
EMERGENCY PURCHASE REPORT

Name of Requestor: **David Laughlin**

Date: **02/07/2020**

1. Date Critical or Emergency situation first noted/occurred (time and date):

02/05/2020 at 3:16 PM

2. Describe the danger to health, safety, property, or of equipment failure or economic loss – be very specific (attach additional pages, if required):

The SWRP North Cogeneration Facility is presently NOT operational and is expected to remain off line for the next 60 to 90 days as repairs are completed. The main bearings in both Generators #1 and #2 have failed and must be replaced. While repairs are being performed, SWRP remains at greater risk of losing all electrical power – a total black out condition. During this time, SWRP is relying primarily on PNM utility power to ensure all plant processes are operational. If we lose PNM power for any reason, GOGEN Generators #3 and #4 will also trip off line (they are too small to carry the plant electrical load by themselves) and the plant will have no power until some emergency portable generators can be started. These will only help maintain sewage flow through the plant and hopefully avoid a Sanitary Sewer Overflow (a serious EPA violation).

Because we will not be able to power the large blowers used in our Nitrogen Reduction Facilities, the longer the outage persists, the greater the likelihood we will violate our permit for Ammonia removal in our effluent outflow to the river. While this violation is not as onerous as a spill, avoiding it remains very important. A rented emergency generator deployed at the SWRP South Blower Building will enable the plant to meet its Nitrogen Removal permit requirements throughout this period of vulnerability.

3. Impact/consequences had purchase not been made immediately:

The longer the SWRP operates without North COGEN, the greater the risk of a violation.

4. Item(s) purchased:

Rental for a period of 90 days of a 2 MW Emergency Portable Generator (480V Output).

5. Price:

\$27,656.00 per four (4)-weeks for a total of 12 weeks + \$800.00 Transportation (one-time charge) = \$83,768.00 plus tax PLUS \$28,456.00 for an additional generator.

6. Vendors contacted to obtain best available price:

- **Wagner Equipment Company; 4000 Osuna Rd NE Albuquerque, NM 87109 (505) 345-8411**
- **Aggreko; 5030 W Watkins St. Phoenix, AZ 85043 Main: (904)-253-0202, Tollfree: 1-800-Aggreko**

EMERGENCY PURCHASING

7. Name and address of selected supplier:

Wagner Equipment Company; 4000 Osuna Rd NE Albuquerque, NM 87109 (505) 345-8411

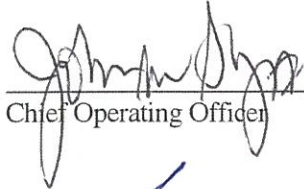
Emergency purchases require review and acknowledgement from the Division Manager.



Division Manager

2/10/2020
Date

Emergency Purchases greater than \$10,000 require review and acknowledgement from the Chief Operating Officer and Chief Financial Officer.



Chief Operating Officer

2/10/20
Date



Chief Financial Officer

2/10/2020
Date

Critical or Emergency Purchases greater than \$100,000 require review and acknowledgement from the Executive Director.



Executive Director

2/11/20
Date

Review and Verification by Purchasing Officer:



Purchasing Officer

2/21/2020
Date



WAGNER EQUIPMENT RENTAL PROPOSAL

New Mexico / Texas
 4000 Osuna Rd NE
 Albuquerque, NM 87109
 (505) 345-8411

Colorado
 18091 E 22nd Ave
 Aurora, CO 80011
 (303) 739-3000

CUSTOMER SERVICE 24 HOURS - 7 DAYS A WEEK - FOR CO CALL (303) 739-3000 - FOR NM CALL (505) 345 -8411				
Quoted by: David Herman	Store #: 15	Proposal No: 10R200085	Sales Rep: David Herman	Date: 2020-02-06
Customer: ALBUQUERQUE BERNALILLO COUNT	Acct#: 80786	Deliver To: ALBUQUERQUE Waste Water Facility		
Address: WATER UTILITY AUTHORITY PO BOX 568		Address: 4201 2nd Street SW		
City, State: ALBUQUERQUE NM		City, State: ALBUQUERQUE NM 87105		
Attention:		Estimated Length of Rental: 1 Month		
E-Mail:	Cell:	Contact: Charles Lee P.E. / Marissa Petty P.E.	Phone: 505 873 6927 / 303-319-5047	
Phone: 505 873 6927	FAX: 505 873 7087	Delivery Date: 2020-02-07		Est Time: 12noon

Qty	Size/Description	VAC	Shift Use	Day	Week	4-Weeks	RENTAL
1	XQ2000GeneratorUE2061	480vAC/3007	Standby	\$3,073.00	\$9,219.00	\$27,656.00	*\$27,656.00

Equip. Charges

Qty	Size/Description	Notes	Day	Week	4-Weeks	RENTAL
						Cable/Acc. Charges

Transportation:	Estimated per Unit:	Est. PM Services (250hr / 500hr intervals)	\$0.00
Delivery Charges:	\$400.00	Est. Tech Charges (\$135.00/hr standard time - \$164.00/hr overtime - \$194.00/hr holiday)	\$0.00
Pick up Charges:	\$400.00		
Total Transport Charges:	\$800.00	Total Tech Charges:	\$0.00
*Transport charges are subject to change		*Estimated travel time included in above rates are portal to portal. Mileage is not included, and will be charged @ \$0.00 per mile.	

Additional Comments: Lee, Charles <clee@abcwua.org> / MPetty@carollo.com	Estimated Trans Charges:	\$800.00
	Estimated Tech Charges:	\$0.00
	2% SMM:	\$0.00
	Estimated Total:	\$28,456.00

PO#		Date	
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Generators · Air Compressors · Temperature Control Emergency – Construction – Special Events – Facility Outages 24 Hr. Service, Delivery & Installation Call: Colorado: (303) 739-3000; New Mexico/Texas: (505) 345-8411		
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Wagner Equipment Co.

18000 Smith Rd., Aurora, CO 80011

Wagner's Insurance Requirements

Customers must meet the following requirements:

- **General Liability** must show at least \$1,000,000 for each occurrence. Wagner must be listed as **Additional Insured**.
- Show **Workers Compensation** limits.
- **Certificate Holder** must read: **Wagner Equipment Co./Wagner Rents Inc.**
18000 Smith Rd.
Aurora, CO 80011

Optional Coverage:

- **Physical Damage** is optional but must cover at least the replacement cost of machine or a 16% Rental Equipment Protection fee will be charged when renting from Wagner Equipment Co. or Wagner Rents. Wagner must be listed as **Loss Payee**.
- **Auto Liability** must show at least \$1,000,000 for Any Auto or Hired Auto if the customer is looking to rent a water or dump truck or transport Wagner equipment or demo an over the road truck. Wagner must be listed as **Additional Insured**.

