Century Health and Rehabilitation Center

6020 Industrial Blvd.

Century, Florida 32535

Nursing Homes Emergency Power Plan

59AER17-1

Facility Information:

Century Health and Rehabilitation Center currently has a 30 kW Kohler Diesel Life Safety Generator which runs all of our emergency lighting, fire alarm systems, critical branch systems and red emergency outlets. We also installed a full building backup generator in 2006, after Hurricane Ivan. This is a 250 kW Kohler Diesel, whole building backup generator that handles all systems, including all of our air conditioning at approximately 51% of Gulf Power's peak loads, a copy of which is attached. The 250 kW generator has a 1,400 gallon, double walled above the ground fuel tank, and the 30 kW generator has a 150 gallon diesel above the ground single-walled fuel tank. Both generators have an automatic transfer switch (ATS) that automatically come on after a power failure, and the 30 kW life safety generator will shut down as soon as it detects the power supplied by the 250 kW generator, after a 10 minute cool-down.

We have calculated that both generators will operator for at least 96 hours on the historic loads provided by Gulf Power and our calculations of the fuel consumption from the hour meters and amount of fuel delivered for both generators from John H. Burkhead Fuels, a copy of which is attached. We have three diesel suppliers within 50 miles and Burkhead is with 10 miles of the facility.

We have been servicing these generators since their installation and are complying with all of Life Safety's rules in maintaining emergency power generators. Also enclosed are AHCA's approval and Humber-Garick, Consulting Engineers of the 250kW generator installation with plans and specifications. Coastal Generators of Pensacola are contracted for testing, servicing, and maintaining the generators as well as performing the required load bank tests.

Air Design Systems is providing preventive maintenance and service on our HVAC and refrigeration equipment which consist of 12 split central units for the common and service areas and approximately 50 PTAC heat-pumps in the Resident's rooms as well as some service areas. Our two generators keep our environment of approximately 35,177 sq. ft. at 80 degrees or less under approximately 51% of Gulf Power's Peak load calculations and at an average load at approximately 35% of the full generator capacity.

We feel that we are presently in compliance with the emergency rule at this time, and should not have to add any additional equipment or fuel capacity. We have, however, due to the plan requirements, asked for a variance and extension of time to be sure that we are in total compliance of the Emergency Rule, when the details of that rule are finalized.

Professional Engineering Review:

We have engaged Oliveri Architects, Architects, MPS, Inc., Electrical Engineers, and Consulting Engineering Associates, Inc., Mechanical Engineers to review and certify that we meet the mandates included in this Emergency Rule. Our system enables us to provide adequate temperature controls for us to maintain a maximum of 80 degrees due to an interruption in our electrical service for at least a 96 hour period.

Acquire Sufficient Fuel:

We have acquired and plan to continue to acquire sufficient fuel through our existing suppliers:

1. John L. Burkhead, Inc.
   P.O. Box 666
   Jay, Florida 32565

2. R.K. Allen Oil Company
   723 W. Main Street
   Pensacola, Florida 32502
3. T-Gill Fuels, Inc.
   6108 Village Oaks Dr.
   Pensacola, Florida 32502

Respectfully submitted: for
Century Health and Rehabilitation Center
6020 Industrial Blvd.
Century, Florida 32535

Donald H. Ripley, Administrator

10/26/17
Date:

JEB BUSH
GOVERNOR

AHCA
FLORIDA AGENCY FOR HEALTH CARE ADMINISTRATION

CHRISTA CALAMAS
SECRETARY

October 2, 2006

Mr. Joe Mitchell
Century Care Center Investors, Inc.
2851 Remington Green Cir. Ste.D
Tallahassee, Florida 32308

Re: Facility Name: Century Care Center
Project Name: Addition of Main Electrical, Service Gen
Client Code/File-Project-Sub. Number: 35/11712-102-006

Dear Mr.Mitchell:

As a result of additional information submitted, the referenced construction project is approved for its intended purpose without further comment or survey by the Agency. This project is considered completed by the Agency, and project review invoice will be prepared for final payment.

One set of construction documents along with the project correspondence file for this project will be archived for five years. All other previously submitted documents regarding this project will be destroyed.

If you have questions concerning this survey, please contact Matt Tala, electrical surveyor, as appropriate at telephone (850) 487-0713.

Sincerely,

Richard A Ramsey

Richard A. Ramsey, P.E.
Prof. Eng. Admin., Plans and Construction
E-mail: ramseyr@ahca.myflorida.com
Tel: (850) 922-6472/Fax: (850) 922-6483

RAR/A/ad

CC: Via Email Humber-Garick Engineers

AHCA
FLORIDA AGENCY FOR HEALTH CARE ADMINISTRATION

JEB BUSH
GOVERNOR

CHRISTA CALAMAS
SECRETARY

September 14, 2006

Mr. Joe Mitchell
Century Care Center Investors, Inc.
2851 Remington Green Cir. Ste.D
Tallahassee, Florida 32308

Re: Facility Name: Century Care Center
Project Name: Addition of Main Electrical, Service Gen
Client Code/File-Project-Sub. Number: 35/11712-102-005

Dear Mr. Mitchell:

On August 22, 2006 an onsite construction survey of the referenced project was conducted and the project is **approved** for its intended purpose subject to the deficiencies noted in the attached comments.

Before this project may be considered completed and closed by the Agency, all deficiencies noted in the attached comments must be corrected and a resurvey must be conducted by the Agency to verify these corrections. The Project Contact Person. as noted on the Plan Review Application, will be contacted to schedule the next construction survey.

If you have questions concerning this survey, please contact Ken Tilbury, architectural surveyor; Yogi Buch, mechanical surveyor; or Matt Tala, electrical surveyor, as appropriate at telephone (850) 487-0713.

Sincerely,

Kenyon Tilbury
Architect, Plans and Construction
E-mail: tilburyk@ahca.myflorida.com
Tel: (850) 488-9862 / Fax: (850) 922-6483

KT/A/ad

CC: Via Email Humber-Garick Engineers

Re: Facility Name: Century Care Center
Project Name: Addition of Main Electrical, Service Gen
Client Code/File-Project-Sub. Number: 35/11712-102-002

GENERAL

No Comment.

ARCHITECTURAL

No Comment.

MECHANICAL

No Comment.

ELECTRICAL

E-1 Provide the test results for all signals coming from the Generator to the annunciator located at the nurse station as required by NFPA 110.

AHCA

JEB BUSH, GOVERNOR | ALAN LEVINE, SECRETARY

April 14, 2006

Mr. Joe Mitchell
Century Care Center Investors, Inc.
2851 Remington Green Cir. Ste.D
Tallahassee, Florida 32308

Re: Facility Name: Century Care Center
Project Name: Addition of Main Electrical, Service Gen
Client Code/File-Project-Sub. Number: 35/11712-102-002

Dear Mr. Mitchell:

The construction documents dated March 21, 2006, for the referenced project, received on March 22, 2006 have been reviewed and are **approved for construction** by the Agency without further comment. Please note this approval is not permission to construct work that is not in full compliance with the requirements of the Certificate of Need (if any) for this project, and all applicable codes and standards.

Before construction may commence, all required local permits and approvals must be obtained. If construction has not commenced within one year from the date of this letter, this project will be considered abandoned and will be terminated by the Agency. To reactivate the project after Agency termination will require resubmission as a new project.

This project must have an onsite survey and approval of the completed construction by the Agency before it can be used for its intended purpose. In approximately six weeks from the date of this letter, the Project Contact Person, as noted on the Plan Review Application, will be contacted by the Office of Plans and Construction to schedule an initial construction survey.

Before this project may be considered completed by the Agency, all outstanding deficiencies from previous review letters, if listed, must be corrected.

If there are outstanding deficiencies listed above, please submit the corrections to the Tallahassee Office at the below address in the form of addendum, change order or revised contract documents as appropriate. Upon receipt of these documents, another review will be made to ascertain the appropriateness of the corrections. Failure to respond timely to these comments can cause a delay to the final completion of this project.

To facilitate all further document reviews of this project, please conform to the following submittal procedures:

1. Provide a transmittal letter with the following information:

Re: Facility Name: Century Care Center
Project Name: Addition of Main Electrical, Service Gen
Client Code/File-Project-Sub. Number: 35/11712-102-002

a. The original review comment number
b. The original comment
c. A word description of the revision
d. The sheet or specification page where correction(s) are located

2. Because this submission constitutes a record public document, proper signing, sealing, and dating by each design professional is required.

If you have questions concerning this review, please contact Yogi Buch, mechanical reviewer; or Matt Tala, electrical reviewer, as appropriate at telephone (850) 487-0713.

Sincerely,

James R. Gregory, NCARB
Bureau Chief, Plans and Construction
Division of Health Quality
Tel: (850) 487-0713/Fax: (850) 922-6483
E-mail: gregorys@ahca.myflorida.com

JRG/A/bk

CC: Via E-mail Humber-Garick Engineers

Kossen
EQUIPMENT, INC.

www.kossenequipment.com

CORPORATE OFFICES
P.O. Box 7
Clinton, MS
39060-0007

MISSISSIPPI
6005 N. McRaven Rd.
Jackson, MS
39209-9631

PHONE
601.922.4444
FAX
601.922.0800

BRANCH OFFICES

NORTH ALABAMA
3779 Pine Lane, SE
Bessemer, AL
35022-5642
PHONE
205.428.1130
FAX
205.428.1125

SOUTH ALABAMA & FLORIDA PANHANDLE
6425 Old Rangeline Rd.
Theodore, AL
36582-5230
PHONE
251.443.8402
FAX
251.443.8489

NORTH LOUISIANA
4910 Hazel Jones Rd.
Bossier City, LA
71111-5321
PHONE
318.742.4442
FAX
318.742.4447

SOUTH LOUISIANA
6547 Pecue Lane
Baton Rouge, LA
70817-4426
PHONE
225.751.4410
FAX
225.751.1344

February 17, 2006

QUOTE # DW06-202

Mr. Don Ripley
Century Care Center
6020 Industrial Blvd.
Century, FL 32535

Via Email: dripley@centurycarecenter.com

RE: KOHLER STANDBY GENERATOR SYSTEM
CENTURY CARE CENTER

Dear Don,

We are pleased to provide you with pricing on the above referenced project.

Your net cost for one (1) **Kohler Model 250REOZDB Diesel Engine Driven Generator** as per the attached Bill of Material, F.O.B. Kohler, Wisconsin, freight allowed to jobsite, would be $61,146.00.
This quote is valid through 5/15/2006. The order must be released for production prior to this date.

No sales or use taxes are included in this pricing and will be added where applicable. Our terms are net 30 following shipment of equipment from Kohler, Wisconsin. Any orders placed are non-cancelable. Delivery on this equipment can be made in approximately nine to eleven weeks and submittal data in two to four weeks, after receipt of order and approval of equipment. Lead times are based on today's dates and are subject to change without notice.

A start-up will not be performed until payment of our invoice, less retainage, is received, or prior arrangements with our credit department are made.

We appreciate this opportunity to provide you with this pricing. If we can be of any further assistance, please advise.

Celebrating our 30th Year – 1976-2006!

KOSSEN EQUIPMENT, INC.

D. F. Wright
Power Systems Sales – Mobile, Alabama
Ph: (251) 443-8402 Fax: (251) 443-8489
DFW/anb

QUOTE # DW06-202

BILL OF MATERIAL

FOR

STANDBY GENERATOR SYSTEM

CENTURY CARE CENTER
CENTURY, FLORIDA

Rated	Voltage	Phase	Wire	Hertz
260kW	120/208	3	4	60

Kohler Model 250REOZDB Diesel Engine Driven Generator, 4UA10 Alternator

Dec-3+ 16 Light Controller
Remote Emergency Stop Switch ***shipped loose for installation by contractor**

Weather Enclosure
Critical Silencer
Tail Pipe and Rain Cap

Fuel System
1400 Gallon Weatherproof Subbase Fuel Tank, 72 Hour Runtime
State of Florida Approval
Low Fuel Alarm
Basin Alarm
Normal Vent
Fill Cap
Emergency Vent
Leak Detection Switch
Five Gallon Carbon Steel Spill/Fill Containment Box
Three Level Alarms set at 8-Hour Low, 48-Hour Low and 90% High

Engine and Generator Accessories
Starting Batteries
Battery Rack and Cables
Battery Charger, Equalize/Float Type with Alarms, 24 V, 10 Amp
***shipped loose for installation by contractor**
Battery Heater, 80 Watt, 120 V
Block Heater, 2500 Watt, 208 V
Safeguard Breaker
Line Circuit Breaker, 1000 Amp, 3 Pole, 100% Rated
Flexible Fuel Lines

Automatic Transfer Switch

Kohler Model KCT-ACTC-1600S, 1600 Amp, 208 V, 3 Pole, 3 Ph, 4 Wire, NEMA-3R
- Microprocessor Controller
- Real-time Clock
- Broad-range Voltage Sensing (208-600VAC) with 2% Accuracy
- Frequency Sensing with 1% Accuracy on Both Sources
- Environmentally Sealed User Interface
- Keypad with Tactile Feedback Pushbuttons
- LED Indicators
- Selectable Operating Modes
- Programmable Inputs and Outputs
- Load / No Load Exercise Function
- In-phase Monitor
- Anti-single Phasing Protection
- Load Control Inputs and Outputs
- Phase Rotation Sensing
- Time-stamped Event Log
- Gold-Flashed Engine Start Contacts
- Modbus Communication with Network and Setup Connections

Miscellaneous Items

- Standard One (1) Year Warranty
- Three (3) Copies General Maintenance Literature
- Rated Power Factor Test
- Certified Test Report
- Load Bank Test, Two (2) Hours
- Lube Oil and Antifreeze
- Installation Supervision
- Initial Test, Startup and Training

NOTES:

1. **Pricing does not include off-unit wiring, piping, rigging, fuel oil, etc.**
2. **If a startup cannot be performed in <u>one</u> <u>trip</u>, due to an incomplete installation or other reasons beyond the control of either Kossen Equipment or Kohler Company, there will be additional charges to the contractor.**
3. **All Kohler generators and automatic transfer switches are <u>clockwise</u> rotation (A-B-C-). We will not be responsible for changing rotation in the field.**
4. **The scope of our bid is limited to the material listed above and found <u>only</u> in the generator and transfer switch sections of the bid specifications.**

HUMBER
GARICK

consulting
engineers

207 Ferry Road SE
Fort Walton Beach
Florida 32548-5806
www.humber-garick.com

Principals:
Philip Humber, P.E.
Chris Garick, P.E., RCDD

T: (850)243-6723
F: (850)664-5420
admin@humber-garick.com

September 19, 2006

Mr. Matt Tala, P.E.
Agency for Health Care Administration
Office of Plans and Construction
2727 Mahan Drive
Building 1, Suite 145
Tallahassee Fl. 32308

Re: Century Health Care
Backup Generator
System Annunciator Test

Our Construction Administrator witnessed a complete test of the above system annunciator on September 18, 2006, and found it to be in perfect working order. All system and fault indicators operated as required.

