



# ***Appendix C***

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**On Site Data Collection Instrument**

## New Hampshire Potential Study Commercial and Industrial On-site Data Collection Form

5-30-08 (rev. 6/18/08)

Site ID: \_\_\_\_\_ Survey Date: \_\_\_\_\_

Building Name: \_\_\_\_\_ Electric Utility: \_\_\_\_\_

Primary Contact: \_\_\_\_\_ Gas Utility (if any): \_\_\_\_\_

Contact Phone: \_\_\_\_\_

Primary Address: \_\_\_\_\_

Surveyor Name: \_\_\_\_\_ Survey Start Time: \_\_\_\_\_ Survey End Time: \_\_\_\_\_

Utility Account/Meter Information (Electric and Gas Service)

Account #	Meter #	Utility	Fuel Type (circle)	Meter Status	% surveyed area
			Electric / Gas		
			Electric / Gas		

Meter Status Codes: V=Verified, NF = New meter found on-site, MDNE = Meter does not exist (was not found), NV = not verified (note why; inaccessible, etc.)

Other Fuel Service Meter/Account Numbers:

Fuel Type	Fuel Used?	Utility / Provider
Oil	<input type="checkbox"/>	
Propane	<input type="checkbox"/>	
Purchased Chilled Water / Purchased Steam	<input type="checkbox"/>	
On-site Generation	<input type="checkbox"/>	Capacity (kW): Fuel: When Used: Is waste heat used? (Y / N)
Other _____	<input type="checkbox"/>	

## General Building Information

1. Site Activity Code(s): \_\_\_\_\_ (if other, describe): \_\_\_\_\_

<b>Office:</b>	Code	<b>Warehouse:</b>	Code
Administration and mgmt	011	Refrigerated Warehouse	071
Financial / Legal	012	Non-refrigerated Warehouse	072
Insurance/Real Estate	013	<b>Health Care:</b>	
Other Office	014	Hospital	081
<b>Restaurant:</b>		Nursing Home	082
Fast Food or Self Service	021	Medical Office	083
Table Service	022	Clinic/Outpatient Care	084
Bar/Tavern/Nightclub/Other	023	<b>Manufacturing:</b>	
<b>Food Store:</b>		Lumber and Wood Products	091
Supermarket	031	Paper and Allied Products	092
Convenience Store	032	Printing, Publishing & Allied Ind.	093
Other Food Store	033	Rubber and misc. Plastics Prod	094
<b>Retail Store:</b>		Fabricated Metals	095
Department / Variety Store	041	I&C Machinery and Comp Equip.	096
Shop in Enclosed Mall	042	Electronic and Other Electrical Eq	097
		(Except computers)	
Other Retail Store	043	Other Assembly / Light Mfg.	098
<b>Education:</b>		Other Med/Heavy Equip. Mfg.	099
Daycare or Preschool	051	<b>Lodging:</b>	
Elementary / Secondary School	052	Hotel	101
College or University	053	Motel	102
Vocational or Trade School	054	Resort	103
<b>Municipal Building:</b>		<b>Automotive:</b>	
Fire / Police	061	Dealership	111
DPW / P&R	062	Repair / Service Station	112
Offices (specify): _____	063		

2. Is this space: \_\_\_\_\_ owner-occupied \_\_\_\_\_ leased

3. Approximately how many full time employees report to this business location? \_\_\_\_\_

4. What is the approximate floor area of this business? \_\_\_\_\_ square feet, # of floors \_\_\_\_\_

5. Characterize the site by circling the appropriate description:

1. Existing building (more than 3 years old) → In what year was this building constructed? \_\_\_\_\_
2. New building.
3. Alteration of existing building.
4. Addition to existing building.
5. Alteration of and addition to existing building.

## Primary Building Schedule

6. Define typical operation for all days of the week (ex. M-F, S-S-H, etc.). For partial (i.e. not full) operation days, also indicate the approximate Partial Op%.

Area of Operation	Days	Business Hours
		from ___ to ___ Partial op% ___
		from ___ to ___ Partial op% ___
		from ___ to ___ Partial op% ___
		from ___ to ___ Partial op% ___
		from ___ to ___ Partial op% ___
		from ___ to ___ Partial op% ___
		from ___ to ___ Partial op% ___
		from ___ to ___ Partial op% ___

7. How many holidays does your business recognize over the calendar year: \_\_\_\_\_
8. How many months per year do you operating your primary heating systems? \_\_\_\_\_
9. How many months per year do you operating your primary cooling systems? \_\_\_\_\_
10. Do you have an EMS at this facility?  
\_\_\_No  
\_\_\_Yes → What software do you use? \_\_\_\_\_  
  
