Bid Proposal

Date: 3 June 2016

To: Jason Eldredge  
   Tel: 208-529-1160 ext. 112

Project: Bonneville Dispatch New Generator Install Labor

We offer the following electrical estimate as per plans and specifications for the above referenced project.

Base Bid $37,900.00

Acknowledgments: Conduit, wire, generator pad, demo, gear rework, new main disconnect, main conduit rework, and duel-fuel natural gas/propane connection.

Exclusions: Generator and ATS

Bid shall be good for 30 calendar days.
Bid includes all applicable taxes and State Electrical Fee.

Idaho Electrical Contractor’s License No.: C 3802
Public Works Contractor’s License No.: PWC-C-12193-UNLIMITED-4 (16000, 02310, 02820, 02810, 13850, 16700)

Please do not hesitate to contact me at (208) 684-5463 should you have any questions regarding the above bid.

Thank you
Sincerely,

Bart Grover
Project Manager
Bid Proposal

Date: 3 June 2016

To: Jason Eldredge

Tel: 208-529-1160 ext. 112

Project: Bonneville Dispatch New Generator Install Material Cummins

We offer the following electrical estimate as per plans and specifications for the above referenced project. This quote is for Cummins Rocky Mountain.

Base Bid $36,300.00

Acknowledgments: Generator 100KW, 400 amp ATS, startup/testing, duel-fuel natural gas/LP vapor, and network system.

Exclusions: Conduit, wire, generator pad, demo, gear rework and propane connection.

Bid shall be good for 30 calendar days.
Bid includes all applicable taxes and State Electrical Fee.

Idaho Electrical Contractor’s License No.: C 3802
Public Works Contractor’s License No.: PWC-C-12193-UNLIMITED-4 (16000, 02310, 02620, 02810, 13850, 16700)

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Thank you
Sincerely,

Bart Grover
Project Manager

100KW, Model # C 160 N06

586 West Hwy 26, Box 1, Blackfoot, Idaho 83221 • Phone: (208) 684-5463 • Fax: (208) 684-3218
Spark-ignited generator set

45–100 kW standby
EPA emissions

Description
Cummins Power Generation generator sets are fully integrated power generation systems providing optimum performance, reliability and versatility for stationary standby applications.

Features
Gas engine - Rugged 4-cycle Cummins QSJ6.9G spark-ignited engine delivers reliable power. The electronic air/fuel ratio control provides optimum engine performance and fast response to load changes.

Alternator - Several alternator sizes offer selectable motor starting capability with low reactance 2/3 pitch windings, low waveform distortion with non-linear loads and fault clearing short-circuit capability.

Control system - The PowerCommand® 1.1 electronic control is standard equipment and provides total generator set system integration including automatic remote starting/stoppage, precise frequency and voltage regulation, alarm and status message display, output metering, auto-shutdown at fault detection and NFPA 110 Level 1 compliance.

Cooling system - Standard cooling package provides reliable running at up to 50 °C (122 °F) ambient temperature.

Enclosures - The aesthetically appealing enclosure incorporates special designs that deliver one of the quietest generators of its kind. Aluminum material plus durable powder coat paint provides the best anti-corrosion performance. The generator set enclosure has been evaluated to withstand 180 MPH wind loads in accordance with ASCE7-10. The design has hinged doors to provide easy access for service and maintenance.

NFPA - The generator set accepts full rated load in a single step in accordance with NFPA 110 for Level 1 systems.

Warranty and service - Backed by a comprehensive warranty and worldwide distributor and dealer network.