Philip M Humber, P.E.
Electrical Engineer
PE13870

Attached: AHCA Survey Report

Cc: Mr. Don Ripley

AHCA Survey Report

Team: A Survey Date: 8/22/06

Facility: Century Care Center

Proj. ID: 103 Submission: 004

Project: Replace Connection

Area:

Survey Type ☐ Progress (CS-2) ☒ 100% (CS-3) ☐ Re-Survey (CS-4) ☐ Pick-Up (CS-5)

Note: The comments in this report are a draft copy only. A final typed and signed copy will be provided at a later date.

I recommend that this project be ☒ Approved / ☐ Disapproved with the following comments:

E-1 Provide the test results by P.E. sign and seal sent To AHCA Or Call me 850/488-8559 we will setup time (9/11/06).

Surveyor

Generator Set/Transfer Switch Installation Checklist

This document has generic content and some items may not apply to some applications. Check only the items that apply to the specific application. Read and understand all of the safety precautions found in the Operation and Installation Manuals. Make the following installation checks before performing the Startup Checklist.

Note: Use this form as a general guide, along with any applicable codes or standards. Comply with all applicable codes and standards. Improper installation voids the warranty.

Equipment Room or Weather Housing

Yes	Does Not Apply		
☑	☐	1.	Is the equipment installed in a fire-resistant room (made of non-combustible material) or in an outdoor weather housing?
☑	☐	2.	Is there adequate clearance between the engine and floor for service maintenance?
☑	☐	3.	Is there emergency lighting available at the equipment room or weather housing?
☑	☐	4.	Is there adequate heating for the equipment room or outdoor weather housing?
☐	☑	5.	Is the equipment room clean with all materials not related to the emergency power supply system removed?
☐	☑	6.	Is the equipment room protected with a fire protection system?

Engine and Mounting

☑	☐	7.	Is the mounting surface(s) properly constructed and leveled?
☑	☐	8.	Is the mounting surface made from non-combustible material?
☐	☑	9.	Was the generator-to-engine alignment performed after attaching the skid to the mounting base? Generator sets with two-bearing generators require alignment.

Lubrication

☑	☐	10.	Is the engine crankcase filled with the specified oil?

Cooling and Ventilation

☑	☐	11.	Is the cooling system filled with the manufacturer's specified coolant/antifreeze and purged of air?
☑	☐	12.	Is there adequate inlet and outlet air flow (electric louvers adjusted and ventilation fan motor(s) connected to the corresponding voltage)?
☐	☑	13.	Is the radiator duct properly sized and connected to the air vent or louver?
☑	☐	14.	Are flexible sections installed in the cooling water lines?

Fuel

☑	☐	15.	Is there an adequate/dedicated fuel supply?
☑	☐	16.	Are the fuel filters installed?
☑	☐	17.	Are the fuel tanks and piping installed in accordance with applicable codes and standards?
☐	☑	18.	Is there adequate fuel transfer tank pump lift capacity and is the pump motor connected to the corresponding voltage?
☐	☑	19.	Is the fuel transfer tank pump connected to the emergency power source?
☑	☐	20.	Are flexible fuel lines installed between the engine fuel inlet and fuel piping?
☐	☑	21.	Is the specified gas pressure available at the fuel regulator inlet?
☐	☑	22.	Does the gas solenoid valve function?
☐	☑	23.	Are the manually operated fuel and cooling water valves installed allowing manual operation or bypass of the solenoid valves?

Exhaust

☑	☐	24.	Is the exhaust line sized per guidelines and does it have flexible connector(s)? Is the flexible connector(s) straight?
☑	☐	25.	Is there an exhaust line condensate trap with a drain installed?
☑	☐	26.	Is the specified silencer installed and are the hanger and mounting hardware tightened?
☐	☑	27.	Is a heat-isolating thimble(s) installed at points where exhaust lines pass through combustible wall(s) or partition(s)?
☑	☐	28.	Is the exhaust line free of excessive bends and restrictions? Is the backpressure within specifications?
☐	☑	29.	Is the exhaust line installed with a downward pitch toward the outside of the building?
☑	☐	30.	Is the exhaust line protected from entry by rain, snow, and animals?
☑	☐	31.	Does the exhaust system outlet location prevent entry of exhaust gases into buildings or structures?
☑	☐	32.	Are individuals protected from exposure to high temperature exhaust parts and are hot parts safety decals present?

AC Electrical System

☑	☐	33.	Does the nameplate voltage/frequency of the generator set and transfer switch match normal/utility source ratings?
☑	☐	34.	Do the generator set load conductors have adequate ampacity and are they correctly connected to the circuit breakers and/or the emergency side of the transfer switch?
☑	☐	35.	Are the load conductors, engine starting cables, battery charger cables, and remote annunciator leads installed in separate conduits?
☑	☐	36.	Is the battery charger AC circuit connected to the corresponding voltage?

Transfer Switch, Remote Control System, Accessories

☑	☐	37.	Is the transfer switch mechanism free of binding? **NOTE:** Disconnect all AC sources and operate the transfer switch manually.
☑	☐	38.	Are the transfer switch AC conductors correctly connected? Verify lead designations using the appropriate wiring diagrams.
☐	☑	39.	Is there a UPS system? If yes, is the UPS installation checklist filled out?
☑	☐	40.	Is all other wiring connected, as required?

Batteries and DC Electrical System

☑	☐	41.	Does the battery(ies) have the specified CCA rating and voltage?
☑	☐	42.	Is the battery(ies) filled with electrolyte and connected to the battery charger?
☑	☐	43.	Are the engine starting cables connected to the battery(ies)?
☑	☐	44.	Do the engine starting cables have adequate length and gauge?
☑	☐	45.	Is the battery(ies) installed with adequate air ventilation?

Special Requirements

☐	☑	46.	Is the earthquake protection adequate for the equipment and support systems?
☑	☐	47.	Is the equipment protected from lightning damage?

Generator Set/Transfer Switch Startup Checklist

This document has generic content and some items may not apply to some applications. Check only the items that apply to the specific application. Read and understand all of the safety precautions found in the Operation and Installation Manuals. Complete the Installation Checklist before performing the initial startup checks. Refer to Service Bulletin 616 for Warranty Startup Procedure Requirements regarding generator set models with ECM-controlled engines.

Yes	Does Not Apply		
☑	☐	1.	Verify that the engine is filled with oil and the cooling system is filled with coolant/antifreeze.
☑	☐	2.	Prime the fuel system.
☑	☐	3.	Open all water and fuel valves. Temporarily remove the radiator cap to eliminate air in the cooling system. Replace radiator cap in step 21.
☑	☐	4.	Place the generator set master switch in the OFF/RESET position. Observe Not-in-Auto lamp and alarm, if equipped, on the controller.
☑	☐	5.	Press the lamp test, if equipped on controller. Do all the alarm lamps on the panel illuminate?
☑	☐	6.	Open the main line circuit breakers, open the safeguard breaker, and/or remove fuses connected to the generator set output leads.
☑	☐	7.	Turn down the speed control (electronic governor) or speed screw (mechanical governor).*
☑	☐	8.	Verify the presence of lube oil in the turbocharger, if equipped. See the engine and/or generator set operation manual.
☑	☐	9.	Place the generator set master switch in the RUN position. Allow the engine to start and run for several seconds.
☐	☑	10.	Verify that the day tank, if equipped, is energized.
☑	☐	11.	Place the generator set master switch in the OFF/RESET position. Check for oil, coolant, and exhaust leaks.
☑	☐	12.	Turn on the water/oil heaters and fuel lift pumps.
☑	☐	13.	Check the battery charger ammeter for battery charging indication.
☑	☐	14.	Place the generator set master switch in the RUN position. Verify whether there is sufficient oil pressure. Check for oil, coolant, and exhaust leaks.
☑	☐	15.	Close the safeguard circuit breaker. Adjust the engine speed to 50/60 Hz if equipped with an electronic governor or to 52.8/63 Hz if equipped with a mechanical governor.*
☐	☑	16.	If the speed is unstable, adjust according to the appropriate engine and/or governor manual.*
☑	☐	17.	Adjust the AC output voltage to match the load voltage using the voltage adjusting control. See the generator set/controller operation manual.
☑	☐	18.	Allow the engine to reach normal operating coolant temperature.
☐	☑	19.	Check the operating temperature on city water-cooled models and adjust the thermostatic valve as necessary.
☑	☑	20.	Manually overspeed the engine to cause an engine shutdown (68-70 Hz on 60 Hz models and 58-60 Hz on 50 Hz models). Place the generator set master switch in the OFF/RESET position.*
☑	☐	21.	Check the coolant level, add coolant as necessary, and replace the radiator cap. Verify that all hose clamps are tight and secure.
☑	☐	22.	Place the generator set master switch in the RUN position.
☑	☐	23.	Verify the engine low oil pressure and high coolant temperature shutdowns.*
☑	☐	24.	Check the overcrank shutdown.*
☑	☐	25.	Place the generator set master switch in the OFF/RESET position.
☑	☐	26.	Open the normal source circuit breaker or remove fuses to the transfer switch.
☑	☐	27.	Disconnect the power switching device and logic controller wire harness at the inline disconnect plug at the transfer switch.
☑	☐	28.	Manually transfer the load to the emergency source.
☑	☐	29.	Close the normal source circuit breaker or replace fuses to the transfer switch.
☑	☐	30.	Check the normal source voltage, frequency, and phase sequence on three-phase models. The normal source must match the load.
☑	☐	31.	Open the normal source circuit breaker or remove fuses to the transfer switch.
☑	☐	32.	Manually transfer the load to the normal source.
☑	☐	33.	Close the generator set main line circuit breakers, close the safeguard breaker, and/or replace the fuses connected to the transfer switch.
☑	☐	34.	Place the generator set master switch in the RUN position.
☑	☐	35.	Check the generator set voltage, frequency, and phase sequence on three-phase models. The generator set must match normal source and load.
☑	☐	36.	Place the generator set master switch in the OFF/RESET position.
☑	☐	37.	Open the generator set main line circuit breakers, open the safeguard breaker, and/or remove the fuses connected to the transfer switch.
☑	☐	38.	Reconnect the power switching device and logic controller wire harness at the inline disconnect plug at the transfer switch.
☑	☐	39.	Close the normal source circuit breaker or replace fuses to the transfer switch. Place the generator set master switch to the AUTO position.
☑	☐	40.	Close the generator set main line circuit breakers, close the safeguard breaker, and/or replace the fuses connected to the transfer switch.
☑	☐	41.	Place the transfer switch in the TEST position (load test or open normal source circuit breaker). **NOTE:** Obtain permission from the building authority before proceeding. This procedure tests transfer switch operation and connects building load to generator set power.
☐	☑	42.	Readjust frequency to 50 or 60 Hz with total building loads.*
☑	☐	43.	Verify that the current phase is balanced for three phase systems.
☑	☐	44.	Release the transfer switch test switch or close the normal circuit breaker. The transfer switch should retransfer to the normal source after appropriate time delay(s).
☑	☐	45.	Allow the generator set to run and shut down automatically after the appropriate cool down time delay(s).
☑	☐	46.	Set the plant exerciser to the customer's required exercise period, if equipped.
☑	☐	47.	Verify that all options on the transfer switch are adjusted and functional for the customer's requirements.
☑	☐	48.	If possible, run the building loads on the generator set for several hours or perform the load bank test if required.
☑	☐	49.	Verify that all the wire connections from the generator set to the transfer switch and optional accessories are tight and secure.
☐	☑	50.	If there is a UPS system, fill out the UPS prestart checklist and UPS startup checklist.
☑	☐	51.	Verify that the customer has the appropriate engine/generator set and transfer switch literature. Instruct the customer in the operation and maintenance of the power system.
☑	☐	52.	Fill out the startup notification at this time and send the white copy to the Generator Warranty Dept. Include the warranty form if applicable.

* Some models with electronic engine controls may limit or prohibit adjusting the engine speed or testing shutdowns.