Is the system working properly? \_\_\_\_\_  
  
What is the age of the system? \_\_\_\_\_ Years
11. How knowledgeable and well trained would you say your personnel are on the operation and maintenance of your facilities energy using equipment? Would you say they are.....  
1 Extremely knowledgeable and well trained on the operation and maintenance of your equipment  
2 Somewhat knowledgeable and trained  
3 Not very knowledgeable or trained  
4 Not at all knowledgeable or trained  
( ) All maintenance of the energy consuming equipment is outsourced to private companies  
( ) Don't Know  
( ) Refused
12. How much attention would you say your company pays on controlling energy costs through general energy efficiency operational practices (i.e., adjusting room temperatures when not occupied, shutting computers and lights off at night, etc.)? Would you say your company pays.....  
1 Substantial attention to these matters  
2 Some attention  
3 Very little attention  
4 No attention at all  
( ) Don't Know  
( ) Refused

**Efficiency Attitudes**

Now I have some questions about your attitudes towards purchasing energy efficient equipment for this space. I am referring to new equipment specifically designed to be more energy efficient than other *new* models. Energy efficient models typically cost more than other models, perhaps 20-30% more.

13. Using a 5-point scale, with 5 being “extremely likely” and 1 being “not at all likely”, how likely you would be to purchase energy efficient equipment *instead of standard equipment*...

[RANDOMIZE order of questions asked]

- 13a. if your monthly energy bill would be less than it would be with the standard equipment?  
\_\_\_ (enter 1, 2, 3, 4 or 5; no authority over such events (n/a), don't know or refused also acceptable responses)
- 13b. if it increased the level of occupant comfort more than standard equipment would?  
\_\_\_ (enter 1, 2, 3, 4 or 5; no authority over such events (n/a), don't know or refused also acceptable responses)
- 13c. if you felt you were helping to protect the environment?  
\_\_\_ (enter 1, 2, 3, 4 or 5; no authority over such events (n/a), don't know or refused also acceptable responses)
- 13d. if you felt you were improving the image or value of your business more than standard equipment would?  
\_\_\_ (enter 1, 2, 3, 4 or 5; no authority over such events (n/a), don't know or refused also acceptable responses)

- 13e. if you received a rebate for the energy efficient equipment?  
\_\_\_ (enter 1, 2, 3, 4 or 5; no authority over such events (n/a), don't know or refused also acceptable responses)
- 138f. if your sales person, contractor, or consultant recommended it?  
\_\_\_ (enter 1, 2, 3, 4 or 5; no authority over such events (n/a), don't know or refused also acceptable responses)

14. In general, what do you see as the primary reasons you might not purchase energy efficient equipment or make energy efficiency improvements to this space?

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- DON'T KNOW  
 REFUSED

**Program Participation and Satisfaction**

15. Are you aware that your utility, [INSERT: UTILITY NAME, ELECTRIC &/OR GAS], has energy efficiency programs or products that offer incentives or rebates?  
 Yes  
 No [THANK AND TERMINATE]  
 DON'T KNOW [THANK AND TERMINATE]

16. Have you participated in any of the utilities' energy efficiency program or purchased any of the promoted products?  
 Yes  
 No [SKIP TO Q20]  
 DON'T KNOW [SKIP TO Q20]

17. Would you participate in the program again should you have the opportunity?  
 Yes [THANK AND TERMINATE]  
 Don't have authority (N/A) to make decisions on energy using equipment [THANK AND TERMINATE]  
 No  
 DON'T KNOW

18. Why do you say that?  
 Program incentives were not enough  
 It wasn't worth the hassle (describe)  
 Payback wasn't sufficient  
 OTHER (specify) \_\_\_\_\_

19. Please describe the conditions that may be sufficient for your business to participate again in a utility-sponsored energy efficiency program.

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[IF Q16=YES, THANK AND TERMINATE SURVEY, CONTINUE WITH SITE VISIT ELEMENTS]

20. I am going to read a list of possible reasons for not participating in an energy efficiency program. Please indicate for each reason whether it is true for you.

- I didn't know I was eligible
- I have not recently purchased any of the items we have talked about in this survey
- I don't have authority (N/A) to make decisions on energy using equipment
- I have purchased items but they were not energy efficient
- I don't know how to find out more about the programs
- Salesperson didn't talk to me about any programs
- Program incentives were not enough
- It wasn't worth the hassle (describe)
- payback wasn't sufficient
- OTHER (specify) \_\_\_\_\_

[IF Q18=INCENTIVES OR Q18=HASSLE OR Q18=PAYBACK]

21. Please describe the conditions that may be sufficient for your business to participate in a utility sponsored energy efficiency program.

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**THANK AND PROCEED WITH FACILITY WALK THROUGH & SITE VISIT DATA COLLECTION**

Purpose of walk through/site visit data collection is to determine types and quantities of energy using equipment installed/operating within the facility, and to assess what proportion of this equipment is currently energy efficient.

