RIC power corp.

RELIABILITY
INTEGRITY
CUSTOMER FOCUSED

# Medium & Low Voltage Switchgear

## Project Highlights

# Manufacturing Custom Switchgear

## About us

RIC Power Corp. is a medium and low voltage switchgear manufacturer in Vancouver, Canada. They provide air insulated switchgear up to 38kV.

Custom designs allow RIC Power Corp. to service a variety of industries including:

- Utility
- Oil & gas
- Shipping and transportation
- Mining
- Pulp & paper
- Marine
- Data centres
- Municipal and general industries

RIC Power Corp. is not constrained by conventional limitations. Their designs can support a variety of protection and control components which helps deliver the end user the most beneficial and cost effective solution.

Drawings (submittal package) is delivered in 4-6 weeks and typical lead time is 14-16 weeks from purchase order; however, expedited delivery is available. RIC Power Corp. has delivered a number of jobs in 8-12 weeks, helping to facilitiate its customer's tight deadlines.

## Customers We Work With

- Shell
- Imperial Oil
- BC Hydro
- GCT Deltaport
- Pipeline Co. (Alberta)
- Richardson
- Seaspan
- Amix Recycling
- Toromont
- Teck Coal

## Contact Us

RIC Power Corp. is your go-to supplier for switchgear that requires custom design and fast delivery. Contact info@ricpower.com.

## Products

**Metal Enclosed Switchgear**
**Metal Clad Switchgear**
**Arc Resistant Switchgear**
**Unit Substation**

## Capabilities

**Outdoor (NEMA 3R)**
**Switchgear in E-house**
**Skid Mounted Substation**
**Marine Certification**
**Integrated Peripherals**
**(battery charger, PLC, distribution, outlets, lights, heaters etc.)**

## Standards

**CSA 22. No 31**
**ANSI/IEEE C37.20.2**
**ANSI/IEEE C37.20.7**
**IEC 62271-200 upon request**

# Contents


## Section 1.
Product Matrix & Testimonials

## Section 2.
Project Highlights


## GCT - Deltaport

**Arc resistant, stainless steel, NEMA 3R switchgear with integrated low voltage in half cell.**

# Product Matrix

| Voltage Class/ Product Category | 480/600V | 2.4kV | 5kV | 15kV | 25kV |
|---|---|---|---|---|---|
| Metal Enclosed Switchgear | ✓ | ✓ | ✓ | ✓ | ✓ |
| Metal Clad Switchgear | ✓ | ✓ | ✓ | ✓ | ✓ |
| Arc Resistant Switchgear | n/a | ✓ | ✓ | ✓ | ✓ |
| Custom Switchgear | ✓ | ✓ | ✓ | ✓ | ✓ |
| Related Products | ✓ | - | ✓ | ✓ | - |

# Testimonials

"There is great pride and workmanship in RIC's finished product, it is difficult to near impossible to find any deficiencies."

~ Richardson Terminal

"We went with RIC because of their ability to provide a custom design and deliver the product in a short amount of time. Overall we were very satisfied with their service."

~ Finning Power Systems

"RIC was exceptionally helpful. Their short approval time and product quality exceeded our expectations."

~ Wajax Power Systems

# Project Highlights

## Deltaport

| Technical Specifications | |
|---|---|
| **Product Type:** | NEMA 3R, Arc Resistant, Metal Clad Switchgear |
| **Ratings:** | 15kV, 600A, 25kAIC, 95kV BIL |
| **No of Cells:** | 5 + 1 |
| **Cell Dimensions:** | 38”L x 102”D x 126”H |
| **Switching Device(s):** | Eaton VCP-W Breakers |
| **Relay/Meters:** | SEL-751A, SEL-735 |
| **Configuration:** | FDR-FDR-BKR-BKR-FDR |
| **Distinctive Features:** | • Arc resistant metal clad switchgear in a skin tight, NEMA 3R, 316 stainless steel enclosure<br>• 1 foot roof overhang<br>• 150kVA transformer with breaker in same cell<br>• LV distribution and battery charger integrated into cell 6 |