KOSSEN EQUIPMENT, INC.
LOAD BANK TEST REPORT

JOB NAME: CENTURY CARE CENTER
GENERATOR MODEL: 250REOZDB
GENERATOR SERIAL: 2101183

KEI OPERATOR: BEN ERCK
TEST WITNESS/COMPANY:
DATE OF TEST: 8-18-06

HOUR	METER	PHASE AMPS			PHASE VOLTS			LOAD BANK PERCENT	WATER TEMP	OIL PRESSURE	EXHAUST TEMP	AMB TEMP	FREQ	DC CHARG VOLT	POWER FACTOR
		PH 1	PH 2	PH 3	PH 1	PH 2	PH 3								
8:00	1.2	182	189	188	214	212	213	32%	185	52	430	83	60	27	1.0
8:25	1.8	361	369	367	213	212	212	64%	187	52	487	83	60	28	1.0
8:50	2.2	533	495	482	212	211	208	86%	190	53	530	88	60	28	1.0
9:10	2.6	650	605	594	210	210	208	100%	192	53	575	89	60	28	1.0
9:30	2.9	650	605	594	210	210	208	100%	192	53	578	89	60	28	1.0
10:00	3.3	650	605	594	211	211	208	100%	192	53	578	89	60	28	1.0
10:30	3.9	671	625	615	211	211	208	100%	192	53	594	90	60	28.5	1.0
11:00	4.4	670	625	615	210	210	209	100%	193	53	594	90	60	28.5	1.00
11:30	4.9	673	627	618	210	210	209	100%	195	53	594	91	60	28.5	1.0
12:00		673	626	618	210	210	209	100%	195	53	595	91	60	28.5	1.0

PART#	DESCRIPTION	COST	SELL	QUANTITY		8-18-06 WORK PERFORMED
GM28725	PCB BOARD DEC 3+			Ø	1	INSTALLED & CONNECTED BATTERIES
31PHD	BATTERIES			Ø	2	CHECKED & ADDED COOLANT TO RADIATOR.
	1/2 IN CHECK VALVE			Ø	1	CHECKED & CONNECTED BATTERY CHARGER
	BATTERY TERMINALS			Ø	4	& BLOCK HEATER, INSTALLED CHECK VALVE
RED	ANTI FREEZE GALLON			Ø	1/2	TO FUEL SUPPLY LINE & PRIMED FUEL
						SYSTEM, REMOVED & REPLACED DEC 3+
						BOARD, P1 CONNECTOR ON BOARD WAS
						BROKEN. CONNECTED WIRING FOR REMOTE
						ANNUNCIATOR & INSTALLED 1amp FUSE
						& HOLDER ON POSITIVE WIRE GOING TO
						ANNUNCIATOR. CHECKED OPERATION OF
						REMOTE ANNUCIATOR. ADJUSTED OVERVOLTAGE
						SHUTDOWN ON DEC 3+ BOARD. CHECKED
						PHASE ROTATION ON COMMERCIAL POWER,
						CHANGED PHASE ROTATION OF GENERATOR
						TO REVERSE ROTATION TO MATCH COMMERCIAL
						POWER. PROGRAMED IMPAC 1000, TRANSFERED
						POWER TO GENERATOR VIA TEST SWITCH
						ON ATS. RAN GENERATOR UNDER LOAD
						FOR 30MIN.
						8-21-06
						COMPLETED 4 HR LOAD BANK. NO PROBLEMS NOTED

HUMBER GARICK
consulting engineers

MEMORANDUM

TO: KOSSEN EQUIPMENT, ATT. DAVE WRIGHT

FROM: BOB KROLL

SUBJECT: CENTURY CARE CENTER

DATE: 8/29/2006

CC: DON RIPLEY

MESSAGE

An AHCA inspection was held on August 22, 2006 at the above project. At the time there was no one present to conduct a complete test of the generator control system. At the time of the test, there was one item of concern: Wiring for the battery charger test system had not been installed.

Also, DEP is requiring a high fuel level alarm device be installed. It is our understanding that you will be adding this device.

AHCA has authorized our company to verify the test results. When these items are complete, please coordinate with us to schedule a time when your representative can meet with us at the project with the proper equipment to conduct a complete test of the system.

Sincerely,

Bob Kroll

Bob Kroll
Construction Administrator

207 Ferry Road SE
Fort Walton Beach, FL 32548
P: 850.243.6723 – F: 850.664.5420
admin@humber-garick.com

7.13.4 The EPSS shall perform within the limits specified in this standard.

7.13.4.1 The on-site installation test shall be conducted in the following manner:

(1) With the prime mover in a "cold start" condition and the emergency load at standard operating level, a primary power failure shall be initiated by opening all switches or breakers supplying the primary power to the building or facility.

(2) The test load shall be that load that is served by the EPSS.

(3) The time delay on start shall be observed and recorded.

(4) The cranking time until the prime mover starts and runs shall be observed and recorded.

(5) The time taken to reach operating speed shall be observed and recorded.

(6) The voltage and frequency overshoot shall be recorded.

(7) The time taken to achieve a steady-state condition with all switches transferred to the emergency position shall be observed and recorded.

(8) The voltage, frequency, and amperes shall be recorded.

(9) The prime mover oil pressure and water temperature shall be recorded, where applicable.

(10) The battery charge rate shall be recorded at 5-minute intervals for the first 15 minutes, and at 15-minute intervals thereafter.

(11) The load test with building load, or other loads that simulate the intended load as specified in 5.4, shall be continued for the minimum time required by Table 4.1(a) for the class, or 2 hours maximum, observing and recording load changes and the resultant effect on voltage and frequency.

(12) When primary power is returned to the building or facility, the time delay on retransfer to primary for each switch with a minimum setting of 5 minutes shall be recorded.

(13) The time delay on the prime mover cooldown period and shutdown shall be recorded.

7.13.5 After completion of the test performed in 7.13.4.1, the prime mover shall be allowed to cool for 5 minutes.

7.13.6 A load shall be applied for a 2-hour, full load test. The building load shall be permitted to serve as part or all of the load, supplemented by a load bank of sufficient size to provide a load equal to 100 percent of the nameplate kW rating of the EPS, less applicable derating factors for site conditions.

7.13.6.1 A unity power factor shall be permitted for on-site testing, provided that rated load tests at the rated power factor have been performed by the manufacturer of the EPS prior to shipment.

7.13.6.2 Where the EPS is a paralleled multi-unit EPS, each unit shall be permitted to be tested

individually at its rating.

7.13.7 A full load test shall be initiated immediately after the cooling time specified in 7.13.5 by any method that starts the prime mover and, immediately upon reaching rated rpm, picks up 100 percent of the nameplate kW rating on one step, less applicable derating factors for site conditions.

7.13.7.1 Where the EPS is a paralleled multi-unit EPS, each unit shall be permitted to be tested individually at its rating.

7.13.8 The data specified in 7.13.4.1(4) through 7.13.4.1(10) shall be recorded at first load acceptance and every 15 minutes thereafter until the completion of the 2-hour test period.

7.13.9 Any method recommended by the manufacturer for the cycle crank test shall be utilized to prevent the prime mover from running.

7.13.9.1 The control switch shall be set at "run" to cause the prime mover to crank.

7.13.9.2 The complete crank/rest cycle specified in 5.6.4.2 and Table 5.6.4.2 shall be observed.

7.13.10 All safeties specified in 5.6.5 and 5.6.6 shall be tested as recommended by the manufacturer.

7.13.11 The following shall be made available to the authority having jurisdiction at the time of the acceptance test:

(1) Evidence of the prototype test as specified in 5.2.1.2 (for Level 1 systems)

(2) A certified analysis as specified in 5.6.10.2

(3) A letter of compliance as specified in 5.6.10.5

(4) A manufacturer's certification of a rated load test at rated power factor with the ambient temperature, altitude, and fuel grade recorded

8.1* General.

8.1.1 The routine maintenance and operational testing program shall be based on all of the following:

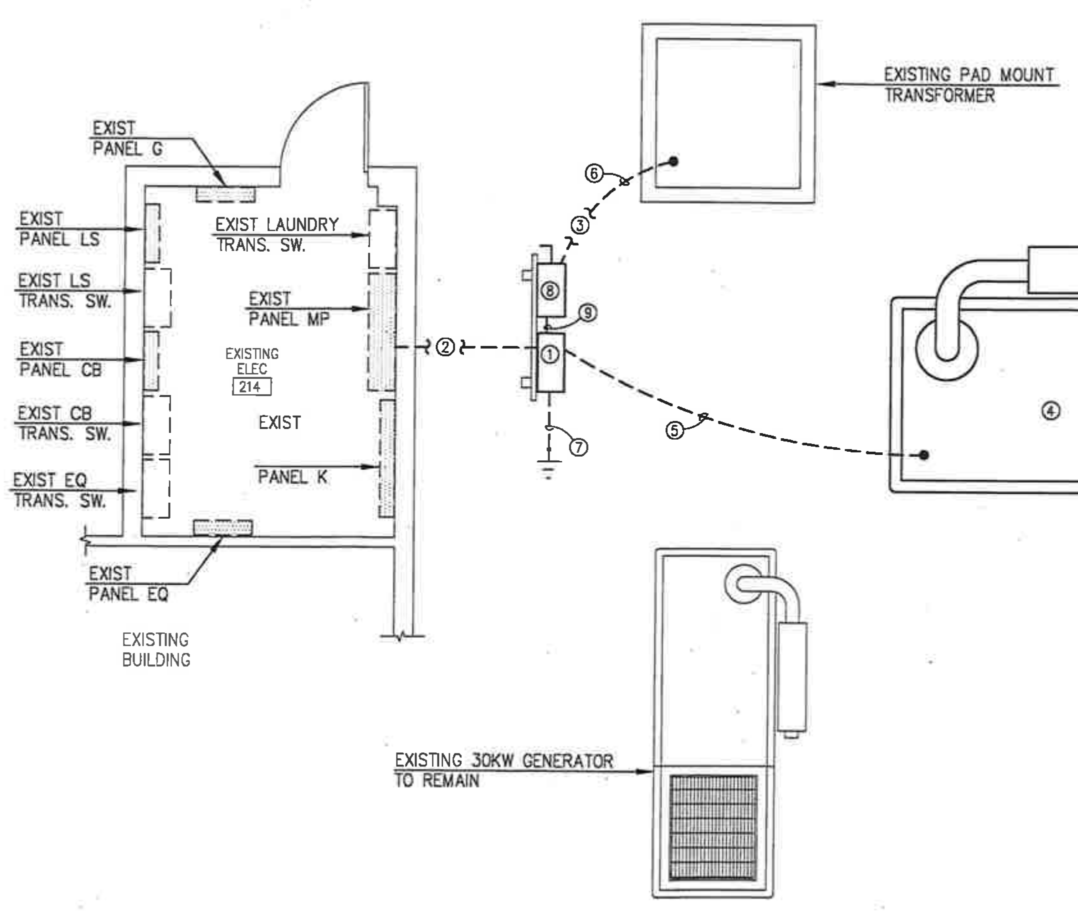
(1) Manufacturer's recommendations

(2) Instruction manuals

(3) Minimum requirements of this chapter

(4) The authority having jurisdiction

8.1.2 Consideration shall be given to temporarily providing a portable or alternate source



ELECTRICAL PLAN

SCALE: 1/4" 1' - 0"

NOTES:

① 1600 AMP TRANSFER SWITCH

② REROUTE CONDUITS TO NEW TRANSFER SWITCH REMOVE EXISTING CONDUCTORS AND REPLACE WITH NEW CONDUCTORS & 1#4/0 CU GND CONDUCTOR.

③ INTERCEPT SERVICE TO BUILDING AND RECONNECT CONDUIT AND EXISTING CONDUCTORS FROM EXISTING TRANSFORMER TO NEW TRANSFER SWITCH.

④ NEW 250 KW GENERATOR. PROVIDE 700 AMP BREAKER.

⑤ TWO RUNS 3 1/2" CONDUIT WITH 4-500MCM CU & 1#1/0 CU GROUND CONDUCTOR.

⑥ EXISTING SERVICE CONDUCTORS ARE: 4-750MCM AL IN 4" CONDUIT.

⑦ 3/0 CU GROUND CONDUCTOR, CONNECT TO EXISTING GOUND SYSTEM.

⑧ NEW 1600 AMP DISCONNECT SWITCH

⑨ (4) RUNS OF 4-750MCM AL IN 4"CONDUIT

HUMBER GARICK consulting engineers

287 Ferry Road S.E.
Fort Walton Beach
Florida 32548-5606

FL Authorization No. 00006880
Christopher A. Garick
FL/P.E. No. 53924
Philip M. Humber
FL/P.E. No. 19810

NEW GENERATOR
CENTURY NURSING HOME
ESCAMBIA COUNTY
CENTURY, FLORIDA

SEAL:

REVISION:	
DATE:	DESCRIPTION:
DRAWN BY:	DRS
DESIGNED BY:	BK
CHECKED BY:	PMH
DATE:	12-07-05
JOB NUMBER:	5074

ELECTRICAL PLAN

E-1 of X

\fish-head\job files\Current Jobs\Jobs-05\5074\Drawings\E-dwgs\5074-E1.dwg, 12/13/2005 8:22:43 AM, dslich

NOTES:

① NEW 1600 AMP SERVICE RATED TRANSFER SWITCH.

② REROUTE CONDUITS TO NEW TRANSFER SWITCH. REMOVE EXISTING CONDUCTORS AND REPLACE WITH NEW CONDUCTORS & 1#4/0 CU GND CONDUCTOR.

③ INTERCEPT EXISTING SERVICE TO BUILDING AND RECONNECT CONDUIT & CONDUCTORS FROM EXISTING TRANSFORMER TO NEW DISCONNECT SWITCH.

④ NEW 250 KW GENERATOR, PROVIDE 700 AMP MAIN LINE CIRCUIT BREAKER.

