AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1. CONTRACT ID CODE	PAGE OF PAGES
	1 17

2. AMENDMENT/MODIFICATION NO.	3. EFFECTIVE DATE	4. REQUISITION/PURCHASE REQ. NO.	5. PROJECT NO. *(If applicable)*
A0001	05/19/2006		

6. ISSUED BY CODE DTS-852

U.S. DOT/RITA/Volpe Center
55 Broadway
Cambridge MA 02142

7. ADMINISTERED BY *(If other than Item 6)* CODE DTS-852

U.S. DOT/RITA/Volpe Center
55 Broadway
Cambridge MA 02142

8. NAME AND ADDRESS OF CONTRACTOR *(No., street, county, State and ZIP Code)*

CODE FACILITY CODE

(x) 9A. AMENDMENT OF SOLICITATION NO.
DTRT57-06-R-20018

x 9B. DATED *(SEE ITEM 11)*
04/20/2006

10A. MODIFICATION OF CONTRACT/ORDER NO.

10B. DATED *(SEE ITEM 11)*

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

[X] The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers [X] is extended. [ ] is not extended.
Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods: (a) By completing Items 8 and 15, and returning 4 copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA *(If required)*

13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

CHECK ONE	
	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: *(Specify authority)* THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.
	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES *(such as changes in paying office, appropriation date, etc.)* SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
	D. OTHER *(Specify type of modification and authority)*

E. IMPORTANT: Contractor [ ] is not. [ ] is required to sign this document and return _____ copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION *(Organized by UCF section headings, including solicitation/contract subject matter where feasible.)*

The due date for proposals is hereby extended to Thursday, June 1, 2006, at 3:00 PM, Eastern Daylight Time.

See the attached continuation sheets for details.

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER *(Type or print)*		16A. NAME AND TITLE OF CONTRACTING OFFICER *(Type or print)*	
		Elizabeth A. Segal	
15B. CONTRACTOR/OFFEROR	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA	16C. DATE SIGNED
_____ *(Signature of person authorized to sign)*		_____ *(Signature of Contracting Officer)*	

1. The following questions, with corresponding answers, were received during the site visit held on May 4, 2006:

Q.1 - Is the facility shut down at night?
A.1 - Yes, from 10 p.m. to 6 a.m.

Q.2 - Can we test during the day?
A.2 - Yes, but the testing must be coordinated with the tower occupants.

Q.3- Do we require permits?
A.3 - No, it is an FAA-owned facility. As a courtesy, the contractor should notify the Fire Department of work, testing, and invite them to witness testing of the fire alarm.

Q.4 - What is the Volpe Center looking for with respect to shop drawings?
A.4 - Shop drawings for the fire alarm, per the Statement of Work/Specifications. Also, the Volpe Center requires as-builts of fire alarm and fire stopping methods. The Volpe Center has provided the drawings electronically for fire alarm and fire stopping.

Q.5 - Can we place a dumpster on site?
A.5 - Yes, with a lid. Parking is not an issue.

Q.6 - Contractors have requested the specifications for the new Kohler natural gas operated generator?
A.6 – This is Government-furnished material. The Volpe Center will provide make, model number. Installation should take a day or two. The contractor shall ensure that temporary standby emergency power is provided if the existing emergency generator is not to remain on-line at the ATCT facility overnight.

Q.7 - Contractors requested electrical schematic for the transfer switch?
A.7 – The Volpe Center will provide this information.

Q.8 - Contractors asked when they could bring by some of their subcontractors.
A.8 – Thursday, May 4, 2006, was the only date for the site visit and no additional visits will be provided.

Q.9 – A question was asked if the wooden panels to be removed have asbestos containing mastic.
A.9 – The FAA will verify, and test if necessary to determine answer.

2. The following questions, with corresponding answers, were received in response to the RFP:

Q.1 - Are Permits required? (No, because it is a Gov't owned facility, however we will coordinate with the local fire inspector during the testing.)
A.1 – This assumption is correct. The Lebanon Air Traffic Control Tower is Federally-owned and therefore the authority having jurisdiction is the Federal Aviation Administration (FAA). Per direction from the FAA, permits will not be required to be filed with the Town of Lebanon, New Hampshire or the Lebanon Fire Department. However, as a courtesy, the FAA will provide documentation to the Lebanon Fire Department (LFD) for informational purposes only and will invite the LFD to the final acceptance test and walk-through inspections.

Q.2 - Please provide the technical data and cut sheets for the Generator that is being provided by the FAA, along with any special installation requirements.
A.2 - The FAA is providing technical data and equipment datasheets on the new generator to be installed. Attached to this amendment are one-line diagrams of the existing emergency generator and other fire protection and life safety systems (see Attachments). Additionally, the product datasheets for the new Kohler Generator are attached to this amendment. The contractor shall ensure that temporary standby emergency power is provided if the existing emergency generator is not to remain on-line at the ATCT facility overnight.

Q.3 - Do you require the contractor to develop Asbuilts dwgs for the installation of the E/g as part of the cost?
A.3 - As-built drawings for the replacement of the Emergency Generator (E/G) are not required based on the Scope of Work document. However, the Contractor is required to submit six (6) copies of a draft and final version of a plan to replace the existing life safety system emergency generator. The plan must outline the procedures required to remove the existing E/G and existing connections, paint the existing support structure, install the new E/G, and reconnect the E/G to make it functional. The plan must be approved by the Government prior to work commencing.

Q.4 - Please provide the wiring diagrams of the existing E/G wiring to the ATS and its load.
A.4 - The FAA is providing electrical drawings on the existing generator and load data for the automatic transfer switch (ATS). Attached to this Amendment letter are one-line diagrams of the existing emergency generator and other fire protection and life safety systems (see Attachments).