All insurance certificates must be faxed OR emailed to the 614-448-2708 or emailed to certificates@JTBatesGroup.com.

Thank you.



WAGNER EQUIPMENT RENTAL PROPOSAL

New Mexico / Texas

4000 Osuna Rd NE
 Albuquerque, NM 87109
 (505) 345-8411

Colorado

18091 E 22nd Ave
 Aurora, CO 80011
 (303) 739-3000

**CUSTOMER SERVICE 24 HOURS - 7 DAYS A WEEK -
 FOR CO CALL (303) 739-3000 - FOR NM CALL (505) 345 -8411**

Quoted by: David Herman	Store #: 15	Proposal No: 10R200109	Sales Rep: David Herman	Date: 2020-02-26
Customer: ALBUQUERQUE BERNALILLO COUNT	Acct#: 80786	Deliver To: ALBUQUERQUE Waste Water Facility		
Address: WATER UTILITY AUTHORITY PO BOX 568		Address: 4201 2nd Street SW		
City, State: ALBUQUERQUE NM		City, State: ALBUQUERQUE NM 87105		
Attention:		Estimated Length of Rental: 2 Month		
E-Mail:	Cell:	Contact: Chuck Lee		Phone: 505-280-8935
Phone: 505 873 6927	FAX: 505 873 7087	Delivery Date: 2020-02-26		Est Time: 2-3pm

Qty	Size/Description	VAC	Shift Use	Day	Week	4-Weeks	RENTAL
1	XQ800GeneratorRGM042	480vAC	Standby	\$1,099.00	\$3,298.00	\$9,893.00	*\$19,786.00

Equip. Charges

Qty	Size/Description	Notes	Day	Week	4-Weeks	RENTAL
Cable/Acc. Charges						

Transportation:	Estimated per Unit:	Est. PM Services (250hr / 500hr intervals)	\$0.00
Delivery Charges:	\$400.00	Est. Tech Charges (\$135.00/hr standard time - \$164.00/hr overtime - \$194.00/hr holiday)	\$0.00
Pick up Charges:	\$400.00		
Total Transport Charges:	\$800.00	Total Tech Charges:	\$0.00
*Transport charges are subject to change		*Estimated travel time included in above rates are portal to portal. Mileage is not included, and will be charged @ \$0.00 per mile.	

Additional Comments:
 Lee, Charles <clee@abcwua.org>
 • Quote is Best Estimate Only May Not Reflect Final Invoicing
 • Does Not Include: 500 Hour PM Service
 • Equipment Returned Not Serviced / Low Fuel Level / Subject to Additional Charges.
 • Does Not Include: 2% Environmental Fees / State Taxes
 • Shift Rates: Single 8hr Day 40hr Week 176hr Month / Double Shift X 1.5 16hr Day 80hr Week 352hr Month / Triple Shift X 2 Continuous
 • Shift Terms: 3 Days = Week / 3 Weeks = Month
 • Rental Start Date is from Time Equipment Leaves Wagner Facility until Equipment is Returned to Wagner Facility.
 • Packaged Ships 600 Gallons Diesel Fuel Customer Responsible for Fueling unless Arranged Through Wagner Power Systems.
 800eKW Unit: RGM042 SN: N1B00290 Hours: 8613
 NO LOAD CABLES
 Ships With 4qty Four Barrel Lugs
 Wagner SERVICE DEPARTMENT SET UP @ \$168.00 Per Hour

Estimated Trans Charges:	\$800.00
Estimated Tech Charges:	\$0.00
2% SMM:	\$0.00
Estimated Total:	\$20,586.00

PO#		Date	
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Generators · Air Compressors · Temperature Control
 Emergency – Construction – Special Events – Facility Outages
 24 Hr. Service, Delivery & Installation
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All insurance certificates must be faxed OR emailed to the 614-448-2708 or emailed to certificates@JTBatesGroup.com.

Thank you.

PERFORMANCE DATA [MJE04060]

MARCH 02, 2017

(MJE04060)-ENGINE (GDG00190)-GENERATOR (GDS00638)-GENSET

For Help Desk Phone Numbers [Click here](#)

Perf No: DM7696

Change Level: 02

General Heat Rejection Emissions Regulatory Altitude Derate Cross Reference Perf Param Ref

[View PDF](#)

SALES MODEL:	C27	COMBUSTION:	DI
BRAND:	CAT	ENGINE SPEED (RPM):	1,800
ENGINE POWER (BHP):	1,214	HERTZ:	60
GEN POWER WITH FAN (EKW):	800.0	FAN POWER (HP):	39.3
COMPRESSION RATIO:	16.5	ADDITIONAL PARASITICS (HP):	52.2
RATING LEVEL:	STANDBY	ASPIRATION:	TA
PUMP QUANTITY:	1	AFTERCOOLER TYPE:	ATAAC
FUEL TYPE:	DIESEL	AFTERCOOLER CIRCUIT TYPE:	JW+OC, ATAAC
MANIFOLD TYPE:	DRY	INLET MANIFOLD AIR TEMP (F):	120
GOVERNOR TYPE:	ADEM4	JACKET WATER TEMP (F):	210.2
ELECTRONICS TYPE:	ADEM4	TURBO CONFIGURATION:	PARALLEL
IGNITION TYPE:	CI	TURBO QUANTITY:	2
INJECTOR TYPE:	EUI	TURBOCHARGER MODEL:	GTA5008BS-56T-1.60
REF EXH STACK DIAMETER (IN):	10	CERTIFICATION YEAR:	2010
MAX OPERATING ALTITUDE (FT):	7,999	PISTON SPD @ RATED ENG SPD (FT/MIN):	1,800.0

INDUSTRY	SUB INDUSTRY	APPLICATION
OIL AND GAS	LAND PRODUCTION	PACKAGED GENSET
ELECTRIC POWER	STANDARD	PACKAGED GENSET

General Performance Data [Top](#)

GENSET POWER WITH FAN	PERCENT LOAD	ENGINE POWER	BRAKE MEAN EFF PRES (BMEP)	BRAKE SPEC FUEL CONSUMPTN (BSFC)	VOL FUEL CONSUMPTN (VFC)	INLET MFLD PRES	INLET MFLD TEMP	EXH MFLD TEMP	EXH MFLD PRES	ENGINE OUTLET TEMP
EKW	%	BHP	PSI	LB/BHP-HR	GAL/HR	IN-HG	DEG F	DEG F	IN-HG	DEG F
800.0	100	1,214	324	0.330	57.3	58.6	120.5	1,230.6	41.1	952.5
720.0	90	1,100	294	0.334	52.5	53.7	115.2	1,195.3	37.5	932.4
640.0	80	988	264	0.339	47.8	48.4	113.4	1,168.6	33.4	919.7
600.0	75	932	249	0.341	45.4	45.5	113.0	1,155.3	31.2	913.8
560.0	70	876	234	0.342	42.9	42.2	111.6	1,138.9	28.8	906.0
480.0	60	765	204	0.344	37.6	34.9	107.3	1,095.6	23.9	882.8
400.0	50	654	175	0.346	32.3	27.3	102.5	1,039.6	19.1	850.4
320.0	40	545	145	0.349	27.1	20.4	98.3	967.7	14.9	804.3
240.0	30	436	116	0.355	22.1	14.5	95.0	875.5	11.4	739.0
200.0	25	380	101	0.359	19.5	11.7	93.6	822.1	9.9	699.4
160.0	20	324	86	0.366	17.0	9.1	92.4	763.2	8.5	654.7
80.0	10	210	56	0.402	12.0	5.1	92.2	626.6	6.3	544.7