<table>
<thead>
<tr>
<th>Natural Gas</th>
<th>Propane</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standby</td>
<td>Standby</td>
</tr>
<tr>
<td>60 Hz</td>
<td>60 Hz</td>
</tr>
<tr>
<td>Model</td>
<td>kW</td>
</tr>
<tr>
<td>C45 N6</td>
<td>45</td>
</tr>
<tr>
<td>C50 N6</td>
<td>50</td>
</tr>
<tr>
<td>C60 N6</td>
<td>60</td>
</tr>
<tr>
<td>C70 N6</td>
<td>70</td>
</tr>
<tr>
<td>C80 N6</td>
<td>80</td>
</tr>
<tr>
<td>C100 N6</td>
<td>100</td>
</tr>
</tbody>
</table>

Our energy working for you.™

©2015 Cummins Power Generation Inc. | NAS-6092a-EN (7/15)
## Generator set specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Governor regulation class</td>
<td>ISO 8528 Part 1 Class G3</td>
</tr>
<tr>
<td>Voltage regulation, no load to full load</td>
<td>± 1.0%</td>
</tr>
<tr>
<td>Random voltage variation</td>
<td>± 1.0%</td>
</tr>
<tr>
<td>Frequency regulation</td>
<td>Isochronous</td>
</tr>
<tr>
<td>Random frequency variation</td>
<td>± 0.25% @ 60 Hz</td>
</tr>
<tr>
<td>Radio frequency emissions compliance</td>
<td>Meets requirements of most industrial and commercial applications</td>
</tr>
</tbody>
</table>

## Engine specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design</td>
<td>Naturally aspirated or turbo charged (varies by generator set model)</td>
</tr>
<tr>
<td>Bore</td>
<td>102.1 mm (4.02 in)</td>
</tr>
<tr>
<td>Stroke</td>
<td>118.9 mm (4.72 in)</td>
</tr>
<tr>
<td>Displacement</td>
<td>5.9 liters (359 in³)</td>
</tr>
<tr>
<td>Cylinder block</td>
<td>Cast iron, in-line 6 cylinder</td>
</tr>
<tr>
<td>Battery capacity</td>
<td>850 amps at ambient temperature of 0 °F to 32 °F (-18 °C to 0 °C)</td>
</tr>
<tr>
<td>Battery charging alternator</td>
<td>52 amps</td>
</tr>
<tr>
<td>Starting voltage</td>
<td>12 volt, negative ground</td>
</tr>
<tr>
<td>Lube oil filter type(s)</td>
<td>Spin-on with relief valve</td>
</tr>
<tr>
<td>Standard cooling system</td>
<td>50 °C (122 °F) ambient cooling system</td>
</tr>
<tr>
<td>Rated speed</td>
<td>1800 rpm</td>
</tr>
</tbody>
</table>

## Alternator specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design</td>
<td>Brushless, 4 pole, drip proof, revolving field</td>
</tr>
<tr>
<td>Stator</td>
<td>2/3 pitch</td>
</tr>
<tr>
<td>Rotor</td>
<td>Direct coupled, flexible disc</td>
</tr>
<tr>
<td>Insulation system</td>
<td>Class H per NEMA MG1-1.65</td>
</tr>
<tr>
<td>Standard temperature rise</td>
<td>120 °C (248 °F) standby</td>
</tr>
<tr>
<td>Exciter type</td>
<td>Torque match (shunt) with PMG as option</td>
</tr>
<tr>
<td>Alternator cooling</td>
<td>Direct drive centrifugal blower</td>
</tr>
<tr>
<td>AC waveform total harmonic distortion</td>
<td>&lt; 5% no load to full linear load, &lt; 3% for any single harmonic</td>
</tr>
<tr>
<td>Telephone influence factor (TIF)</td>
<td>&lt; 50 per NEMA MG1-22.43</td>
</tr>
<tr>
<td>Telephone harmonic factor (THF)</td>
<td>&lt;3%</td>
</tr>
</tbody>
</table>

## Available voltages

<table>
<thead>
<tr>
<th>Voltage</th>
<th>1-phase</th>
<th>3-phase</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>120/240</td>
<td>120/208</td>
</tr>
<tr>
<td></td>
<td>120/240</td>
<td>277/480</td>
</tr>
<tr>
<td></td>
<td></td>
<td>347/600</td>
</tr>
<tr>
<td></td>
<td></td>
<td>127/220</td>
</tr>
</tbody>
</table>

## Generator set options

### Fuel system
- Single fuel - natural gas or propane vapor, field selectable
- Dual fuel - natural gas and propane vapor auto changeover
- Low fuel gas pressure warning