Areas/energy end-uses to be assessed include:

- o Lighting
- o Heating, Ventilation, Air Conditioning (HVAC) and Controls
- o Building Envelope
- o Water Heating
- o Motors
- o Refrigeration (self contained and remote)
- o Compressed Air
- o Process Heat
- o Cooking/Food Services Equipment
- o Appliances
- o Pools and Spas
- o Standby Power/Office Equipment
- o Other Uses
- o On-Site Generation (which should already be documented in section above)





## 2- Facility Heating and Cooling Continued

In general, provide an assessment of how well maintained the facility AHUs are by characterizing them as: Poor / Fair / Good / Excellent

Briefly provide reason why characterized that way: \_\_\_\_\_

Assign a unique system no. for each AHU and Ventilation System Type. Describe or use abbreviations. Motor data not required if under 1.0 HP. Associate with main heating/cooling system using Sys. No. from previous page. (add model number and manufacturer when available)

AHU No.	Space Air Distribution Equipment	Count of Each Type	Assoc. Main Heating System	Assoc. Main Cooling System	Run Time % of Week	VAV? (Y/N)	Air Vol. Ctrl. Type	Heating Capacity kBTUh	Cooling Capacity kBTUh	S/R Fan Motor HP	S/R Fan Motor Eff.	Is there humidity control? (H/D/B)	OA Economizer? (Y/N)	
														<b>Table of Popular Air System Types</b>
														Hot water fan/coil
														Steam fan/coil
														Chilled water fan/coil
														HW & Chilled water fan/coil
														DX Packaged System
														Window Unit
														Furnace
														Hydronic heat pump
														Electric heat pump
														Distributed Refrigeration Evaporator
														Packaged Terminal Heat Pump
														Packaged Terminal Air Conditioner
														Other (specify)

Vent. Sys. No.	Ventilation System Type	Count of Each Type	Assoc. Main Heating System	Assoc. Main Cooling System	Run Time % of Week	VAV? (Y/N)	Air Vol. Ctrl. Type	Heating Capacity kBTUh	Cooling Capacity kBTUh	S/R Fan Motor HP	S/R Fan Motor Eff.	Heat Recovery? (Y/N)	
													<b>Table of Popular Ventilation System Types</b>
													OA Economizer on AHU (AHU No.)
													Lab Hood Exhaust Fan
													Kitchen Hood Exhaust Fan
													Toilet Exhaust Fan
													Process Exhaust Fan
													Stairwell Exhaust Fan
													Elevator Shaft Exhaust Fan
													Other Exhaust Fan
													Make-up Air Unit (AHU No.)
													Heat Recovery Ventilator
													Enthalpy Wheel
													Other (specify)

## 2- Facility Heating and Cooling Continued

Assign a unique system no. for each equipment type. Describe or use abbreviations. Motor data not required if under 1.0 HP. Associate with main heating/cooling system using Sys. No. from previous page (add manufacturer and model number were available)

Equip No.	Central Heating Equipment Type	Assoc. Central Heating System	Output Heating Capacity kBTU/h	Fuel Used	Rated Eff.	Burner Motor HP	Burner Motor Eff.	Burner Cap. Ctrl.	Solar Assist? (Y/N)	Age in Years	Used for Process Heat? (Y/N)

Equip No.	Central Cooling Equipment Type	Assoc. Central Cooling System	Output Cooling Capacity kBTU/h	Fuel Used	Rated Eff.	Cap. Ctrl. Type	Used for Process Cool? (Y/N)	Age in Years		

Equip No.	Heat Rejection Equipment Type	Assoc. Central Cooling System	No of Tower Cells	Rated Motor HP	Motor Rated Eff.	Cap. Ctrl. Type	Cap. Ctrl. Type	Used for Process Cool? (Y/N)	Age in Years	

Pump No.	HVAC Pump Type	Central Heating System	Central Cooling System	Rated Motor HP	Rated Motor Eff.	Parallel W/Pump No.	Flow. Ctrl. Type	Age in Years		

**Chiller Types**  
 Reciprocating  
 Screw Compressor  
 Scroll Compressor  
 Open Centrifugal  
 Hermetic Centrifugal  
 1-Stage Absorption  
 2-Stage Absorption  
 Engine Driven  
 DX  
 Other (describe)

**Abbreviation**  
 Recip  
 Screw  
 Scroll  
 Open Cent  
 Herm Cent  
 Abs -1 Stg  
 Abs -2 Stg  
 Engine  
 DX

**Heat Rejection Types**  
 Open Water Tower  
 Closed Water Tower  
 Water Cooled Condenser  
 Air Cooled Condenser  
 Evaporative Cooler

