

Oneida County Corrections

6065 Judd Rd.

Oriskany, NY 13424

Site Contact

Brad Walker

Project Engineer

Aegis Energy Services Inc.

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- CDH was on site February 23, 2016 to install a datalogger, terminate meter wiring, setup communications, and verify sensor readings. Data collection begins.

Summary

CDH provided the data logger and enclosure. Aegis provided and installed the gas, power, and BTU meters. Aegis installed the CDH enclosure and performed all of the necessary wire pulls while CDH terminated wiring to the data logger and sensors.

Monitored Data Points

Logger Channel	Data Point	Description	Eng Units	Instrument / Transducer	Output
MB-001	WT	Gross Generator Power Output - Existing Gen.	kWh	Veris H-8035-300	Modbus RS-485
MB-003	WP	Parasitic Loads	kWh	Veris H-8035-100	Modbus RS-485
-	WG	Net Power Output	kWh	-	Calculated
1	FG	Cogen Gas Consumption	cf	ConEd Meter w/ Pulse	Pulse
MB-004	FHW	Recovered Heat loop Flow	gpm	Badger Series 380	Modbus RS-485
MB-004	THW1	Recovered Heat Loop - Supply Temp.	°F	Badger Series 380	Modbus RS-485
2	THW2	Recovered Heat Loop - Temp. After HX1 (Space Heating)	°F	MAMAC 10k Type II Thermistor	Resistance
MB-004	THW3	Recovered Heat Loop - Temp. After HX2 (DHW)	°F	Badger Series 380	Modbus RS-485
3	THW4	Recovered Heat Loop - Temp. After Dump Radiator	°F	MAMAC 10k Type II Thermistor	Resistance
4	ICCP	Current to Cogen Control Panel	Amps	Veris Hawkeye H921	4-20 mA
-	QR	Rejected Heat Recovery - New Cogen	Mbtu/h		Calculated
-	QB	Useful Heat Recovery - Boiler	Mbtu/h		Calculated
-	QDHW	Useful Heat Recovery - DHW	Mbtu/h		Calculated
-	QU	Total Useful Heat Recovery	Mbtu/h	-	Calculated

IT Information

External IP:	166.139.137.166:1111
Internal IP:	192.168.0.6
Netmask:	255.255.255.0
Gateway:	192.168.0.1
DNS #1:	8.8.8.8
DNS #2:	8.8.4.4

Procedure

- Hot water loop flow was verified by comparing the Badger 380 flow reading on the Obvius to measurements taken using a portable Portaflow ultrasonic flowmeter.
- THW2 was verified by comparing the Veris strap-on 10k Type 2 thermistor to a Fluke handheld temperature sensor
- ICCP was verified by comparing the reading from the Hawkeye H921 Current Sensor to the reading on a handheld Fluke 39 Power Meter.

Verification Data

Recovered Heat Loop Flow

FHW	Ultrasonic	Badger
	21.5	21.5
	21.5	21.6
	21.6	21.6
	21.6	21.6
	21.6	21.6
	21.8	21.8
	21.9	21.9
	21.6	21.7

Avg: 21.6 21.7

Control Panel Current

ICCP	Fluke	Veris Hawkeye
	4.57	4.62
	4.58	4.61
	4.56	4.62

Avg: 4.57 4.62

Temperature

THW2	Fluke	Obvius
	137.8	139.7

Site Photos



Aegen TP75-LE cogen unit located in basement mechanical room.



CDH panel containing data logger and CDH network switch.



Badger 380 BTU meter (THW1, THW3, FHW).



Mamac 10k Type 2 Thermistor (THW4), located in mechanical room.



Veris 10k Type 2 Thermistor (THW2), located in mechanical room.

PUMP SCHEDULE						
PUMP NO.	SERVICE	FLOW	HEAD	H.P.	PHASE	MODEL
P-1	COGEN MODULE	25 GPM	70 FT	3/4	3	BELL & GOSSETT SERIES 1535 353T
P-2	BOILER HEATING	30 GPM	33 FT	3/4	3	BELL & GOSSETT SERIES 60 613T
P-3	DHW	30 GPM	15 FT	1/6	1	BELL & GOSSETT PL-45B
P-4	GLYCOL LOOP	30 GPM	33 FT	3/4	3	BELL & GOSSETT SERIES 60 613T

CONTROL VALVE SCHEDULE						
VALVE NO.	SERVICE	FLOW TYPE	SIZE	VOLTAGE	VALVE MODEL	ACTUATOR
V-1	BOILER HEATING	MIXING	1 1/2"	24 V	TAC VS2313-526-9-54	MS40-7043M MODULATING
V-2	DHW	MIXING	1 1/2"	24 V	TAC VS2313-526-9-54	MS40-7043M MODULATING

