

Case No.: <u>14-1256-EL-EEC</u>

Mercantile Customer:	Procter & Gamble
Electric Utility:	Duke Energy
Program Title or Description:	Air Cooled Chiller Tune Ups

Rule 4901:1-39-05(F), Ohio Administrative Code (O.A.C.), permits a mercantile customer to file, either individually or jointly with an electric utility, an application to commit the customer's existing demand reduction, demand response, and energy efficiency programs for integration with the electric utility's programs. The following application form is to be used by mercantile customers, either individually or jointly with their electric utility, to apply for commitment of such programs in accordance with the Commission's pilot program established in Case No. <u>10-834-EL-POR</u>

Completed applications requesting the cash rebate reasonable arrangement option (Option 1) in lieu of an exemption from the electric utility's energy efficiency and demand reduction (EEDR) rider will be automatically approved on the sixty-first calendar day after filing, unless the Commission, or an attorney examiner, suspends or denies the application prior to that time. Completed applications requesting the exemption from the EEDR rider (Option 2) will also qualify for the 60-day automatic approval so long as the exemption period does not exceed 24 months. Rider exemptions for periods of more than 24 months will be reviewed by the Commission Staff and are only approved up the issuance of a Commission order.

Complete a separate application for each customer program. Projects undertaken by a customer as a single program at a single location or at various locations within the same service territory should be submitted together as a single program filing, when possible. Check all boxes that are applicable to your program. For each box checked, be sure to complete all subparts of the question, and provide all requested additional information. Submittal of incomplete applications may result in a suspension of the automatic approval process or denial of the application.

Any confidential or trade secret information may be submitted to Staff on disc or via email at <u>ee-pdr@puc.state.oh.us</u>.

# Section 1: Mercantile Customer Information

Name: Procter & Gamble

Principal address: **11510 Reed Hartman Hwy Blue Ash, OH 45241** 

Address of facility for which this energy efficiency program applies:

8340 Mason Montgomery Road	Mason,	ОН	45040
11473 Grooms Road	Blue Ash,	ОН	45241
6083 Center Hill Ave	Cincinnati,	ОН	45224

Name and telephone number for responses to questions:

### Megan Fox, (513)287-3367

Electricity use by the customer (check the box(es) that apply):

- □ The customer uses more than seven hundred thousand kilowatt hours per year at the above facility. (Please attach documentation.)
- ✓ The customer is part of a national account involving multiple facilities in one or more states. (Please attach documentation.)

## Section 2: Application Information

- A) The customer is filing this application (choose which applies):
  - □ Individually, without electric utility participation.

# ✓ Jointly with the electric utility.

- B) The electric utility is: **Duke Energy**
- C) The customer is offering to commit (check any that apply):
  - Energy savings from the customer's energy efficiency program. (Complete Sections 3, 5, 6, and 7.)
  - □ Capacity savings from the customer's demand response/demand reduction program. (Complete Sections 4, 5, 6, and 7.)
  - ✓ Both the energy savings and the capacity savings from the customer's energy efficiency program. (Complete all sections of the Application.)

# **Section 3: Energy Efficiency Programs**

- A) The customer's energy efficiency program involves (check those that apply):
  - □ Early replacement of fully functioning equipment with new equipment. (Provide the date on which the customer replaced fully functioning equipment, and the date on which the customer would have replaced such equipment if it had not been replaced early. Please include a brief explanation for how the customer determined this future replacement date (or, if not known, please explain why this is not known)).
  - Installation of new equipment to replace equipment that needed to be replaced The customer installed new equipment on the following date(s):
     <u>Month and Year</u>
  - □ Installation of new equipment for new construction or facility expansion. The customer installed new equipment on the following date(s):
  - ✓ Behavioral or operational improvement.

## 2013 installation

- B) Energy savings achieved/to be achieved by the energy efficiency program:
  - If you checked the box indicating that the project involves the early replacement of fully functioning equipment replaced with new equipment, then calculate the annual savings [(kWh used by the original equipment) – (kWh used by new equipment) = (kWh per year saved)]. Please attach your calculations and record the results below:

Annual savings: \_\_\_\_\_kWh

2) If you checked the box indicating that the customer installed new equipment to replace equipment that needed to be replaced, then calculate the annual savings [(kWh used by less efficient new equipment) – (kWh used by the higher efficiency new equipment) = (kWh per year saved)]. Please attach your calculations and record the results below:

Annual savings: \_\_\_\_\_kWh

Please describe any less efficient new equipment that was rejected in favor of the more efficient new equipment.