**Abbreviation**  
 OWT  
 CWT  
 WCC  
 ACC  
 EC

### 3 - Building Envelope

In general, provide an assessment of how well maintained the facility envelope is by characterizing it as:  
 Poor / Fair / Good / Excellent

Briefly provide reason why characterized that way: \_\_\_\_\_

#### Exterior Walls – if W1 represents > approximately 80% of total walls, skip W2

(between conditioned space and outdoors):		W1	W2	W3
Wall construction type	<i>From Wall Type table below</i>			
Insulation material type	<i>From Insulation Type table below</i>			
Insulation R-value				
Estimated Wall Height	<i>From Ground to Roof</i>			
Approx. % of Total Wall Area		%	%	%

#### Roof/Ceiling – if R1 represents > approximately 80% of total roof area, skip R2

		R1	R2
Roof or Top Floor Area (ft <sup>2</sup> )			
Roof construction type	<b>RFAT</b> = Framed With Attic <b>RMET</b> = Metal Decking <b>RFNO</b> = Framed Without Attic <b>RCON</b> = Concrete Decking <b>RADB</b> = Adiabatic	RFAT RMET RFNO RCON RADB	RFAT RMET RFNO RCON RADB
Roof Surface	<b>B</b> = Built-up <b>W</b> = Wood Shingle <b>M</b> = Metal <b>C</b> = Clay/Cement Tile <b>A</b> = Asphalt Roll/shingle <b>U</b> = Urethane	B    W M    C A    U	B    W M    C A    U
Roof Finish	<b>R</b> = Reflective <b>F</b> = Flat	R    F	R    F
Roof Color	<b>D</b> = Dark <b>M</b> = Medium <b>L</b> = Light	D   M   L	D   M   L
Roof Insulation material type	<i>From Insulation Type table</i>		
Roof Insulation R-value			
Suspended Ceiling?	<i>At roof level</i>	Y   N	Y   N
Ceiling Insulation type	<i>From Insulation Type table</i>		
Ceiling Insulation R-value			
Skylights?		Y   N	Y   N
Approx. % of Total Roof Area		%	%

#### Floor

		F1
Bottom Floor Area (ft <sup>2</sup> )	Estimate or take off available plans	SqFt
Floor construction type	<b>S</b> = Slab <b>C</b> = Crawl <b>U</b> = Unheated Basement <b>O</b> = Open (Garage) <b>A</b> = Adiabatic	S    C    U O    A
Insulation material type	<i>From Insulation Type table</i>	
Insulation R-value		

Wall Types	Wall Types (Cont.)	Insulation Types	(R/in)
WFF 2 X 4 Wood Frame	WC8 8" Solid Concrete	BAT Batt or Blanket	3.3
WFM 2 X 4 Metal Frame	WC10 10" Solid Concrete	LSF Loose fill	2.7
WSF 2 X 6 Wood Frame	WC12 12" Solid Concrete	XPE Expanded perlite	2.8
WSM 2 X 6 Metal Frame	WBLO Concrete Block	XPS Expanded polystyrene	3.8-5.0
WAIR Air	WBRI Brick	RDG Rigid board	2.8-4.0
WC4 4" Solid Concrete	WGLS Glass Curtain	N None	0
WC6 6" Solid Concrete	WADB Adiabatic or Below Grade	OTH1 Other1 _____	_____
WCM Corrugated Metal	Other _____	OTH2 Other2 _____	_____

**Building Envelope Continued**

<b>Windows/Fenestration:</b>		<b>G1</b>				<b>G2</b>				<b>G3</b>			
Layers of glazing													
Type of glazing	<b>C</b> = Clear <b>T</b> = Tinted <b>R</b> = Reflective <b>O</b> = Opaque	<b>C</b>	<b>T</b>	<b>R</b>	<b>O</b>	<b>C</b>	<b>T</b>	<b>R</b>	<b>O</b>	<b>C</b>	<b>T</b>	<b>R</b>	<b>O</b>
Glazing features	<b>N</b> = None <b>L</b> = Low E <b>G</b> = Gas Filled	<b>N</b>	<b>L</b>	<b>G</b>	<b>N</b>	<b>L</b>	<b>G</b>	<b>N</b>	<b>L</b>	<b>G</b>	<b>N</b>	<b>L</b>	<b>G</b>
Interior shading	<b>F</b> = Fixed <b>M</b> = Moveable <b>N</b> = None	<b>F</b>	<b>M</b>	<b>N</b>	<b>F</b>	<b>M</b>	<b>N</b>	<b>F</b>	<b>M</b>	<b>N</b>	<b>F</b>	<b>M</b>	<b>N</b>
% of exterior wall that is glass		%				%				%			



## 5 - Motors

In general, provide an assessment of how well maintained the facility motors are by characterizing them as:  
 Poor / Fair / Good / Excellent

Briefly provide reason why characterized that way: \_\_\_\_\_

Item #	Description	Service Type	Control Type	Size (hp)	# of Units	Nom. Eff. %**	Drive Type	Duty Type	Avg Age (yrs)	Avg run hrs per week*
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										

\* “Avg run hrs per week” estimate is required for each motor item.