# Deltaport RMB Substation

## Technical Specifications

| | |
|---|---|
| **Product Type:** | Stainless Steel NEMA 3R, Arc Resistant 2MVA Substation, Skid Mounted |
| **Distinctive Features:** | • 15kV VCP-W breaker c/w isolation switch (ABB NAL)<br>• 2MVA oil filled, close-coupled transformer<br>• 600V, 2400A main with 2000A feeder and station service distribution<br>• RIC Electronics battery charger and Eaton low voltage switchgear incorporated into RIC Power NEMA 3R enclosure<br>• 30ft skid shipped as single piece |

# Cambridge Bay

## Technical Specifications

| | |
|---|---|
| **Product Type:** | Arc Resistant, Metal Clad Switchgear |
| **Ratings:** | 5kV, 1200A, 29kAIC |
| **No of Cells:** | 3 |
| **Cell Dimensions:** | BKR: 36”W x 91”D x 100”H |
| **Switching Device(s):** | Tavrida Draw-out Breaker |
| **Relay/Meters:** | GE 345, GE 750, GE 489 |
| **Configuration:** | BKR-BKR-BKR |
| **Distinctive Features:** | • Short lead time (12 weeks, PO<br>• to Ship)<br>• New ANSI cradle design for IEC style breaker<br>• Extreme cold environment arc exhaust hood |

# Pipeline Co. (Alberta) II

## Technical Specifications

| | |
|---|---|
| **Product Type:** | Skid Mounted, Metal Clad, NEMA 3R Switchgear |
| **Ratings:** | 25kV, 1200A, 20kAIC |
| **No of Cells:** | 8 |
| **Cell Dimensions:** | BKR: 38”W x 117”D x 120”H<br>CPT: 38”W x 117”D x 120”H<br>LBS: 48”W x 117”D x 120”H<br>LBS: 48”W x 117”D x 120”H |
| **Switching Device(s):** | Eaton VCP-W<br>ABB NAL Load Break Switch |
| **Relay/Meters:** | ION7650, GE Multilin SR350 and F60 |
| **Configuration:** | LBS-LBS-LBS-BKR-BKR-BKR-DWR/CPT-BKR |
| **Distinctive Features:** | • Outdoor, skid mounted with integrated 15kVA CPTs |

## Options

**NEMA 3R “Skin Tight” Enclosure**

- Used for outdoor and harsh environments
- Wrap any type of gear (ME/MC/AR)
- Can reduce footprint and cost

**Breaker Lift Cart (image right)**

- Compact and foldable for easy storage
- Capable of breaker removal from lower or upper compartment

**External Remote Racking Device**

- Protect operators from high probably arc fault situation

# BC Hydro - Ruskin Dam

## Technical Specifications

| | |
|---|---|
| **Product Type:** | Arc Resistant, Metal Clad Switchgear |
| **Ratings:** | 15kV, 3000A, 41kAIC |
| **No of Cells:** | 3 Lineups of 3 |
| **Cell Dimensions:** | BKR: 36”W x 91”D x 100”H |
| **Switching Device(s):** | Eaton VCP-W |
| **Relay/Meters:** | By Others |
| **Configuration:** | Varies |
| **Distinctive Features:** | • Incorporation of C800 CTs<br>• Inclusion of surge arresters and surge capacitors<br>• Shared plenum<br>• Bus duct interconnections |

Protection and control for 150MW at Ruskin Dam

# Toromont - Repulse Bay

## Technical Specifications

| | |
|---|---|
| **Product Type:** | Arc Resistant, Metal Clad Switchgear |
| **Ratings:** | 5kV, 2000A, 25kAIC |
| **No of Cells:** | 3 |
| **Cell Dimensions:** | BKR: 36”W x 91”D x 100”H |
| **Switching Device(s):** | Eaton VCP-W |
| **Relay/Meters:** | GE B30, GE 850, GE 889, GE 845 |
| **Configuration:** | BKR-BKR-BKR |
| **Distinctive Features:** | • ABS marine certified<br>• Extreme cold environment arc exhaust hood |

