

2/29/2012

VA MEDICAL AND REGIONAL OFFICE CENTER
WHITE RIVER JUNCTION, VT 05009
Project 405-13-102
SCOPE OF WORK
B28 DDC UPGRADE

I BACKGROUND:

The goal of this project is to replace heating control valves within building 28 with DDC controls to allow for energy savings and increased temperature control.

II SCOPE:

Provide all materials, labor and supervision to install DDC control valves and expand the EMS system within B28 as outlined below.

A. DDC Installation:

1. Install new DDC valves on perimeter steam heating units (140).
2. Provide room thermostat/sensor without temperature display.
3. Complete wiring of valves, sensors, and associated work.
4. Remove and dispose of valves, room thermostats, and associated equipment.
5. Connect units to EMS system and provide necessary programming, graphics, and system optimization in accordance with established facility operating procedures.

III REQUIREMENTS:

1. Prior to the start of any work, contractor shall provide their written work plan for the project including:
 - a. Concept for scheduling work including plan for limiting disruption to the office spaces.
 - b. Description of their approach to complete the project and meet all requirements.
2. All the work shall be performed to industry standard, or better, by qualified personnel and in conformance with VA standards and Vermont requirements.
3. Personnel shall be fully licensed or certified for the trades being performed where these trades are licensed by the Vermont or by the governing association for that trade or specialty. Submit documentation on licenses or certifications on request.
4. Safety and Health:
 - a. All project personnel working on site are required to have safety training appropriate to their work. A minimum of the ten hour (10 hour) OSHA class is required for all construction personnel working on site.
 - b. The Contractor is required to have a Competent Person, as defined by OSHA, on site at all times while any work is in progress.
 - c. Contractor and all Subcontractors shall comply with all VA safety and health Policies, including but not limited to:
 - i. Personal Protective Equipment
 - ii. Fire Safety and Hot Work permits
 - iii. Lock Out/Tag Out
 - iv. Confined Space Entry

- v. Fall Protection
 - vi. Electrical Safety
 - vii. Trenching and excavation safety, OSHA 1926
 - viii. Hazardous Materials/Workers Right to Know Act
 - ix. Penetration Permits, assuming FRR separation may be in place prior to this work
 - x. Security - including badges, keys, and parking.
- d. Documentation of compliance, including Daily Reports, will be required.
- e. Submit training and other advance documentation before start of work and prepare other reports daily for each day that work is underway.
- 5. Personal Identity Verification of Contractor Personnel (October 2006)
 - a. The Contractor shall comply with agency personal identity verification (PIV)
 - b. This PIV process typically requires all workers to complete forms in advance of entering the VA Medical Center, to present two official forms of identification, to submit finger prints and background checks, etc depending on the nature of the project and the length of construction. The approval process typically requires five business days before access can be approved.
- 6. Waste Disposal/Recycling:
 - a. All metal suitable for recycling shall be placed in the metal trailer by the loading dock of Building 31.
 - b. Hazardous waste resulting from the demolition, if any, shall be delivered to VA Building 46 under the supervision of the GEMS coordinator.
 - c. Other Hazardous waste, if any, shall be correctly disposed of by the Contractor at no additional cost to the VA (provide a copy of the manifest, and other documentation to COTR).
 - d. Other waste including rubbish and C&D - The Contractor, at no cost to the VA, shall properly dispose of (construction and demolition) debris off site.
 - e. Store, label waste and containers and dispose of waste in full compliance with EPA, NFPA and VT AEC requirements.
- 7. An MSDS shall be maintained at the work site for all chemicals and hazardous materials brought onto the VA property. Employees using such materials shall use required PPE and shall be familiar with the hazards, disposal, storage and emergency response including spill and fire procedures, etc. Contractor is responsible for compliance with EPA and VT requirements related to use, storage, disposal and emergency response including spill and fire procedures, etc. for all hazardous materials utilized in this project.
- 8. Work is to be done during normal working hours. Weekend and Night work may be allowed with advance written request, subject to availability of VA staff to observe operations.
- 9. Contractor is responsible for providing and installing all required system components, fastening, miscellaneous hardware and construction materials, including any building materials required for patching/painting/touch up/restoration.
- 10. Where applicable, in advance of construction, submit shop drawings, catalog cuts, manufacturer's literature, installation instructions, wiring and piping diagrams, control prints, recommended spare parts lists and O&M manuals for equipment and materials to be incorporated into the work for approval. At the completion of the work and before acceptance, Contractor is to submit three (3) sets of all of the above plus any as-built changes, as applicable, in three (3) ring binders.**
- 11. Cleanup & protection:
 - a. Work sites to be protected during construction to minimize damage to VA property, furnishings, etc.
 - b. Work sites to be regularly cleaned and kept free of waste and hazards