 If you checked the box indicating that the project involves equipment for new construction or facility expansion, then calculate the annual savings [(kWh used by less efficient new equipment) – (kWh used by higher efficiency new equipment) = (kWh per year saved)]. Please attach your calculations and record the results below:

# Annual savings: XXXXX kWh (See Attachment 1 - Appendix 2)

Please describe the less efficient new equipment that was rejected in favor of the more efficient new equipment.

4) If you checked the box indicating that the project involves behavioral or operational improvements, provide a description of how the annual savings were determined.

Annual savings: 1,566,300 kWh (See Attachment 1 - Appendix 2)

# Section 4: Demand Reduction/Demand Response Programs

- A) The customer's program involves (check the one that applies):
  - ✓ Coincident peak-demand savings from the customer's energy efficiency program.
  - □ Actual peak-demand reduction. (Attach a description and documentation of the peak-demand reduction.)
  - D Potential peak-demand reduction (check the one that applies):
    - □ The customer's peak-demand reduction program meets the requirements to be counted as a capacity resource under a tariff of a regional transmission organization (RTO) approved by the Federal Energy Regulatory Commission.
    - □ The customer's peak-demand reduction program meets the requirements to be counted as a capacity resource under a program that is equivalent to an RTO program, which has been approved by the Public Utilities Commission of Ohio.
- B) On what date did the customer initiate its demand reduction program?

## Month(s) and Year(s)

C) What is the peak demand reduction achieved or capable of being achieved (show calculations through which this was determined):

## 2004.86 KW (See Attachment 1 - Appendix 2)

# Section 5: Request for Cash Rebate Reasonable Arrangement (Option 1) or Exemption from Rider (Option 2)

Under this section, check the box that applies and fill in all blanks relating to that choice.

Note: If Option 2 is selected, the application will not qualify for the 60-day automatic approval. All applications, however, will be considered on a timely basis by the Commission.

A) The customer is applying for:

## ✓ Option 1: A cash rebate reasonable arrangement.

OR

□ Option 2: An exemption from the energy efficiency cost recovery mechanism implemented by the electric utility.

## OR

- □ Commitment payment
- B) The value of the option that the customer is seeking is:
  - Option 1: A cash rebate reasonable arrangement, which is the lesser of (show both amounts):
    - ✓ A cash rebate of \$8,466.00 (See Attachment 1 Appendix 3).
  - Option 2: An exemption from payment of the electric utility's energy efficiency/peak demand reduction rider.
    - An exemption from payment of the electric utility's energy efficiency/peak demand reduction rider for \_\_\_\_\_ months (not to exceed 24 months). (Attach calculations showing how this time period was determined.)

## OR

A commitment payment valued at no more than \$\_\_\_\_\_. (Attach documentation and calculations showing how this payment amount was determined.)

- OR
- Ongoing exemption from payment of the electric utility's energy efficiency/peak demand reduction rider for an initial period of 24 months because this program is part of the customer's ongoing efficiency program. (Attach documentation that establishes the ongoing nature of the program.) In order to continue the exemption beyond the initial 24 month period, the customer will need to provide a future application establishing additional energy savings and the continuance of the organization's energy efficiency program.)

## Section 6: Cost Effectiveness

The program is cost effective because it has a benefit/cost ratio greater than 1 using the (choose which applies):

- Total Resource Cost (TRC) Test. The calculated TRC value is: \_\_\_\_\_\_
   (Continue to Subsection 1, then skip Subsection 2)
- Utility Cost Test (UCT). The calculated UCT value is X.XX (See Attachment 1 Appendix 4)

## Subsection 1: TRC Test Used (please fill in all blanks).

The TRC value of the program is calculated by dividing the value of our avoided supply costs (generation capacity, energy, and any transmission or distribution) by the sum of our program overhead and installation costs and any incremental measure costs paid by either the customer or the electric utility.