Q.5 - Are the floor tiles in the facility Asbestos?
A.5 – Based on the review of the 1995 RMCI (asbestos) survey and report, documented asbestos containing materials are as follows:

- **Gray streaked and white streaked floor tile, adhesive and black mastic at the first floor equipment room and first floor tower area.**
- **White gritty material underneath 2 layers of paint at stair treads (where present on all floors and landings) in tower stairs.**
- **Gray floor tile and mastic in Junction room on the 4th floor of the tower.**
- **Green floor tile and mastic in 4th floor tower Storage Room.**
- **Cab stairs gray streaked floor tile and mastic.**

Other noted information includes the following:

- **Fire doors were not tested, assume asbestos containing materials. Do not penetrate the fire door veneer, exposing the insulation inside door. This insulation is assumed to be asbestos containing materials.**
- **On cab roof, assume roofing materials underneath elastomeric roofing system are asbestos containing materials.**
- **No friable asbestos containing materials were identified in this facility among the samples that were taken.**
- **Mastics, stair treads and floor tiles are classified as non-friable materials but they can become friable when severely damaged or in dry conditions. Abrasive actions such as cutting, drilling dry buffing, grinding, hammering, sawing should not be performed.**

Finally, please note: Floor tiles could be present and undisturbed underneath areas that are carpeted, so before drilling or otherwise damaging carpeting, verify with FAA personnel to be sure there are no floor tiles underneath.

Q.6 - Is there asbestos in the Tower cab where we are ripping out the paneling?
A.6 – There was no existing data as to whether there are asbestos containing materials in the wainscoting mastic in the Tower CAB. The FAA had a sample of the material sent out for testing on May 10, 2006. The test results that were reported to the FAA on May 11, 2006 indicate that the wainscoting mastic tested negative for asbestos.

Q.7 - What is the plan for ripping out the paneling? Are we to rip it out and paint the steel frame? Please explain.
A-7 – The Contractor is required to remove the wainscoting in the Cab and the wainscoting above the suspended ceiling on the fourth floor in the stairway. Until otherwise directed, the Contractor shall finish and paint wall at the top of the stair and in the Cab after removing the wainscoting. The color of the paint should match the existing (i.e., black).

Q.8 - Are we able to work part of the project between the hours of 10PM and 5:00am in the stairwell (Ceiling) area so that we will have a minimal affect on AT and any potential safety issue?
A.8 – Working during hours that are not normal operation of the Tower is possible, if acceptable to the FAA Resident Engineer (RE) and/or the on-site COTR; however, this will not be considered the norm.

Q.9 - Due to the potential issue with routing of conduit and cables into the cab area is it possible to utilize the existing conduits/wires to install the new system as we discussed during the walk thru?
A.9 – It might be possible and acceptable to use existing conduits/wires to install the new system in the CAB area, as discussed on-site. However, the Contractor will be required to submit a plan in writing outlining what is being proposed for re-use and a transition plan from the existing system equipment to the new system equipment. This plan must be submitted in writing to the Volpe Center, the FAA, and the Fire Protection Engineer for review. The plan must be approved in advance prior to performing any of the outlined work within the plan.

Q.10 - Based on the discussion regarding submittals for dwgs you only require the routing of the conduits to be approved. Is this true? (since you already provided dwgs regarding the ceiling assembly in section II)
A.10 – This statement is very broad and the response could be misinterpreted regardless of how the question is answered. The Fire Protection Engineer's response to the question is as follows: fire alarm system device and appliance locations are shown on the design documents and it is expected that the Contractor will install the equipment in these locations. If the Contractor modifies the layout of fire alarm system equipment, the proposed locations must be submitted on shop drawings for approval and must be approved prior to installation. Conduit and wire routing must be submitted on shop drawings for approval and must be approved prior to installation. Additional direction is provided to the Contractor in the Scope of Work document, on the drawings, and in the specifications.

Q.11 - We intend on providing submittals on all materials used and equipment purchased. Is this what you want for submittals?
A.11 – Submitting documentation on all materials used and equipment purchased is required. However, this is not the extent of the required submittals. The Scope of Work document and the specifications for each work section indicate the information that is required to be submitted; e.g., specification section 13852, 1.05.E requires a Unit Cost Pricing Schedule to be submitted.

Q.12 - Section F F.2 states that the contractor shall complete the work within 90 calendar days once notice to proceed is given. At the walk thru someone mentioned 4 weeks. Is 90 days the requirement? Obviously it would be our goal to finish in less than 4-weeks but we wouldn't want to be penalized for running over.
A.12 – The 90 calendar day requirement includes time for submission and approval of all submittals. All submittals have to be approved by the Government prior to beginning construction. The estimate for the actual construction phase is estimated to be four (4) weeks. The contractor would not be penalized for running over.

Q.13 - Section H.11: Sales Tax. Will VOLPE be providing the selected contractor a TAX ID for this project, so that those materials will not be taxed by the vendor? Typically the tax id is provided and then we provide it to our supplier and then do not add the tax. The description in H.11 seems a little more involved with vouchers, payments etc. for Volpe.
A.13 - The Volpe Center will provide the successful offeror with a tax exempt number for all items purchased in Massachusetts. Items purchased in New Hampshire are tax exempt. If sales tax is paid on any items, the tax has to be identified as a separate line items on invoices/vouchers.

Q.14 - There is mention on vouchers throughout, however this is typically for T&M project. Where would you need vouches for a fixed price project?
A.14 - The term "Vouchers" is often used in place of the term "Invoice".

Q.15 - Schedule 1- Under Miscellaneous work items, is this where the Onsite Project manager and AutoCAD support go?
A.15 – Yes. The Miscellaneous work items are items that are not included in the other bid items.

Q.16 - Is a licensed (Journeyman or Master) electrician required to over see the electrical installation? If yes, which one? Journeyman or Master?
A.16 – The electrician required on-site is to be a minimum journeyman level electrician.

Q.17 – Section 00100-6/20- Contractor Qualification for NICET. During the walk thru it was explained that at least one of the technicians installing the fire alarm system needed to by NICET certified. However, there is terminology in paragraph E (Job Supervisor) stating that the site supervisor needs to be NICET certified. This conflicts with the site survey discussion. The site supervisor is the person that will be coordinating the subcontractors and the interface with the COTR. Please clarify.