\*\* Enter Nominal Efficiency as a % or if not available, use: **S**=Standard **H**=High-efficiency **P**=Premium-efficiency

### Motor Codes:

Service Type	Control Type	Drive Type	Duty Type
<b>P</b> : Pump <b>F</b> : Fan/Blower <b>M</b> : Material Handling/conveyor <b>T</b> : Machine Tool <b>G</b> : Grinding/milling <b>E</b> : Escalator <b>PE</b> : Passenger Elevator <b>FE</b> : Freight Elevator <b>S</b> : Separation <b>O</b> : Other _____	<b>T</b> : Throttled <b>M</b> : Mechanical VSD <b>E</b> : Electronic VSD <b>C</b> : Constant Speed	<b>AC</b> : AC <b>DC</b> : DC <b>N</b> : Non-electric	<b>C</b> : Constant <b>V</b> : Variable <b>I</b> : Intermittent

## 6 - Refrigeration Equipment - Self Contained

In general, provide an assessment of how well maintained the facility self contained refrigeration systems are by characterizing them as: Poor / Fair / Good / Excellent

Briefly provide reason why characterized that way: \_\_\_\_\_

### Non-Commercial Refrigerator/Freezers:

N/A

Item #	Equip Code	Equipment Description	Total # of Units	Average Age (years)	Energy Star? (#)
1	1D	Single-door			
2	2D	Two-door ( <u>T</u> op, <u>B</u> ottom or <u>S</u> ide freezer)			
3	UC	Under counter			
4	UF	Upright freezer			
5	CH	Chest freezer			
6	OT	(describe) _____			

### Commercial Refrigeration Equipment:

N/A

Item #	Equip Code	Size (L, Ft or Cu. Ft)	# of Doors	*Amps @ 120V	*Amps @ 208V	Amps@ 240V	Age	Total # of units
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								

*\*Note: Amps listed should not include defrost heater amperage.*

### Commercial Refrigeration Equipment Codes

Equip Code	Equipment Description
<b>GDR</b>	Glass Door Reach-In Refrigerator
<b>GDF</b>	Glass Door Reach-In Freezer
<b>SDR</b>	Solid Door Reach-In Refrigerator
<b>SDF</b>	Solid Door Reach-In Freezer
<b>GDB</b>	Glass door beverage cases (e.g. vendor supplied) from 2 to 4 doors
<b>OU</b>	Open upright display cases (pizza, juice, etc.) usually 4,5,6 ft lengths
<b>IC</b>	Island cases (cheese, sometimes produce or juice) from 8 to 16 ft long
<b>SC</b>	Service cases (bakery, sometimes deli) from 4 to 8 ft long
<b>CD</b>	Closed door storage cabinets (e.g. backbar storage cabinet for wine & beer)
<b>CF</b>	Coffin type glass top freezer cases (usually ice cream) typically 6 or 8 ft
<b>IB</b>	Ice storage boxes
<b>OT</b>	Other: self-contained refrigeration not listed above
<b>VM</b>	Soft drink vending machine
<b>IV</b>	Ice vending machines (hotel-sized icemaker)

## 7 - Remote Refrigeration Equipment

In general, provide an assessment of how well maintained the facility remote refrigeration systems are by characterizing them as: Poor / Fair / Good / Excellent

Briefly provide reason why characterized that way: \_\_\_\_\_

### Display Cases:

Item #	# __	# __	# __	# __	# __
Type/Suction Temperature: <b>IC</b> = Ice Cream/Frozen Juices (-35 °F) <b>FF</b> = Frozen Food/Meat/Bakery (-25 °F) <b>MD</b> = Fresh Meat/Deli-Meat (+10 °F) <b>DP</b> = Dairy/Produce/Beverage (+20 °F)	IC FF MD DP	IC FF MD DP	IC FF MD DP	IC FF MD DP	IC FF MD DP
Case Lighting N=None F=Fluor. L=LED	N F L	N F L	N F L	N F L	N F L
<b>Size:</b>					
Single-decks: Total length (ft.)					
Multi-decks:* Total length (ft.)					
Double-wide islands: Total length (ft.)					
Glass-door cases: # of doors					

\*Multiple Shelves

If information requested in this highlighted section can not be determined by visual inspection, ask customer for information and get equipment make and model# if easily accessible.

Defrost control type (*req'd for all*):

E = Electric G = Hot Gas  
T = Timed-off N = None

E G	E G	E G	E G	E G
T N	T N	T N	T N	T N

External liquid-suction heat exchangers?

