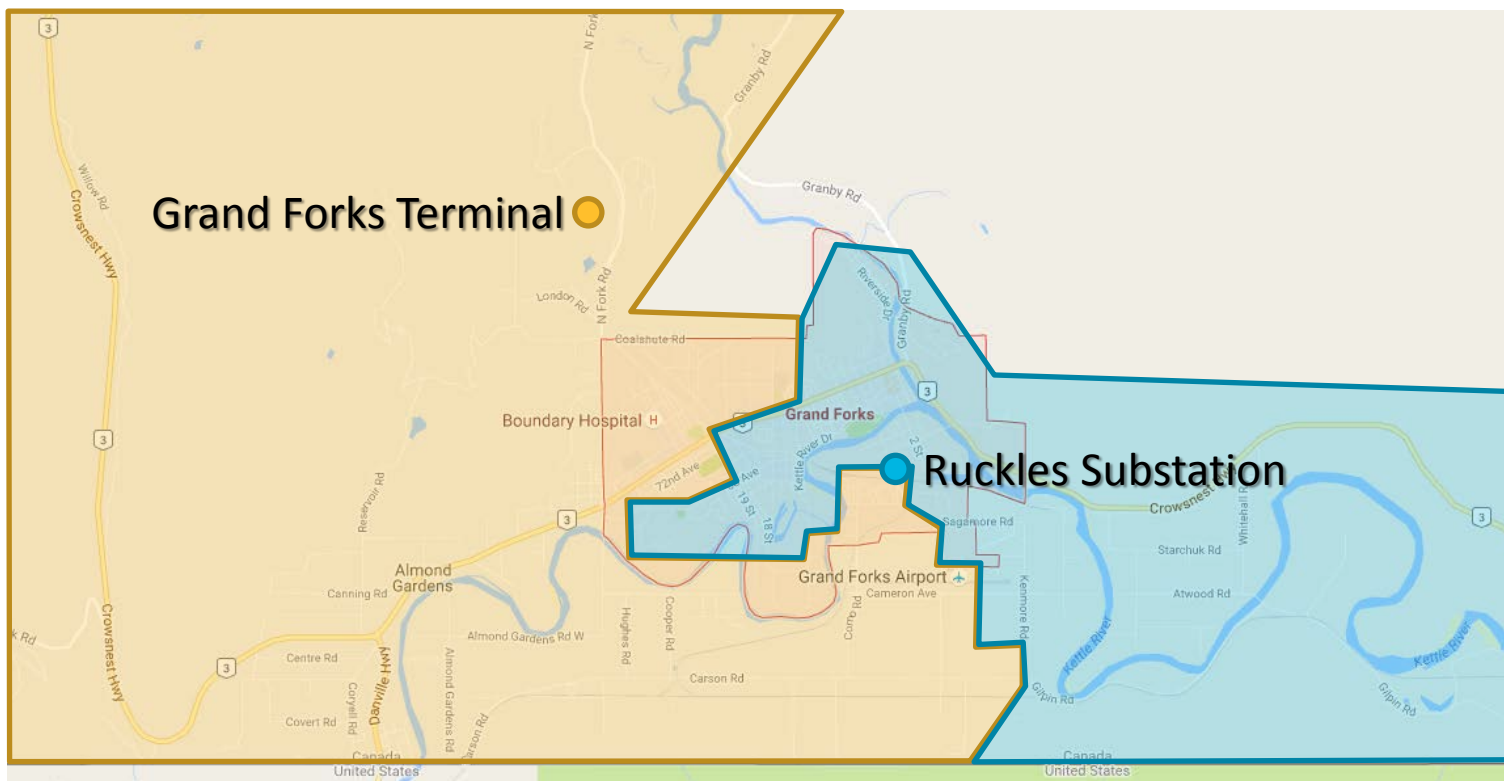


Ruckles Substation Rebuild Project

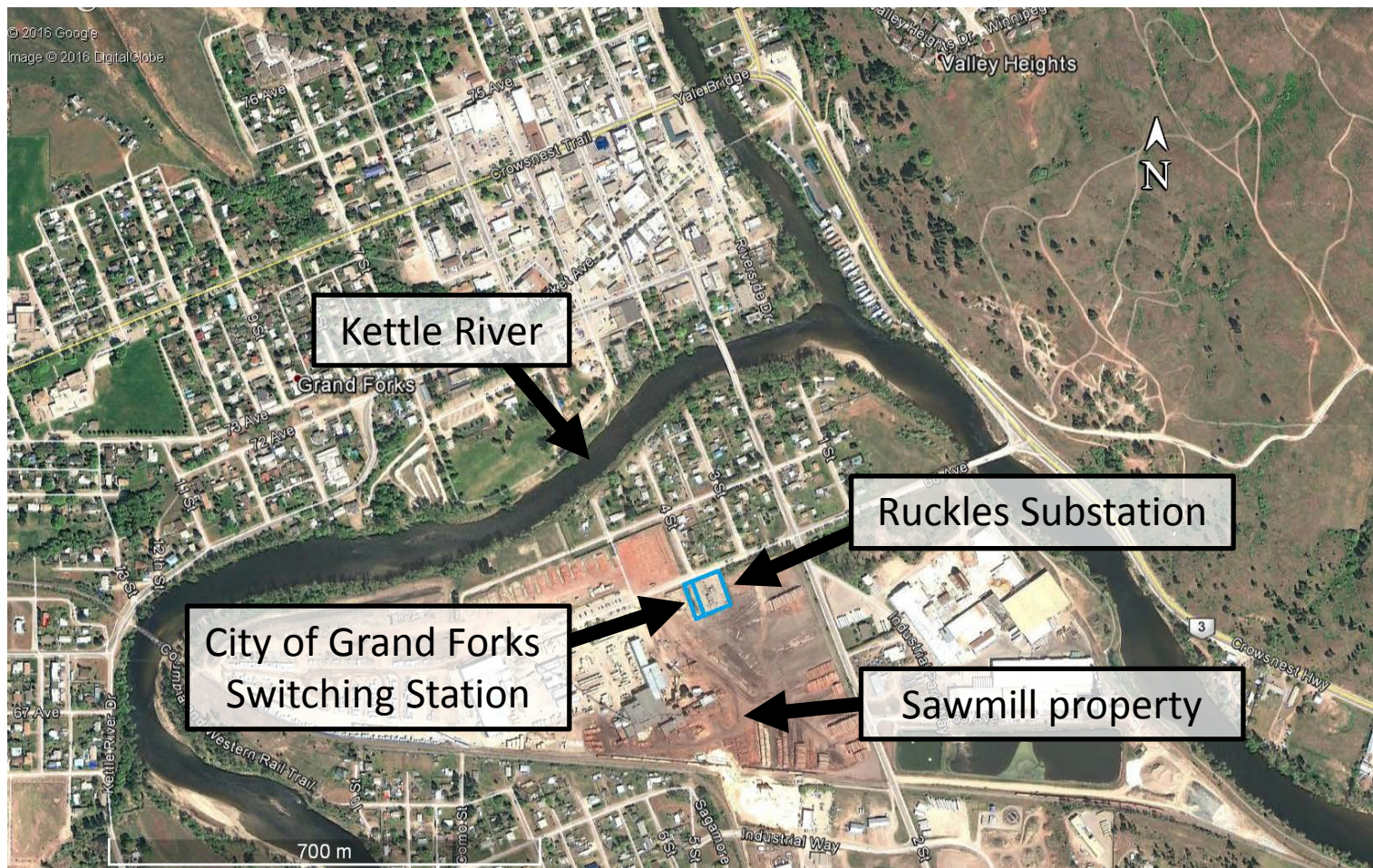
Four project drivers:

1. Reliability, environmental and safety risks associated with flooding
2. Safety risks due to arc-flash hazard
3. Obsolete equipment
4. Insufficient distribution backup capacity