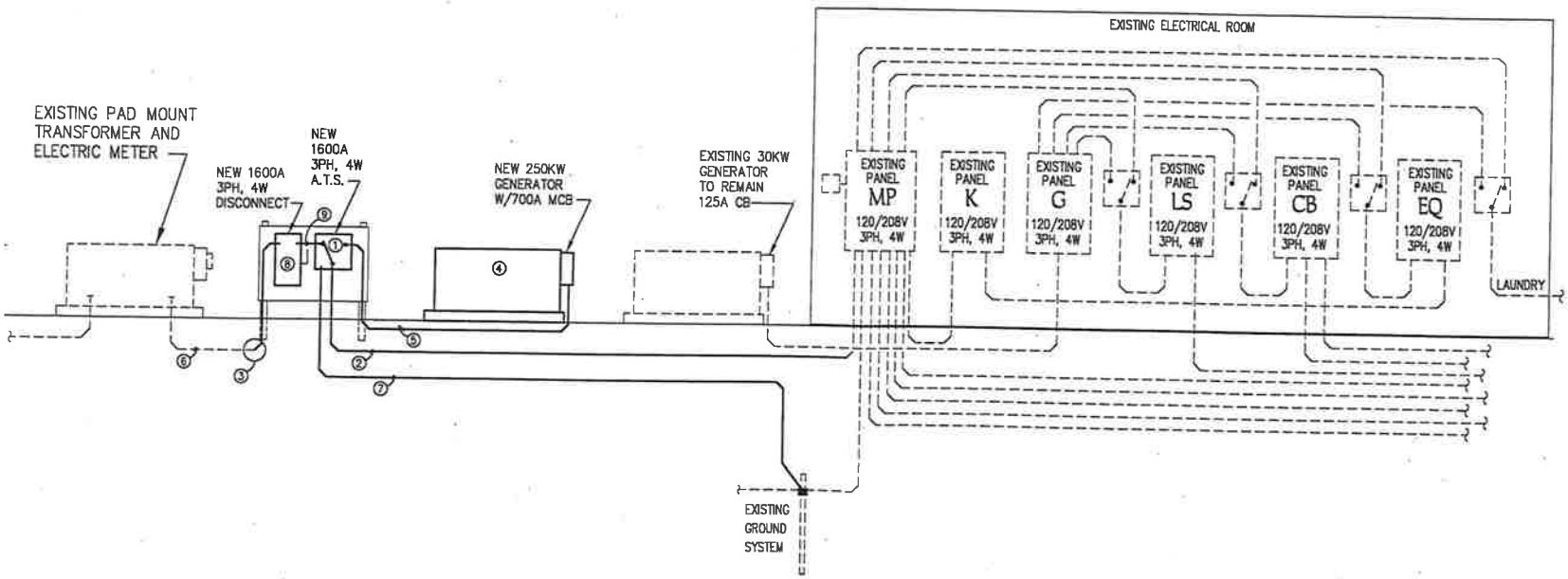
⑤ TWO RUNS OF 3 1/2" CONDUIT WITH 4-500MCM CU & 1#1/0 CU GROUND CONDUCTOR.

⑥ EXISTING SERVICE CONDUCTORS ARE: (4) RUNS OF 4-750MCM AL IN 4" CONDUIT.

⑦ 3/0 CU CONDUCTOR, CONNECT TO EXISTING BUILDING GROUND SYSTEM.

⑧ NEW 1600 AMP DISCONNECT SWITCH

⑨ (4) RUNS OF 4-750MCM AL IN 4" CONDUIT.



SINGLE LINE POWER RISER

NOT TO SCALE

HUMBER GARICK consulting engineers
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www.humber-garick.com
FL Authorization No. 00026890
Christopher A. Garick
FLPE No. 53974
Philip M. Humber
FLPE No. 5820

NEW GENERATOR
CENTURY NURSING HOME
ESCAMBIA COUNTY
CENTURY, FLORIDA

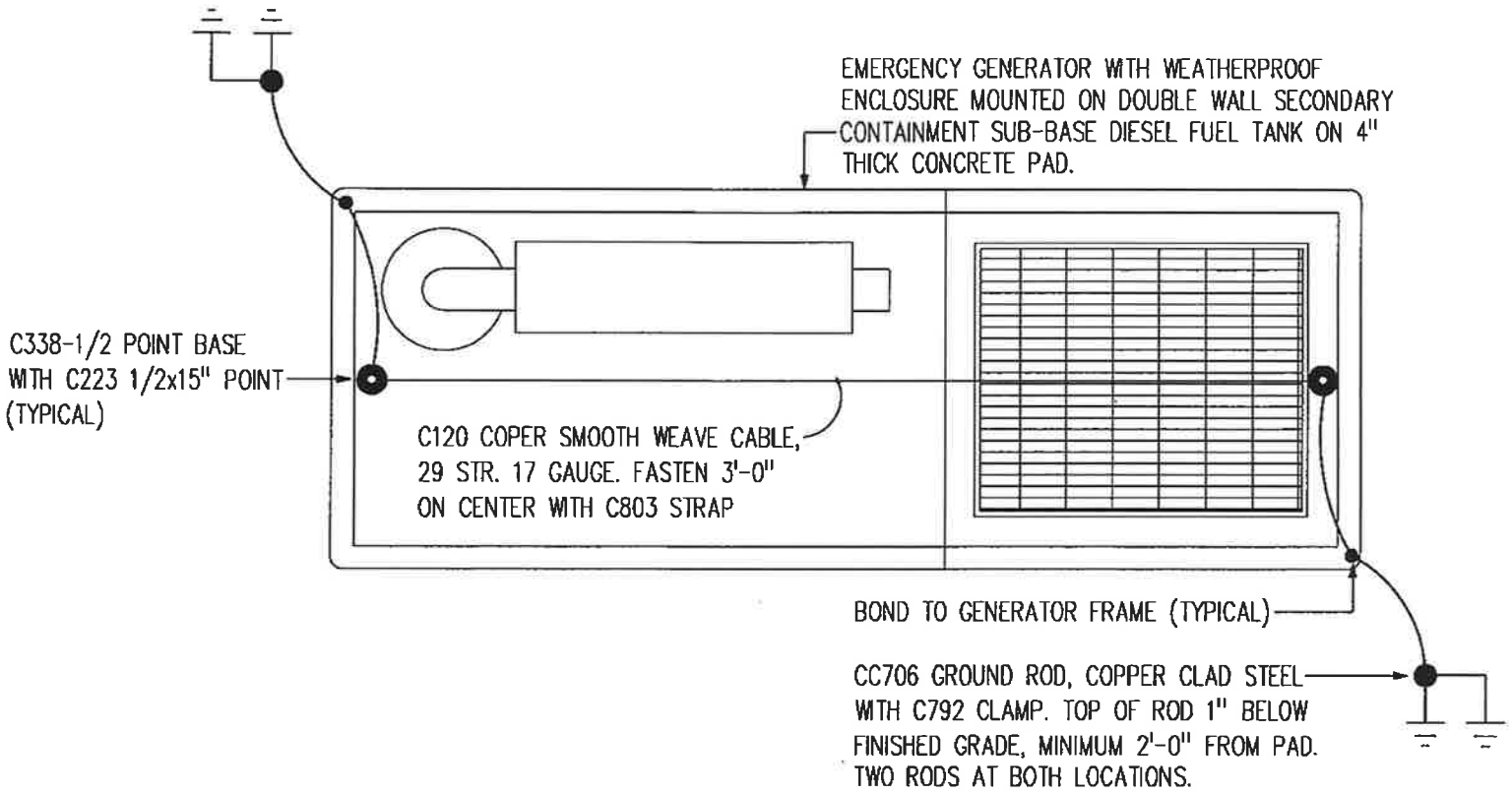
SEAL:

REVISION:	
DATE:	DESCRIPTION:

DRAWN BY:	CWLS
DESIGNED BY:	BK
CHECKED BY:	PMH
DATE:	12-07-05
JOB NUMBER:	5074

NEW WORK NOTES

E-2 of x



EMERGENCY GENERATOR LIGHTNING PROTECTION

NOT TO SCALE

HUMBER GARICK consulting engineers
207 Ferry Road S.E.
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Florida 32548-5806
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Christopher A. Garick;
FL P.E. No. 53824
Philip M. Humber;
FL P.E. No. 13870

NEW GENERATOR
FOR
CENTURY CARE CENTER
CENTURY, FLORIDA
ESCAMBIA COUNTY,

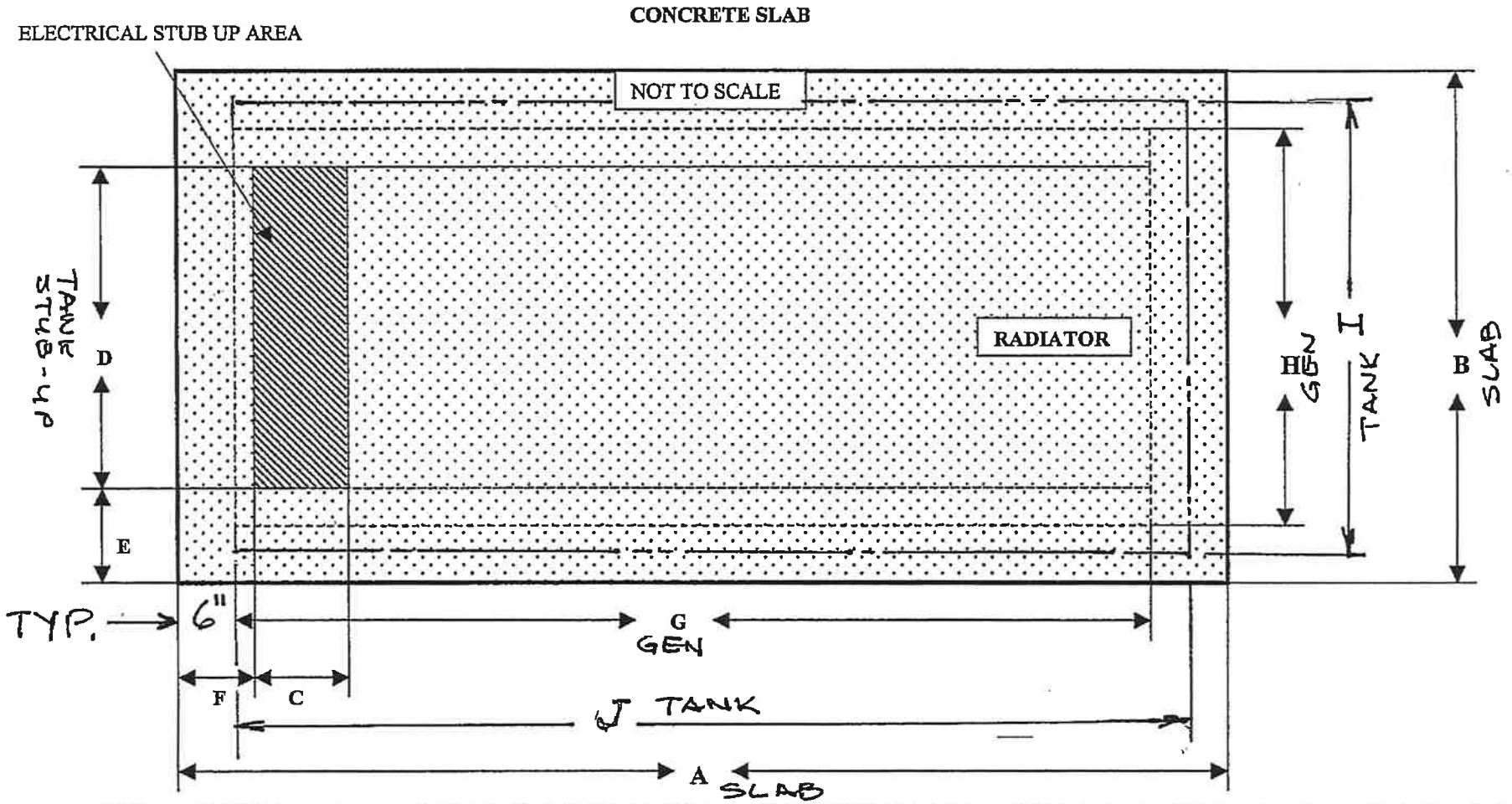
Drawn:	D. WYNN
Date:	02-21-08
Rev Number:	1
Job Number:	5074