HEAT EXCHANGER HX-1		
DESIGN MANUFACTURER	API HEAT TRANSFER	
MODEL	SBM7M-40	
TYPE	BRAZED PLATE	
MATERIAL	COPPER	
SERVICE	BOILER HEAT	
SIDE	HOT	COLD
FLUID TYPE	WATER	WATER
FLUID FLOW	22 GPM	30 GPM
TEMPERATURE IN	225 DEG F	165 DEG F
TEMPERATURE OUT	178 DEG F	190 DEG F
PRESSURE DROP	0.77 PSI	2.71 PSI
INLET SIZE	2" NPT	2" NPT

HEAT EXCHANGERS HX-3		
DESIGN MANUFACTURER	API HEAT TRANSFER	
MODEL	SBM7M-40	
TYPE	BRAZED PLATE	
MATERIAL	COPPER	
SERVICE	DUMP RADIATOR	
SIDE	HOT	COLD
FLUID TYPE	WATER	WATER
FLUID FLOW	22 GPM	30 GPM
TEMPERATURE IN	225 DEG F	172 DEG F
TEMPERATURE OUT	179 DEG F	207 DEG F
PRESSURE DROP	0.91 PSI	1.71 PSI
INLET SIZE	2" NPT	2" NPT

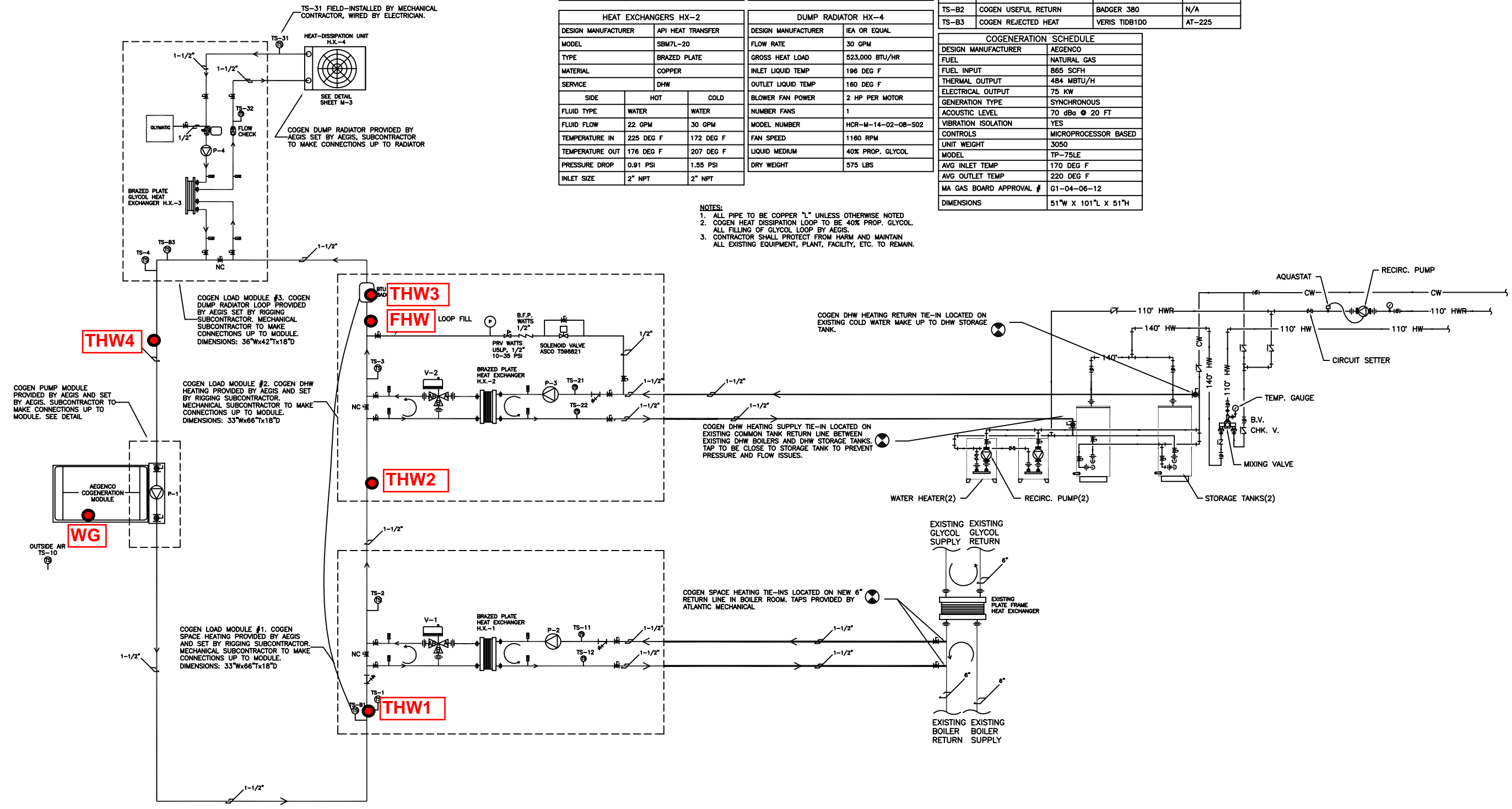
TEMPERATURE SENSOR SCHEDULE			
TS NO.	SERVICE	MODEL	WELL TYPE
TS-1	COGEN SUPPLY	MAMAC TE-703-C-5A	AT-225
TS-2	BOILER TO DHW	MAMAC TE-703-C-5A	AT-225
TS-3	DHW TO HEAT DISSIPATION	MAMAC TE-703-C-5A	AT-225
TS-4	COGEN RETURN	MAMAC TE-703-C-5A	AT-225
TS-11	HEATING RETURN TO HX	MAMAC TE-703-C-5A	AT-225
TS-12	HX TO HEATING RETURN	MAMAC TE-703-C-5A	AT-225
TS-21	DHW TO HX	MAMAC TE-703-C-5A	AT-225
TS-22	HX TO DHW	MAMAC TE-703-C-5A	AT-225
TS-31	RADIATOR TO HX	MAMAC TE-703-C-5A	AT-225
TS-32	HX TO RADIATOR	MAMAC TE-703-C-5A	AT-225
TS-10	OUTSIDE AIR	MAMAC TE-205-F-5	N/A
TS-B1	COGEN SUPPLY TEMPERATURE	BADGER 380	AT-225
TS-B2	COGEN USEFUL RETURN	BADGER 380	N/A
TS-B3	COGEN REJECTED HEAT	VERIS TIDB1D0	AT-225