GENSET POWER WITH FAN	PERCENT LOAD	ENGINE POWER	COMPRESSOR OUTLET PRES	COMPRESSOR OUTLET TEMP	WET INLET AIR VOL FLOW RATE	ENGINE OUTLET WET EXH GAS VOL FLOW RATE	WET INLET AIR MASS FLOW RATE	WET EXH GAS MASS FLOW RATE	WET EXH VOL FLOW RATE (32 DEG F AND 29.98 IN HG)	DRY EXH VOL FLOW RATE (32 DEG F AND 29.98 IN HG)
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GENSET POWER WITH FAN	PERCENT LOAD	ENGINE POWER	COMPRESSOR OUTLET PRES	COMPRESSOR OUTLET TEMP	WET INLET AIR VOL FLOW RATE	ENGINE OUTLET WET EXH GAS VOL FLOW RATE	WET INLET AIR MASS FLOW RATE	WET EXH GAS MASS FLOW RATE	WET EXH VOL FLOW RATE (32 DEG F AND 29.98 IN HG)	DRY EXH VOL FLOW RATE (32 DEG F AND 29.98 IN HG)
EKW	%	BHP	IN-HG	DEG F	CFM	CFM	LB/HR	LB/HR	FT3/MIN	FT3/MIN
800.0	100	1,214	61	362.1	2,216.4	6,011.7	9,543.1	9,944.2	2,093.1	1,894.9
720.0	90	1,100	57	341.6	2,124.9	5,659.3	9,125.9	9,493.8	1,998.8	1,815.5
640.0	80	988	51	320.7	2,001.3	5,260.8	8,572.1	8,906.9	1,875.2	1,707.1
600.0	75	932	48	309.9	1,930.4	5,042.0	8,257.4	8,575.1	1,805.0	1,645.1
560.0	70	876	44	295.4	1,851.1	4,797.3	7,907.3	8,207.3	1,727.2	1,576.0
480.0	60	765	37	264.1	1,678.1	4,260.9	7,148.0	7,411.6	1,560.5	1,427.2
400.0	50	654	29	233.3	1,497.7	3,697.0	6,361.6	6,588.0	1,387.5	1,272.0
320.0	40	545	22	203.3	1,329.0	3,157.0	5,630.4	5,820.5	1,228.0	1,129.6
240.0	30	436	16	173.6	1,175.4	2,643.8	4,970.3	5,124.7	1,084.4	1,003.3
200.0	25	380	13	158.7	1,102.8	2,392.1	4,660.7	4,797.2	1,014.7	942.2
160.0	20	324	10	143.8	1,032.8	2,142.5	4,363.5	4,482.1	945.3	881.3
80.0	10	210	6	121.2	926.9	1,716.6	3,911.4	3,995.6	840.3	792.1

Heat Rejection Data Top

GENSET POWER WITH FAN	PERCENT LOAD	ENGINE POWER	REJECTION TO JACKET WATER	REJECTION TO ATMOSPHERE	REJECTION TO EXH	EXHUAUST RECOVERY TO 350F	FROM OIL COOLER	FROM AFTERCOOLER	WORK ENERGY	LOW HEAT VALUE ENERGY	HIGH HEAT VALUE ENERGY
EKW	%	BHP	BTU/MIN	BTU/MIN	BTU/MIN	BTU/MIN	BTU/MIN	BTU/MIN	BTU/MIN	BTU/MIN	BTU/MIN
800.0	100	1,214	18,785	6,240	45,257	25,637	6,549	9,235	51,468	122,961	130,984
720.0	90	1,100	18,137	5,061	42,000	23,586	6,007	8,276	46,664	112,779	120,138
640.0	80	988	17,141	4,437	38,642	21,600	5,462	7,119	41,902	102,550	109,241
600.0	75	932	16,243	4,573	36,868	20,559	5,186	6,513	39,533	97,376	103,729
560.0	70	876	15,133	4,950	34,899	19,383	4,898	5,822	37,162	91,965	97,965
480.0	60	765	13,933	4,599	30,563	16,728	4,301	4,488	32,445	80,759	86,028
400.0	50	654	12,297	4,489	26,024	13,914	3,694	3,331	27,748	69,364	73,890
320.0	40	545	10,665	4,336	21,575	11,109	3,103	2,367	23,120	58,261	62,063
240.0	30	436	9,960	3,213	17,222	8,311	2,521	1,564	18,469	47,340	50,429
200.0	25	380	9,576	2,592	15,113	6,955	2,231	1,215	16,122	41,885	44,618
160.0	20	324	9,057	2,021	13,057	5,639	1,939	898	13,745	36,402	38,778
80.0	10	210	7,177	1,693	9,288	3,167	1,375	455	8,885	25,814	27,498

Emissions Data Top

Units Filter All Units v

RATED SPEED POTENTIAL SITE VARIATION: 1800 RPM

GENSET POWER WITH FAN		EKW	800.0	600.0	400.0	200.0	80.0
ENGINE POWER		BHP	1,214	932	654	380	210
PERCENT LOAD		%	100	75	50	25	10
TOTAL NOX (AS NO2)		G/HR	7,541	4,507	2,865	1,989	1,253
TOTAL CO		G/HR	517	644	630	514	567
TOTAL HC		G/HR	66	83	90	71	85
PART MATTER		G/HR	55.4	52.1	86.3	99.7	101.9
TOTAL NOX (AS NO2)	(CORR 5% O2)	MG/NM3	3,121.8	2,374.5	2,149.1	2,626.2	2,606.8
TOTAL CO	(CORR 5% O2)	MG/NM3	215.2	343.4	483.1	717.2	1,372.2
TOTAL HC	(CORR 5% O2)	MG/NM3	23.7	38.9	59.2	87.9	183.2
PART MATTER	(CORR 5% O2)	MG/NM3	18.9	22.9	55.1	113.5	210.1
TOTAL NOX (AS NO2)	(CORR 5% O2)	PPM	1,521	1,157	1,047	1,279	1,270
TOTAL CO	(CORR 5% O2)	PPM	172	275	386	574	1,098
TOTAL HC	(CORR 5% O2)	PPM	44	73	111	164	342
TOTAL NOX (AS NO2)		G/HP-HR	6.27	4.86	4.40	5.25	6.00
TOTAL CO		G/HP-HR	0.43	0.69	0.97	1.36	2.72
TOTAL HC		G/HP-HR	0.05	0.09	0.14	0.19	0.41
PART MATTER		G/HP-HR	0.05	0.06	0.13	0.26	0.49
TOTAL NOX (AS NO2)		LB/HR	16.63	9.94	6.32	4.38	2.76
TOTAL CO		LB/HR	1.14	1.42	1.39	1.13	1.25
TOTAL HC		LB/HR	0.15	0.18	0.20	0.16	0.19
PART MATTER		LB/HR	0.12	0.11	0.19	0.22	0.22