Grand Forks Area Supply



Ruckles Substation Location



© 2015 Google
Image © 2016 DigitalGlobe

Valley Heights

Grand Forks

Ruckles Substation site
potential floodwater depth

~2.0 m flood (1 in 20)
~2.5 m flood (1 in 200)

700 m

Flood Risk – Equipment Damage



1 in 20 year flood
elevation (approximate)

High water mark from
2011 flood



Flood Risk – Environmental and Safety



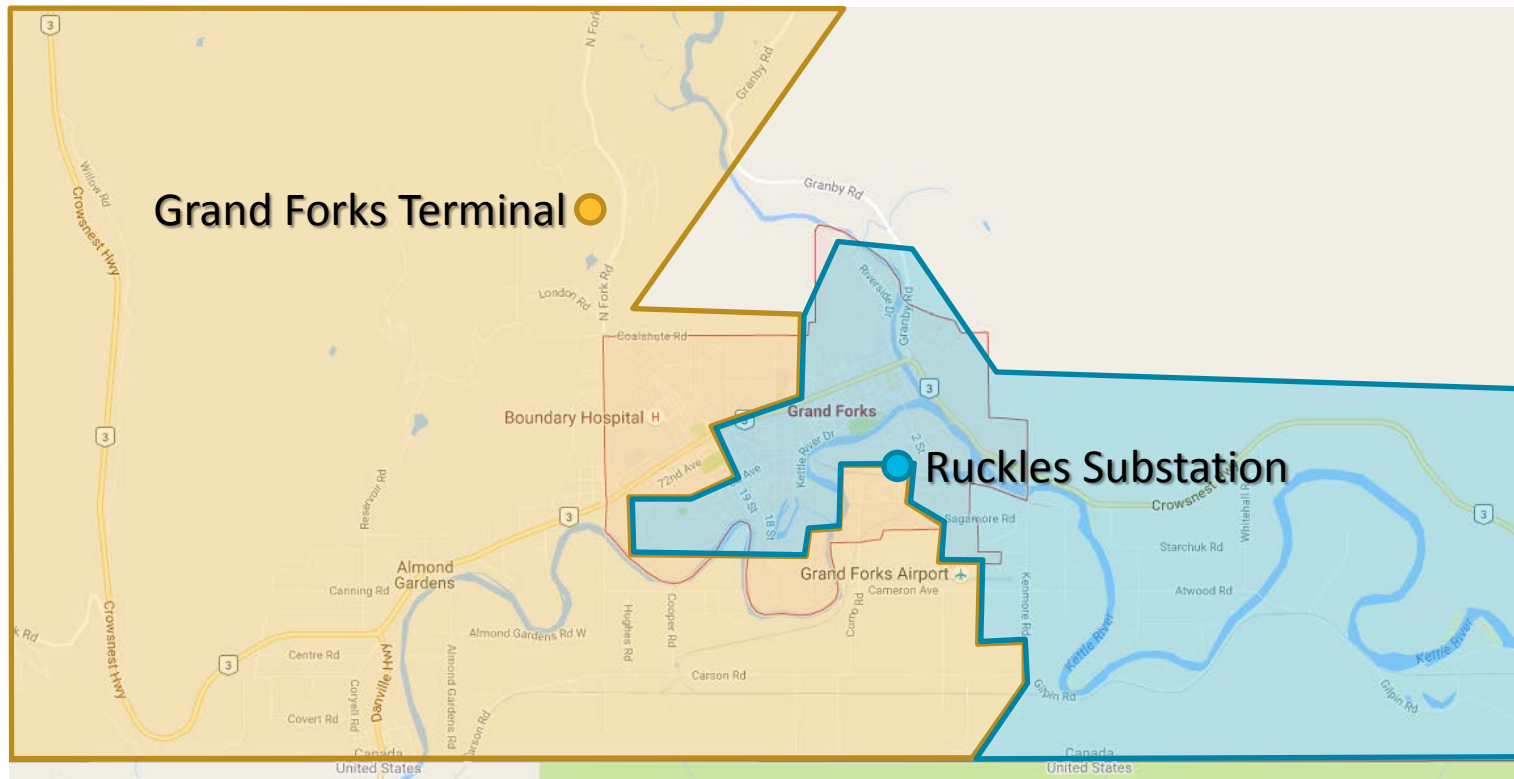
Driver #2 – Arc Flash Hazard



Driver #3 – Obsolete Equipment



Driver #4 - Insufficient Backup Supply Capacity



Ruckles Rebuild – Project Description

- Rebuild or relocate?
- Project cost: \$8.3 million (as-spent)
- Completion by Q4 2018
- Construction to be confined to the existing substation site
- Addresses all four project drivers for lowest cost



UBO Old Plant Refurbishment Project

Mike Leclair, P.Eng., Director, Generation and Compression

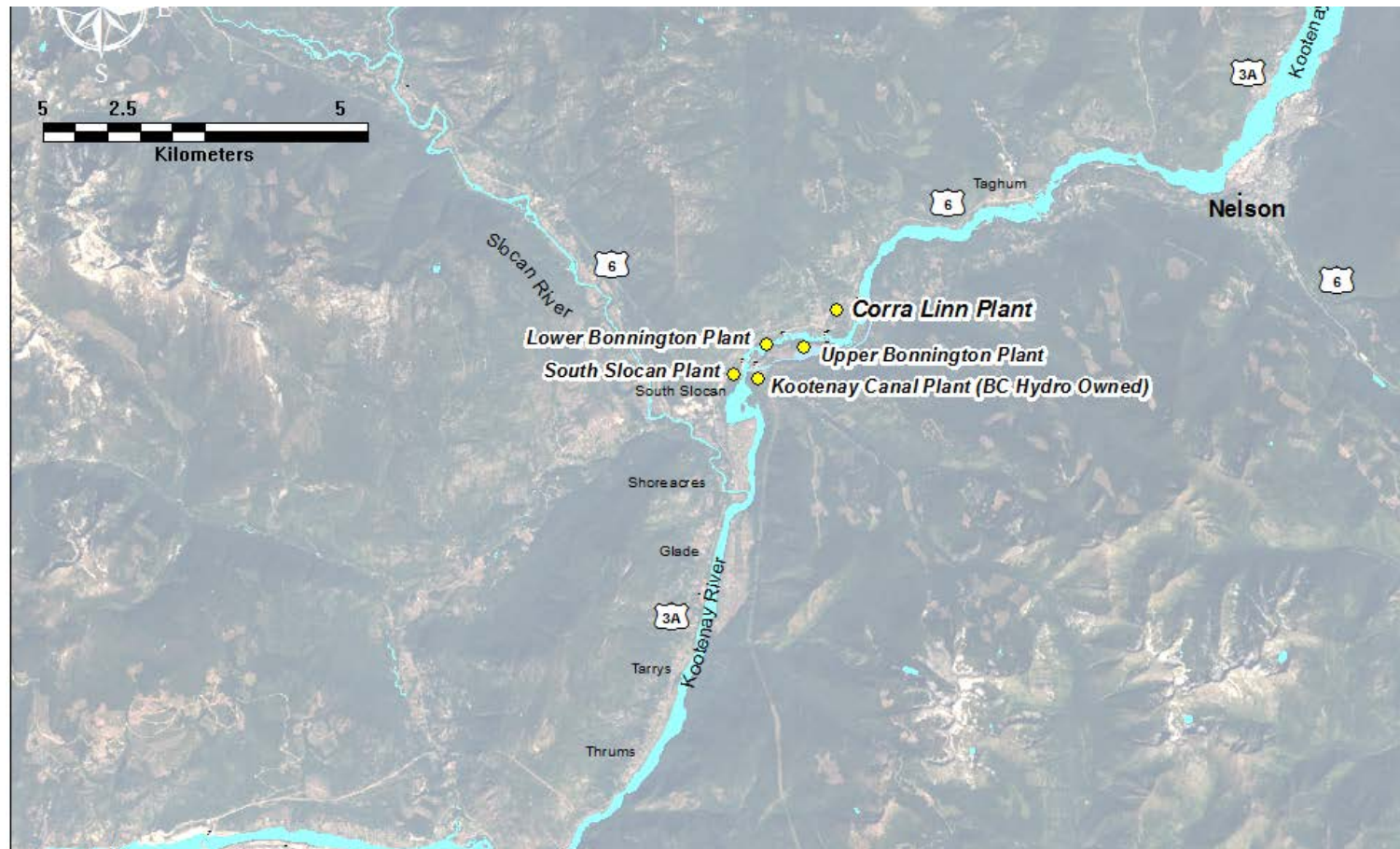


UBO Old Plant Refurbishment Project

Project Need:

- Reliability: UBO Units 1-4 are end of life
- Increasing safety risks
- Increasing environmental risks

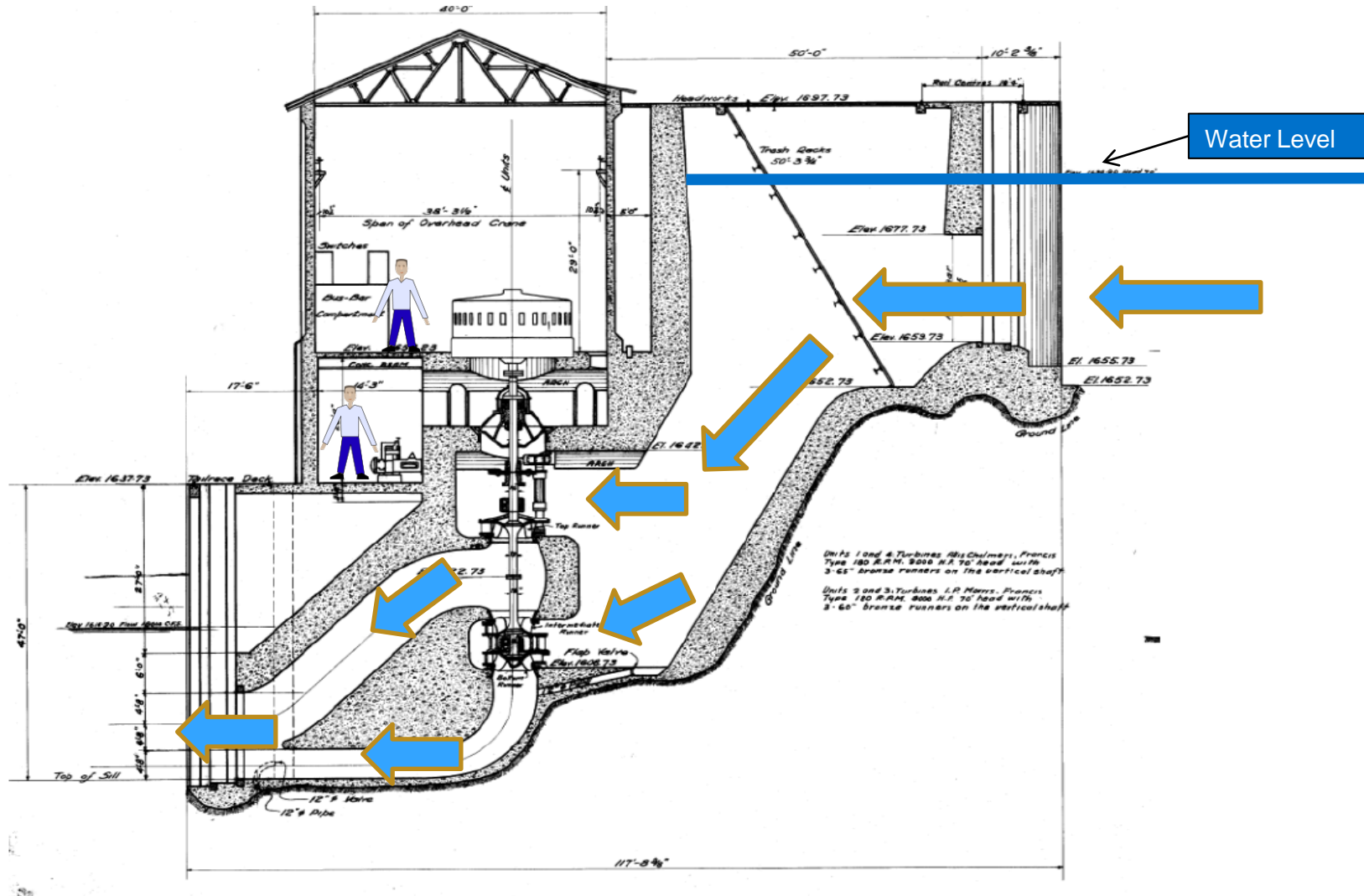
Upper Bonnington Old Plant



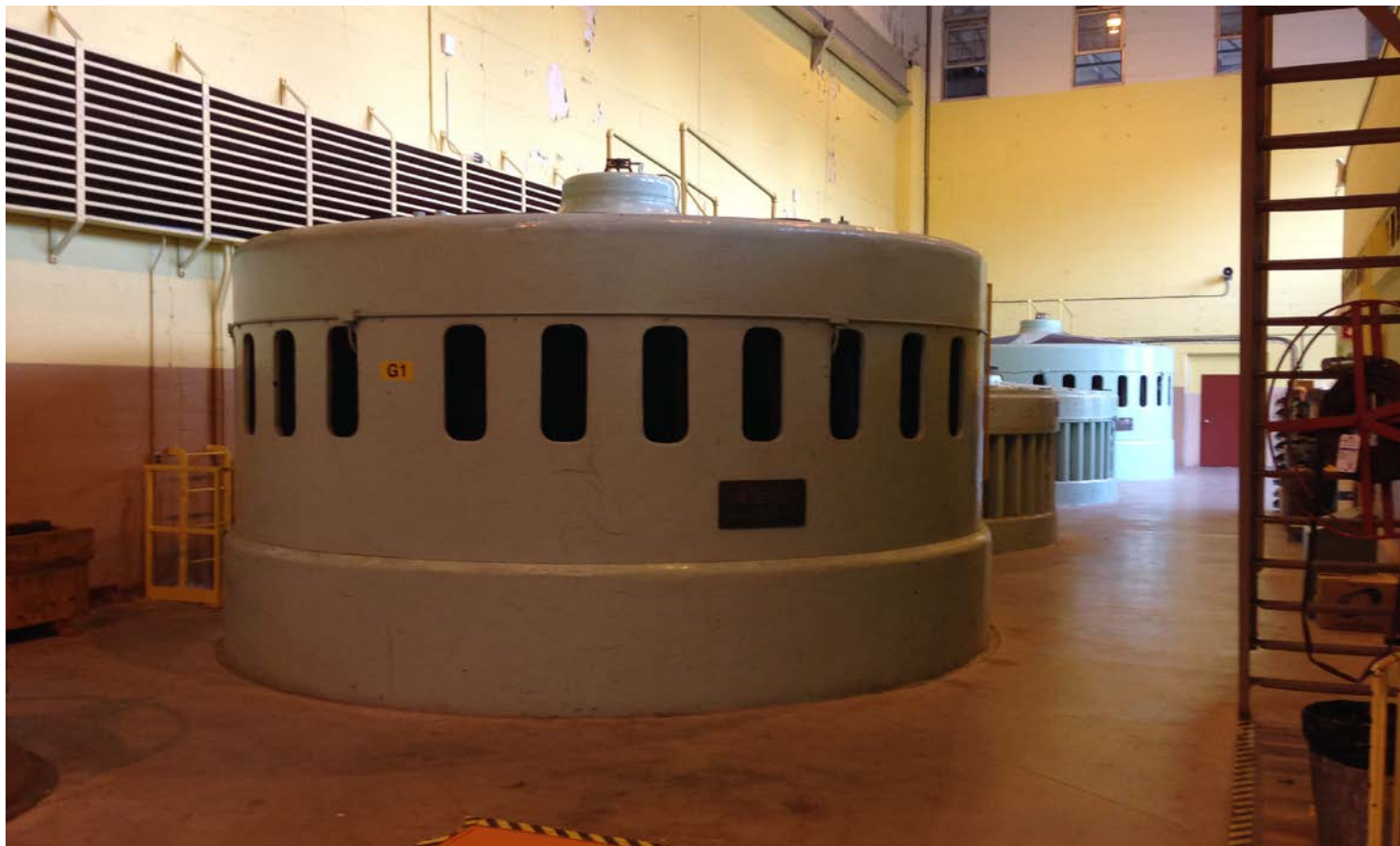
Upper Bonnington Old Plant



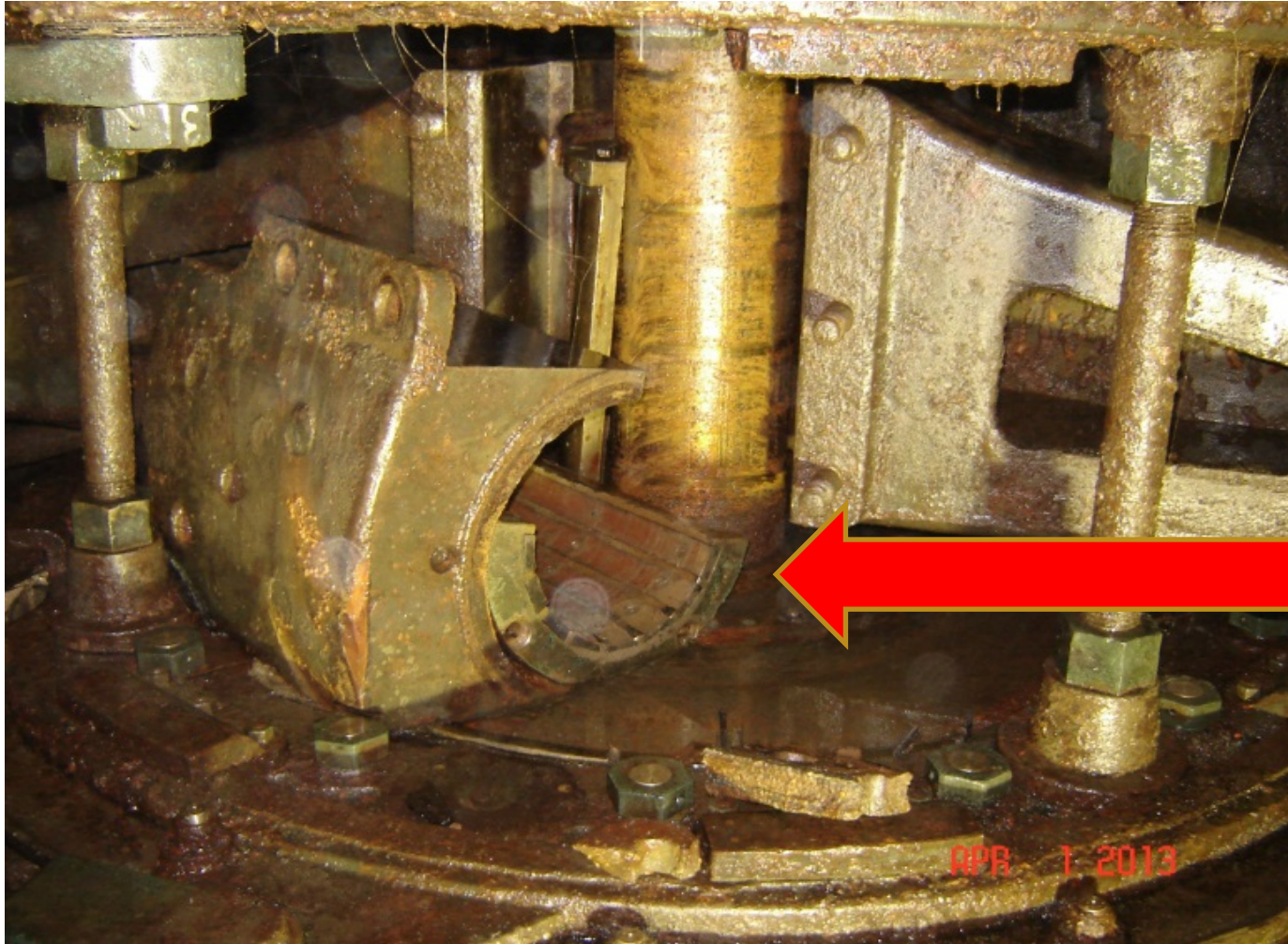
Typical Old Unit Cross Section



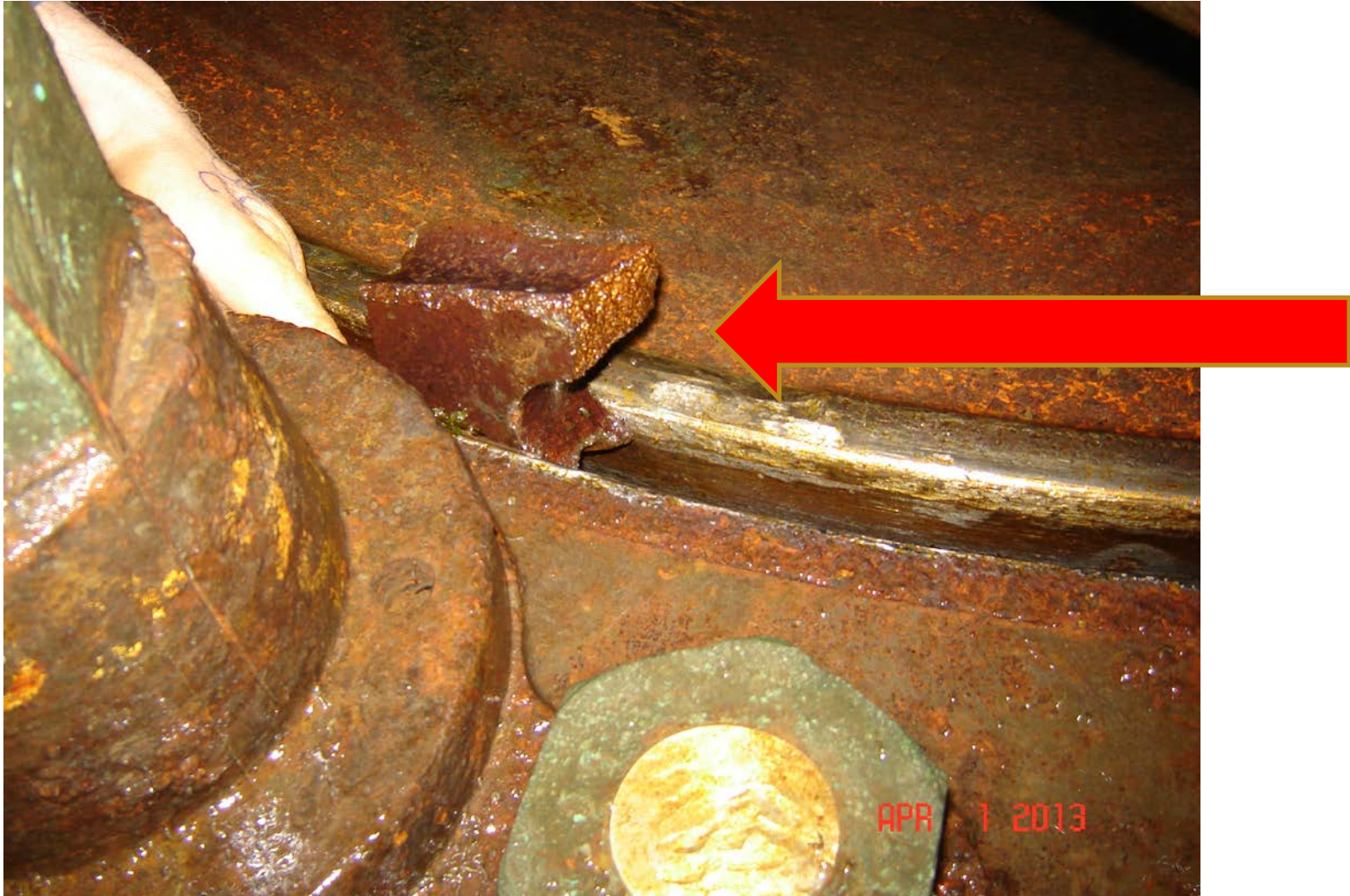
Upper Bonnington Old Plant



Old Units are End of Life – U3 Failure



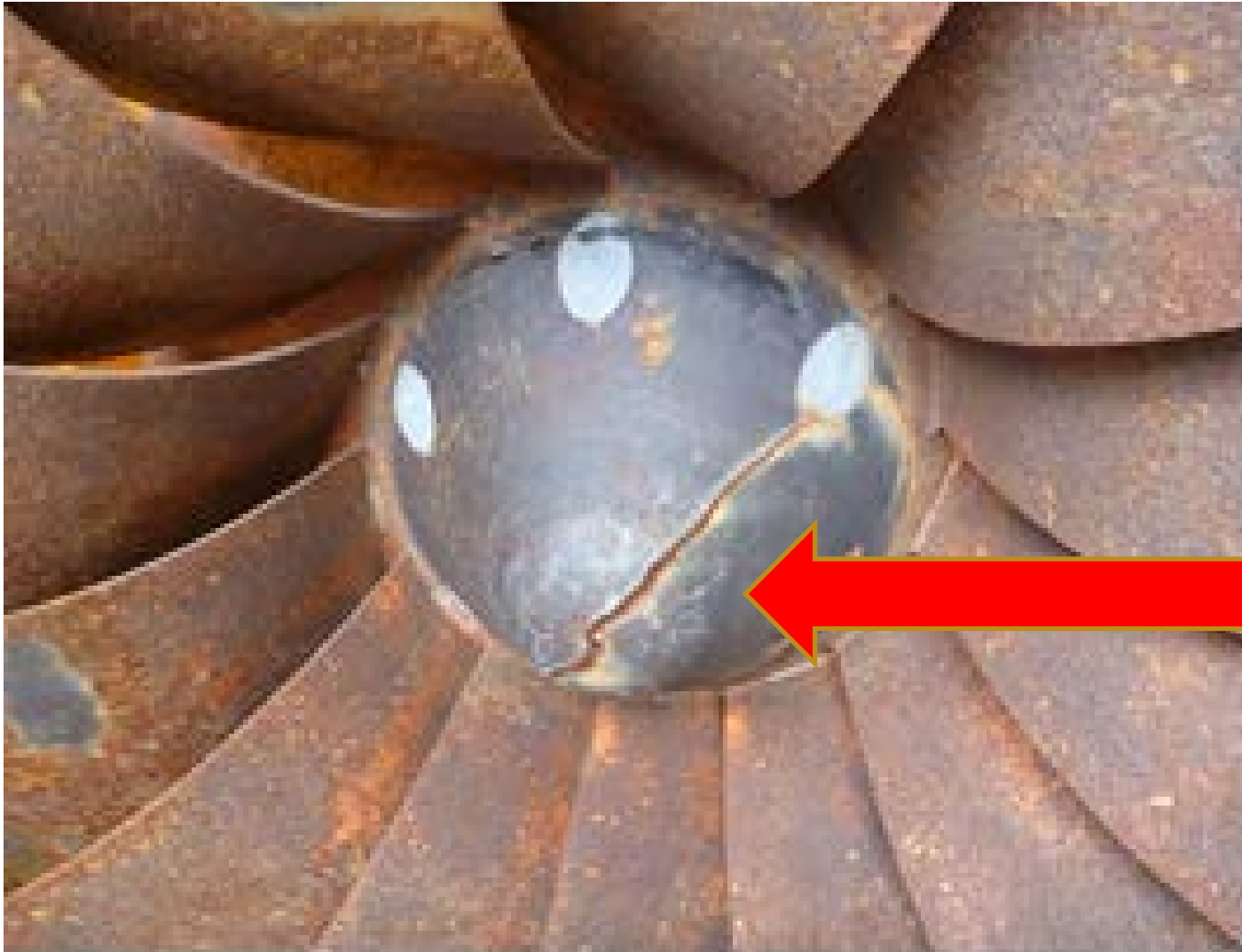
Old Units are End of Life – U3 Failure



Old Units are End of Life – U3 Failure



Old Units are End of Life – U3 Failure



Old Units are End of Life



Old Units are End of Life



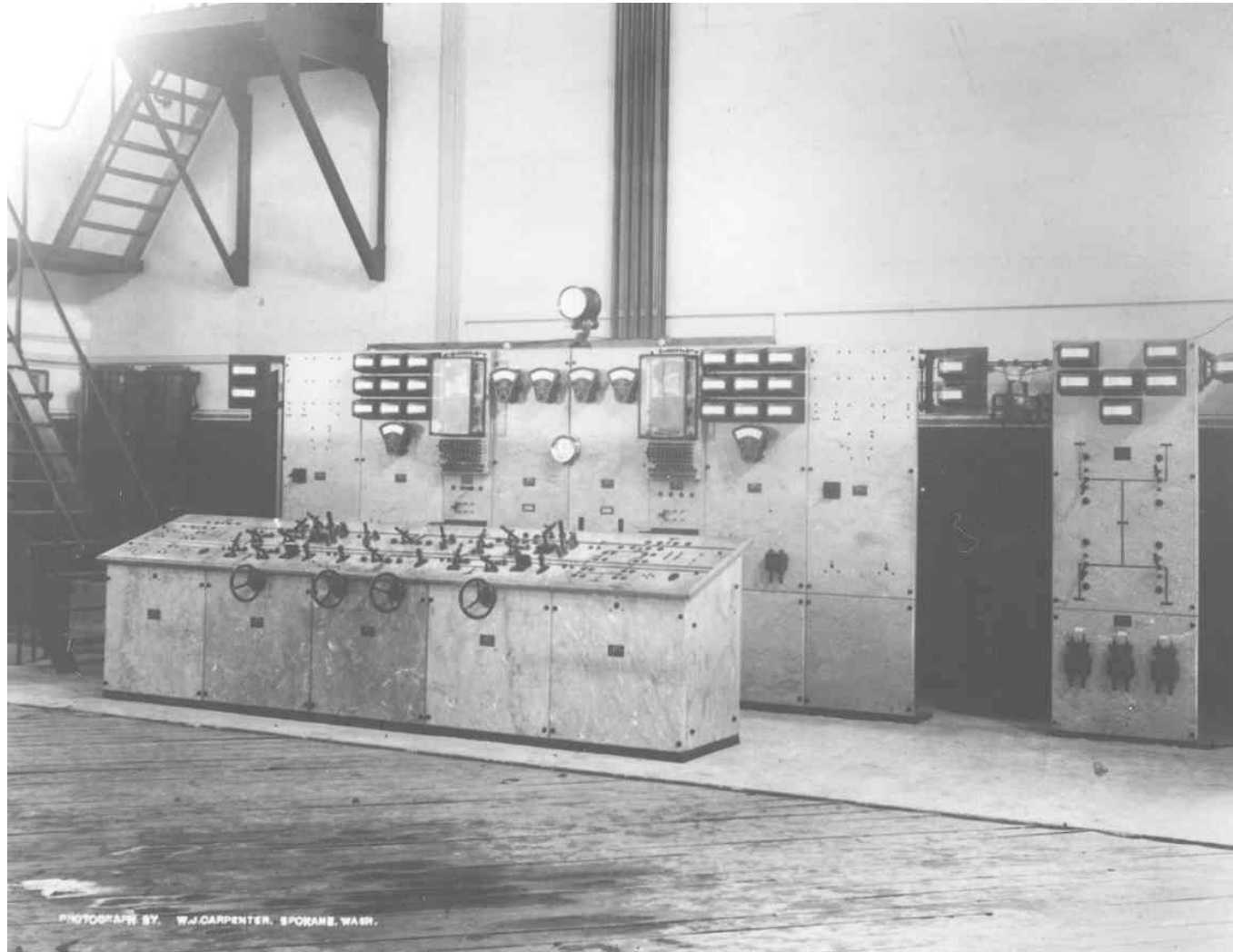
Old Units are End of Life



Old Units are End of Life



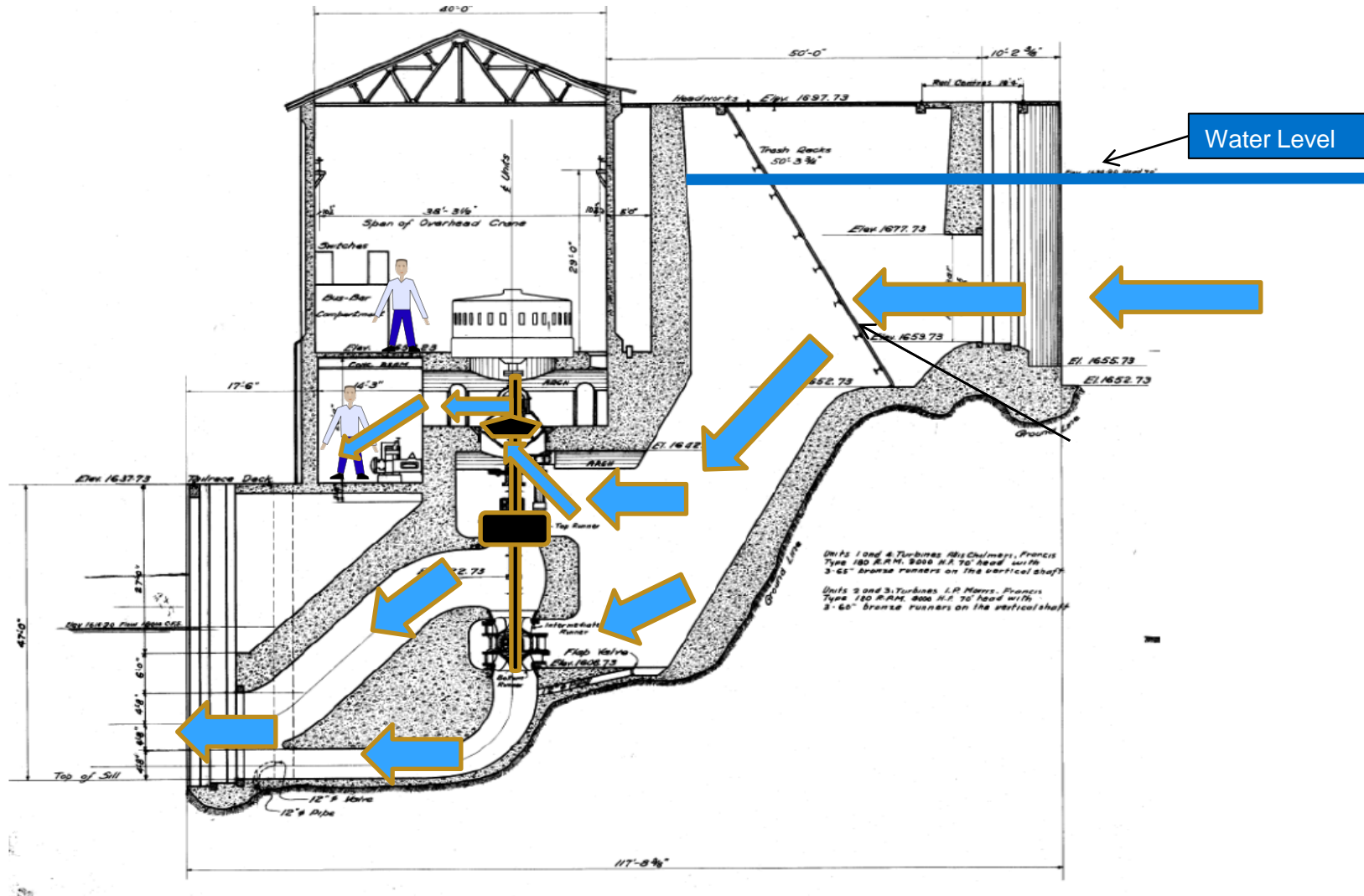
Old Units are End of Life



Old Units are End of Life



Typical Old Unit Cross Section

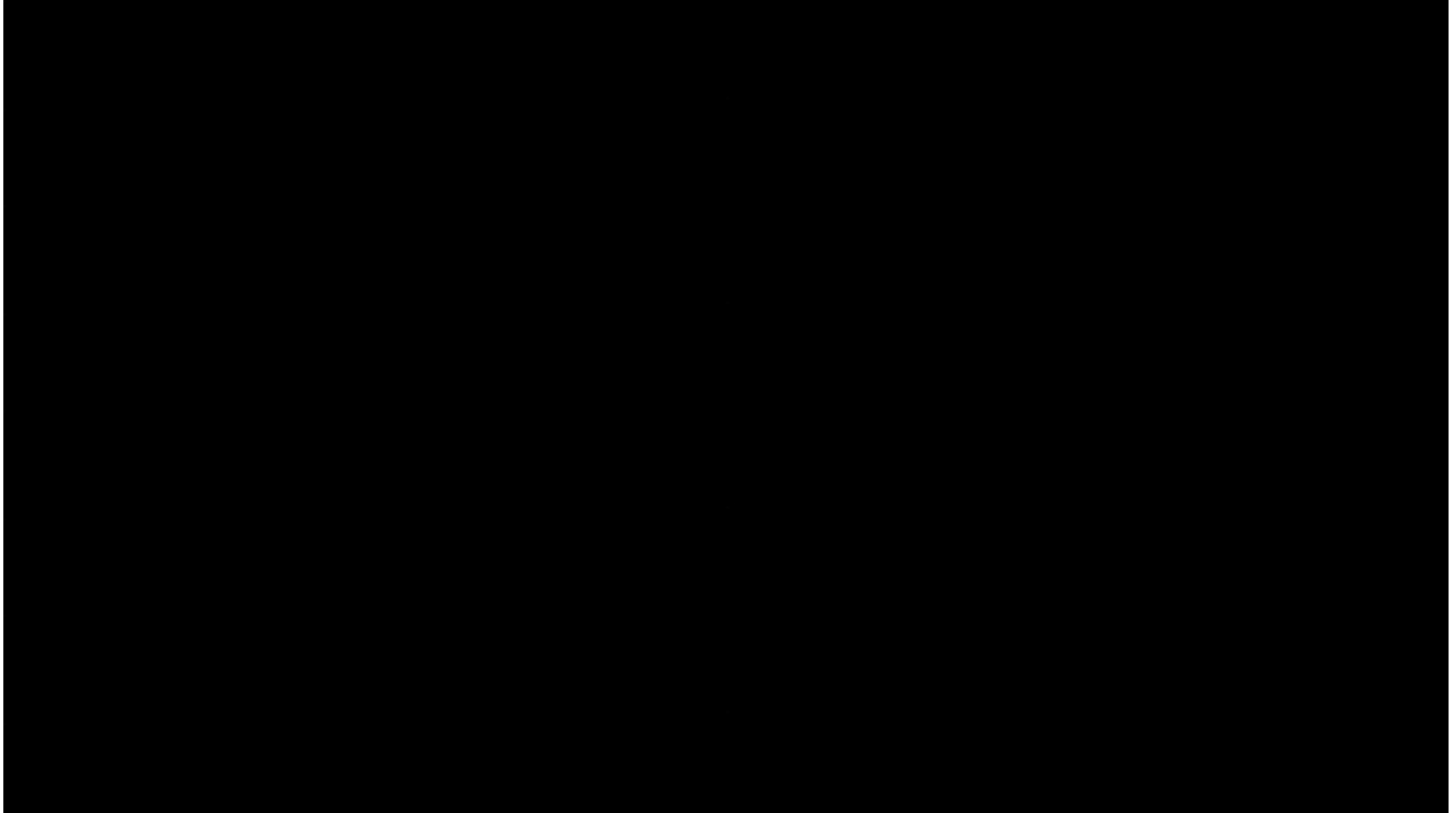


UBO Old Plant Refurbishment Project

Project Need Summary:

- Reliability: UBO Units 1-4 are end of life
- Increasing safety risks
- Increasing environmental risks

UBO Video



UBO Old Plant Refurbishment Project

Project Objectives:

- Preserve reliable generation supply to FBC's customers at the lowest reasonable cost
- Mitigate safety risks
- Mitigate environmental risks

UBO Old Plant Refurbishment Project

Options Considered:

- Option 1: Old Units Decommissioning
- Option 2: Old Units Full Life Extension
- Option 3: Old Units Refurbishment

UBO Old Plant Refurbishment Project

	Option 1 – Decommissioning	Option 2 – Full Life Extension	Option 3 - Refurbishment
Preliminary capital cost (as spent, incl. removal and AFUDC)	\$4.256 million	\$47.351 million	\$31.783 million
Added Service Life	0 Years	40 Years	20 Years
Estimated Future Capital Expenditure	\$0	\$0	\$24.44 million
Expected Service Life Considering Future Capital	0 Years	40 years	40 Years
NPV of Incremental Revenue Requirement (50 Years)	\$118.967 million	\$46.892 million	\$34.038 million
Levelized % Increase on Rate to 2016 Approved Rate (50 Years)	2.14%	0.84%	0.61%

UBO Old Plant Refurbishment Project

- **Option 3 Refurbishment**
 - ❑ Capital Cost: \$31.78 million (as-spent)
 - ❑ NPV of Revenue Requirement: \$34.04 million (lowest of all options)
 - ❑ Levelized Rate Impact: 0.61% (lowest of all options)
- **Main Construction June 2017 to November 2020**