Y N	Y N	Y N	Y N	Y N
-----	-----	-----	-----	-----

Anti-sweat heater control?

Y N	Y N	Y N	Y N	Y N
-----	-----	-----	-----	-----

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### Walk-Ins/Prep Areas:

Item Letter	Ltr __				
Type/Suction Temp. Range: <b>F</b> = Freezer (0 to -10 °F) <b>C</b> = Cooler (30 to 40 °F) <b>P</b> = Prep Area (50 to 55 °F)	F C P	F C P	F C P	F C P	F C P
Floor Area (ft <sup>2</sup> )					
Ceiling Height (ft)					
Defrost control type: <b>E</b> = Electric <b>G</b> = Hot Gas <b>T</b> = Timed-off <b>N</b> = None	E G T N				
Space Lighting F=Fluor. L=LED I=Incand.	F L I	F L I	F L I	F L I	F L I
Light Controls <b>O</b> =Occu. sensor <b>W</b> =Wall Switch	O W	O W	O W	O W	O W
Strip curtains?	Y N	Y N	Y N	Y N	Y N

If information requested in this highlighted section can not be determined by visual inspection, ask customer for information and get equipment make and model# if easily accessible.

Defrost control type:

E = Electric G = Hot Gas  
T = Timed-off N = None

E G	E G	E G	E G	E G
T N	T N	T N	T N	T N

Commercial/Industrial Site Visit Data Collection Form for New Hampshire Energy Efficiency Potential Study

<b>Compressors:</b>	Item #	# __	# __	# __	# __	# __
Type: C = Conventional S = Two-stage multiplex T = Twins M = Multiplex A=Absorption O = Other		C S T M A O				
Compressor Total hp						
Number of compressors						
Unloader or VSD compressors?		U V	U V	U V	U V	U V
High-eff. (discus or scroll) compressors?		Y N	Y N	Y N	Y N	Y N
Subcooling Type: A = Ambient M = Mechanical N = None		A M N	A M N	A M N	A M N	A M N
Refrigerant Type (from Nameplate: Ammonia, R-22, etc.)						
Floating Head Pressure Control?		Y N	Y N	Y N	Y N	Y N
-- Very Low Head Pressure control?		Y N	Y N	Y N	Y N	Y N
Heat recovery type: N = None S = Space heating/Reheat W = Water heating O = Other _____		N S W O				
Serves Case/Walk-In( <i>List System # or letter</i> )						
Manufacturer						
Model #						

<b>Condensers:</b>	Item #	# __	# __	# __	# __	# __
Type: A = Air-cooled W = Water-cooled P = Air-cooled w/precooler C = Close-approach		A W P C				
Total fan horsepower (all types) -- Motor Eff.: <b>Nom. %</b> <u>OR</u> S=Std. H=HiEff P=Premium -- VSD fan?		S H P Y N				
Pump motor hp (water-cooled units only) -- Motor Eff.: <b>Nom. %</b> <u>OR</u> S=Std. H=HiEff P=Premium -- VSD pump?		S H P Y N				
Serves Compressor # ( <i>A if all</i> )						

<b>Economizers:</b>	Item #	# __	# __	# __	# __	# __
		Y N	Y N	Y N	Y N	Y N

### 8 - Compressed Air

In general, provide an assessment of how well maintained the facility compressed air systems are by characterizing them as: Poor / Fair / Good / Excellent

Briefly provide reason why characterized that way: \_\_\_\_\_

Does the facility have a Leak Reduction Maintenance Program?  YES  NO

Item #	Description	Comp Type	Appl Type	Control Type	Size (hp)	# of Units	Nom. Eff. %**	Drive Type	Avg Age (yrs)	Avg run hrs per week*	Manufacturer	Model#
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
14												
15												
16												
17												
18												
19												
20												

\* "Avg run hrs per week" estimate is required for each air compressor item

\*\* Enter Nominal Efficiency as a % or if not available, use: **S**=Standard **H**=High-efficiency **P**=Premium-efficiency

#### Air Compressor Codes:

Compressor Type	Application Types	Control Type	Drive Type
<b>RTD:</b> Reciprocating (Two-stage, Double-acting)	<b>P</b> -Industrial Process	<b>S</b> -Start/Stop	<b>AC</b>
<b>RST:</b> Reciprocating (Single-stage, Double-acting)	<b>H</b> -HVAC Pneumatic	<b>L</b> -Load/Unload	<b>DC</b>
<b>RTS:</b> Reciprocating (Two-stage, Single-acting)	<b>O</b> -Other _____	<b>V</b> -VSD Throttling	<b>N</b> : Non-electric
<b>RSS:</b> Reciprocating (Single-stage, Single-acting)		<b>T</b> -Throttling	
<b>ST:</b> Rotary Screw (Two-stage)		<b>O</b> -Other _____	
<b>C:</b> Centrifugal			
<b>O:</b> Other _____			