GENSET POWER WITH FAN		EKW	800.0	600.0	400.0	200.0	80.0
ENGINE POWER		BHP	1,214	932	654	380	210
PERCENT LOAD		%	100	75	50	25	10

RATED SPEED NOMINAL DATA: 1800 RPM

GENSET POWER WITH FAN		EKW	800.0	600.0	400.0	200.0	80.0
ENGINE POWER		BHP	1,214	932	654	380	210
PERCENT LOAD		%	100	75	50	25	10
TOTAL NOX (AS NO2)		G/HR	6,233	3,725	2,368	1,644	1,036
TOTAL CO		G/HR	276	344	337	275	303
TOTAL HC		G/HR	35	44	48	37	45
TOTAL CO2		KG/HR	563	445	315	188	116
PART MATTER		G/HR	28.4	26.7	44.2	51.1	52.3
TOTAL NOX (AS NO2)	(CORR 5% O2)	MG/NM3	2,580.0	1,962.4	1,776.1	2,170.4	2,154.4
TOTAL CO	(CORR 5% O2)	MG/NM3	115.1	183.6	258.3	383.5	733.8
TOTAL HC	(CORR 5% O2)	MG/NM3	12.5	20.6	31.3	46.5	96.9
PART MATTER	(CORR 5% O2)	MG/NM3	9.7	11.8	28.3	58.2	107.7
TOTAL NOX (AS NO2)	(CORR 5% O2)	PPM	1,257	956	865	1,057	1,049
TOTAL CO	(CORR 5% O2)	PPM	92	147	207	307	587
TOTAL HC	(CORR 5% O2)	PPM	23	38	58	87	181
TOTAL NOX (AS NO2)		G/HP-HR	5.18	4.02	3.63	4.34	4.96
TOTAL CO		G/HP-HR	0.23	0.37	0.52	0.72	1.45
TOTAL HC		G/HP-HR	0.03	0.05	0.07	0.10	0.22
PART MATTER		G/HP-HR	0.02	0.03	0.07	0.13	0.25
TOTAL NOX (AS NO2)		LB/HR	13.74	8.21	5.22	3.62	2.28
TOTAL CO		LB/HR	0.61	0.76	0.74	0.61	0.67
TOTAL HC		LB/HR	0.08	0.10	0.11	0.08	0.10
TOTAL CO2		LB/HR	1,240	982	694	414	255
PART MATTER		LB/HR	0.06	0.06	0.10	0.11	0.12
OXYGEN IN EXH		%	8.9	10.0	11.1	13.1	15.4
DRY SMOKE OPACITY		%	0.2	1.1	2.6	4.3	5.3
BOSCH SMOKE NUMBER			0.14	0.39	0.96	1.51	1.69

Regulatory Information ^{Top}

EPA TIER 2	2006 - 2010
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GASEOUS EMISSIONS DATA MEASUREMENTS PROVIDED TO THE EPA ARE CONSISTENT WITH THOSE DESCRIBED IN EPA 40 CFR PART 89 SUBPART D AND ISO 8178 FOR MEASURING HC, CO, PM, AND NOX. THE "MAX LIMITS" SHOWN BELOW ARE WEIGHTED CYCLE AVERAGES AND ARE IN COMPLIANCE WITH THE NON-ROAD REGULATIONS.

Locality	Agency	Regulation	Tier/Stage	Max Limits - G/BKW - HR
U.S. (INCL CALIF)	EPA	NON-ROAD	TIER 2	CO: 3.5 NOx + HC: 6.4 PM: 0.20

EPA EMERGENCY STATIONARY	2011 - ----
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GASEOUS EMISSIONS DATA MEASUREMENTS PROVIDED TO THE EPA ARE CONSISTENT WITH THOSE DESCRIBED IN EPA 40 CFR PART 60 SUBPART IIII AND ISO 8178 FOR MEASURING HC, CO, PM, AND NOX. THE "MAX LIMITS" SHOWN BELOW ARE WEIGHTED CYCLE AVERAGES AND ARE IN COMPLIANCE WITH THE EMERGENCY STATIONARY REGULATIONS.

Locality	Agency	Regulation	Tier/Stage	Max Limits - G/BKW - HR
U.S. (INCL CALIF)	EPA	STATIONARY	EMERGENCY STATIONARY	CO: 3.5 NOx + HC: 6.4 PM: 0.20

Altitude Derate Data ^{Top}

ALTITUDE CORRECTED POWER CAPABILITY (BHP)

AMBIENT OPERATING TEMP (F)	50	60	70	80	90	100	110	120	130	NORMAL
ALTITUDE (FT)										
0	1,214	1,214	1,214	1,214	1,214	1,214	1,214	1,214	1,214	1,214
1,000	1,214	1,214	1,214	1,214	1,214	1,214	1,214	1,214	1,214	1,214
2,000	1,214	1,214	1,214	1,214	1,214	1,214	1,214	1,214	1,214	1,214
3,000	1,214	1,214	1,214	1,214	1,214	1,214	1,214	1,214	1,214	1,214
4,000	1,214	1,214	1,214	1,214	1,214	1,214	1,214	1,214	1,214	1,214
5,000	1,214	1,214	1,214	1,214	1,214	1,214	1,214	1,214	1,214	1,214
6,000	1,214	1,214	1,214	1,214	1,214	1,214	1,214	1,214	1,197	1,214

AMBIENT OPERATING TEMP (F)	50	60	70	80	90	100	110	120	130	NORMAL
7,000	1,214	1,214	1,214	1,214	1,214	1,212	1,191	1,170	1,150	1,214
8,000	1,214	1,214	1,214	1,207	1,185	1,164	1,144	1,124	1,105	1,214
9,000	1,214	1,204	1,181	1,159	1,138	1,118	1,098	1,079	1,061	1,214
10,000	1,178	1,155	1,134	1,113	1,092	1,073	1,054	1,036	1,018	1,195
11,000	1,130	1,109	1,088	1,067	1,048	1,029	1,011	994	977	1,154
12,000	1,084	1,063	1,043	1,024	1,005	987	970	953	937	1,115
13,000	1,039	1,019	1,000	981	964	946	930	914	898	1,077
14,000	996	977	958	940	923	907	891	876	861	1,039
15,000	954	935	918	901	884	869	853	839	824	1,003