# Shaw Communications

## Technical Specifications

| | |
|---|---|
| **Product Type:** | Low Voltage Metal Enclosed Switchgear |
| **Ratings:** | 230/400V, 1200A, 50kA |
| **No of Cells:** | 3 |
| **Cell Dimensions:** | 22”W (3P) / 27”W (4P) x 48”D x 95”H |
| **Switching Device(s):** | Eaton Magnum DS Breaker, Drawout |
| **Relay/Meters:** | Eaton Digitrip |
| **Configuration:** | BKR-BKR-CABLE |
| **Distinctive Features:** | • Shortened depth<br>• Integrated control panel |

# Richardson

| Technical Specifications | |
|---|---|
| **Product Type:** | Metal Clad Switchgear c/w Remote Control Panel |
| **Ratings:** | 15kV, 1200A, 25kAIC |
| **No of Cells:** | 5 |
| **Cell Dimensions:** | 36”W x 72”D x 95”H |
| **Switching Device(s):** | Eaton VCP-T |
| **Relay/Meters:** | SEL-751A, SEL-735 |
| **Configuration:** | BKR-FDR-FDR-FDR-FDR |
| **Distinctive Features:** | • Severe space restrictions<br>• Remote HMI panel w/ breaker motor rack controls<br>• (2) High feeder design |

# Shell Oil - Carmon Creek

| Technical Specifications | |
|---|---|
| **Product Type:** | Metal Clad Switchgear |
| **Ratings:** | 5kV, 2000A, 41kAIC |
| **No of Cells:** | 9 |
| **Cell Dimensions:** | BKR: 36”W x 91”D x 95”H |
| **Switching Device(s):** | Eaton VCP-W |
| **Relay/Meters:** | SEL-751A<br>SEL-735<br>SEL-700G |
| **Configuration:** | BKR-BKR-BKR-BKR-TIEBKR-FDR-FDR-FDR |
| **Distinctive Features:** | • Short Delivery (8 Weeks from PO to Delivery) |

# Imperial Oil - Hebron

## Technical Specifications

| | |
|---|---|
| **Product Type:** | Metal Enclosed Switchgear c/w Remote HMI Panel and ABS Certified E-House |
| **Ratings:** | 25kV, 600A, 16kAIC |
| **No of Cells:** | 11 |
| **Cell Dimensions:** | BKRM: 48”W x 68”D x 92”H<br>TRAN: 21”W x 68”D x 92”H |
| **Switching Device(s):** | Tavrida LD, ABB NAL Switch |
| **Relay/Meters:** | SEL-751A, SEL-787, SEL-3530 |
| **Configuration:** | BKR-TRAN-FDR-FDR-TIEBKR-TRAN-FDR-FDR-FDR-FDR |
| **Distinctive Features:** | • GL certification of 25kV switchgear<br>• Tilt table testing of switchgear |

GL Certified Switchgear in E-House

# Amix II

## Technical Specifications

| | |
|---|---|
| **Product Type:** | Metal Clad Switchgear |
| **Ratings:** | 25kV, 600A, 25kAIC |
| **No of Cells:** | 5 |
| **Cell Dimensions:** | BKR: 36”W x 91”D x 95”H<br>LBS/MET: 48”W x 91”D x 95”H |
| **Switching Device(s):** | ABB NAL Loadbreak Switch<br>Eaton VCP-W |
| **Relay/Meters:** | SEL-751 |
| **Configuration:** | LBS-BKR-MET-FDR-FDR |
| **Distinctive Features:** | • Short Delivery (12 Weeks from PO to Delivery)<br>• (2) High Feeder Design |