E-2X

GENERATOR CONCRETE SLAB DETAILS

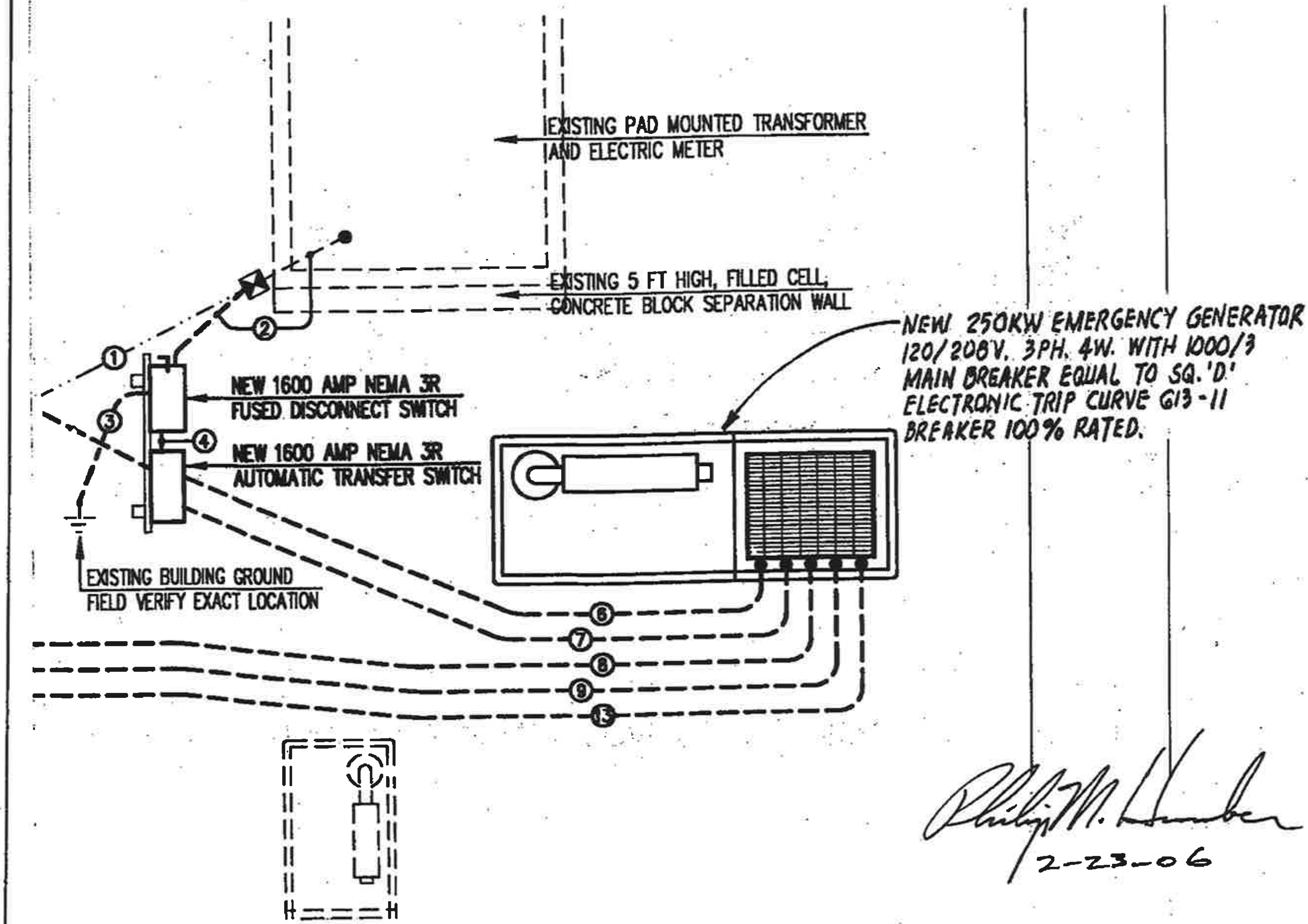
GENERATOR MODEL 250REOZOB TANK CAPACITY 1400 PROJECT CENTURY CARE

GENERATOR WEIGHT 7500 TOTAL WEIGHT INCLUDING FUEL 22,000



A	B	C	D	E	F	G	H	I	J	K	L
192"	88"	14.63"	70"	9"	9"	134.5"	50"	76"	180"		

Typical concrete pad composition- 3000 psi with # 4 rebar on 12" centers or # 8 ga. wire. Pad weight should equal that of generator which will determine min thickness.



HUMBER GARICK consulting engineers

NEW GENERATOR
FOR
CENTURY CARE CENTER
ESCAMBIA COUNTY, CENTURY, FLORIDA

Drawn:	D. WYNN
Date:	02-21-06
Rev Number:	1
Job Number:	8074

E-2Y

Century Care Center
Addition of Main Electrical Service Generator

Specification Index

Philip M Humber, P.E.
Electrical Engineer
PE # 13870

SECTION 16100
ELECTRICAL

PART 1 - GENERAL

1.01 RELATED DOCUMENTS: The General and/or Special Conditions Sections are a part of this specification and the Contractor shall consult them in detail for instructions pertaining to this work. Section 16 is subdivided for convenience only. Other related sections of the specifications are:

Section 16200	Emergency Power System
Section 16205	Generator Sets
Section 16415	Transfer Switch

1.02 SCOPE: Furnishing of all labor, material, equipment, supplies, and services necessary to construct and install the complete electrical systems as shown on the drawings and specified herein. Work shall include but is not necessarily limited to the following items:

A. Service from utility source to new service entrance equipment, metering equipment is existing.

B. Outdoor service entrance equipment and automatic transfer switch.

C. Grounding system.

D. Outdoor Generator.

1.03 JOB CONDITIONS:

A. SITE INSPECTIONS: Before submitting proposals, each bidder should visit the site and fully familiarize himself with all job conditions and shall be fully informed as to the extent of his work. No consideration will be given after bid opening date for alleged misunderstanding as to the requirements of work involved in connecting to the utilities or as to requirements of materials to be furnished.

B. EXISTING CONDITIONS: All utilities, existing system and conditions shown on the plans as existing are approximate, and the Contractor shall verify before any work is started.

C. SCHEDULED INTERRUPTIONS: Planned interruptions of utilities service, to any facility affected by this contract, shall be carefully planned and approved by Engineer at least ten (10) days in advance of the requested interruption. The Contractor shall not interrupt services until specific approval has been granted by the Engineer. The request shall indicate services to be affected, date and time of interruption and duration of outage. Request for interruption of service will not be approved until all equipment and material required for the completion of that particular phase of work are on the job site. The work may have to be scheduled after normal working hours.

D. ACCIDENTAL INTERRUPTIONS: All excavation and/or remodeling work required shall be performed with care so as not to interrupt other existing services (water, gas, electrical, sewer, sprinklers, etc.). If accidental utility interruption resulting from work performed by the Contractor occurs, service shall be immediately restored to its original condition without delay, by and at the expense of the Contractor, using skilled workmen of the trade required.

1.04 CODES, PERMITS AND INSPECTIONS: The installation shall comply with all local, state and federal laws and ordinances applicable to electrical installation and with the regulations of the latest

published edition of the National Electric Code. All work shall meet the requirements of the Florida Agency for Health Care.

1.05 DRAWINGS AND SPECIFICATIONS: The drawings and these specifications are complementary each to the other. What is called for by one shall be as binding as if called for by both. Omissions from the drawings and specifications of details of work which are evidently necessary to carry out the intent of the drawings and specifications, or which are customarily performed, shall not relieve the Contractor from performing such work. In any case of discrepancy in the figures or catalog numbers, the matter shall be submitted to the Engineer, who shall promptly make a determination in writing. Any adjustment by the Contractor shall be at the Contractor's own risk and expense. Electrical drawings are diagrammatic only. Do not scale these drawings. All equipment shall be installed in accordance with manufacturer's recommendations and any conflicting data shall be verified before bidding.

1.06 STANDARDS OF MATERIALS AND WORKMANSHIP:

A. MATERIALS: All materials shall be new and shall be listed as approved by the Underwriters' Laboratories, Inc., in every case where a standard has been established for a particular type of material in question. All work shall be executed in a workmanlike manner and shall present a neat appearance.

B. SUBSTITUTIONS: The Contractor shall base his proposal on the materials specified herein and on the drawings. Reference to a particular product by manufacturer, trade name, or catalog number establishes the quality standards of material and equipment required for this installation and is not intended to exclude products equal in quality and similar design. The Engineer reserves the sole right to decide the equality of materials proposed for use in lieu of these specified. It shall be the Contractor's responsibility to furnish the information and data sufficient to establish the quality and utility of the items in question, including furnishing of samples if required. If other manufacturers of equipment determine that their equipment will fit the space with recommended clearances, suit all job conditions, equal or exceed the quality of the specified items, a request may be made in writing to the Engineer at least ten (10) days prior to bid date for permission to be included in the approved equipment list. All data required for evaluation shall accompany the above letter.

1.07 TYPES OF SERVICE: Electric service shall be 120/208 volts three phase 4 wire served an underground secondary service an underground secondary service derived from a pad mounted transformer served by an underground primary service.

1.08 SUBMITTALS:

A. SHOP DRAWINGS: The Contractor shall submit a list of items proposed for use. He shall also submit catalog data and shop drawings on proposed systems and their components. Where substitutions alter the design or space requirements, the Contractor shall defray all items of cost for the revised design and construction including costs to all allied trades involved. Data shall be submitted within thirty (30) days after the contract is awarded. Provide six (6) copies of shop drawings as a minimum unless a greater number of copies is required by the General Conditions. Each submittal data section shall be covered with an index sheet listing Contractor, supplier, etc., and an index to the enclosed submittals.

B. AS-BUILT DRAWINGS: Upon completion of the project, the Contractor shall furnish a complete set of the drawings which formed a part of the contract and include all revisions, sketches, etc., which may have been required during the construction.

C. OPERATING AND MAINTENANCE MANUALS: At completion of the work, furnish three (3) copies of written operation instructions which shall include manufacturer's descriptive

bulletins, operating and maintenance manuals and parts lists of all equipment installed. Also include in such instructions, the specified size and capacity ratings of all equipment installed. Each set of instructions shall be assembled into a suitable looseleaf type binder and presented to the Engineer for delivery to the Owner.

D. Each major section of submittals such as lighting equipment, etc., shall be secured in a booklet or stapled with a covering index which lists the following information:

(1) General contractor w/phone number and project manager.

(2) Sub-contractor w/phone number and project manager.

(3) Supplier of equipment w/phone number and person responsible for this project.

(4) Index of each item covered in submittal and model number.

(5) Any deviation from contract documents shall be specifically noted on submittal cover index and boldly on specific submittal sheet.

1.09 EXCAVATION, TRENCHING AND BACKFILLING: Trenches for all underground conduits shall be excavated to the required depth. The bottom of trenches shall be tamped hard. Before backfilling the excavation shall be cleaned of trash and debris. Backfill shall consist of excavation or borrow of sand, gravel or other approved material free of trash, lumber, sawdust or other debris. Backfill shall be placed in 9-inch thick, moistened and hand or machine tamped layers. Backfill shall be brought to suitable elevation above ground to provide for anticipated settlement and shrinkage. Any paving broken up shall be repaired and returned to the original condition.

1.10 PAINTING AND IDENTIFICATION: Contractor shall touch-up or refinish all items of electrical equipment furnished with a factory finish coat of paint and which may have been damaged regardless of cause.

1.11 CLEANING UP: The Contractor shall remove all oil, grease or other stains resulting from his work performed in the building or the exterior thereof.

1.12 GUARANTEE AND SERVICE: Upon completion of all tests and acceptance, the Contractor shall furnish the Owner a written guarantee covering the electrical work done for a period of one (1) year from date of acceptance. Guarantee includes equipment capacity and performance ratings specified without excessive noise levels. Upon notice from the Engineer or the Owner, the Contractor shall, during the guarantee period, rectify and replace any defective material or workmanship and repair any damage caused thereby without additional cost.

PART 2 - EQUIPMENT AND MATERIALS

2.01 WIRING MATERIALS:

A. CONDUIT SYSTEMS: Conduits shall be rigid galvanized conduit or Schedule 40 PVC in all concealed concrete and solid masonry structures and buried in the earth. In exposed areas subject to moisture, conduit shall be rigid steel, aluminum or IMC. Electrical metallic tubing may be used in other portions of the structures. Rigid galvanized conduits shall be Pittsburgh Standard galvanized rigid conduit, National Electric Products, Shearduct, Youngstown Buckeye hot galvanized rigid conduit or approved equal. Flexible conduit (for motor or equipment connections) shall be as manufactured by Anaconda or approved equal and shall be liquidtight in all visible locations. Electrical metallic tubing shall be as manufactured by Pittsburgh Standard, Youngstown Buckeye or National Electric Products. It is concealed and protected from mechanical injury. Horizontal runs in exposed joist spaces

and runs on walls in area noted for exposed construction may be run in EMT. Connections and terminals used on electrical metallic tubing shall provide a smooth insulated bushed opening to protect the insulation on conductors and shall be of rolled steel, set screw or compression type, Appleton, Thomas and Betts, Crouse-Hinds, Pyle-National or approved equal.

B. CONDUCTORS: Conductors for building wiring shall have THHN, THHW, or THWN, 600 volt insulation unless specified on drawings. Conductors material is noted on the drawings. Minimum size shall be No. 12. All wire No. 8 and larger shall be stranded except as permitted or required by the NEC. All power feeders and branch circuits No. 8 and smaller shall be wired with color-coded wire with the same color used for a system throughout the building. Ungrounded conductors larger than No.8 and grounded conductors larger than No. 6 shall either be fully color-coded or shall have black insulation and be similarly color coded with tape or paint in all junction boxes and panels. Tape or paint shall completely cover the full visible length of conductor insulation within the box or panel. Color coding of all conductors shall be as existing.

PART 3 - EXECUTION

3.01 WIRING MATERIALS:

A. CONDUIT SYSTEMS:

(1) Electrical metallic tubing shall be rigidly joined together by approved couplings to insure perfect mechanical and electrical connections. Where entering boxes, cabinets and fittings, it shall form a completed bonded system. Bends and offsets shall be made with bending equipment designed for use in electrical metallic tubing so as to prevent crushing.

(2) Flexible metal conduit may be used between fixture outlets on structural steel and fixtures (but not between fixture outlets), between disconnect and motor driven equipment, and between wall outlets and equipment. Where applications are not concealed by the building construction, liquid-tight flexible conduit and grounding type fittings shall be used and system shall be fully bonded. Maximum length of flexible conduit shall be 18". (All visible locations shall be liquidtight.)

(3) EMT shall be supported at 10' maximum intervals and within 3' of each outlet box. Conduit shall be rigidly supported by means of beam clamps and hanger rods (where required), purlin clips or stud clips, using conduit hangers by Caddy, Efcor or Minerallac. Conduit supported by wire of any type will not be acceptable.

(4) PVC conduit shall be bent, installed, and solvent welded at joints in strict accordance with manufacturer's recommendations. Field bends shall be made with an approved hot box bender; heating with flame or hand held dryers are prohibited.

(5) Rigid steel and aluminum conduits shall have inside edges of ends reamed smooth. At couplings, conduit end shall be threaded so that they meet in the coupling, but right and left couplings shall not be used. Rigid steel conduits shall be given two coats of bitumastic or aluminized asphaltum prior to use in earth.

3.03 GROUNDING: The entire wiring system and all equipment connected thereto shall be grounded in accordance with Article No. 250 of the N.E.C. There shall be a redundant green insulated ground conductor in all raceways.

3.05 DEMOLITION:

A. CONDUIT: Any existing conduit runs may be re-used concealed in place or any conduit removed in good condition may be re-installed in this building. All existing conductors are shown to be removed and are not to be re-used on this project site.