- **Project Close out by April 2021**

AMI Project Update

Mark Warren, Director, Customer Service Technology & Systems



AMI Project Update

- Implementation nearly complete
 - ❑ 130,500 meters installed (99.2%)
 - ❑ 99.0% of radio-on meters communicating over-the-air
 - ❑ 99.5% of communicating radio-on meters read on schedule
 - ❑ Monthly billing, consolidated billing and “pick your bill date” available
 - ❑ Hourly data display and AMI-based revenue protection remain



AMI O&M Costs and Savings (millions)

	2016		2017	
	Projected	CPCN	Forecast	CPCN
Costs	1.481	1.892	1.992	1.925
Savings	(2.816)	(3.976)	(3.118)	(3.970)
Net AMI Costs/(Savings)	(1.335)	(2.084)	(1.126)	(2.045)

2014 Meter Reading

Actual	CPCN
2.280	2.984

Service Quality Indicators

James Wong, Director, Strategic Initiatives & Budgeting

Dawn Mehrer, Director, Customer Contact Centres

Marko Aaltomaa, Manager, Network Services

Dean Stevenson, Director, OH&S and Technical Training



Overview of Service Quality Indicators

- SQL Benchmarks
 - ❑ Approved in PBR Plan
 - ❑ Based on historical performance
- Satisfactory Performance Ranges
 - ❑ Range between approved benchmark and threshold
 - ❑ BCUC directed stakeholder consultation process