### Engine
- Engine air cleaner
- Shut down - low oil pressure
- Extension - oil drain
- Engine oil heater

### Alternator
- 120 °C temperature rise alternator
- 105 °C temperature rise alternator
- PMG

### Electrical
- One, two or three circuit breaker configurations
- 80% rated circuit breakers
- 100% rated LSI circuit breakers
- Battery charger

### Control
- AC output analog meters
- Stop switch - emergency
- Auxiliary output relays (2)
- Auxiliary configurable signal inputs (8) and relay outputs (8)

### Generator set accessories
- Coolant heaters - 1000W / 1500W
- Battery rack, standard/larger battery
- Battery heater kit
- Engine oil heater
- Remote control displays
- Auxiliary output relays (2)
- Auxiliary configurable signal inputs (8) and relay outputs (8)
- Annunciator – RS485

### Exhaust system
- Exhaust connector NPT
- Exhaust muffler mounted

### Generator set application
- Base barrier - elevated genseal
- Battery rack, standard battery
- Battery rack, larger battery
- Radiator outlet duct adapter

### Warranty
- Base warranty - 2 year/400 hours, standby
- 3 year standby warranty options
- 5 year standby warranty options

### Generator set options
- Remote monitoring device - PowerCommand 500/550
- Battery charger - stand-alone, 12V
- Circuit breakers
- Enclosure Sound Level 1 to Sound Level 2 upgrade kit
- Base barrier - elevated generator set
- Mufflers - industrial, residential or critical
- Alternator PMG
- Alternator heater
Control system PowerCommand 1.1

PowerCommand control is an integrated generator set control system providing voltage regulation, engine protection, operator interface and isochronous governing (optional). Major features include:
- Battery monitoring and testing features and smart starting control system.
- Standard PCCNet interface to devices such as remote annunciator for NFPA 110 applications.
- Control boards potted for environmental protection.
- Control suitable for operation in ambient temperatures from -40 °C to +70 °C (-40 °F to +158 °F) and altitudes to 5000 meters (13,000 feet).
- Prototype tested; UL, CSA, and CE compliant.
- InPower™ PC-based service tool available for detailed diagnostics.

Operator/display panel
- Manual off switch
- Alpha-numeric display with pushbutton access for viewing engine and alternator data and providing setup, controls and adjustments (English or international symbols)
- LED lamps indicating generator set running, not in auto, common warning, common shutdown, manual run mode and remote start
- Suitable for operation in ambient temperatures from -40 °C to +70 °C
- Bargraph display (optional)

AC protection
- Over current warning and shutdown
- Over and under voltage shutdown
- Over and under frequency shutdown
- Over excitation (loss of sensing) fault
- Field overload

Engine protection
- Overspeed shutdown
- Low oil pressure warning and shutdown
- High coolant temperature warning and shutdown
- Low coolant level warning or shutdown
- Low coolant temperature warning
- High, low and weak battery voltage warning
- Fail to start (overcrank) shutdown
- Fail to crank shutdown
- Redundant start disconnect
- Cranking lockout
- Sensor failure indication
- Low fuel level warning or shutdown

Alternator data
- Line-to-line and Line-to-neutral AC volts
- 3-phase AC current
- Frequency
- Total kVA

Engine data
- DC voltage
- Lube oil pressure
- Coolant temperature
- Engine speed

Other data
- Generator set model data
- Start attempts, starts, running hours
- Fault history
- RS485 Modbus® interface
- Data logging and fault simulation (requires InPower service tool)

Digital governing (optional)
- Integrated digital electronic isochronous governor
- Temperature dynamic governing

Digital voltage regulation
- Integrated digital electronic voltage regulator
- 2-phase line-to-line sensing
- Configurable torque matching

Control functions
- Time delay start and cooldown
- Cycle cranking
- PCCNet interface
- (2) Configurable inputs
- (2) Configurable outputs
- Remote emergency stop
- Automatic transfer switch (ATS) control
- Generator set exercise, field adjustable