HEAT EXCHANGERS HX-2		
DESIGN MANUFACTURER	API HEAT TRANSFER	
MODEL	SBM7L-20	
TYPE	BRAZED PLATE	
MATERIAL	COPPER	
SERVICE	DHW	
SIDE	HOT	COLD
FLUID TYPE	WATER	WATER
FLUID FLOW	22 GPM	30 GPM
TEMPERATURE IN	225 DEG F	172 DEG F
TEMPERATURE OUT	178 DEG F	207 DEG F
PRESSURE DROP	0.91 PSI	1.55 PSI
INLET SIZE	2" NPT	2" NPT

DUMP RADIATOR HX-4	
DESIGN MANUFACTURER	IEA OR EQUAL
FLOW RATE	30 GPM
GROSS HEAT LOAD	523,000 BTU/HR
INLET LIQUID TEMP	196 DEG F
OUTLET LIQUID TEMP	160 DEG F
BLOWER FAN POWER	2 HP PER MOTOR
NUMBER FANS	1
MODEL NUMBER	HCR-M-14-02-08-S02
FAN SPEED	1160 RPM
LIQUID MEDIUM	40% PROP. GLYCOL
DRY WEIGHT	575 LBS

COGENERATION SCHEDULE	
DESIGN MANUFACTURER	AEGENCO
FUEL	NATURAL GAS
FUEL INPUT	865 SCFH
THERMAL OUTPUT	484 MBTU/H
ELECTRICAL OUTPUT	75 KW
GENERATION TYPE	SYNCHRONOUS
ACOUSTIC LEVEL	70 dBa @ 20 FT
VIBRATION ISOLATION	YES
CONTROLS	MICROPROCESSOR BASED
UNIT WEIGHT	3050
MODEL	TP-75LE
AVG INLET TEMP	170 DEG F
AVG OUTLET TEMP	220 DEG F
MA GAS BOARD APPROVAL #	G1-04-06-12
DIMENSIONS	51"W X 101"L X 51"H

- NOTES:
1. ALL PIPE TO BE COPPER "L" UNLESS OTHERWISE NOTED
 2. COGEN HEAT DISSIPATION LOOP TO BE 40% PROP. GLYCOL. ALL FILLING OF GLYCOL LOOP BY AEGIS.
 3. CONTRACTOR SHALL PROTECT FROM HARM AND MAINTAIN ALL EXISTING EQUIPMENT, PLANT, FACILITY, ETC. TO REMAIN.



NOTES:

FOR: *BID/REVIEW*

CONTRACTOR: **AEGIS ENERGY SERVICES INC**
55 JACKSON ST
HOLYOKE, MA 01040
PH: 413-536-1156
EX: 413-536-1104

ENGINEER: *T.B.D*

PROJECT: **ONEIDA COUNTY
CORRECTIONAL FACILITY
COGENERATION SYSTEM**
6065 JUDD RD
ORISKANY, NY 13424

SHEET TITLE: **HVAC SCHEDULES &
FLOW DIAGRAM**

SEAL & SIGNATURE

DATE: 3/17/2014

PROJECT NO: _____

DRAWN BY: BW

CHECKED BY: _____

DWG NO: **M-101.01**

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