### 9 - Process Heat

In general, provide an assessment of how well maintained the facilities independent process heating systems are by characterizing them as: Poor / Fair / Good / Excellent

Briefly provide reason why characterized that way: \_\_\_\_\_

When completing the table below, link all systems to the facility heating and cooling codes gathered in Section 2

Item #	Process Code	Product Produced	# of Machines	Rated Heat Input (specify units)	Avg Age of Equipment (yrs)	Waste Heat Recovery (Y/N)	Primary Fuel		Heat System/ Eqt #	Avg hrs per week*
							Fuel	% of Annual Btu		
1							E G O	%		
2							E G O	%		
3							E G O	%		
4							E G O	%		
5							E G O	%		
6							E G O	%		
7							E G O	%		
8							E G O	%		
9							E G O	%		
10							E G O	%		

\* "Avg hrs per week" estimate is required for each process equipment item.

#### Process Equipment Codes:

Process	Process Code
Heat Processing	HP
Dehydration	DHD
Material Preparation:	MP
Filtration	FL
Finishing	FI
Pulping	PLP
Paper Preparation	PP
Separation and Distillation	SD
Solid-Liquid Extraction	SLE
Plastic Molding	PM
Washing and Drying	WD
Drying/Curing/Baking	DCB
Refrigeration/Freezing	RF
Mixing and Emulsification	M&E
Fiber Preparation	FP
Crystallization	CR
Screening and Separation	SS
Exploration and Drilling	ED
Emission Reduction Equipment	ERD (1)

(1) If Emission Reduction Equipment is used in the plant, does this include Thermo Oxidizer(s)?

( Yes No )

If Yes, is it regenerative (recovers heat from the oxidization process)? (Yes No)

## 10 - Cooking/Food Service Equipment

In general, provide an assessment of how well maintained the facility cooking systems are by characterizing them as: Poor / Fair / Good / Excellent

Briefly provide reason why characterized that way: \_\_\_\_\_

Item #	Equip Code	Equipment Description	Total # of Electric Units	Average kW	Total # of Non-Electric Units	Average kBtuh	Avg hrs per week*
	FS	Fryer, Any-type w/solid-state control					
	FC	Fryer, Counter-type					
	FF	Fryer, Floor-type					
	FI	Fryer, Induction (1 vat reference)					
	IF	Infrared Power Burner Fryer					
	GE	Griddle, Efficient (note make/model)					
	HT	Hot Food Holding Cabinet					
	OV	Oven (in Range or standalone)					
	IO	Infrared Power Burner Oven					
	CO	Oven, Convection					
	ICO	Infrared Conveyor Oven					
	FO	Oven, Finishing/Toaster					
	FB	Oven, FlashBake					
	MW	Oven, Microwave					
	PC	Oven, Pizza, Counter-top					
	PL	Oven, Pizza, Large					
	STP	Steamer, Pressurized					
	STNP	Steamer, Non-Pressurized					
	SV	Steamer, Vacuum-type					
	DCE	Demand Control Exhaust Hood					
	WDS	Wash Down/Sanitation					

## 11 – Appliances

In general, provide an assessment of how well maintained the facility appliances are by characterizing them as: Poor / Fair / Good / Excellent

Briefly provide reason why characterized that way: \_\_\_\_\_

Item #	Equip Code	Equipment Description	Fuel Type	Total # of units	Approx Age (yrs)	Avg hrs per week	High Efficiency?
1			E G O				Y N
2			E G O				Y N
3			E G O				Y N
4			E G O				Y N
5			E G O				Y N
6			E G O				Y N
7			E G O				Y N
8			E G O				Y N
9			E G O				Y N

ID	Equipment Type	ID	Equipment Type
	<b>Laundry</b>		<b>Other</b>
L1	Clothes Dryer, Residl.	OT	Describe in Equip. Description
L2	Clothes Washer, Residl.		Incl: ENERGY STAR compliant Single Door refrigerator, TVs (LCD, Plasma, etc.)
L3	Clothes Dryer, Commcl.		
L4	Clothes Washer, Commcl.		
L5	Dry Cleaning Unit		

## 12 - Pool/SPA

In general, provide an assessment of how well maintained the facility pools/spas are by characterizing them as: Poor / Fair / Good / Excellent

Briefly provide reason why characterized that way: \_\_\_\_\_

N/A

	# 1	# 2	# 3
Type: <b>S</b> = Swimming Pool <b>H</b> = Hot Tub <b>O</b> = Other _____	S H O	S H O	S H O
What is the size of the pool (sq. ft.)?			
Dedicated water heater? If yes, note Item #			
Pool Cover in use?	Y N	Y N	Y N
Months heated start... (1...12)			
stop... (1...12)			
Solar collector area in use (ft <sup>2</sup> )			
Temperature Control Measures?	Y N	Y N	Y N
On-Demand Ventilation Control?	Y N	Y N	Y N