3.07 PAINTING: All equipment furnished shall be rendered free from grease, dirt, etc., and should any equipment with factory finish be scratched, the blemish shall be touched-up with the equipment manufacturer's touch-up paint. All unprotected hangers, supports, etc., shall be painted with rust resistant primer and two finish coats of epoxy enamel.

3.09 PAINTING:

A. All equipment furnished shall be rendered free from grease, dirt, etc. and should any equipment with factory finish be scratched, the blemish shall be touched-up with the equipment manufacturer's touch-up paint.

B. All unprotected hangers, supports, etc. shall be painted with rust resistant primer and two finish coats of acrylic enamel.

END OF SECTION 16100

SECTION 16200 - EMERGENCY POWER SYSTEM

1) Scope of Work

a) This section shall consist of providing a packaged electrical system and associated controls with all required accessories as specified and shown on the plans. The equipment supplier must be the authorized distributor for each component of the products specified herein. The work includes the furnishing of all labor, materials, equipment, test, and training to provide a complete and workable power system, including the generator set and generator set controls, and the transfer switch and transfer switch controls, and installation as shown on the plans, drawings, and specifications herein. It is the intent of these specifications to have a single source responsibility for the generator set, and transfer switch.

b) Any and all exceptions to the published specifications shall be subject to the approval of the engineer.

c) The power system, except for the service disconnect, shall be finished by a single manufacturer who shall be responsible for the design, coordination, and testing of the complete system. The entire system shall be installed as shown on the plans, drawings, and specifications herein.

d) The equipment shall be produced by a manufacturer who has produced this type of equipment for a period of at least 5 years and who maintains a service organization available twenty-four hours a day throughout the year.

e) The equipment shall be produced by a manufacturer who is ISO 9001 certified for the design, development, production, installation, and service of the their complete product line.

2) General Requirements

a) It is the intent of this specification to secure an electrical power system that has been tested during design verification, production and at the final job site. All finished equipment shall be of the lasted commercial design and will be complete with all of the necessary accessories for complete installation as shown on the plans, drawings, and specifications herein. The equipment supplied and installed shall meet the requirements of the National Electrical Code, along with all applicable local codes and regulations. All equipment shall be new and of current production of a national firm that manufactures generator sets and controls, transfer switches, switchgear, and assembles them as a complete and coordinated system. There will be one source responsibility for warranty, parts, and service through a local representative with factory-trained servicemen.

3) Related Documents

a) The following specification section apply to all work herein:

i) Section 16205 - Generator Set
ii) Section 16415 - Transfer Switch

END SECTION GENERAL

SECTION 16205 - GENERATOR SET

1) Submittal

a) The submittal shall include prototype test certification and specification sheets showing all standard and optional accessories to be supplied, schematic wiring diagrams, dimension drawings, and interconnection diagrams identifying by terminal number, each required interconnection between the generator set, the transfer switch, and the remote annunciator panel if it is included elsewhere in these specifications.

2) Codes and Standards

a) The generator set shall conform to the requirements of the following codes and standards:

i) CSA C22.2, No. 14 – M91 Industrial Control Equipment.

ii) EN50082-2, Electromagnetic Compatibility – Generic Immunity Requirements, Part 2: Industrial.

iii) EN55011, Limits and Methods of Measurement of Radio Interference Characteristics of Industrial, Scientific and Medical Equipment.

iv) IEC8528 part 4. Control Systems for Generator Sets

v) IEC Std 801.2, 801.3, and 801.5 for susceptibility, conducted, and radiated electromagnetic emissions.

vi) IEEE446 – Recommended Practice for Emergency and Standby Power Systems for Commercial and Industrial Applications

vii) NFPA70 – National Electrical Code. Equipment shall be suitable for use in systems in compliance to Article 700, 701, and 702.

viii) NFPA99 – Essential Electrical Systems for Health Care Facilities

ix) NFPA110 – Emergency and Standby Power Systems. The generator set shall meet all requirements for Level 1 systems. Level 1prototype tests required by this standard shall have been performed on a complete and functional unit, component level type tests will not substitute for this requirement.

3) Testing

a) To assure that the equipment has been designed and built to the highest reliability and quality standards, the manufacturer and/or local representative shall be responsible for three separate tests: design prototype tests, final production tests, and site tests.

i) Design Prototype Tests: Components of the emergency system such as the engine/generator set, transfer switch, and accessories shall not be subjected to prototype tests since the tests are potentially damaging. Rather, similar design prototypes and preproduction models shall be subject to the following tests.

(1) Maximum power (kW).

(2) Maximum motor starting (kVA) at 35% instantaneous voltage dip.

(3) Alternator temperature rise by embedded thermocouple and/or by resistance method per NEMA MG1-32.40.

(4) Governor speed regulation under steady-state and transient conditions.

(5) Voltage regulation and generator transient response.

(6) Harmonic analysis, voltage waveform deviation, and telephone influence factor.

(7) Three-phase short circuit tests.

(8) Alternator cooling air flow.

(9) Torsional analysis to verify that the generator set is free of harmful torsional stresses.

(10) Endurance testing.

b) Production Tests

i) Final Production Tests: Each generator set shall be tested under varying loads with guards and exhaust system in place. Tests shall include:

ii) Single-step load pickup.

iii) Transient and steady—state governing.

iv) Safety shutdown device testing.

v) Voltage regulation.

vi) Rated Power @ 0.8 PF

vii) Maximum Power.

viii) A certified test record will be sent prior to shipment.

c) Site Tests

i) Site Tests: An installation check, start-up, and building load test shall be performed by the manufacturer's local representative. The engineer, regular operators, and the maintenance staff shall be notified of the time and date of the site test. The tests shall include:

ii) Fuel, lubricating oil, and antifreeze shall be checked for conformity to the manufacturer's recommendations, under the environmental conditions present and expected.

iii) Accessories that normally function while the set is standing by shall be checked prior to cranking the engine. These shall include: block heaters, battery charger, alternator strip heaters, remote annunciator, etc.

iv) Start-up under test mode to check for exhaust leaks, path of exhaust gases outside the building, cooling air flow, movement during starting and stopping, vibration during running, normal and emergency line-to-line voltage and frequency, and phase rotation.

v) Automatic start-up by means of simulated power outage to test remote-automatic starting, transfer of the load, and automatic shutdown. Prior to this test, all transfer switch timers shall be adjusted for proper system coordination. Engine coolant temperature, oil pressure, and battery charge level along with generator set voltage, amperes, and frequency shall be monitored throughout the test. An external load bank shall be connected to the system if sufficient building load is unavailable to load the generator set to the nameplate kW rating.

4) Warranty & Maintenance

a) A one year warranty for the generator set shall be included to guarantee against defective material and workmanship in accordance with the manufacturer's published warranty from date of start-up. Optional warranties shall be available upon request.

b) The generator set manufacturer and its distributor shall maintain a 24-hour parts and service organization. This organization shall be regularly engaged in a maintenance contract program to perform preventive maintenance and service on equipment similar to that specified. A service agreement shall be available and shall include system operation under simulated operating conditions, adjustment to the generator set, transfer switch, and switchgear controls as required, and certification in the owner's maintenance log of repairs made and proper functioning of all systems.

5) Equipment

a) The generator set shall be a Kohler model 250REOZDB with a 4UA10W alternator or equal by Caterpillar or Cummins. It shall provide 250 kW, 312.5 KVA when operating at 120/208 volts, .8 power factor. The generator set shall be capable of this rating while operating in an ambient condition of 104°F (40°C) and 6562 feet above sea level.

b) The generator set shall be capable of starting motor loads of 680 KVA inrush, with a maximum voltage dip of 35%.

c) Vibration isolators shall be provided between the engine-alternator and heavy-duty steel base

6) Engine

a) The 552 cubic-inch-displacement engine shall deliver a minimum of 415 hp at a governed speed of 1800 rpm. The engine shall be equipped with the following:

i) An electronic isochronous governor capable of +0.25% steady-state frequency regulation.

ii) 24 Volt positive engagement solenoid shift-starting motor.

iii) 60-Ampere minimum automatic battery charging alternator with solid-state voltage regulation.

iv) Positive displacement, full pressure lubrication oil pump, cartridge oil filters, dipstick, and oil drain.

v) Dry-type replaceable air cleaner elements for normal applications.

vi) Engine-driven or electric fuel transfer pump capable of lifting fuel 7 feet, fuel filters, and electric solenoid fuel shut-off valve.

b) The turbocharged and aftercooled engine shall be fueled with No. 2 diesel

c) The engine shall have a minimum of 6 cylinders, and be liquid-cooled by a unit-mounted radiator, blower fan, water pump, and thermostats. This system shall properly cool the engine with up to 0.5 inches H20 static pressure on the fan in an ambient temperature up to 122F/50C.

7) Alternator

a) The alternator shall be a brushless type alternator with an auxiliary power brushless exciter design. The exciter field shall include permanent magnet. To assure positive field flashing at startup. The excitation system shall be powered by an auxiliary stator winding that is independent of the main output winding and dedicated solely for field excitation. In one step load and short circuit fault conditions, the power to the field shall be boosted to provide strong recovery or sustained short circuit current support to clean downstream circuit breakers.

b) The alternator shall be salient-pole, brushless, 12-lead reconnectable, self-ventilated of drip-proof construction with amortisseur rotor windings and skewed stator for smooth voltage waveform. The insulation shall meet the NEMA standard (MG1-32.40) for Class H and be insulated with epoxy varnish to be fungus resistant per MIL 1-24092. Temperature rise of the rotor and stator shall be limited to 130°C. The excitation system shall be of brushless construction controlled by a solid- state voltage regulator capable of maintaining voltage within +/- .25% at any constant load from 0% to 100% of rating. The regulator must be isolated to prevent tracking when connected to SCR loads, and provide individual adjustments for voltage range, stability and volts-per-hertz operations; and be protected from the environment by conformal coating.

c) The generator set shall meet the transient performance requirements of ISO 8528-5, level G-2.

d) The generator shall be inherently capable of sustaining at least 250% of rated current for at least 10 seconds under a 3-phase symmetrical short circuit without the addition of separate current support devices.

e) The alternator having a single maintenance-free bearing, shall be directly connected to the flywheel housing with a semi-flexible coupling between the rotor and the flywheel.

8) Controller

a) Set-mounted controller capable of facing right, left, or rear, shall be vibration isolated on the alternator enclosure. The controller shall be capable of being remote-mounted. The microprocessor control board shall be moisture proof and capable of operation from -40°C to 85°C. Relays will only be acceptable in high-current circuits.

b) Circuitry shall be of plug-in design for quick replacement. Controller shall be equipped to accept a plug-in device capable of allowing maintenance personnel to test controller performance without operating the engine. The controller shall include the following features:

i) Fused DC circuit.

ii) Complete 2-wire start/stop control, which shall operate on closure of a remote contact.

iii) Speed sensing and a second independent starter motor disengagement systems shall protect against starter engagement with a moving flywheel. Battery charging alternator voltage will not be acceptable for this purpose.

iv) The starting system shall be designed for restarting in the event of a false engine start, by permitting the engine to completely stop and then re-engage the starter.

v) Cranking cycler with 15-second ON and OFF cranking periods.

vi) Overcrank protection designed to open the cranking circuit after 75 seconds if the engine fails to start.

vii) Circuitry to shut down the engine when signal for high coolant temperature, low oil pressure, or overspeed are received.

viii) Engine cooldown timer factory set at 5 minutes to permit unloaded running of the standby set after transfer of the load to normal.

ix) 3-position (Automatic-OFF-TEST) selector switch. In the TEST position, the engine shall start and run regardless of the position of the remote starting contacts. In the Automatic position, the engine shall start when contacts in the remote control circuit close and stop 5 minutes after those contacts open. In the OFF position, the engine shall not start even though the remote start contacts close. This position shall also provide for immediate shutdown in case of an emergency. Reset of any fault shall also be accomplished by putting the switch to the OFF position.

x) Alarm horn with silencer switch per NFPA 110.

c) Standard indicating lights to signal the following shall be included:

i) Not-in-Auto (flashing red)

ii) Overcrank (red)

iii) Emergency Stop (red)

iv) High Engine Temperature (red)

v) Overspeed (red)

vi) Low Oil Pressure (red)

vii) Battery Charger Malfunction (red)

viii) Low Battery Voltage (red)

ix) Low Fuel (red)

x) Auxiliary Prealarm (yellow)

xi) Auxiliary Fault (red)

xii) System Ready (green)

d) Test button for indicating lights.

e) Terminals shall be provided for each indicating light above, plus additional terminals for common fault and common prealarm.