# De Beers

## Technical Specifications

| | |
|---|---|
| **Product Type:** | Metal Enclosed,NEMA 3R Switchgear |
| **Ratings:** | 5kV, 1200A, 31.5kAIC |
| **No of Cells:** | 3 |
| **Cell Dimensions:** | CABLE: 12”W x 60”D x 68”H<br>BKR/LBS: 42”W x 60”Dx 68”H |
| **Switching Device(s):** | ABB NAL Loadbreak Switch<br>Tavrida LD Series Breaker |
| **Relay/Meters:** | Eaton EDR-5000<br>Eaton PMX-2260 |
| **Configuration:** | CBL-BKR-LBS |
| **Distinctive Features:** | • Short height designed to fit on 737 freighter<br>• Enclosure suitable for installation in -40°C climate |

# Pipeline Co. (Alberta) I

## Technical Specifications

| | |
|---|---|
| **Product Type:** | Skid Mounted Metal Clad<br>NEMA 3R Switchgear |
| **Ratings:** | 25kV, 600A, 20kAIC |
| **No of Cells:** | 4 |
| **Cell Dimensions:** | BRKM: 36”W x 117”D x 120”H<br>CPT: 36”W x 117”D x 120”H<br>LBS: 48”W x 117”D x 120”H<br>LBS: 48”W x 117”D x 120”H |
| **Switching Device(s):** | Eaton VCP-W<br>ABB NAL Load Break Switch |
| **Relay/Meters:** | ION7650<br>GE Multilin SR350 |
| **Configuration:** | BRK-LBS-LBS |
| **Distinctive Features:** | • Outdoor skid mounted |

# Ice Harbor Dam

| Technical Specifications | |
|---|---|
| **Product Type:** | Metal Clad NEMA 3R Switchgear |
| **Ratings:** | 5kV, 1200A, 40kAIC |
| **No of Cells:** | 2 |
| **Cell Dimensions:** | BRK:<br>36”W x 106”D x 118”H<br>Control:<br>36” W x 106”D x 118”H |
| **Switching Device(s):** | Eaton, VCP-W |
| **Relay/Meters:** | SEL787, SEL735, SEL2533 |
| **Configuration:** | BKR-CTRL |
| **Distinctive Features:** | • Short delivery |