Cross Reference [Top](#)

Test Spec	Setting	Engine Arrangement	Engineering Model	Engineering Model Version	Start Effective Serial Number	End Effective Serial Number
OK7925	PP5660	2671232	GS327	-	MJE00001	
3704841	GG0523	3495619	GS603	LS	MJE00001	
OK4031	GG0383	3541450	GS582	-	PEN00001	

Performance Parameter Reference [Top](#)

Parameters Reference: DM9600 - 08

PERFORMANCE DEFINITIONS

PERFORMANCE DEFINITIONS DM9600

APPLICATION:

Engine performance tolerance values below are representative of a typical production engine tested in a calibrated dynamometer test cell at SAE J1995 standard reference conditions. Caterpillar maintains ISO9001:2000 certified quality management systems for engine test Facilities to assure accurate calibration of test equipment. Engine test data is corrected in accordance with SAE J1995. Additional reference material SAE J1228, J1349, ISO 8665, 3046-1:2002E, 3046-3:1989, 1585, 2534, 2288, and 9249 may apply in part or are similar to SAE J1995. Special engine rating request (SERR) test data shall be noted.

PERFORMANCE PARAMETER TOLERANCE FACTORS:

- Power +/- 3%
- Torque +/- 3%
- Exhaust stack temperature +/- 8%
- Inlet airflow +/- 5%
- Intake manifold pressure-gage +/- 10%
- Exhaust flow +/- 6%
- Specific fuel consumption +/- 3%
- Fuel rate +/- 5%
- Specific DEF consumption +/- 3%
- DEF rate +/- 5%
- Heat rejection +/- 5%
- Heat rejection exhaust only +/- 10%
- Heat rejection CEM only +/- 10%

Heat Rejection values based on using treated water.

Torque is included for truck and industrial applications, do not use for Gen Set or steady state applications.

On C7 - C18 engines, at speeds of 1100 RPM and under these values are provided for reference only, and may not meet the tolerance listed.

These values do not apply to C280/3600. For these models, see the tolerances listed below.

C280/3600 HEAT REJECTION TOLERANCE FACTORS:

Heat rejection +/- 10%
Heat rejection to Atmosphere +/- 50%
Heat rejection to Lube Oil +/- 20%
Heat rejection to Aftercooler +/- 5%

TEST CELL TRANSDUCER TOLERANCE FACTORS:

Torque +/- 0.5%
Speed +/- 0.2%
Fuel flow +/- 1.0%
Temperature +/- 2.0 C degrees
Intake manifold pressure +/- 0.1 kPa

OBSERVED ENGINE PERFORMANCE IS CORRECTED TO SAE J1995 REFERENCE AIR AND FUEL CONDITIONS.

REFERENCE ATMOSPHERIC INLET AIR

FOR 3500 ENGINES AND SMALLER

SAE J1228 AUG2002 for marine engines, and J1995 JAN2014 for other engines, reference atmospheric pressure is 100 KPA (29.61 in hg), and standard temperature is 25deg C (77 deg F) at 30% relative humidity at the stated aftercooler water temp, or inlet manifold temp.

FOR 3600 ENGINES

Engine rating obtained and presented in accordance with ISO 3046/1 and SAE J1995 JAN2014 reference atmospheric pressure is 100 KPA (29.61 in hg), and standard temperature is 25deg C (77 deg F) at 30% relative humidity and 150M altitude at the stated aftercooler water temperature.

MEASUREMENT LOCATION FOR INLET AIR TEMPERATURE

Location for air temperature measurement air cleaner inlet at stabilized operating conditions.

REFERENCE EXHAUST STACK DIAMETER

The Reference Exhaust Stack Diameter published with this dataset is only used for the calculation of Smoke Opacity values displayed in this dataset. This value does not necessarily represent the actual stack diameter of the engine due to the variety of exhaust stack adapter options available. Consult the price list, engine order or general dimension drawings for the actual stack diameter size ordered or options available.

REFERENCE FUEL

DIESEL

Reference fuel is #2 distillate diesel with a 35API gravity;
A lower heating value is 42,780 KJ/KG (18,390 BTU/LB) when used at
29 (84.2), where the density is 838.9 G/Liter (7.001 Lbs/Gal).

GAS

Reference natural gas fuel has a lower heating value of 33.74 KJ/L
(905 BTU/CU Ft). Low BTU ratings are based on 18.64 KJ/L (500
BTU/CU FT) lower heating value gas. Propane ratings are based on
87.56 KJ/L (2350 BTU/CU Ft) lower heating value gas.

**ENGINE POWER (NET) IS THE CORRECTED FLYWHEEL POWER (GROSS) LESS
EXTERNAL AUXILIARY LOAD**

Engine corrected gross output includes the power required to drive
standard equipment; lube oil, scavenge lube oil, fuel transfer,
common rail fuel, separate circuit aftercooler and jacket water
pumps. Engine net power available for the external (flywheel)
load is calculated by subtracting the sum of auxiliary load from
the corrected gross flywheel out put power. Typical auxiliary
loads are radiator cooling fans, hydraulic pumps, air compressors
and battery charging alternators. For Tier 4 ratings additional
Parasitic losses would also include Intake, and Exhaust
Restrictions.

ALTITUDE CAPABILITY

Altitude capability is the maximum altitude above sea level at
standard temperature and standard pressure at which the engine
could develop full rated output power on the current performance
data set.

Standard temperature values versus altitude could be seen on
TM2001.

When viewing the altitude capability chart the ambient temperature
is the inlet air temp at the compressor inlet.

Engines with ADEM MEUI and HEUI fuel systems operating at
conditions above the defined altitude capability derate for
atmospheric pressure and temperature conditions outside the values
defined, see TM2001.

Mechanical governor controlled unit injector engines require a
setting change for operation at conditions above the altitude
defined on the engine performance sheet. See your Caterpillar
technical representative for non standard ratings.

REGULATIONS AND PRODUCT COMPLIANCE

TMI Emissions information is presented at 'nominal' and 'Potential
Site Variation' values for standard ratings. No tolerances are
applied to the emissions data. These values are subject to change
at any time. The controlling federal and local emission
requirements need to be verified by your Caterpillar technical
representative.

Customer's may have special emission site requirements that need
to be verified by the Caterpillar Product Group engineer.