- c. At completion of work, and prior to acceptance, the interior and exterior of equipment, panels, etc. and the work site shall be thoroughly cleaned of all construction scraps, dirt, dust, etc.
- 12. Restoration - Cleanup & protection:
 - a. Any damage to finished surfaces shall be replaced or repaired to a condition equal, or better than current conditions.

IV WARRANTY:

- a. Work is to be guaranteed for 100% of all labor and materials for a period of one (1) year from the date of completion or acceptance, whichever is later. Contractor shall promptly repair or replace any portion of the work or equipment which fails within this time period, except in the case of VA abuse, VA failure to follow minimum operations and maintenance requirements that have been specifically outlined by the contractor and conveyed in the documentation at acceptance, or by acts of God.
- b. If manufacturer's warranty exceeds one year then contractor shall extend guarantee for the same period for only that equipment or materials.

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Attachment 1:

Point Number	Description	Name	Type	Initial Values	Units	Proof Point (L2SL)	Slope	Intercept	Proof Delay
02	APPLICATION	APPLAC	LAD	1013.0000	NUMBER	0	1.000000	0.000000	0.0000
03	RM SETPOINT	RM1RMS	LAD	72.0000	DEG F	0	1.000000	0.000000	0.0000
04	RM SETPOINT	RM2RMS	LAD	72.0000	DEG F	0	1.000000	0.000000	0.0000
05	RM SETPOINT	RM3RMS	LAD	72.0000	DEG F	0	1.000000	0.000000	0.0000
06	RM SETPOINT	RM4RMS	LAD	72.0000	DEG F	0	1.000000	0.000000	0.0000
13	RM 1 TEMP	RM1RMT	LAI	0.0000	DEG F	0	0.099400	-41.732598	0.0000
14	RM 1 HUMIDTY	RM1RH	LAI	0.0000	PCT RH	0	0.038435	-25.000002	0.0000
15	RM 2 TEMP	RM2RMT	LAI	0.0000	DEG F	0	0.099400	-41.732598	0.0000
16	RM 2 HUMIDTY	RM2RH	LAI	0.0000	PCT RH	0	0.038435	-25.000002	0.0000
17	RHT 1 VLV	RM1RHV	LAD	0.0000	PCT	0	0.006104	0.000000	0.0000
18	RHT 2 VLV	RM2RHV	LAD	0.0000	PCT	0	0.006104	0.000000	0.0000
28	POINT 28	PNT28	LAD	0.0000	NUMBER	0	1.000000	0.000000	0.0000
29	POINT 29	PNT29	LAD	0.0000	NUMBER	0	1.000000	0.000000	0.0000
33	RM 3 TEMP	RM3RMT	LAI	0.0000	DEG F	0	0.099400	-41.732598	0.0000
34	RM 3 HUMIDTY	RM3RH	LAI	0.0000	PCT RH	0	0.038435	-25.000002	0.0000
35	RM 4 TEMP	RM4RMT	LAI	0.0000	DEG F	0	0.099400	-41.732598	0.0000
36	RM 4 HUMIDTY	RM4RH	LAI	0.0000	PCT RH	0	0.038435	-25.000002	0.0000
37	RHT 3 VLV	RM3RHV	LAD	0.0000	PCT	0	0.006104	0.000000	0.0000
38	RHT 4 VLV	RM4RHV	LAD	0.0000	PCT	0	0.006104	0.000000	0.0000