 - ❑ Factors taken into consideration include historical variances, historical trend, etc.
- Consensus Agreement
 - ❑ Agreed ranges for SQLs with benchmarks where performance is considered satisfactory
 - ❑ Outlined process for examination of SQL results at each Annual Review

SQL Performance

Service Quality Indicator	2015 (Relative to Benchmark and Threshold)	2016 Aug YTD (Relative to Benchmark and Threshold)
Safety SQLs		
Emergency Response Time	Within Range	Meets
All Injury Frequency Rate (AIFR)	Outside Threshold	Within Range
Responsiveness to Customer Needs SQLs		
First Contact Resolution	Within Range	Meets
Billing Index	Meets	Meets
Meter Reading Accuracy	Within Range	Meets
Telephone Service Factor (Non-Emergency)	Meets	Meets
Customer Satisfaction Index - informational	n/a	n/a
Telephone Abandon Rate - informational	n/a	n/a
Reliability SQLs		
System Average Interruption Duration Index (SAIDI) - Normalized	Meets	Meets
System Average Interruption Frequency Index (SAIFI) - Normalized	Meets	Meets
Generator Forced Outage Rate - informational	n/a	n/a

Responsiveness to Customer Needs

Service Quality Indicator	2015 Results	Status (Relative to Benchmark and Threshold)	2016 Aug YTD Results	Status (Relative to Benchmark and Threshold)	Benchmark	Threshold