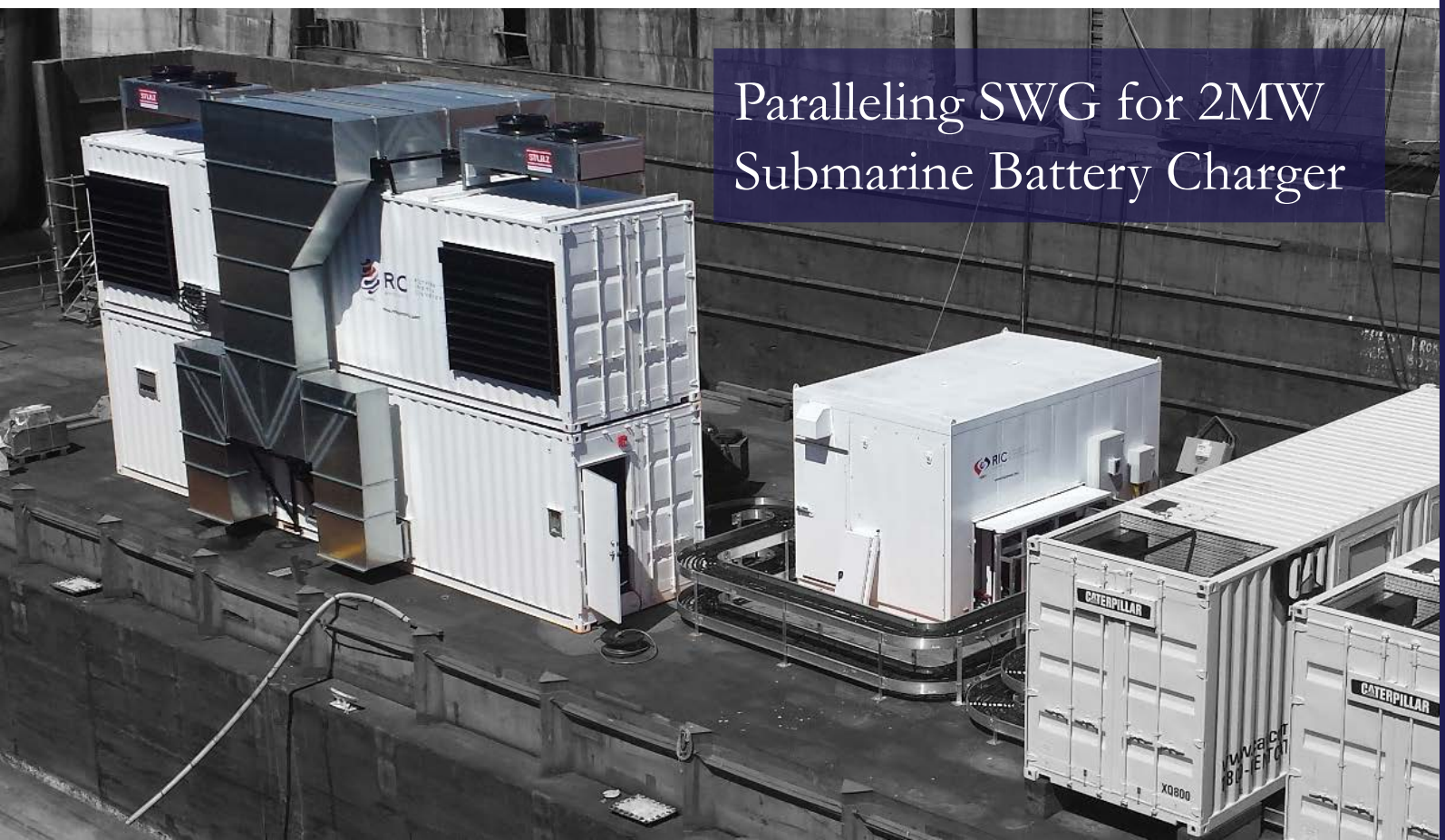
# Teck Coal

| Technical Specifications | |
|---|---|
| **Product Type:** | Metal Clad Switchgear |
| **Ratings:** | 5kV, 2000A, 41kAIC |
| **No of Cells:** | 4 |
| **Cell Dimensions:** | 36”W x 72”D x 95”H |
| **Switching Device(s):** | Eaton VCP-W |
| **Relay/Meters:** | SEL-751A<br>SEL-787<br>SE-330 |
| **Configuration:** | BKR-FDR-FDR-TIE |
| **Distinctive Features:** | • Custom connection to existing switchgear<br>• Space restrictions |

# Victoria Shipyard - Seaspan

## Technical Specifications

| | |
|---|---|
| **Product Type:** | Metal Clad Switchgear c/w E-House and Generator Rental |
| **Ratings:** | 480V, 3000A, 65kAIC |
| **No of Cells:** | 4 |
| **Cell Dimensions:** | 24”W x 56”D x 95”H |
| **Switching Device(s):** | Eaton Magnum |
| **Relay/Meters:** | ION 7350 |
| **Configuration:** | BKR-BKR-FDR-FDR |
| **Distinctive Features:** | • Marine rated E-house<br>• Rear accessible camlocks for switchgear connections |




## Paralleling SWG for 2MW Submarine Battery Charger

# Toromont - Gjoa Haven

| Technical Specifications | |
|---|---|
| **Product Type:** | Arc Resistant, Metal Clad Switchgear |
| **Ratings:** | 5kV, 2000A, 25kAIC |
| **No of Cells:** | 3 |
| **Cell Dimensions:** | BRK:<br>36”W x 91”D x 100”H |
| **Switching Device(s):** | Eaton, VCP-W |
| **Relay/Meters:** | GE B30<br>GE 850<br>GE 889<br>GE 845 |
| **Configuration:** | BKR-BKR-BKR |
| **Distinctive Features:** | • ABS marine certified<br>• Extreme cold environment arc exhaust hood |