9) Instrument Panel

a) The instrument panel shall include the following:

i) Dual range voltmeter 3 1/2-inch, +/- 2% accuracy

ii) Dual range ammeter 3 1/2-inch, +/- 2% accuracy.

iii) Voltmeter-ammeter phase selector switch.

iv) Lights to indicate high or low meter scale.

v) Direct reading pointer-type frequency meter 3 1/2-inch, 0.5% accuracy, 45 to 65 Hz scale.

vi) Panel-illuminating lights.

vii) Battery charging voltmeter.

viii) Coolant temperature gauge.

ix) Oil pressure gauge.

x) Running-time meter.

xi) Voltage-adjust rheostat

10) Accessories

a) A 100% rated line circuit breaker of 1000 amperes, 1000 amps sensor, 600 volt rated, molded case type, generator mounted.

b) Engine block heater. Thermostatically controlled and sized to maintain manufacturers recommended engine coolant temperature to meet the start-up requirements of NFPA-99 and NFPA-110, Level 1.

c) A resettable line current sensing circuit breaker with inverse time versus current response shall be furnished which protects the generator from damage due to its own high current capability. This breaker shall not trip within the 10 seconds specified above to allow selective tripping of down-stream fuses or circuit breakers under a fault condition. This breaker shall not automatically reset, preventing restoration of voltage if maintenance is being performed. a field current-sensing breaker will not be acceptable.

d) Weather housings shall be as follows:

i) All enclosures are to be constructed from G60 galvanized high strength, low alloy steel

ii) The enclosure shall be primed with BASF urethane and finish coated with BASF Superl System paint. Enclosures will be finished in the manufacturer's standard color.

iii) The enclosures must allow the generator set to operate at full load in an ambient of 40°C with no additional derating of the electrical output.

iv) The enclosures must meet all of the requirements of UL-2200.

v) Enclosures must be equipped with sufficient side and end doors to allow access for operation, inspection, and service of the unit and all options. Minimum requirements are two doors per side. When the generator set controller faces the rear of the generator set, an additional rear facing door is required. Access to the controller and main line circuit breaker must meet the requirements of the National Electric Code.

vi) Doors must be hinged with stainless steel hinges and hardware and be removable.

vii) Doors must be equipped with lockable latches. Locks must be keyed alike.

viii) Enclosures must be mounted to the generator set skid.

ix) The enclosure roof must be pitched to prevent accumulation of water

x) A duct between the radiator and air outlet must be provided to prevent re-circulation of hot air.

e) Battery rack, battery heater to maintain 50°F and battery cables, capable of holding the manufacturer's recommended batteries, shall be supplied.

f) 12-volt lead-antimony battery(ies) capable of delivering the manufacturer's recommended minimum cold-cranking Amps required at 0°F, per SAE Standard J-537, shall be supplied.

g) 10-Ampere automatic float and equalize battery charger with +/- 1% constant voltage regulation from no load to full load over +/-10% AC input line variation, current limited during engine cranking and short circuit conditions, temperature compensated for ambient temperatures from -40°C to +60°C, 5% accurate voltmeter and ammeter,

fused, reverse polarity and transient protected and equipped with alarm card for remote annunciation

h) Two flexible fuel lines rated at a minimum of 257°F and 100 psi ending in pipe thread.

i) Air cleaner restriction indicator to indicate the need for maintenance of the air cleaners.

11) Remote Serial Annunciator

a) Annunciator must meet the following specifications:

i) Operating temperature range: -20° to 70°C (-4° to 158°F)

ii) Storage temperature range: -40° to 85°C (-40° to 185°F)

iii) Humidity range: 5-95% noncondensing

iv) Enclosure: NEMA 2

v) Power supply: 12- or 24-VDC

vi) Power draw: 200 mA

b) Standards:

i) NFPA 110, Level 1

ii) NFPA 99

iii) UL 508 Recognized

iv) CE Directive (Voltage and EMC)

v) EN610000-4-4 Fast Transient Immunity

c) Hardware Requirements

i) Front panel--

ii) Up to (24) Light-emitting diode (LED) indicators for shutdowns, warnings (pre-alarms) and status

iii) Up to (19) Light-emitting diode (LED) indicators, an audible horn, an alarm silence button, and a lamp test button required by NFPA 110, Level 1.

iv) LEDs must be activated to indicate: shutdowns, warnings (pre-alarms), or status

v) Must have a minimum of (3) LED colors to define function

vi) Must have LEDs with blinking functions to indicate status

vii) LEDs required to activate for the following shutdown and/or warning conditions:

(1) Overcrank
(2) Low Coolant Temperature
(3) High Engine Temperature
(4) Low Oil Pressure
(5) Overspeed
(6) Emergency Stop
(7) Low Fuel
(8) Low Coolant Level
(9) Not-In-Auto
(10) High Battery Voltage
(11) Low Battery Voltage
(12) Battery Charger Failure
(13) Common Fault

viii) LEDs required to activate upon the following status conditions:

(1) Lamp test
(2) Alarm silence
(3) System ready
(4) Generator running
(5) Communications
(6) EPS Supplying Load

d) Annunciator shall have removable text inserts for assigning user-defined inputs, assigning generator identification, and replacement.

e) Front panel of annunciator shall be a sealed membrane and shall be capable of both surface-mounting and flush-mounting.

12) Double Wall Secondary Containment Sub Base Fuel Tank:

a) A sub base fuel tank used in conjunction with a diesel powered generator set of 250 kW rating will contain fuel to support the generator set for a period of 72 hours at 100% of rated load and 101 hours at 75% of rated load.

b) The sub base fuel system is listed under UL 142, sub section entitled Special Purpose Tanks EFVT category, and will bear their mark of UL Approval according to their particular classification. The tank shall meet the Florida Building code and A.H.C.A. requirements for hospitals & nursing homes.

c) The above ground steel secondary containment rectangular tank for use as a sub base for diesel generators is manufactured and intended to be installed in accordance with the Flammable and Combustible Liquids Code—NFPA 30, the Standard for Installation and Use of Stationary Combustible Engine and Gas Turbines—NFPA 37, and Emergency and Standby Power Systems—NFPA 110.

d) Construction:

i) Primary Tank

(1) It will be rectangular in shape and constructed in clam shell fashion to ensure maximum structural integrity and allow the

use of a full throat fillet weld.

ii) Steel Channel Support System

(1) Reinforced steel box channel for generator support, with a load rating of 5,000 lbs. per gen set mounting hole location. Full height gussets at either end of channel and at gen set mounting holes shall be utilized.

iii) Exterior Finish

(1) The exterior coating has been tested to withstand continuous salt spray testing at 100 percent exposure for 244 hours to a 5 percent salt solution at 92-97° F. The coating has been subjected to full exposure humidity testing to 100 percent humidity at 100° F for 24 hours. Tests are to be conducted in accordance with The American Standard Testing Methods Society.

e) Venting:

i) Normal venting shall be sized in accordance with the American Petroleum Institute Standard No 2000, Venting Atmospheric and Low Pressure Storage Tanks not less than 1-1/4" (3 cm.) nominal inside diameter. A 1 -1/4" atmospheric mushroom cap shall be furnished and the installing contractor shall pipe above the highest fill point as a minimum

f) Emergency Venting

i) The emergency vent opening shall be sized to accommodate the total capacity of both normal and emergency venting and shall be not less than that derived from NFPA 30, table 2-8, and based on the wetted surface area of the tank. The wetted area of the tank shall be calculated on the basis of 100 percent of the primary tank. A zinc plated emergency pressure relief vent cap shall be furnished for the primary tank. The vent is spring-pressure operated: opening pressure is 0.5/psig and full opening pressure is 2.5 psig. Limits are stamp marked on top of each vent. The emergency relief vent is sized to accommodate the total venting capacity of both normal and emergency vents.

g) Fuel Fill:

i) There shall be a 2" NPT opening within the primary tank with an 8" raised fill pipe and lockable manual fill cap.

h) Fuel Level:

i) A direct reading, UL listed, magnetic fuel level gauge with a hermetically-sealed vacuum tested dial shall be provided to eliminate fogging.

i) Low Fuel Level Switches

i) Consists of two (2) 50 watt float switches for remote or local annunciation set at 48 hours of fuel remaining and at 8 hours of fuel remaining.

END SECTION GENERATOR SET

SECTION 16415 - TRANSFER SWITCH

1) Submittal

a) The submittal shall include prototype test certification and specification sheets showing all standard and optional accessories to be supplied, schematic wiring diagrams, dimension drawings, and interconnection diagrams identifying by terminal number, each required interconnection between the generator set and the transfer switch if it is included elsewhere in these specifications.

2) Testing

a) To assure that the equipment has been designed and built to the highest reliability and quality standards, the manufacturer and/or local representative shall be responsible for three separate tests: design prototype tests, final production tests, and site tests.

i) Design Prototype Tests: Components of the emergency system such as the engine/generator set, transfer switch, and accessories shall not be subjected to prototype tests since the tests are potentially damaging. Rather, similar design prototypes and preproduction models, which will not be sold, shall have been used for the following tests.

b) Production Tests

i) Final Production Tests: Each transfer switch shall be tested under load with all guards in place. Tests shall include:

(1) The complete automatic transfer switch shall be tested to ensure proper operation of the individual components and correct overall sequence of operation and to ensure that the operating transfer time, voltage, frequency, and time delay settings are in compliance with the specification requirements.

(2) The complete automatic transfer switch shall be subjected to a dielectric strength test per NEMA Standard ICS 1-109.05.

(3) The control panel shall meet or exceed the voltage surge withstand capability in accordance with ANSI C37.90a-2978 and the impulse withstand voltage test in accordance with NEMA Standard ICS 1-109.

ii) Upon request, arrangements to either witness this test will be made, or a certified test record will be sent prior to shipment.

c) Site Tests

i) Site Tests: The manufacturer's local representative shall perform an installation check, start-up, and building load test. The engineer, regular operators, and the maintenance staff shall be notified of the time and date of the site test.

3) Warranty & Maintenance

a) A one year warranty for the automatic transfer switch shall be included to guaranteed against defective material and workmanship in accordance with the manufacturer's published warranty from date of start-up. Optional warranties shall be available upon request.

b) The automatic transfer switch manufacturer and its distributor shall maintain a 24-hour parts and service organization. This organization shall be regularly engaged in a maintenance contract program to perform preventive maintenance and service on equipment similar to that specified. A service agreement shall be available and shall include system operation under simulated operating conditions, adjustment to the generator, transfer switch, and switchgear controls as required, and certification in the owner's maintenance log of repairs made and proper functioning of all systems.

4) Compliance With Codes and Standards

a) The ATS shall conform to the requirements of:

i) UL 1008--Standard for Automatic Transfer Switches

ii) NFPA 70--National Electrical Code, including use in emergency and standby systems in accordance with Articles 517, 700

iii) NFPA 99--Essential Electrical Systems for Health Care Facilities

iv) NFPA 110--Standard for Emergency and Standby Power Systems

v) IEEE Standard 446--Recommended Practice for Emergency and Standby Power Systems (Orange Book)

vi) IEEE Standard 241--Recommended Practice for Electric Power Systems in Commercial Buildings (Gray Book)

vii) NEMA Standard IC10 (formerly ICS 2-447) Automatic Transfer Switches.

viii) UL 508 – Standard for industrial Control Equipment

ix) EN61000-4-5 Surge Immunity Class 4 (voltage sensing and programmable inputs only)

x) EN61000-4-4 Fast Transient Immunity Severity Level 4

xi) IEC Specifications for EMI/EMC Immunity as follows:

(1) CISPR 1 Radiated Emissions
(2) IEC 1000-4-2, Electrostatic Discharge
(3) IEC 1000-4-3, Radiated Electromagnetic Fields
(4) IEC 1000-4-4, Electrical Fast Transient (Bursts)
(5) IEC 1000-4-5, Surge Voltage
(6) IEC 1000-4-6, Conducted RF Disturbances
(7) IEC 1000-4-8, Magnetic Fields
(8) IEC 1000-4-11, Voltage Variations and Interruptions

5) Electrical Requirements

a) Automatic transfer switches not intended for continuous duty or repetitive load transfer switching are not acceptable.

b) The automatic transfer switch shall be rated in amperes for total system transfer including control of motors, electric-discharge lamps, electric heating, and tungsten-filament lamp load. Switches rated 400 amperes and below shall be suitable for 100% tungsten-filament lamp load. Switches rated above 400 amperes shall be suitable for 30% tungsten-filament load.

c) The automatic transfer switch shall be rated to withstand the rms symmetrical short circuit current available at the automatic transfer switch terminals, with the type of overcurrent protection shown on the plans.

6) Equipment

a) The automatic transfer switch shall be a Kohler model KCT-ACTC-1600S or equal by ASCO or Zenith.

b) The transfer switch shall have the following characteristics:

i) 1600 amp current rating

ii) 3 Pole

iii) 4 wire, 3 phase

iv) 208 Volt-60Hz

v) Solid Neutral

vi) The withstand and closing ratings with any overcurrent protective device shall be 100,000 Amps

c) The ATS shall be furnished in a NEMA 3R enclosure.

d) The switch shall be a 600 volt class.

7) Mechanical Requirements

a) All main contacts shall be of silver composition. The main contacts shall be protected by arcing contacts and shall be of the blow-on configuration and of segmented construction in ratings 600 amperes and above.

b) All contacts, coils, springs, and control elements shall be conveniently removable from the front of the transfer switch without major disassembly or disconnection of power conductors.

c) The contact transfer time shall not exceed one-sixth of a second.

d) All moveable parts of the operating mechanism shall remain in positive mechanical contact with the main contacts during the transfer operation without the use of separate mechanical interlocks.

e) All contacts, coils, springs, and control elements shall be conveniently removable from the front of the transfer switch without major disassembly or disconnection of power conductors.

f) The neutral conductor shall be solidly connected as shown on the plans, a neutral conductor terminal plate with fully rated AL-CU pressure connectors shall be provided.

8) Transfer Switch Control System

a) The control module shall direct the operation of the transfer switch. The control module shall have a keyed disconnect plug to enable the control module to be disconnected from the transfer mechanism for routine maintenance.

b) The control module shall be mounted separately from the transfer mechanism unit for safety and ease of maintenance. Interfacing relays shall be industrial control grade plug-in type with dust cover.

c) The control module shall include a user interface keypad with tactile feedback pushbuttons and light-emitting diode status indication. These features shall be user accessible when the enclosure door is closed:

i) Keypad pushbuttons:
(1) Start/end system test
(2) Set/end exercise
(3) End time delay
(4) Lamp test/service reset

ii) Light-emitting diode status indicators:
(1) Contactor Position: Normal, Off, Emergency
(2) Source Available: Normal, Emergency
(3) Service required: immediate, maintenance
(4) Not in automatic mode
(5) Four stage time delay remaining
(6) Exercise: load, no load, set/disabled
(7) Test: load, no load
(8) Load control active: peak shave, load shed, pre/post-transfer signal
(9) In-phase monitor/Off delay active

d) Outputs:

i) Generator engine start.

ii) Pre-transfer load control.

iii) One Programmable output.