Options
- Auxiliary output relays (2)
- Remote annunciator with (3) configurable inputs and (4) configurable outputs
- PMG alternator excitation
- PowerCommand 500/550 for remote monitoring and alarm notification (accessory)
- Auxiliary, configurable signal inputs (8) and configurable relay outputs (8)
- Digital governing
- AC output analog meters (bargraph)
  - Color-coded graphical display of:
    - 3-phase AC voltage
    - 3-phase current
    - Frequency
    - kVA
- Remote operator panel
**Ratings definitions**

**Emergency standby power (ESP):** Applicable for supplying power to varying electrical load for the duration of power interruption of a reliable utility source. Emergency Standby Power (ESP) is in accordance with ISO 8528. Fuel Stop power in accordance with ISO 3046, AS 2789, DIN 6271 and BS 5514.

**Limited-time running power (LTP):** Applicable for supplying power to a constant electrical load for limited hours. Limited Time Running Power (LTP) is in accordance with ISO 8528.

**Prime power (PRP):** Applicable for supplying power to varying electrical load for unlimited hours. Prime Power (PRP) is in accordance with ISO 8528. Ten percent overload capability is available in accordance with ISO 3046, AS 2789, DIN 6271 and BS 5514.

**Base load (continuous) power (COP):** Applicable for supplying power continuously to a constant electrical load for unlimited hours. Continuous Power (COP) in accordance with ISO 8528, ISO 3046, AS 2789, DIN 6271 and BS 5514.

*Do not use for installation design*

<table>
<thead>
<tr>
<th>Model</th>
<th>Dim &quot;A&quot; mm (in.)</th>
<th>Dim &quot;B&quot; mm (in.)</th>
<th>Dim &quot;C&quot; mm (in.)</th>
<th>Set Weight* wet kg (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Open Set</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C45 N6</td>
<td>2489 (98)</td>
<td>1016 (40)</td>
<td>1473 (58)</td>
<td>989 (2180)</td>
</tr>
<tr>
<td>C50 N6</td>
<td>2489 (98)</td>
<td>1016 (40)</td>
<td>1473 (58)</td>
<td>989 (2180)</td>
</tr>
<tr>
<td>C60 N6</td>
<td>2489 (98)</td>
<td>1016 (40)</td>
<td>1473 (58)</td>
<td>1103 (2431)</td>
</tr>
<tr>
<td>C70 N6</td>
<td>2489 (98)</td>
<td>1016 (40)</td>
<td>1473 (58)</td>
<td>1111 (2449)</td>
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<tr>
<td>C80 N6</td>
<td>2489 (98)</td>
<td>1016 (40)</td>
<td>1473 (58)</td>
<td>1173 (2587)</td>
</tr>
<tr>
<td>C100 N6</td>
<td>2489 (98)</td>
<td>1016 (40)</td>
<td>1473 (58)</td>
<td>1233 (2719)</td>
</tr>
</tbody>
</table>

| **Weather Protective Enclosure** |                   |                 |                 |                        |
| C45 N6  | 2489 (98)       | 1016 (40)       | 1473 (58)       | 1070 (2359)            |
| C50 N6  | 2489 (98)       | 1016 (40)       | 1473 (58)       | 1070 (2359)            |
| C60 N6  | 2489 (98)       | 1016 (40)       | 1473 (58)       | 1184 (2610)            |
| C70 N6  | 2489 (98)       | 1016 (40)       | 1473 (58)       | 1192 (2628)            |
| C80 N6  | 2489 (98)       | 1016 (40)       | 1473 (58)       | 1255 (2766)            |
| C100 N6 | 2489 (98)       | 1016 (40)       | 1473 (58)       | 1315 (2898)            |

| **Sound Attenuated Enclosure Level 1** |                   |                 |                 |                        |
| C45 N6  | 3023 (119)      | 1016 (40)       | 1473 (58)       | 1114 (2455)            |
| C50 N6  | 3023 (119)      | 1016 (40)       | 1473 (58)       | 1114 (2455)            |
| C60 N6  | 3023 (119)      | 1016 (40)       | 1473 (58)       | 1227 (2706)            |
| C70 N6  | 3023 (119)      | 1016 (40)       | 1473 (58)       | 1236 (2724)            |
| C80 N6  | 3023 (119)      | 1016 (40)       | 1473 (58)       | 1298 (2862)            |
| C100 N6 | 3023 (119)      | 1016 (40)       | 1473 (58)       | 1358 (2994)            |