A.17 - Both specification section 00100, 1.03.D and 13852, 1.03.D require the following:

"System configuration(s), installation, programming and testing shall be supervised by a National Institute for Certification in Engineering Technologies (NICET) Level III (or IV) Fire Alarm Engineering Technician (where fire alarm system work is involved) trained by the manufacturer of the system(s) to be modified/installed and/or tested."

Additionally, specification section 00100, 1.03.E and 13852, 1.03.D require the following:

"Provide a job site supervisor who is to be present on-site at all times during any fire alarm system programming, circuit interconnection, panel termination, or testing and acceptance activities. The job site supervisor shall be a minimum National Institute for Certification Engineering Technology (NICET) Level III and "manufacturer trained" on the specific manufacturer's system(s)/system(s) components being installed…"

Specification section 13852, 1.05.H.9 requires shop drawings and submittal packages to be reviewed by an Engineering Technician with a NICET certification Level III (or IV).

Finally, specification section 13852, 2.14.C.10 requires the following:

"Installation of all wiring shall be supervised by a National Institute for Certification in Engineering Technologies (NICET) Level III (or IV) Fire Alarm Engineering Technician."

Q.18 - 00100-19/20 and 20/20 part C, 0720-13/13 section C and other parts of the specification: During the test phase it is possible to run into issues that need to be resolved. (This is all part of the installation). How can a contractor guarantee that the system is going to work prior to being tested? Are you going to allow the contractor to have one preliminary test (To make sure) and then have a final test for inspection? Also the Gov't is providing a COTR and a person from HUGHES to inspect as we progress thru the work; any items should have been caught by the time the final inspection takes place. Please clarify this item.
A.18 - The Contractor is required to pre-test the system and resolve any issues prior to the system testing witnessed by the Volpe Center, the FAA, and the Fire Protection Engineer. Specification section 00100, 3.04.A and 18852, 3.04.A state:

"The Contractor shall perform a pre-acceptance test to ensure system(s)/system(s) operation and compliance with the referenced codes and this specification. The Contractor's test report and certifications as required above shall be submitted to the CO, with written request for a CAI, at least twenty-one (21) days prior to testing."

Q.19 - Are we painting only interior surfaces? Based on the site walk this is what we discussed, but the spec leaves it open. Please clarify.
A.19 – Interior surfaces are being painted. The Scope of Work does not include painting of exterior tower surfaces except the existing support structure associated with the new E/G.

Q.20 - Is it possible for the painting of the conduit to be done once it is installed?
A.20 – The painting can be done whenever the Contractor would like, provided that the results are acceptable to the FAA RE and the on-site COTR. Can the Contractor ensure that the painting of conduit will be in a neat and workmanlike manner once it is installed? Will the Contractor be able to ensure that all sides of the conduit are painted once it is installed?

Q.21 - Has the existing fire alarm company been notified that a new system is going in and will be connecting to their remote facility? Are there any provisions that need to take place ahead of time to allow this to happen when we are ready to switch over?
A.21 - Presently, SimplexGrinnell LP is the fire alarm system service company of record and the company that provides the off-site monitoring of the fire alarm system. The Contractor is required to coordinate the installation of the new fire alarm system with SimplexGrinnell, ahead of time such that their will be no issues with the transition from the old system to the new system with uninterrupted monitoring. The Volpe Center, the FAA, and the Fire Protection Engineer are available to assist at the request of the Contractor, if the SimplexGrinnell contact is not providing the adequate response. Specifically, specification section 13852, 2.13.A states:

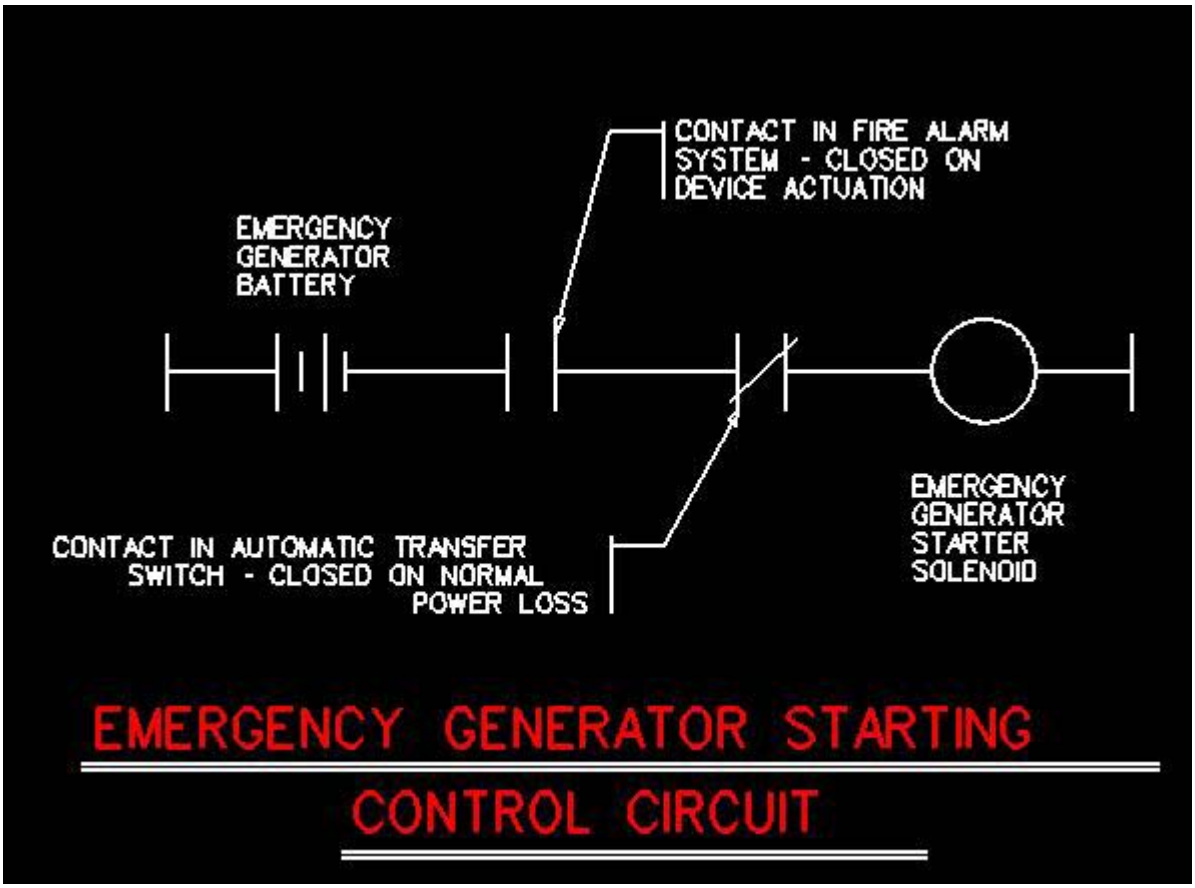
"The Contractor shall coordinate connection of the new fire alarm system with the UL Listed Central Station (SimplexGrinnell, Westminster, Massachusetts) service for record keeping, monitoring and reporting. The coordination of the connection to the Central Station shall occur prior to the Contractor requesting the final acceptance test of the system with the CO and the FAA RE."