9) Operation

a) All phases of normal and all phases of emergency shall be monitored for over and under voltage and single phase of normal and emergency for over- and under-frequency. In addition, the controller shall use anti-single phasing protection that detects regenerative voltage (using the phase angle of the source) to determine a failed source condition.

b) Voltage and frequency sensing:

i) Undervoltage pick-up set at 90% of nominal voltage, adjustable 85% - 100% of nominal voltage.

ii) Undervoltage dropout set at 90% of pickup voltage, adjustable 75% - 98% of pickup voltage.

iii) Overvoltage dropout set at 110% of nominal voltage, adjustable 105% - 135% of nominal voltage.

iv) Overvoltage pick-up set at 95% of dropout voltage, adjustable 85% - 100% of nominal voltage.

v) Voltage dropout time set at 0.5 seconds adjustable 0.1 – 9.9 seconds.

vi) Voltage accuracy: 2%.

vii) Under frequency pick-up set at 90% of nominal frequency, adjustable 85% - 95% of nominal frequency.

viii) Under frequency dropout set at 99% of pick-up frequency, adjustable 95% - 99% of pick-up frequency.

ix) Over frequency dropout set at 101% of pick-up frequency, adjustable 101% - 105% of nominal frequency.

x) Over frequency pick-up set at 110% of nominal frequency, adjustable 105% - 120% of nominal frequency.

xi) Frequency accuracy: 1%

c) Time Delays:

i) Time delay for engine start to delay initiation of transfer for momentary source outages: Range 0-6 seconds. Factory set at 3 seconds.

ii) Time delay for transfer to standby: Range 0-60 minutes. Factory set at 1 second.

iii) Time delay for transfer back to normal: Range 0-60 minutes. Factory set at 15 minutes.

iv) Time delay for engine cool down: Range 0-60 minutes. Factory set at 0 minutes.

v) Failure to acquire standby source: Range 0-60 minutes. Factory set at 1 minute.

vi) Pre-transfer to normal signal: Range 0-60 minutes. Factory set at 3 second.

vii) Pre-transfer to standby signal: Range 0-60 minutes. Factory set at 3 second.

viii) Post-transfer to normal signal: Range 0-60 minutes. Factory set at 0 minute.

ix) Post-transfer to standby signal: Range 0-60 minutes. Factory set at 0 minute.

d) User terminals shall be available to connect a normally open contact that, when closed, signals the control module to start and transfer load to the engine-generator. Opening these contacts shall initiate a retransfer and engine cool down sequence. The load shall be transferred to an available utility source immediately if the generator source should fail.

e) The following features shall be built into the control module logic. These features shall be enabled at the factory or in the field.

i) Phase rotation sensing programmable ABC or CBA.

ii) In-phase monitoring shall continuously monitor the contactor transfer times, source voltage, frequency and phase angle to provide a self-adjusting, zero crossing contactor transfer signal. A flashing LED on the user interface panel shall indicate active in-phase monitoring.

iii) Plant Exerciser: Programmable seven-day or fourteen-day exerciser with user selectable load or no-load operation. An LED, on the user interface, shall indicate the type of exercise (load or no load). The time remaining on the exercise shall be indicated. The exercise time may be reset at any time with a single keystroke. The engine shall be allowed to run when the exercise period is terminated. The exerciser may be disabled for maintenance purposes. An amber LED shall flash on the user interface if the exerciser has been disabled. The exerciser shall have the capability of being programmed, using up to twenty-one (21) event for a calendar mode. The controller shall have provisions for disconnecting a load bank (during exercise) if there is a loss of normal power.

END SECTION ATS

Century Care Center
Addition of Main Electrical Service Generator

Coordination Study

Contents:

Reference Sheets

Philip M. Humbert
2-8-06
PE 13870

Gulf Power

CENTURY CARE CENTER INC (Priority)

Premise Address	6020 INDUSTRIAL BLVD CENTURY FL 325	AccountNumber	1826070009
Phone Number	850-256-1540	Premise Number	182607000
Company	Gulf Power	Account Status	Active
Operating Center	Century	Account Opened:	7/7/1994
Gulf TLN	13079-72729-	NAICS Code	623110
Tariff	View Tariff Info	Bill Group / Meter R	7 / 564
Meter Number	3126558	Rev. Class / Acct. Ty	Commercial / Servic
Opco Rep. Name	Vaughn Nichols	Service Points	47423093

Service End Date	Bill Date	Billing Days	Total kWh	Peak kW
9/10/2017	9/11/2017	33	89,120	185
8/8/2017	8/9/2017	29	80,480	199
7/10/2017	7/11/2017	31	83,680	176
6/9/2017	6/9/2017	31	73,280	167
5/9/2017	5/10/2017	30	68,000	153
4/9/2017	4/10/2017	31	67,840	172
3/9/2017	3/10/2017	29	64,480	153
2/8/2017	2/9/2017	30	69,280	171
1/9/2017	1/10/2017	32	78,720	180
12/8/2016	12/9/2016	31	69,760	169
11/7/2016	11/8/2016	29	66,720	165
10/9/2016	10/10/2016	31	82,880	187
9/8/2016	9/9/2016	30	84,480	187
8/9/2016	8/10/2016	30	83,360	186
7/10/2016	7/11/2016	31	91,520	187
6/9/2016	6/9/2016	31	76,800	173
5/9/2016	5/10/2016	29	64,480	158
4/10/2016	4/11/2016	31	70,080	143
3/10/2016	3/10/2016	29	67,360	173
2/10/2016	2/10/2016	31	84,000	201
1/10/2016	1/11/2016	33	84,160	176
12/8/2015	12/9/2015	30	66,720	158
11/8/2015	11/9/2015	31	70,560	159
10/8/2015	10/9/2015	29	71360	181
Totals and Peaks		732	1,809,120	201
Averages				173
				59.5%
				51.2%

Gulf Power

CENTURY CARE CENTER INC (Priority)

Premise Address	6020 INDUSTRIAL BLVD CENTURY FL 32535	AccountNumber	1826070009
Phone Number	850-256-1540	Premise Number	182607000
Company	Gulf Power	Account Status	Active
Operating Center	Century	Account Opened:	7/7/1994
Gulf TLN	13079-72729-	NAICS Code	623110
Tariff	View Tariff Info	Bill Group / Meter Route	7 / 564
Meter Number	3126558	Rev. Class / Acct. Type	Commercial / Service
Opco Rep. Name	Vaughn Nichols	Service Points	47423093

Service End Date	Bill Date	Billing Days	Total kWh	Peak kW	Hrs Use of Bill Demand	Elec Svc Amount	c/kWh
9/10/2017	9/11/2017	33	89,120	185	482	$8,839.99	9.92
8/8/2017	8/9/2017	29	80,480	199	404	$8,242.14	10.24
7/10/2017	7/11/2017	31	83,680	176	475	$8,321.80	9.94
6/9/2017	6/9/2017	31	73,280	167	439	$7,148.80	9.76
5/9/2017	5/10/2017	30	68,000	153	444	$6,623.23	9.74
4/9/2017	4/10/2017	31	67,840	172	394	$6,745.54	9.94
3/9/2017	3/10/2017	29	64,480	153	421	$6,339.28	9.83
2/8/2017	2/9/2017	30	69,280	171	405	$6,854.60	9.89
1/9/2017	1/10/2017	32	78,720	180	437	$7,680.13	9.76
12/8/2016	12/9/2016	31	69,760	169	413	$7,134.84	10.23
11/7/2016	11/8/2016	29	66,720	165	404	$6,849.99	10.27
10/9/2016	10/10/2016	31	82,880	187	443	$8,369.39	10.1
9/8/2016	9/9/2016	30	84,480	187	452	$8,504.33	10.07
8/9/2016	8/10/2016	30	83,360	186	448	$8,402.75	10.08
7/10/2016	7/11/2016	31	91,520	187	489	$9,098.03	9.94
6/9/2016	6/9/2016	31	76,800	173	444	$7,757.00	10.1
5/9/2016	5/10/2016	29	64,480	158	408	$6,611.27	10.25
4/10/2016	4/11/2016	31	70,080	143	490	$6,976.77	9.96
3/10/2016	3/10/2016	29	67,360	173	389	$6,960.89	10.33
2/10/2016	2/10/2016	31	84,000	201	418	$8,563.47	10.19
1/10/2016	1/11/2016	33	84,160	176	478	$8,399.05	9.98
12/8/2015	12/9/2015	30	66,720	158	422	$7,141.20	10.7
11/8/2015	11/9/2015	31	70,560	159	444	$7,491.78	10.62
10/8/2015	10/9/2015	29	71360	181	394	$7,719.90	10.82
Totals and Peaks		732	1,809,120	201	490	$182,776.17	
Averages				173	435	$7,615.67	9.97

Century Care Center
Profit & Loss Detail
As of October 10, 2017

Type	Date	Num	Name	Memo	Clr	Split	Amount	Balance
Expense								
8555 · FUEL/GAS								
Bill	09/08/2011	140382	JOHN BURKHEAD, ...			2020 · ACCOU...	1,810.50	1,810.50
Bill	08/23/2012	143493	JOHN BURKHEAD, ...			2020 · ACCOU...	1,261.70	3,072.20
Bill	05/05/2015	151846	JOHN BURKHEAD, ...			2020 · ACCOU...	1,219.86	4,292.06
Bill	02/24/2016	153864	JOHN BURKHEAD, ...			2020 · ACCOU...	581.10	4,873.16
Bill	06/01/2017	156742	JOHN BURKHEAD, ...	DIESEL FOR ...		2020 · ACCOU...	1,121.00	5,994.16
Bill	09/08/2017	157352	JOHN BURKHEAD, ...			2020 · ACCOU...	383.00	6,377.16
Total 8555 · FUEL/GAS							6,377.16	6,377.16
Total Expense							6,377.16	6,377.16
Net Income							**-6,377.16**	**-6,377.16**

From: **John L Burkhead Inc.** burkheadjohnlcor@bellsouth.net
Subject: **Fuel Purchases from John L Burkhead Inc**
Date: **Oct 10, 2017 at 12:48:22 PM**
To: **Don Ripley** admin@centuryhrc.com

2014 none found
May 5,2015 502 gallons
Feb 24,2016 390 gallons
June 1,2017 590 gallons
Sept 8,2017 150 gallons

JOHN L. BURKHEAD, INC.
P.O. BOX 666
JAY, FLORIDA 32565
PH. 675-4678 – 675-4870

157352

DELIVERY TICKET & INVOICE

DATE 9-8-17

Sold To / Deliver To: Century Care Center

Customer / Dealer Number

Customer Order / Requisition

Terms Charge

Rec. Qty. Shown Here On-Purchase

Received Payment

Qty.	PRODUCT	Gallon Lbs. or Units	Base Price	Fed. Ex. Tax	State Tax	Inspect Fee	Co. Tax	Fl. Poll. Tax	Net Price	AMOUNT
	UNLEADED –87									
	UNLEADED PLUS–89									
	SUPER UNLEADED–93									
	DIESEL									
150	Dyed Diesel Fuel Non Taxable Use Only Penalty For Taxable Use	150	2.1993					.0701	2.27	333.00
	250	30 Kw				Service	Charge			50.00
	90% 564.4	90% 395.0								
	14.4 Hrs.	13.9 Hrs								383.00
	10.41 Gal/Hr	10.5 Gal/Hr								
									$	383.00

THIS IS YOUR INVOICE – PLEASE RETAIN – THANK YOU

10.5 Gal/Hr. 133.3 Hrs
Run Time

JOHN L. BURKHEAD, INC.
P.O. BOX 666
JAY, FLORIDA 32565
PH. 675-4678 – 675-4870

156742

DELIVERY TICKET & INVOICE

DATE 6-1-17

Sold To / Deliver To: Century Care Center

Customer / Dealer Number

Customer Order / Requisition

Terms Charge

Rec. Qty. Shown Here On-Purchase

Received Payment

Qty.	PRODUCT	Gallon Lbs. or Units	Base Price	Fed. Ex. Tax	State Tax	Inspect Fee	Co. Tax	Fl. Poll. Tax	Net Price	AMOUNT
	UNLEADED –87									
	UNLEADED PLUS–89									
	SUPER UNLEADED–93									
	DIESEL									
590	Dyed Diesel Fuel Non Taxable Use Only Penalty For Taxable Use	590	1.8793					.0207	1.90	1121.00
	30%	25%								
	52% 1382.1	49% 550.0								
	605.9	107.9 = 55 Gal/Hr								
				4 Gal/Hr						
		173.8 Hr								
										$1121.00

Thank You!

THIS IS YOUR INVOICE – PLEASE RETAIN – THANK YOU

JOHN L. BURKHEAD, INC.
P.O. BOX 666
JAY, FLORIDA 32565
PH. 675-4678 – 675-4870

153864

& INVOICE

DATE 2-24-16

Deliver To: Century Care Center

Customer / Dealer Number

Customer Order / Requisition

Terms Charge

Rec. Qty. Shown Here On - Purchase

Received Payment

Qty.	PRODUCT	Gallon Lbs. or Units	Base Price	Fed. Ex. Tax	State Tax	Inspect Fee	Co. Tax	Fl. Poll. Tax	Net Price	AMOUNT
	UNLEADED –87									
	UNLEADED PLUS–89									
	SUPER UNLEADED–93									
	DIESEL									
390	DYED DIESEL FUEL NON-TAXABLE USE ONLY PENALTY FOR TAX USE	390	1.4693					.0207	1.49	581.10
	252 Kw	30								
	442.1	70%	1316.2							

Thank You!
Tom Fail

581.10

THIS IS YOUR INVOICE – PLEASE RETAIN – THANK YOU

10179
Payment
581.10
581.10

581.10

CG7KMD0010000 B1GSF000506
TXRX11 01/22/2016 03:57