EMISSIONS DEFINITIONS:

Emissions : DM1176

HEAT REJECTION DEFINITIONS:

Diesel Circuit Type and HHV Balance : DM9500

HIGH DISPLACEMENT (HD) DEFINITIONS:

3500: EM1500

RATING DEFINITIONS:

Agriculture : TM6008

Fire Pump : TM6009

Generator Set : TM6035

Generator (Gas) : TM6041

Industrial Diesel : TM6010

Industrial (Gas) : TM6040

Irrigation : TM5749

Locomotive : TM6037

Marine Auxiliary : TM6036

Marine Prop (Except 3600) : TM5747

Marine Prop (3600 only) : TM5748

MSHA : TM6042

Oil Field (Petroleum) : TM6011

Off-Highway Truck : TM6039

On-Highway Truck : TM6038

SOUND DEFINITIONS:

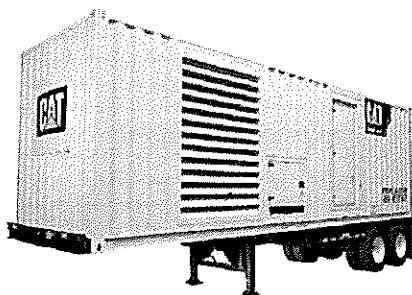
Sound Power : DM8702

Sound Pressure : TM7080

Date Released : 7/7/15



XQ800 RENTAL



STANDBY 795 kW
PRIME 725 kW
POWER MODULE
50 Hz 1500 rpm
60 Hz 1800 rpm

Frequency	Voltage	Standby kW (kVA)	Prime kW (kVA)
60 Hz	480/277V	795 (994)	725 (906)
60 Hz	240/139V	795 (994)	725 (906)
60 Hz	208/120V	795 (994)	725 (906)
60 Hz	600V	795 (994)	725 (906)
50 Hz	400V	660 (825)	600 (750)

FEATURES

FUEL/EMISSIONS STRATEGY

- EPA Tier 4 Interim

DESIGN CRITERIA

- Accepts 100% rated load in one step per NFPA 110 and meets ISO 8528-5 transient response
- CSA Approved

SINGLE-SOURCE SUPPLIER

- Factory designed and fully prototype tested with certified torsional vibration analysis available
- ISO 9001:2000 compliant facility

WORLDWIDE PRODUCT SUPPORT

- Cat® dealers provide extensive post sale support including maintenance and repair agreements
- Cat dealers have over 1600 dealer branch stores operating in 200 countries
- The Cat S•O•SSM program effectively detects internal engine component condition, even the presence of unwanted fluids and combustion byproducts

CAT C27 ATAAC DIESEL ENGINE

- Utilizes ACERT™ Technology
- Reliable, rugged, durable design
- Four-stroke diesel engine combines consistent performance and excellent fuel economy with minimum weight
- Electronic engine control

PRODUCT LINK ASSET MONITORING

- Total Hours & Total Fuel Consumption
- Events & Diagnostic
- GPS Location
- kWh Measurement

CAT GENERATOR

- Matched to the performance and output characteristics of Cat engines
- Single point access to accessory connections
- UL 1446 Recognized Class H insulation

CAT EMCP 4.4 CONTROL PANEL

- Simple user friendly interface and navigation
- Integrated, automatic genset paralleling facilitates multi-unit systems meeting a wide range of customer applications
- Integrated Control System and Communications Gateway

CAT DIGITAL VOLTAGE REGULATOR (CAT DVR)

- Three-phase sensing
- Adjustable volts-per-hertz regulation
- Provides precise control, excellent block loading, and constant voltage in the normal operating range

SOUND ATTENUATED CONTAINER

- Provides ease of transportation and protection
- Meets 74 dB(A) at 7 meters per SAE J1074 measurement procedure at 110% prime load

REDUCED ENVIRONMENTAL IMPACT

- 110% spill containment of onboard engine fluids



XQ800 RENTAL

FACTORY INSTALLED STANDARD EQUIPMENT

SYSTEM	STANDARD EQUIPMENT
Engine	<p>EPA certified Tier 4 interim Cat C27 heavy duty diesel engine Heavy duty air cleaner with pre-cleaner and service indicator 65-Amp charging alternator Fuel filters – Duplex primary with integral water separator and change-over valve, engine mounted secondary filter Fuel cooler and electric priming pump Lubricating oil system including pump, integral oil cooler, lube oil, filter, filtered crankcase breather system and oil drain line with internal valve routed to connection point accessible from exterior 500 hour oil change intervals Jacket water heater (6kW) Electronic ADEM™ A4 controls 24V electric starting motors with battery rack and cables</p>
Generator	<p>SR4B, three-phase, brushless, salient pole, 0.6667 pitch, permanent magnet excited, Class H insulation Anti-condensation heaters (120V, 600V) 12-lead design, with voltage changeover link board 6-lead design, (600V) Cat Digital Voltage Regulator (Cat DVR) with VAR/PF control</p>
Product Link Asset Monitoring	<p>Product Link functionality features include:</p> <ul style="list-style-type: none"> · Total Hours and Total Fuel Consumption · GPS Location · Geo-Fencing · kWh Measurement · Start/Stop Times · Events and Diagnostic (via supported datalink)
Containerized Module	<p>30' ISO high cube container 2-axle, 30' ISO container chassis Sound attenuated air intake louvers and 3 lockable personnel doors with panic release Interior walls and ceilings insulated with 100 mm of acoustic paneling Floor of container insulated with acoustic glass and covered with galvanized steel Sound attenuated 74 dB(A) @ 7m Side bus bar access door, external access load connection bus bars Shore power connection via distribution block connections for jacket water heater, battery charger, and generator condensate heaters Lighting 3 DC, one single duplex service receptacle, 2 external emergency stop push buttons 1,250 gal fuel tank, UL listed, double wall, 24 hr runtime @ 75% prime +10% rating (ULC + CGSB43-146) Internal connections for fuel Spill containment 110% of all engine fluids Fuel transfer system and controls Two oversized maintenance-free batteries, battery rack and 20-Amp battery charger, and solar powered battery maintainer Hospital grade, internally insulated, disc shaped exhaust silencer with vertical discharge Vibration isolators, corrosion resistant hardware and hinges External drain access to standard fluids Two 4.5 kg (10lb) carbon dioxide fire extinguishers Standard Cat rental decals and painted standard Cat power module white</p>
Cooling	<p>Standard cooling provides 43° C ambient capability at prime +10% rating Vertically mounted radiator, with vertical air discharge from the container Coolant drain line with internal valve Coolant sight gauge, level switch and shutdown 50/50 Ethylene Extended Life Glycol</p>
Genset Controls and Protection	<p>EMCP 4.4 genset mounted controller Automatic start/stop with cool down timer Generator Protection features: 32, 46, 50/51, 27/59, 81 O/U, and phase sequence Utility multi-function relay (UMR) protection features: 25, 27/59, 32, 47, 40Z, 51, 51N, 60FL, 81O, 81U (Optional) Reverse compatible for interface to legacy power modules 3000A electrically operated generator circuit breaker Multi-mode operation (island, multi-unit island and utility parallel (requires optional UMR)) Manual and automatic paralleling capability, with load sharing (multi-unit only)</p>