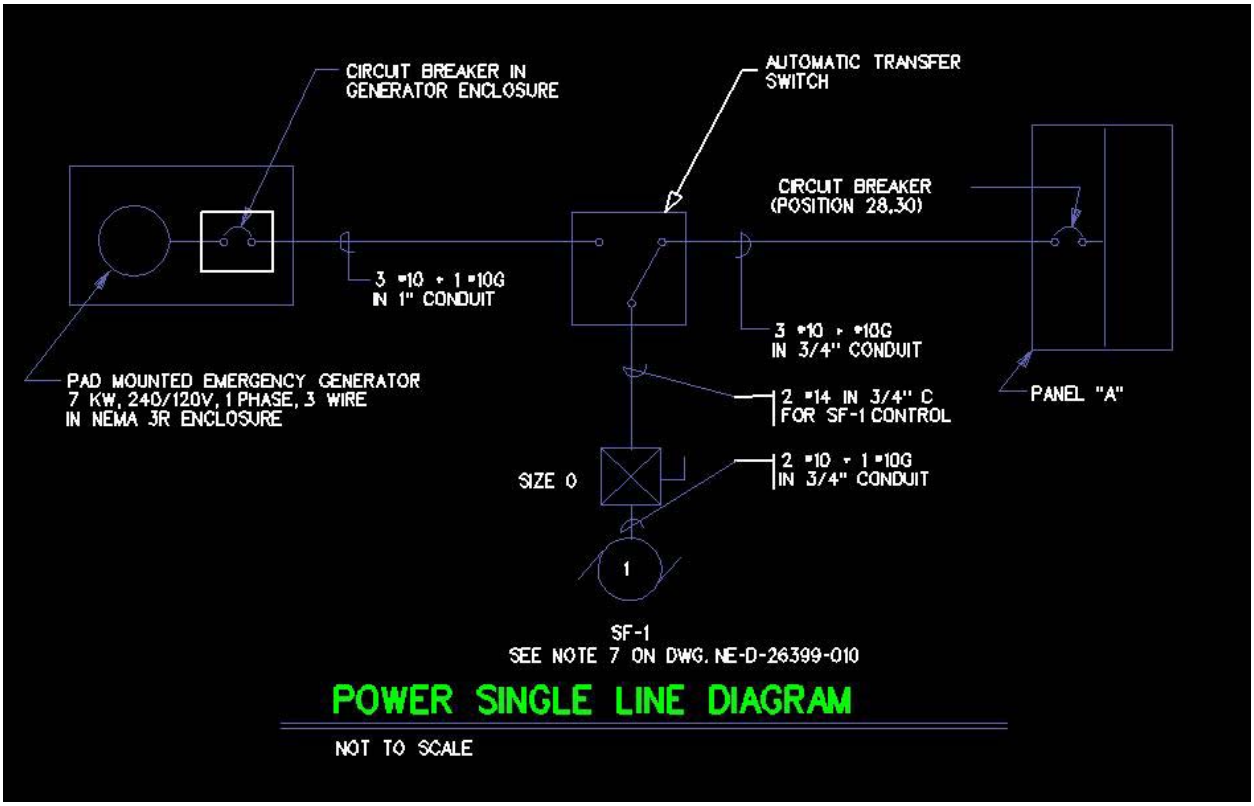
3. Section H, Paragraph H.5 Hours of Work is hereby revised to read as follows:

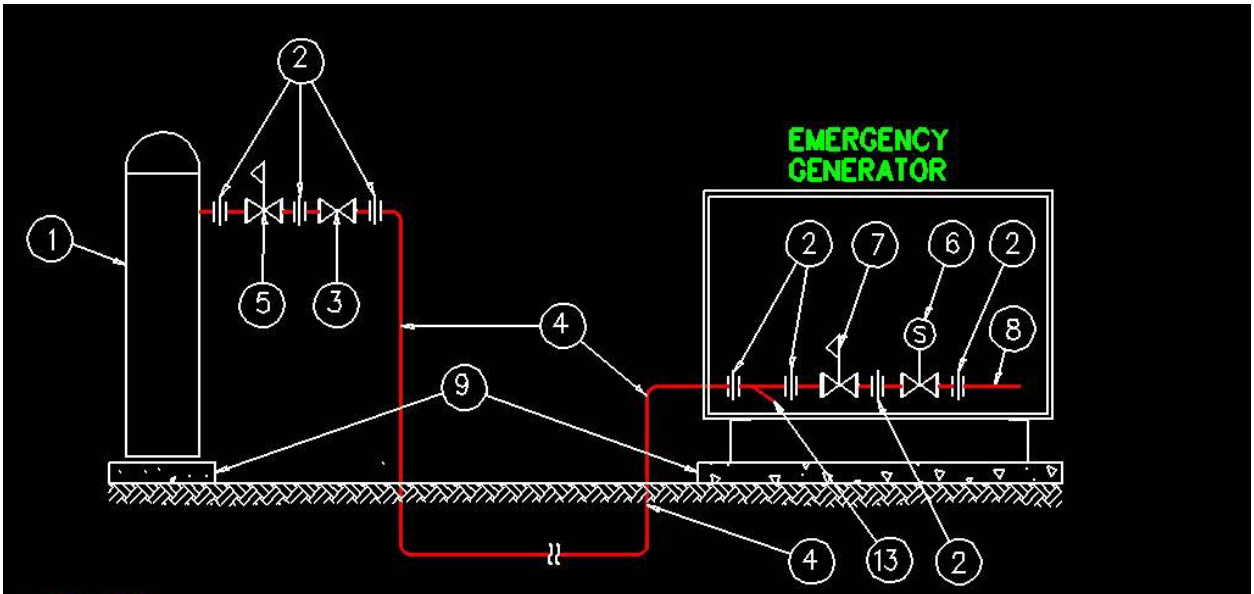
H.5 HOURS OF WORK (MAY 2006)

Contractor and subcontractor employees performing work under this contract on Government premises shall adhere to the established business hours, except as may be required by this contract to accomplish the performance of the work, or except as may be required by the Contracting Officer designated representative. The normal business hours are Monday through Friday. The Contractor is expected to work five, 8-hour days. The contractor may work 10-hour days with the approval of the FAA Resident Engineer and FAA support staff.