Notes: \_\_\_\_\_

## 13 – Time Permitting: Standby Power Office Equipment

In general, provide an assessment of how well maintained the facility office equipment is by characterizing them as: Poor / Fair / Good / Excellent

Briefly provide reason why characterized that way: \_\_\_\_\_

Item #	Equip ment Code	Equipment Description	Total # of units (check one)					ENERGY STAR? Yes/No	Avg age of stock (yrs)	How often replaced? (yrs)
			0	1 - 5	6 - 20	21 - 50	> 50			
1	PC	Personal Computer								
2	PTR	Printer								
3	UPS	Uninterruptible Power Supply								
4	COP	Copier								
5	BP	Blueprint Machine								
6	MON	Monitor/Terminal								
7	MAIN	Computer – Mainframe								
8	SERV	Servers								
9	SWEQ	Switching Equipment								
10	FAX	FAX machine								
11	TEL	Telephone System								
12	POS	Point-of-Sale Terminals								
13	REG	Cash Registers								
14	SHRD	Shredder								
15	OT1	Other (describe) _____								
16	OT2	Other (describe) _____								
17	OT3	Other (describe) _____								
18	OT4	Other (describe) _____								
19	OT5	Other (describe) _____								
20	OT6	Other (describe) _____								

### 14 - Time Permitting: Other Uses

In general, provide an assessment of how well maintained the other facility equipment is by characterizing them as: Poor / Fair / Good / Excellent

Briefly provide reason why characterized that way: \_\_\_\_\_

ID	Equipment Type	Default kW (kBtuh)	In Use
<b>Building Equipment</b>			
B1	Air Hand Dryers	2.3	Y N
B4	Battery Charger	3.2	Y N
B7	Water Coolers (Drinking)	0.5	Y N
<b>Medical/Hospital</b>			
M1	Autoclave	1.2	Y N
M2	CAT Scan Machine	75	Y N
M3	Centrifuge	4.2	Y N
M4	Chromatograph, analyzer	1.5	Y N
M5	Cytometer, blood analyzer	2.0	Y N
M8	Hot Plate, Lab Equip.	2.5 (20)	Y N
M9	Incubator	1.5	Y N
M10	Laboratory Oven	1.5 (15)	Y N
M12	Sterilizer	1.0 (10)	Y N
M13	X-Ray Machine	4.6	Y N
<b>Electronics</b>			
E2	Stereo System	0.25	Y N
E3	Television	0.28	Y N
E4	Video Recorder (VCR)	0.5	Y N
<b>Service/Retail</b>			
R1	ATM Machine	1.0	Y N
R4	Film Processing	3.0	Y N
R5	Photo Equipment	1.7	Y N
R7	Hair Dryers	1.0	Y N
R8	Exercise Equipment	1.0	Y N
R9	Industrial Compactor	2.8	Y N
R10	Vending Machine, Hot Food	0.8	Y N
R11	Vending Machine, Refrig.	0.9	Y N
<b>Shop Equipment</b>			
S1	Forklifts	7.5 (50)	Y N
S2	Hand Truck/Pallet Lifts	2.5 (15)	Y N
S3	Non-Forklift Elec. Vehicles	10	Y N
S4	Other Electric Transport	10	Y N
S5	Battery Chargers	1.5	Y N
S6	Electric Crane	3.4	Y N
S10	Welder	30 (120)	Y N
<b>Space Comfort</b>			
C1	Air Cleaner	0.5	Y N
C2	Ceiling or Portable Fan	0.2	Y N
C3	Dehumidifier	0.6	Y N
5	Portable Heater	1.4 (10)	Y N

### 15 – Time Permitting: Distribution Transformers

In general, provide an assessment of how well maintained the distribution transformers are by characterizing them as: Poor / Fair / Good / Excellent

Briefly provide reason why characterized that way: \_\_\_\_\_

Item #	Type	KVA	Voltage	# of Units	Avg Age (yrs)	3-phase?	Manufacturer	Model Number
1						Y N		
2						Y N		
3						Y N		
4						Y N		

**Transformer Codes:**

Type	Voltage	Efficiency
<b>LI:</b> Liquid Immersed <b>DT:</b> Dry-Type	<b>Low:</b> Low Voltage (Primary voltage < 600 volts) <b>Med:</b> Medium Voltage (Primary voltage between 2.4kV and 35kV)	<b>S:</b> Standard <b>HE:</b> High Efficiency (=>NEMA TP-1 Standard)