<i>Responsiveness to Customer Needs SQIs</i>						
First Contact Resolution	76%	Within Range	78%	Meets	78%	72%
Billing Index	0.39	Meets	0.44	Meets	5.0	<=5.0
Meter Reading Accuracy	96%	Within Range	98%	Meets	97%	94%
Telephone Service Factor (Non-Emergency)	71%	Meets	70%	Meets	70%	68%

Informational Indicators	2015 Results		2016 Aug YTD Results		2013 Actuals	2014 Actuals
Customer Satisfaction Index	8.1	n/a	8.2	n/a	8.0	8.1
Telephone Abandon Rate	2.7%	n/a	3.9%	n/a	2.0%	12.4%

Safety and Reliability

Service Quality Indicator	2015 Results	Status (Relative to Benchmark and Threshold)	2016 Aug YTD Results	Status (Relative to Benchmark and Threshold)	Benchmark	Threshold
Safety SQLs						
Emergency Response Time	92%	Within Range	97%	Meets	93.0%	90.6%
All Injury Frequency Rate	2.52	Outside Threshold	1.92	Within Range	1.64	2.39
Reliability SQLs						
SAIDI - Normalized	2.15	Meets	2.22	Meets	2.22	2.62
SAIFI - Normalized	1.49	Meets	1.58	Meets	1.64	2.50

Informational Indicators	2015 Results		2016 Aug YTD Results		2013 Actuals	2014 Actuals
Generator Forced Outage Rate - informational	0.1%	n/a	1.2%	n/a	5.20%	1.74%