ATTACHMENTS

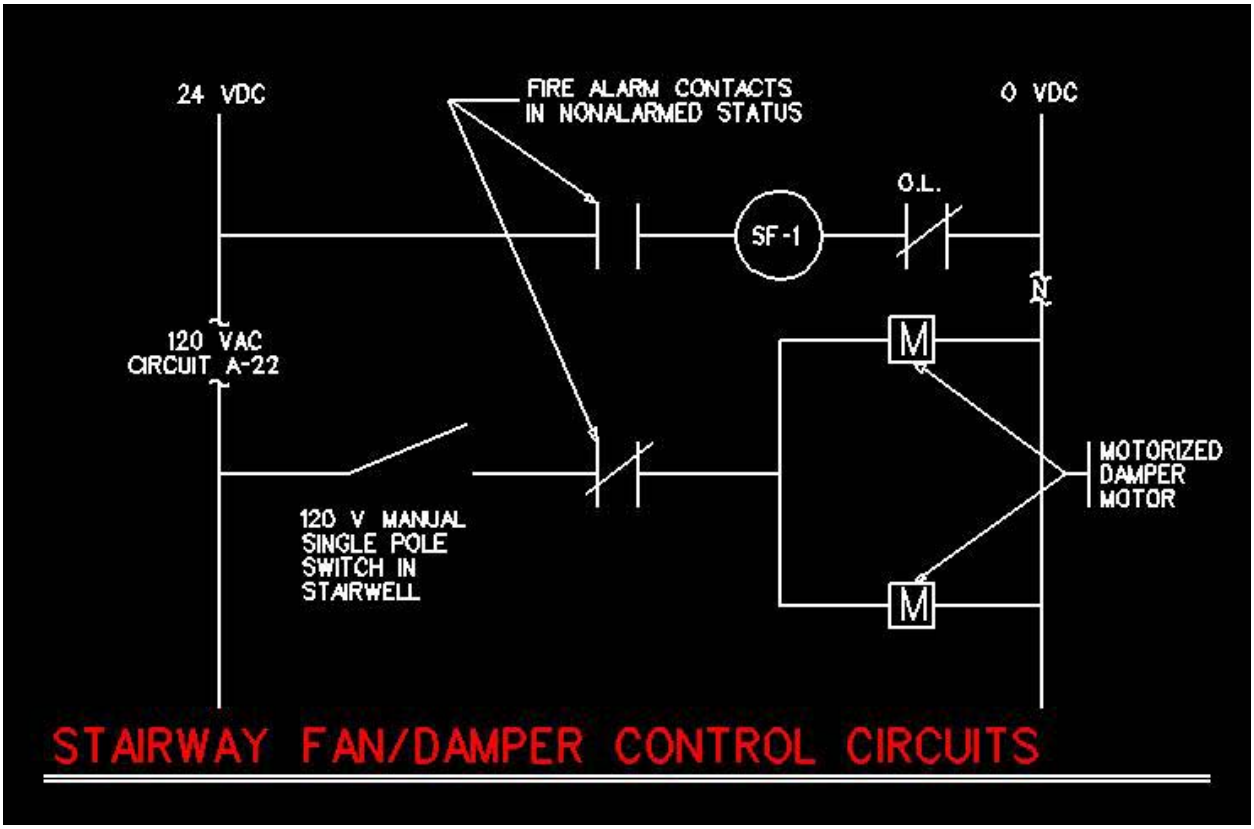


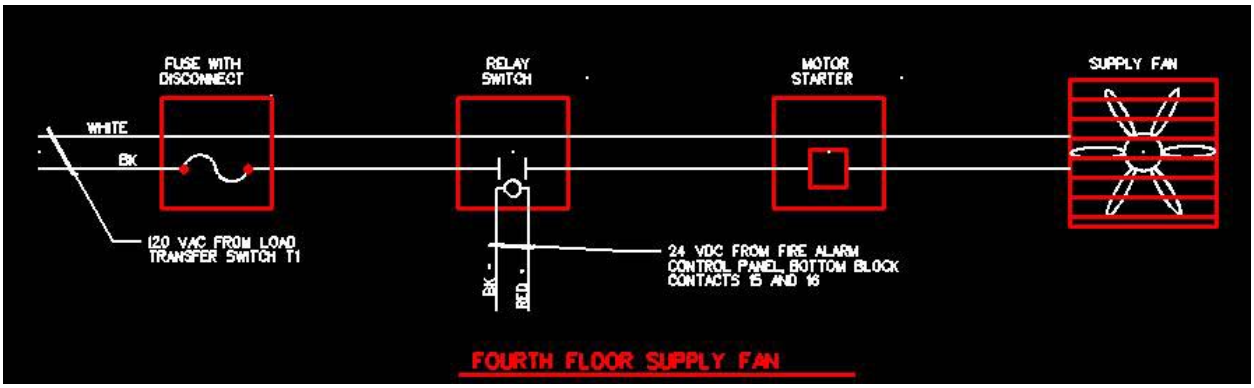

CIRCUIT BREAKER IN GENERATOR ENCLOSURE
AUTOMATIC TRANSFER SWITCH
CIRCUIT BREAKER (POSITION 28,30)
3 #10 + 1 #10G IN 1" CONDUIT
3 #10 + #10G IN 3/4" CONDUIT
PAD MOUNTED EMERGENCY GENERATOR 7 KW, 240/120V, 1 PHASE, 3 WIRE IN NEMA 3R ENCLOSURE
2 #14 IN 3/4" C FOR SF-1 CONTROL
PANEL "A"
SIZE 0
2 #10 + 1 #10G IN 3/4" CONDUIT
1
SF-1
SEE NOTE 7 ON DWG. NE-D-26399-010
POWER SINGLE LINE DIAGRAM
NOT TO SCALE



NOTES

1. 55 GAL PROPANE TANK.
2. UNION.
3. SHUT OFF PLUG VALVE.
4. 3/4" IRON GAS PIPE, 18" BELOW GRADE.
5. PRIMARY REGULATING VALVE.
6. SOLENOID VALVE 12 VOLT DC.
7. SECONDARY REGULATING VALVE.
8. STAINLESS FLEXIBLE CONNECTOR.
9. CONCRETE PAD.
10. NOT USED.
11. PROPANE PIPING INSTALLED UNDERGROUND IN ACCORDANCE WITH ALL APPLICABLE CODES.
12. NOT USED.
13. STRAINER.


24 VDC
FIRE ALARM CONTACTS
IN NONALARMED STATUS
0 VDC
O.L.
SF-1
N
120 VAC
CIRCUIT A-22
M
MOTORIZED
DAMPER
MOTOR
120 V MANUAL
SINGLE POLE
SWITCH IN
STAIRWELL
M
STAIRWAY FAN/DAMPER CONTROL CIRCUITS

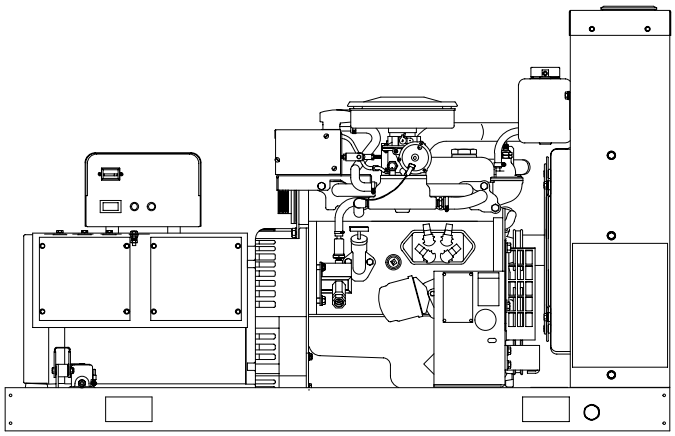

FUSE WITH
DISCONNECT
RELAY
SWITCH
MOTOR
STARTER
SUPPLY FAN
WHITE
BK
120 VAC FROM LOAD
TRANSFER SWITCH T1
BK
RED
24 VDC FROM FIRE ALARM
CONTROL PANEL BOTTOM BLOCK
CONTACTS 15 AND 16
FOURTH FLOOR SUPPLY FAN

Model: 10RY/RZ

KOHLER POWER SYSTEMS

Gas

ISO 9001 KOHLER GENERATORS INTERNATIONALLY REGISTERED U.S.A. Plant ISO Registered



Standard Features

- **Kohler Co. provides one-source responsibility for the generating system and accessories.**
- **All generator sets and components are prototype tested, factory built, and production tested.**
- **Generator set provides one-step load acceptance per NFPA 110.**
- **A one-year limited warranty covers all systems and components. Extended warranties are available.**
- **Generator feature:**
  - **Kohler's PowerBoost™ voltage regulation system provides instant response to load changes.**
- **Other features:**
  - **Low coolant level shutdown protects generator set from overheating.**
  - **Integral vibration isolation eliminates the need for vibration spring isolators under the unit.**
  - **Electronic, isochronous governor provides precise frequency regulation.**

Generator Ratings

Model Series	Hz	Voltage	Phase	Standby Amps Nat. Gas	Standby Amps LP Gas	Generator Model	Standby kW/kVA	
							Nat. Gas	LP Gas
10RY	60	120/240	1	38	42	4H5	9/9	10/10
10RZ	60	120/240	1	38	42	4J6	9/9	10/10
10RZ	60	120/208	3	31	35	4J6	9/11	10/12.5
10RZ	60	120/240	3	27	30	4J6	9/11	10/12.5
10RZ	60	127/220	3	30	33	4J6	9/11	10/12.5
10RZ	60	139/240	3	27	30	4J6	9/11	10/12.5
10RZ	60	220/380	3	17	19	4J6	9/11	10/12.5
10RZ	60	277/480	3	14	15	4J6	9/11	10/12.5
10RZ	50	110/220	1	36	36	4J6	8/8	8/8
10RZ	50	110/190	3	30	30	4J6	8/10	8/10
10RZ	50	110/220	3	26	26	4J6	8/10	8/10
10RZ	50	120/208	3	28	28	4J6	8/10	8/10
10RZ	50	220/380	3	15	15	4J6	8/10	8/10
10RZ	50	240/416	3	14	14	4J6	8/10	8/10

RATINGS: Standby ratings are continuous for the duration of any power outage. No overload capacity is specified at this rating. All single-phase units are rated at 1.0 power factor. All 3-phase units are rated at 0.8 power factor. Availability is subject to change without notice. Kohler Co. reserves the right to change the design or specifications without notice and without any obligation or liability whatsoever. Contact your local Kohler Co. generator distributor for availability. GENERAL GUIDELINES FOR DERATION: *ALTITUDE*: Derate 4% per 1000 ft. (305 m) elevation above 500 ft. (153 m). *TEMPERATURE*: Derate 1% per 10°F (5.5°C) temperature increase above 85°F (29°C).