Point Number	Description	Name	Type	Initial Values	Units	Proof Point (L2SL)	Slope	Intercept	Proof Delay
02	APPLICATION	APPLAC	LAD	1021.0000	NUMBER	0	1.000000	0.000000	0.0000
03	ROOM SETPT	AC2RMS	LAD	72.0000	DEG F	0	1.000000	0.000000	0.0000
04	VIRT OATEMP	AC2OAA	LAD	0.0000	DEG F	0	1.000000	0.000000	0.0000
05	COOLING ENBL	AC2MEC	LDO	0.0000		0	0.000000	0.000000	0.0000
10	SUP FAN PRF	AC2SPS	LDI	0.0000		0	0.000000	0.000000	0.0000
13	ROOM HUMIDTY	AC2RMH	LAI	0.0000	PCT RH	0	0.038435	-25.000000	0.0000
14	SUP AIR TEMP	AC2SAT	LAI	0.0000	DEG F	0	0.100000	-39.822681	0.0000
15	RET AIR TEMP	AC2RAT	LAI	0.0000	DEG F	0	0.100000	-39.822681	0.0000
16	RM 209 TEMP	RMTEMP	LAI	0.0000	DEG F	0	0.099400	-41.289131	0.0000
20	SUP AIR FAN	AC2SAF	L2SL	0.0000		10	0.000000	0.000000	30.0000
21	ECONOMIZER	AC2ECO	LDO	0.0000		0	0.000000	0.000000	0.0000
23	KW READING	AC2KWR	LAD	0.0000	KW	0	1.000000	0.000000	0.0000
28	POINT 28	PNT28	LAD	0.0000	NUMBER	0	1.000000	0.000000	0.0000
29	POINT 29	PNT29	LAD	0.0000	NUMBER	0	1.000000	0.000000	0.0000
30	COND STATUS	AC2CDS	LDI	0.0000		0	0.000000	0.000000	0.0000
32	AC2 SMK DET	AC2SMK	LDI	0.0000		0	0.000000	0.000000	0.0000
33	B8 AC2 KWM	AC2KWM	LAI	0.0000	AMPS	0	0.019217	-12.500000	0.0000
34	ROOM TEMP	AC2RMT	LAI	0.0000	DEG F	0	0.100000	-39.822681	0.0000
41	MECH COOLING	AC2DX1	LDO	0.0000		0	0.000000	0.000000	0.0000
67	SHUTDN	SHUTDN	LDO	0.0000		0	0.000000	0.000000	0.0000