# Amix I

| Technical Specifications | |
|---|---|
| **Product Type:** | Metal Enclosed Switchgear |
| **Ratings:** | 5kV, 2000A, 25kAIC |
| **No of Cells:** | 4 |
| **Cell Dimensions:** | BKRM: 30”W x 61.5”D x 92.5”H<br>BKRF: 26”W x 61.5”D x 92.5”H<br>CBL: 19”W x 61.5”D x 92.5”H |
| **Switching Device(s):** | Eaton, VCP-W |
| **Relay/Meters:** | By Others |
| **Configuration:** | BKR-FDR-CBL-FDR |
| **Distinctive Features:** | • Short delivery (12 weeks from PO to delivery)<br>• Compact design |

# BC Hydro Road Mobile

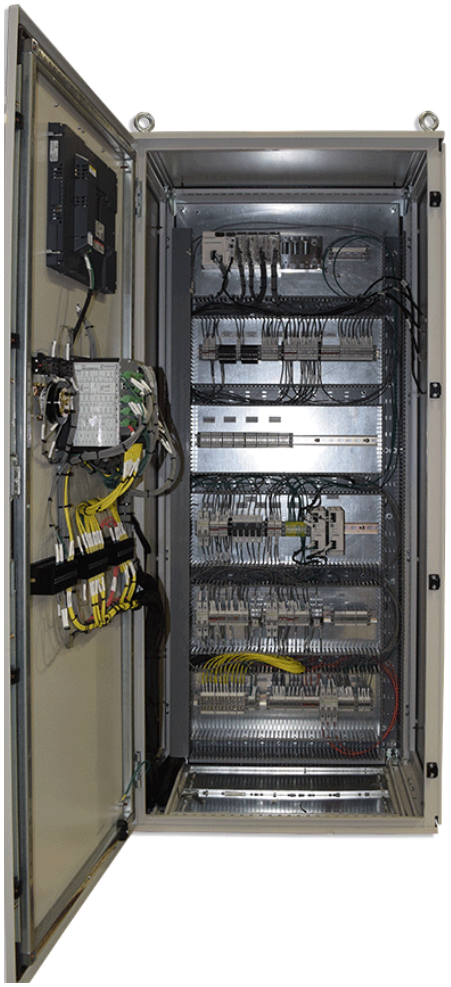
## Technical Specifications

| | |
|---|---|
| **Product Type:** | Custom Switchgear c/w Protection and Control Cabinet |
| **Ratings:** | 2.4kV, 1200A, 29kAIC |
| **No of Cells:** | 2 |
| **Cell Dimensions:** | 36”W x 54”D x 80”H |
| **Switching Device(s):** | ABB NAL Loadbreak Switch<br>Eaton VCP-W |
| **Relay/Meters:** | By Others |
| **Configuration:** | Custom |
| **Distinctive Features:** | • Space restricted within E-house |

# Myra Falls

## Technical Specifications

| | |
|---|---|
| **Product Type:** | Metal Clad Switchgear |
| **Ratings:** | 5kV, 3000A, 40kA |
| **No of Cells:** | 8 |
| **Cell Dimensions:** | 36”W x 95”H x 91”D |
| **Switching Device(s):** | Eaton VCP-W<br>ABB NAL Load Break Switch |
| **Relay/Meters:** | SEL-700G<br>SEL-751 |
| **Configuration:** | TX-FDR-BRK-BRK-BRK-BRK-BRK-FDR |
| **Distinctive Features:** | • Paralleling/Synchronizing five Gensets c/w PLC programming. |



# Port of Oakland

## Technical Specifications

| | |
|---|---|
| **Product Type:** | Metal Clad Switchgear |
| **Ratings:** | 15kV, 1200A, 25kA |
| **No of Cells:** | 13 |
| **Cell Dimensions:** | 33" W x 100 15/16"H x 94"D |
| **Switching Device(s):** | ABB Load Break Switch<br>Schneider VR Breaker |
| **Relay/Meters:** | GE Multilin F60 & F35 Itron Utility Meter |
| **Configuration:** | METER-BRK-TRAN-LBS-LBS-LBS-LBS-LBS-LBS-TRAN-BRK-CPT-CP |
| **Distinctive Features:** | • NEMA 3R Skin tight |

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