Alternator Specifications

Specifications	PowerBoost™ Generator 1-Phase 4H5 (RY)	3-Phase 4J6 (RZ)
Manufacturer	Kohler	
Output reconnectable	120/240	Broadrange
Type	Rotating Field	
Number of leads	4	12
Voltage regulator	Solid State	
Insulation: NEMA MG1-1.66,		
Material	Class F	
Temperature rise	Class F	
Bearing, number, type	1, Sealed	
Coupling	Flexible Disc	
Amortisseur windings	Full	
Voltage regulation, no load to full load	±2%	
One-step load acceptance per NFPA 110	100% of Rating	
Peak motor starting kVA:	(35% dip for 480 V, 60 Hz and 380 V, 50 Hz)	
60 Hz	21	40
50 Hz	-	32

- Compliance with NEMA, IEEE, and ANSI standards for temperature rise.
- Self-ventilation and drip-proof construction.
- Vacuum-impregnated windings with fungus-resistant epoxy varnish for dependability and long life.
- Superior voltage waveform from a two-thirds pitch stator and skewed rotor on three-phase models.
- PowerBoost™ voltage regulator with ±2% no load to full load regulation.
- A rotating-field alternator with static exciter on single-phase models and a brushless alternator with rotating brushless exciter on three-phase models for excellent load response.

Application Data

Engine

Engine Specifications	60 Hz	50 Hz
Manufacturer	Ford	
Engine, Model, Type	VSG-413, 4-Cycle	
Cylinder arrangement	4 In-line	
Displacement, cu. in. (L)	79 (1.3)	
Bore and stroke, in. (mm)	2.911 (73.96) x 2.972 (75.48)	
Compression ratio	9.5:1	
Piston speed, ft/min. (m/sec.)	892 (4.5)	743 (3.7)
Main bearings: number, type	5, Replaceable Inserts	
Rated rpm	1800	1500
Max. power at rated rpm, hp (kW)	17 (13)	15 (11)
Cylinder head material	Cast Iron	
Piston type and material	Autothermic Aluminum Alloy	
Crankshaft material	Nodular Cast Iron	
Valves material	Forged Steel	
Governor, type	Electronic	
Frequency regulation, no load to full load	Isochronous	
Frequency regulation, steady state	±0.5%	
Air cleaner type, all models	Dry	

Exhaust

Exhaust System	60 Hz	50 Hz
Exhaust flow at rated kW, cfm (m^3/min.)	75.0 (2.1)	62.5 (1.8)
Exhaust temperature at rated kW, dry exhaust, °F (°C)	800 (472)	
Maximum allowable back pressure, in. Hg (kPa)	2.0 (6.7)	
Exhaust outlet size at hookup, in. (mm)	1.5 (38.5)	

Engine Electrical

Engine Electrical System	60 Hz	50 Hz
Ignition system	Electronic, Breakerless	
Battery charging system:		
Ground (negative/positive)	Negative	
Volts (DC)	12	
Ampere rating	35	
Starter motor rated voltage (DC)	12	
Recommended battery cold cranking amps (CCA) rating for 0°F (–18°C)	235	
Quantity of batteries	1	
Battery voltage (DC)	12	
Rolling current at 32°F	160 amps	

Fuel

Fuel System	60 Hz	50 Hz
Fuel type	LP Gas or Natural Gas	
Fuel supply inlet	3/4-14 NPT	
Fuel supply pressure oz./in.^{2} (in. H_2O)	4-6 (7-11)	

Lubrication

Lubricating System	60 Hz	50 Hz
Type	Full Pressure	
Oil pan capacity, qts. (L)	2.9 (2.8)	
Oil pan capacity with filter, qts. (L)	3.5 (3.3)	
Oil filter, quantity, type	1, Cartridge	
Oil drain extension with valve	Standard	

Application Data

Cooling (Standard Radiator)

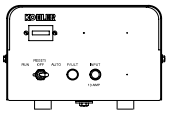
Cooling System	60 Hz	50 Hz
Ambient temperature °F (°C)	122 (50)	
Engine jacket water capacity, gal. (L)	0.93 (3.5)	
Engine jacket water flow, gpm (L/min.)	9.0 (34.0)	7.5 (28.0)
Radiator system capacity, including engine, gal. (L)	3.1 (11.8)	
Heat rejected to cooling water at rated kW, wet exhaust Btu/min.	610	510
Water pump type	Centrifugal	
Fan diameter, including blades, in. (mm)	15 (380)	
Fan hp (kW)	1.7 (1.3)	1.0 (0.75)
Max. restriction of cooling air, intake and discharge side of rad., in. H_2O (in. Hg)	0.5 (0.125)	

Operation Requirements

Cooling Air Requirements	60 Hz	50 Hz
Radiator-cooled cooling air, cfm (m^3/min.)	2400 (68)	2000 (57)
Combustion air, cfm (m^3/min.)	30 (0.85)	24 (0.68)
Total air Inlet Requirement, cfm (m^3/min.)	2430 (69)	2024 (57)
Heat rejected to ambient air:		
Engine Btu/min.	200	170
Generator Btu/min.	85	85