XQ800 RENTAL

	Metering display: voltage, current, frequency, power factor, kW, WHM, kVAR, and synchroscope
Quality	Factory testing of standard generator set and complete power module UL, NEMA, ISO, IEEE, CSA standards O&M manuals

Technical Data

CAT GENERATOR	CAT DIESEL ENGINE
Frame Size 598	C27 ATAAC, V-12 4-stroke water cooled diesel
Pitch 0.6667	Bore – mm (in) 137.2 mm (5.4 in)
No. of poles 4	Stroke – mm (in) 152.4 mm (6.0 in)
Excitation Static regulated brushless PM excited	Displacement – L (cu in) 27.03 L (1958.9 in ³)
Number of bearings Single bearing, close coupled	Compression ratio 16:1
Insulation Class H	Aspiration TA
Enclosure Drip proof IP23	Fuel system MEUIC
Alignment Pilot shaft	Governor type ADEM A4
Overspeed capability – % of rated 125% of rated	
Voltage regulator 3 phase sensing with Volts-per-Hertz	
Voltage regulation Less than ± 1/2% voltage gain	
Adjustable to compensate for engine speed droop and line loss	
Wave form deviation 3%	
Telephone Influence Factor (TIF) Less than 50	
Harmonic Distortion (THD) Less than 5%	

Generator Set Technical Data	Units	50Hz	50 Hz	60 Hz	60Hz
		Prime	Standby	Prime	Standby
Power Rating	kW (KVA)	600 (750)	660 (825)	725 (906)	795 (994)
Performance Specification					
Lubricating System					
Oil pan capacity with filter change	L (gal)	99 (26)	99 (26)	99 (26)	99 (26)
Fuel System					
Fuel consumption					
100% Load	L/hr (gal/hr)	142 (37.4)	178 (47.1)	203 (53.5)	223 (58.8)
75% Load	L/hr (gal/hr)	108 (28.5)	135 (35.7)	152 (40.2)	167 (44.2)
50% Load	L/hr (gal/hr)	74 (19.6)	92 (24.4)	109 (28.7)	118 (31.1)
Fuel Tank Capacity	L (gal)	4730 (1250)	4730 (1250)	4730 (1250)	4730 (1250)
Running time @ 75% rating	Hr	44	35	31	28
Cooling System					
Ambient Capability	°C (°F)	43 (109)	43 (109)	43 (109)	43 (109)
Radiator & engine coolant capacity	L (gal)	100.7 (26.6)	100.7 (26.6)	100.7 (26.6)	100.7 (26.6)
Engine coolant capacity	L (gal)	70 (18.5)	70 (18.5)	70 (18.5)	70 (18.5)
Air Requirements					
Combustion air flow	m ³ /min (cfm)	42.5 (1500)	45.3 (1600)	54.6 (1927)	57.9 (2044)
Maximum dirty air cleaner restriction	kPa (in H ₂ O)	2.5 (10)	2.5 (10)	2.5 (10)	2.5 (10)
Exhaust System					
Exhaust flow at rated	m ³ /min (cfm)	106 (3743)	116 (4097)	135 (4766)	148 (5224)
Exhaust temperature at rated kW – dry exhaust	°C (°F)	470 (878)	493 (919)	460 (860)	485 (905)
Noise Rating (with enclosure)* @ 7 meters (23 feet)	dB(A)	71	71	73	73
Emissions (Regulation)					
NO _x	g/hp-hr	2.6	2.6	2.6	2.6
CO	g/hp-hr	0.11	0.11	0.11	0.11
HC	g/hp-hr	0.03	0.03	0.03	0.03
PM	g/hp-hr	0.075	0.075	0.075	0.075



XQ800 RENTAL

Model XQ800	Length mm (in)	Width mm (in)	Height mm (in)		Weight kg (lb)
				Lube Oil & Coolant – Empty Fuel Tank	16,129 (35,500)
				Fuel Tank 200 Gallons of Fuel	16,777 (36,930)
XQ800 w/o chassis	9,144 (360)	2,438 (96)	2,896 (114)	Full Fuel Tank	21,113 (46,547)
XQ800 w/ chassis	9,144 (360)	2,438 (96)	4,115 (162)	Chassis Weight Addition	x4,355 (9,660)

STANDARD FEATURES

EMCP 4.4 LOCAL CONTROL PANEL

- Generator mounted EMCP 4.4 provides power metering, protective relaying and engine and generator control and monitoring
- UL508 recognized
- Convenient service access for Cat Service tools (not included)
- Integration with the Cat DVR provides enhanced system monitoring
- Ability to view and reset diagnostics of all controls networked on primary CAN datalink eliminates need for separate service tools for troubleshooting
- True RMS AC metering, 3 phase
- Multiple stored setpoint group selection via switched input eliminates need to reprogram control when switching voltages and frequencies

EMCP 4.4 ENGINE OPERATOR INTERFACE

- Controls
 - Run/Auto/Stop
 - Speed Adjust
 - Voltage Adjust
 - Emergency Stop
 - Cycle crank
 - Cool-down timer
- Digital indication for
 - RPM
 - Operating hours
 - Coolant Temperature
 - L-L volts, L-N volts, phase amps, Hz
 - kW, kVA, kVAR, kW-hr, %kW, PF
 - DC Volts
 - Oil pressure
 - Oil Temperature
- Shutdowns with common indicating light for
 - Low oil pressure
 - High Coolant Temp
 - Low Coolant level
 - Failure to Start (Overcrank)
 - Overspeed
 - High Oil Temperature
 - Emergency stop
- Emergency stop pushbutton
- Display navigation keys including four shortcut keys for Engine Parameters, Generator Parameters, Control and main menu
- Fuel level monitoring and control

VOLTAGE REGULATION AND POWER FACTOR CONTROL CIRCUITRY

- Generator mounted automatic voltage regulator, microprocessor based
- Automatic voltage and VAR/power factor control for maintaining constant generator power factor while paralleled with the utility. Voltage and power factor adjustments are performed on the Generator Paralleling Control
- Includes RFI suppression, exciter limiter and exciter diode monitoring

CIRCUIT BREAKER

- 3000A fixed type, 3 poles, genset mounted, electrically operated, insulated case circuit breaker
- Solid state trip unit for overload (time overcurrent) and fault (instantaneous) overcurrent protection
- 100 KA-interrupting capacity at 480 VAC
- Under-voltage release