First Contact Resolution and Abandon Rates

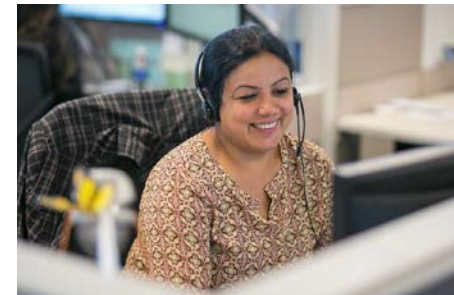
First Contact Resolution

- Two consecutive years between the threshold and the benchmark (2014 at 73% & 2015 at 76%)
- YTD 2016 Results at benchmark of 78%
- Actions taken to improve results:
 - ❑ Improve up-front messaging to identify alternative channels (in addition to hours of operation messaging)
 - ❑ Refresher training in collections and billing policies and procedures
 - ❑ Call handling and soft skill training in explaining complex issues to customers
 - ❑ One-on-one coaching for Customer Service Reps with calls “not resolved”

Abandon Rates

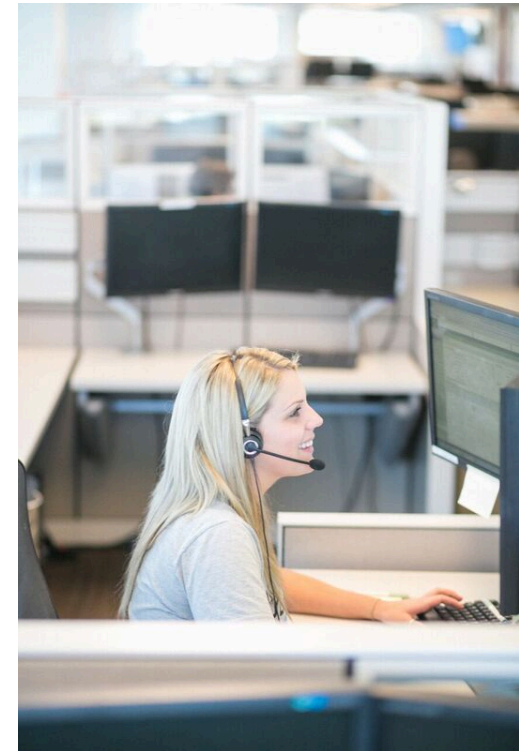
# Seconds until abandon	0 – 30 Seconds	31 – 60 Seconds	61 – 120 Seconds	Over 120 Seconds
% of Abandons	31%	14%	35%	20%

- 2016 YTD abandon rate is 3.9%
- The higher abandon rate this year does not appear to be due to long wait times
- Abandoned calls can be caused by a number of other things including:
 - Customer behavior and choice
 - Large scale outages and the use of IVR
- As of August 2016, FBC also now uses the call-back feature



Commission Directive – Contact Centre Staff

- FEI contact centre agents in Prince George answering overflow FBC calls
- Approximately 18 trained resources
 - Answering electric calls
 - Doing gas work between calls
- Benefits of cross-utilization include:
 - Cost-effective way to address variable work volumes
 - Provides development opportunities for staff
 - Customers experience lower wait times and lower costs



Service Quality of FEI Employee Interactions

- Coaching and development is integrated into daily life at the contact centre
- Electric customers are receiving a high level of service from agents in Prince George
- Survey results and customer comments showing satisfaction with the level of service provided by the CSR are as follows:

	All Electric Calls	Calls Taken by PG Staff
Total Calls	128,000	7,374
Total Surveys	697	58
Very Satisfied	87%	85%
Somewhat Satisfied	10%	10%
Somewhat Dissatisfied	1%	3%
Very Dissatisfied	2%	2%

“She was efficient. We got to the bottom of what I was calling about. So, that's what it's all about when you call asking questions. If you get an answer to your question, then you're satisfied, right?”

“Because I needed something done and I wasn't sure how to do it. He directed me right through it and I got it done, so. “

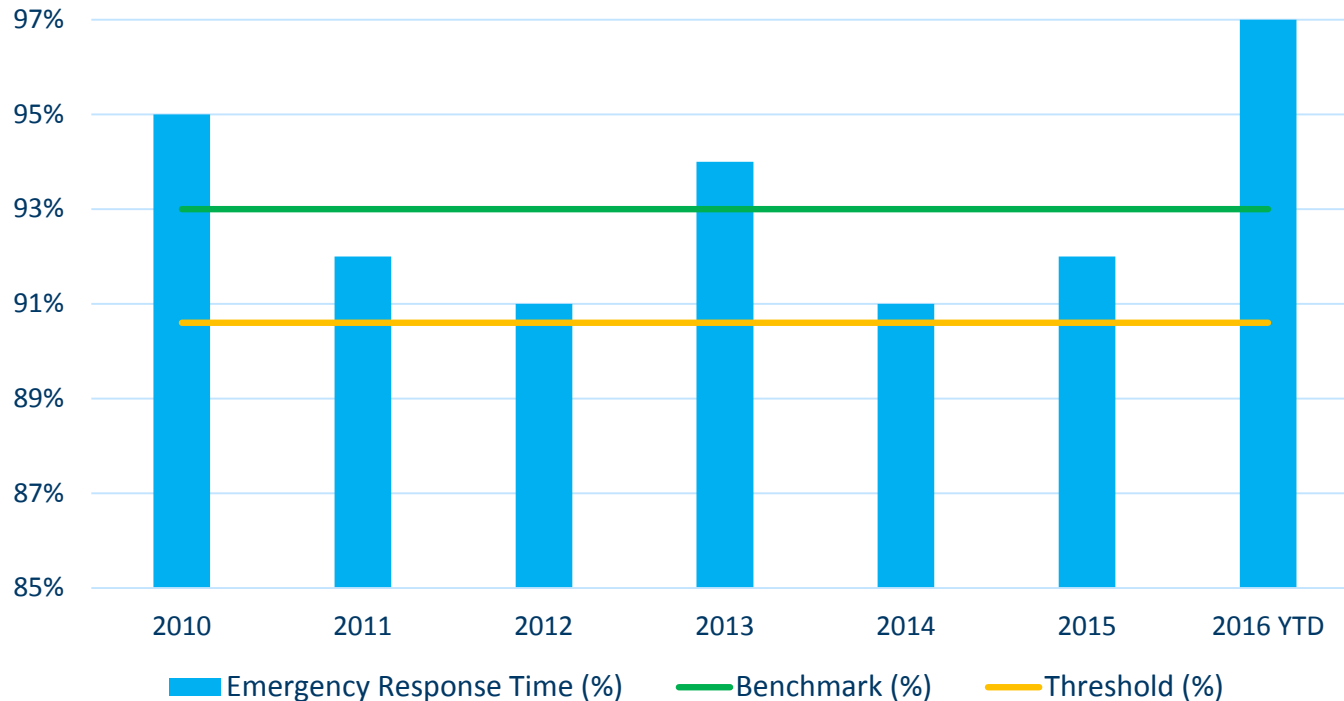
“I'm very dissatisfied because I don't think he was honest.”

“He was very courteous, sorry, he was very nice and he knew where to go for the information I needed.”

“Why am I? Because she got it done. She answered my questions for me. “

Emergency Response Time

Emergency Response Time (within 2 hours)



➤ Factors influencing 2015 result of 92% :

- High trouble call volumes in June, July, August and November
- Major events in July (windstorm), August (wildfires) and November (snowstorm)

Safety

All Injury Frequency Rate (AIFR)

Description	2009	2010	2011	2012	2013	2014	2015	August 2016
								YTD
Annual Results	1.41	1.72	1.48	1.72	2.82	3.21	1.54	1.02
Three Year Rolling Average	2.00	2.00	1.54	1.64	2.01	2.58	2.52	1.92
Benchmark	n/a	n/a	n/a	n/a	n/a	1.64	1.64	1.64
Threshold	n/a	n/a	n/a	n/a	n/a	2.39	2.39	2.39

2015 annual AIFR significantly improved over 2014

- ❑ WorkSafeBC Certificate of Recognition retained in 2015
- ❑ Target Zero implemented
- ❑ 2016 YTD results trending positively

Question Period