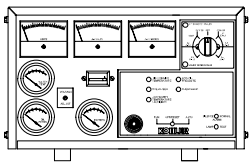
Fuel Consumption	60 Hz	50 Hz
Natural Gas, cfh (m^3/hr.) at % load		
100%	122 (3.5)	101 (2.9)
75%	96 (2.7)	80 (2.3)
50%	81 (2.3)	67 (1.9)
25%	64 (1.8)	53 (1.5)
LP Gas, cfh (m^3/hr.) at % load		
100%	68 (1.9)	56 (1.6)
75%	54 (1.5)	50 (1.4)
50%	44 (1.2)	44 (1.2)
25%	35 (1.0)	37 (1.0)

Controllers



Standard Controller Features

- Type: relay
- Power source with fuse protection: 12-volt DC
- Cyclic cranking
- Meters:
  - Running time hourmeter
- Switches and Controls:
  - Master control switch: run/off-reset/auto (engine start)
  - Local/remote two-wire start control
- Common Fault Lamp:
  - High engine temperature (red)
  - Low coolant level (red)
  - Low oil pressure (red)
  - Overcrank (red)
  - Overspeed (red)



Optional Controller Features

- Type: 5-light microprocessor (NFPA 110, level 2)
- Power source with fuse protection: 12-volt DC
- Cyclic cranking
- Engine cooldown time delay
- Panel lamps (2)
- Analog Meters:
  - AC meters, 2.5 in. (64 mm) volts, amperes, and frequency
  - DC meters, 2 in. (51 mm), DC volts, engine water temperature, and lube oil pressure
  - Running time hourmeter
- Switches and Controls:
  - Master control switch: run/off-reset/auto (engine start)
  - Local/remote two-wire start control
  - Meter phase selector switch, 7-position
  - Lamp test switch
  - Alarm horn and silencing switch
  - Front-mounted voltage adjusting rheostat
- Fault and Condition Lamps:
  - High engine temperature lamp (red)
  - Low oil pressure lamp (red)
  - Low water temperature/auxiliary fault lamp (red)
  - Overcrank lamp (red)
  - Overspeed lamp (red)

NOTE: See the respective controller spec sheet for additional controller features and accessories.

KOHLER CO., Kohler, Wisconsin 53044 U.S.A.
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For the nearest sales and service outlet in U.S.A. and Canada
Phone 1-800-544-2444

Kohler® Power Systems
Asia Pacific Headquarters
7 Jurong Pier Road
Singapore 619159
Phone (65)264-6422, Fax (65)264-6455

Accessories

Enclosed Unit

- ❑ Exhaust Silencer, Critical
- ❑ Silencer Mounting Kit inside Housing
- ❑ Tail Pipe and Rain Cap Kit
- ❑ Weather Housing

Open Unit

- ❑ Exhaust Silencer, Critical (loose)
- ❑ Exhaust Silencer, Critical (engine mounted)
- ❑ Flexible Exhaust Connector, Stainless Steel

Cooling System

- ❑ Block Heater
- ❑ Radiator Duct Flange

Fuel System

- ❑ Automatic Changeover (Natural Gas to LPG Vapor)
- ❑ Flexible Fuel Lines
- ❑ Fuel System Kit (LP Gas or Natural Gas)
- ❑ Gas Strainer
- ❑ LP Gas Liquid Withdrawal Fuel System
- ❑ CARB and EPA Emission Certification

Electrical System

- ❑ Battery
- ❑ Battery Charger, Equalize/Float Type
- ❑ Battery Charger, Trickle Type
- ❑ Battery Heater
- ❑ Battery Rack and Cables

Engine and Generator

- ❑ Air Cleaner, Heavy Duty
- ❑ CSA Certification
- ❑ Generator Strip Heater
- ❑ Line Circuit Breaker
- ❑ NFPA 110 Literature
- ❑ Rodent Guards
- ❑ Skid End Caps

Maintenance

- ❑ General Maintenance Literature Kit
- ❑ Overhaul Literature Kit

Controller (Relay Controller)

- ❑ Engine Gauge Package
- ❑ Run Relay Kit

Controller (Microprocessor Controller)

- ❑ Chime Alarm Kit
- ❑ Common Failure Relay Kit
- ❑ Customer Connection Kit
- ❑ Decision Monitor™ Remote Annunciator Panel
- ❑ Dry Contact Kit (Isolated Alarm)
- ❑ Extension Wiring Harness for Remote Mounting of Controller
- ❑ FASTCHECK® Diagnostic Fault Detector
- ❑ Overvoltage Protection Shutdown Kit
- ❑ Prealarm Sender Kit
- ❑ Remote Audio/Visual Alarm Panel
- ❑ Remote Connection Kit
- ❑ Remote Emergency Stop Kit
- ❑ Run Relay Kit

Miscellaneous Accessories

- ❑ _____
- ❑ _____
- ❑ _____
- ❑ _____
- ❑ _____
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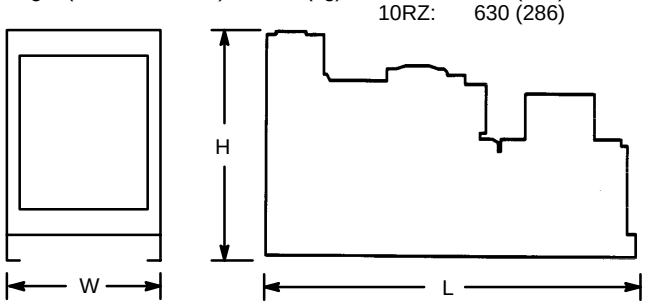
- ❑ _____
- ❑ _____

WEIGHTS AND DIMENSIONS

Overall Size, L x W x H, in. (mm):
10RY: 46.75 x 24.00 x 34.35 (1187 x 610 x 872)
10RZ: 53.70 x 24.00 x 34.35 (1363 x 610 x 872)
Weight (Radiator Model), wet lb. (kg): 10RY: 580 (263)
10RZ: 630 (286)



NOTE: This drawing is provided for reference only and should not be used for planning installation. Contact your local distributor for more detailed information.

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