CURRENT TRANSFORMERS

- CT's rated 3000:5 with 200:5 secondaries wired to shorting terminal strips

POTENTIAL TRANSFORMERS

- 4:1 ratio with primary and secondary fuse Protection (with optional UMR)

BUS BARS

- Three phase, plus full rated neutral, bus bars are tin-plated copper with NEMA standard hole pattern for connection of customer load cables and generator cables
- Bus bars are sized for full load capacity of the generator set at 0.8 power factor
- Includes ground studs for connection to the generator frame ground and field ground cable

XQ800 RENTAL

EMCP 4.4 GENERATOR PROTECTIVE RELAYING

- Generator protective features provided by EMCP 4.4
 - Phase over/under voltage (Device 27/59)
 - Over/Under frequency (Device 81 O/U)
 - Reverse Power (Device 32/32RV)
 - Current Balance (46)
 - Overcurrent (Device 50/51)
 - Bus Phase Sequence

CONTAINER

- 30' ISO high cube container designed to meet CSC but not certified
- Painted standard Cat Power Module white
- Sound attenuated air intake louvers
- Floor insulated with acoustic glass and covered by galvanized steel
- Three lockable personnel doors with panic release
- Two fire extinguishers
- External drain access to standard fluids

EXHAUST SILENCER

- Hospital grade, internally insulated, disc shaped exhaust silencer with vertical discharge

FUEL TANK

- UL Listed 1250 gallon double walled tank provides 24 hr runtime at 75% prime +10% rating (ULC + TC (CGSB43-146))
- AC Fuel transfer system connected to shore and generator power with automatic switchover

SHORE POWER

- Two shore power connections for jacket water heaters and fuel transfer pump
- One for generator space heater and battery charger

INTERNAL LIGHTING

- Three internal DC lights with one timer installed at the container door
- One single duplex service receptacle connected to shore and generator power with automatic switchover

BATTERY CHARGER AND BATTERIES

- 24 VDC/20A battery charger with float/equalize modes and charging ammeter
- Two oversized maintenance free batteries
- Solar power battery maintainer

EMERGENCY STOP PUSHBUTTON

- Two external, emergency stop pushbuttons (ESP) located near each access door

TRAILER

- Two axle with Anti-lock brake system
- 295/75R225 Load Range G Tires
- Air suspension chassis (optional)

LINK BOARD ASSEMBLY

- 3000A link board for 208/240/400/480 wye operation
- Reconnection via movable link board
- Includes switch to determine the mode of operation

AC DISTRIBUTION

- Provides 120 VAC for all module accessories
- Includes controls to de-energize jacket water heaters and generator space heater when the engine is running

UTILITY MULTI-FUNCTION RELAY (UMR) (OPTIONAL)

Basler Utility Multi-function Relay (UMR) BE1-11i provides the following utility/intertie protection features:

- Synch Check (Device 25)
- Phase under voltage, 2 stage (Device 27)
- Reverse Power (Device 32)
- Negative sequence overvoltage (Device 47)
- Phase time overcurrent (Device 51)
- Neutral overcurrent (Device 51N)
- Phase overvoltage, 2 stage (Device 59)
- Under frequency, 2 stage (Device 81U)
- Over frequency (Device 81O)
- Loss of field (Device 402)

XQ800 RENTAL

MODES OF OPERATION

- Provides for single unit stand-alone operation, island mode paralleling and load sharing with other power modules, and single unit-to-utility mode paralleling for base load control (with open transition between paralleling modes)
- Island mode paralleling features:
 - Lead unit select control allows single unit to connect to a dead bus or HWDBA Hard Wired Dead Bus Arbitration to allow first unit up to voltage and speed to be first unit to connect to a dead bus
 - Auto synchronization (voltage & phase matching)
 - Load sharing (kW) analog signal (like units & legacy compatible)
 - Load sharing (kVAR) analog signal (like units only)
- Utility mode paralleling features:
 - Auto synchronization (voltage & phase matching)
 - Base-load control (programmable set-point or potentiometer adjust)
 - Soft load/unload (programmable, shared set-point)
 - Power Factor control (programmable set-point)

SINGLE UNIT STAND-ALONE AND MULTI-UNIT ISLAND OPERATION

1. Utility Standby Mode (Normal)
 - a. The utility is providing power for the plant loads.
 - b. The PM Generator breaker is open.
 - c. The PM is in automatic standby mode to respond to a utility failure.
2. Emergency Mode (Emergency)
 - a. Utility Failure
 - 1) The customer protective relaying senses a utility abnormal condition.
 - 2) A run request is sent to the PM Generator plant.
 - 3) The first PM generator to reach rated to voltage and frequency is closed to the bus.
 - 4) In Multi-Unit Island Mode, the remaining PM Generators are paralleled to the bus as they reach rated voltage and frequency. This function is performed via the lead unit select jumper and interconnect wiring connected between the Power Modules.

- 5) Plant load is transferred to the Power Modules, which share load equally via load share lines.

SINGLE UNIT BASE LOAD OPERATION

1. Utility Mode (Normal)
 - a. The utility is providing power for the plant loads.
 - b. The PM is in auto mode and the generator breaker is open.
 - c. The PM is interconnected to the utility breaker aux contact, lead unit jumper is not installed and load share lines are not connected
 - d. The Paralleling controls automatically detect utility parallel mode when the utility aux contact is closed.
2. Base Load Mode
 - a. Unit receives remote run request and starts
 - b. Unit reaches rated voltage and frequency.
 - c. UMR performs sync-check to permit generator breaker to close.
 - d. Unit ramps to Base-Load setpoint at programmed ramp time.
 - e. Unit continues to run until remote run request is removed or unit is stopped at control panel.

RATING DEFINITIONS AND CONDITIONS

Meets or Exceeds International Specifications:

AS1359, CSA, IEC60034-1, ISO3046, ISO8528, NEMA MG 1-22, NEMA MG 1-33, 72/23/EEC, 98/37/EC, 2004/108/EC

Prime - Output available with varying load for an unlimited time. Average power output is 70% of the prime power rating. Typical peak demand is 100% of prime rated kW with 10% overload capability for emergency use for a maximum of 1 hour in 12. Overload operation cannot exceed 25 hours per year. Prime power in accordance with ISO3046. Prime ambients shown indicate ambient temperature at 100% load which results in a coolant top tank temperature just below the alarm temperature.

Ratings are based on SAE J1349 standard conditions. These ratings also apply at ISO3046 standard conditions. Fuel rates are based on fuel oil of 35° API [16° C (60° F)] gravity having an LHV of 42 780 kJ/kg (18,390 Btu/lb) when used at 29° C (85° F) and weighing 838.9 g/liter (7.001 lbs/U.S. gal.). Additional ratings may be available for specific customer requirements, contact your Caterpillar representative for details. For information regarding Low Sulfur fuel and Biodiesel capability, please consult your Cat dealer.

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