| **Sound Attenuated Enclosure Level 2** |                   |                 |                 |                        |
| C45 N6  | 3454 (136)      | 1016 (40)       | 1473 (58)       | 1127 (2485)            |
| C50 N6  | 3454 (136)      | 1016 (40)       | 1473 (58)       | 1127 (2485)            |
| C60 N6  | 3454 (136)      | 1016 (40)       | 1473 (58)       | 1241 (2736)            |
| C70 N6  | 3454 (136)      | 1016 (40)       | 1473 (58)       | 1249 (2754)            |
| C80 N6  | 3454 (136)      | 1016 (40)       | 1473 (58)       | 1312 (2892)            |
| C100 N6 | 3454 (136)      | 1016 (40)       | 1473 (58)       | 1372 (3024)            |

*Weights above are average. Actual weight varies with product configuration.*

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## Codes and standards

Codes or standards compliance may not be available with all model configurations – consult factory for availability.

<table>
<thead>
<tr>
<th><strong>International Building Code</strong></th>
<th><strong>U.S. EPA</strong></th>
</tr>
</thead>
</table>

- The Prototype Test Support (PTS) program verifies the performance integrity of the generator set design. Cummins Power Generation products bearing the PTS symbol meet the prototype test requirements of NFPA 110 for Level 1 systems.
- This generator set is designed in facilities certified to ISO 9001 and manufactured in facilities certified to ISO 9001 or ISO 9002.
- The generator set is available Listed to UL 2200, Stationary Engine Generator Assemblies.
- All low voltage models are CSA certified to product class 4215-01.

**Warning:** Back feed to a utility system can cause electrocution and/or property damage. Do not connect to any building's electrical system except through an approved device or after building main switch is open.
Bid Proposal

Date: 3 June 2016

To: Jason Eldredge
Tel: 208-529-1160 ext. 112

Project: Bonneville Dispatch New Generator Install Material Generac

We offer the following electrical estimate as per plans and specifications for the above referenced project. This quote is for Energy Management Corporation.

Base Bid $51,300.00

Acknowledgments: Generator 100KW, 400amp ATS, startup/testing, duel-fuel natural gas/LP vapor, and network system.

Exclusions: Conduit, wire, generator pad, demo, gear rework and propane connection.

Bid shall be good for 30 calendar days.
Bid includes all applicable taxes and State Electrical Fee.

Idaho Electrical Contractor’s License No.: C 3802
Public Works Contractor’s License No.: PWC-C-12193-UNLIMITED-4 (16000, 02310, 02620, 02610, 13850, 16700)

Please do not hesitate to contact me at (208) 684-5463 should you have any questions regarding the above bid.

Thank you
Sincerely,

Bart Grover
Project Manager

586 West Hwy 26, Box 1, Blackfoot, Idaho 83221 • Phone: (208) 684-5463 • Fax: (208) 684-3218
Bid Proposal

Date: 3 June 2016

To: Jason Eldredge
Tel: 208-529-1160 ext. 112

Project: Bonneville Dispatch New Generator Install Material Kohler

We offer the following electrical estimate as per plans and specifications for the above referenced project. This quote is for EC Power systems.

Base Bid $40,200.00

Acknowledgments: Generator 100 KW, 400amp ATS, startup/testing, duel-fuel natural gas/LP vapor, and network system.

Exclusions: Conduit, wire, generator pad, demo, gear rework and propane connection.

Bid shall be good for 30 calendar days.
Bid includes all applicable taxes and State Electrical Fee.

Idaho Electrical Contractor’s License No.: C 3802
Public Works Contractor’s License No.: PWC-C-12193-UNLIMITED-4 (16000, 02310, 02820, 02810, 13850, 16700)

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Thank you
Sincerely,

Bart Grover
Project Manager

Model # 1006 RE2GD

586 West Hwy 26, Box 1, Blackfoot, Idaho 83221 • Phone: (208) 684-5463 • Fax: (208) 684-3218