Points

Point Number	Description	Name	Type	Initial Value	Units	Proof Point (L2SL)	Slope	Intercept	Proof Delay
01	ADDRESS	ADDRESS	LAD	0.0000	NUMBER	0	1.000000	0.000000	0.0000
02	APPLACTION	APPLAC	LAD	1020.0000	NUMBER	0	1.000000	0.000000	0.0000
03	DAMPER MIN	ACTDMN	LAD	25.0000	PCT	0	1.000000	0.000000	0.0000
04	MIX LOW LIM	ACTMAS	LAD	50.0000	DEG F	0	1.000000	0.000000	0.0000
05	ECONOMIZER	ACTECO	LDO	0.0000		0	0.000000	0.000000	0.0000
06	CALC SUPSET	ACTSAS	LAD	55.0000	DEG F	0	1.000000	0.000000	0.0000
07	DX ENABLE	ACTMEC	LDO	0.0000		0	0.000000	0.000000	0.0000
08	RM TMP HISET	ATRMHS	LAD	73.0000	DEG F	0	1.000000	0.000000	0.0000
09	RM RH HISET	ATRMHS	LAD	65.0000	PCT RH	0	1.000000	0.000000	0.0000
10	ACT1SF5	ACT1SF5	LDI	0.0000		0	0.000000	0.000000	0.0000
12	COND STATUS	ACTCOS	LDI	0.0000		0	0.000000	0.000000	0.0000
13	SUPPLY TEMP	ACTSAT	LAI	0.0000	DEG F	0	0.099400	-41.188938	0.0000
14	MIX AIR TEMP	ACTMAT	LAI	0.0000	DEG F	0	0.100000	-41.000000	0.0000
15	RET AIR TEMP	ACTRAT	LAI	0.0000	DEG F	0	0.100000	-41.222000	0.0000
17	MIX AIR DMPR	ACTMAD	LAD	0.0000	PCT	0	0.006104	0.000000	0.0000
20	ACT1SAF	ACT1SAF	L2SL	0.0000		10	0.000000	0.000000	30.0000
21	COOL STG 1	ACTDX1	LDO	0.0000		0	0.000000	0.000000	0.0000
23	KW READING	ACTKW/R	LAD	0.0000	KW	0	1.000000	0.000000	0.0000
28	POINT 28	PNT28	LAD	0.0000	NUMBER	0	1.000000	0.000000	0.0000
29	POINT 29	PNT29	LAD	1.0000	NUMBER	0	1.000000	0.000000	0.0000
30	ACT1RF5	ACT1RF5	LDI	0.0000		0	0.000000	0.000000	0.0000
33	88ACT1KW	ACT1KW	LAI	0.0000	AMPS	0	0.019217	-12.500001	0.0000
40	ACT1PAF	ACT1PAF	L2SL	0.0000		30	0.000000	0.000000	30.0000
41	COOL STG 2	ACTDX2	LDO	0.0000		0	0.000000	0.000000	0.0000
46	VIRT RM TMP1	ATRM1T	LAD	0.0000	DEG F	0	1.000000	0.000000	0.0000
47	VIRT RM TMP2	ATRM2T	LAD	0.0000	DEG F	0	1.000000	0.000000	0.0000
48	VIRT RM TMP3	ATRM3T	LAD	0.0000	DEG F	0	1.000000	0.000000	0.0000
49	VIRT RM TMP4	ATRM4T	LAD	0.0000	DEG F	0	1.000000	0.000000	0.0000
50	VIRT RM HMD1	ATRM1H	LAD	0.0000	PCT RH	0	1.000000	0.000000	0.0000
51	VIRT RM HMD2	ATRM2H	LAD	0.0000	PCT RH	0	1.000000	0.000000	0.0000
52	VIRT RM HMD3	ATRM3H	LAD	0.0000	PCT RH	0	1.000000	0.000000	0.0000
53	VIRT RM HMD4	ATRM4H	LAD	0.0000	PCT RH	0	1.000000	0.000000	0.0000
54	VIRT OATMP	ACTOAA	LAD	0.0000	DEG F	0	1.000000	0.000000	0.0000
55	SUP LOOP OUT	ACTSLO	LAD	0.0000	UNITS	0	1.000000	0.000000	0.0000
56	RM TMP MAX	ATRM1X	LAD	0.0000	DEG F	0	1.000000	0.000000	0.0000

57	RM RH MAX	ATRM1X	LAD	0.0000	PCT RH	0	1.000000	0.000000	0.0000
58	MIX LOW OUT	ACTMLO	LAD	0.0000	UNITS	0	1.000000	0.000000	0.0000
59	P GAIN SUP	ACTFGS	LAD	20.0000	GAIN	0	1.000000	0.000000	0.0000
60	I GAIN SUP	ACTIGS	LAD	20.0000	GAIN	0	1.000000	0.000000	0.0000
61	D GAIN SUP	ACTDGS	LAD	500.0000	GAIN	0	1.000000	0.000000	0.0000
62	SAMPLE TIME	ACTSTS	LAD	1.0000	SEC	0	1.000000	0.000000	0.0000
63	P GAIN MIX	ACTPGM	LAD	20.0000	GAIN	0	1.000000	0.000000	0.0000
64	I GAIN MIX	ACTIGM	LAD	20.0000	GAIN	0	1.000000	0.000000	0.0000
65	D GAIN MIX	ACTDSM	LAD	500.0000	GAIN	0	1.000000	0.000000	0.0000
66	SAMPLE TIME	ACTSTM	LAD	3.0000	SEC	0	1.000000	0.000000	0.0000
67	SHUTDOWN	SHUTDOWN	LDO	0.0000		0	0.000000	0.000000	0.0000
68	ACT1OCC	ACT1OCC	LDO	0.0000		0	0.000000	0.000000	0.0000

New

Delete