The electric utility's avoided supply costs were \_\_\_\_\_.

Our program costs were \_\_\_\_\_.

The incremental measure costs were \_\_\_\_\_.

Subsection 2: UCT Used (please fill in all blanks).

We calculated the UCT value of our program by dividing the value of our avoided supply costs (capacity and energy) by the costs to our electric utility (including administrative costs and incentives paid or rider exemption costs) to obtain our commitment.

Our avoided supply costs were **\$391,090 (See Attachment 1 - Appendix 5).** 

The utility's program costs were **\$30,550(See Attachment 1 - Appendix 6)**.

The utility's incentive costs/rebate costs were **\$8,466 (See Attachment 1 - Appendix 3)**.

## Section 7: Additional Information

Please attach the following supporting documentation to this application:

Narrative description of the program including, but not limited to, make, model, and year of any installed and replaced equipment.

A copy of the formal declaration or agreement that commits the program or measure to the electric utility, including:

- 1) any confidentiality requirements associated with the agreement;
- 2) a description of any consequences of noncompliance with the terms of the commitment;
- 3) a description of coordination requirements between the customer and the electric utility with regard to peak demand reduction;
- 4) permission by the customer to the electric utility and Commission staff and consultants to measure and verify energy savings and/or peak-demand reductions resulting from your program; and,
- 5) a commitment by the customer to provide an annual report on your energy savings and electric utility peak-demand reductions achieved.

## Refer to Offer Letter following this application

A description of all methodologies, protocols, and practices used or proposed to be used in measuring and verifying program results. Additionally, identify and explain all deviations from any program measurement and verification guidelines that may be published by the Commission.

# Attachment 1 – Customer Name

# Appendix 1 – Electric History

50503770 01				
GILLIGAN OIL	CO			
9188 PLAINFIE	ELD RD	)		
CINCINNATI,	OH 45	236		
Date	Days	Read	Actual KWH	Bill KWH
6/24/2014	28	4269	11,360	11,360
5/27/2014	32	3985	12,040	12,040
4/25/2014	30	3684	10,880	10,880
3/26/2014	29	3412	10,400	10,400
2/25/2014	32	3152	10,520	10,520
1/24/2014	29	2889	11,120	11,120
12/26/2013	34	2611	12,440	12,440
11/22/2013	30	2300	11,720	11,720
10/23/2013	29	2007	12,440	12,440
9/24/2013	32	1696	13,840	13,840
8/23/2013	29	1350	12,720	12,720
7/25/2013	30	1032	13,440	13,440
6/25/2013	33	696	14,400	14,400
5/23/2013	31	336	13,440	13,440
4/22/2013	27	0	11,480	11,480
3/26/2013	32	1053	12,640	12,640
2/22/2013	28	737	10,920	10,920
1/25/2013	35	464	13,040	13,040
12/21/2012	31	138	5,480	5,480
11/20/2012	15	1	40	40

# Appendix 2 – Annual kWh and kW savings

			Annual kWh Gross with	TOTAL Annual	Saved Summer coincident kW with	Total KW Gross
Measure	Measure Amount	Unit of Measure	(per unit)	kWh Gross with losses	losses Per Unit	with losses
SelfDirect LED Panel 2x4 replacing or in lieu of T8 FL	56	per fixture	125	7,004	0.03	1.50
SelfDirect LED Panel 2x2 replacing or in lieu of T8 FL	13	per fixture	31	403	0.01	0.09
SelfDirect LED Exit Signs Electronic Fixtures (Retrofit Only)	12	per fixture	244	2,934	0.03	0.40
SelfDirect Garage HID replacement above 175W to 250W HID retrofit	8	per fixture	1,008	8,061	0.12	0.92
SelfDirect LED Canopy replacing 251-400W HID	16	per fixture	818	13,090	0.00	0.00
SelfDirect LED Panel 1x4 replacing or in lieu of T8 FL	17	per fixture	70	1,195	0.01	0.25
SelfDirect Exterior HID replacement to 175W HID retrofit	6	per fixture	299	1,795	0.00	0.00
SelfDirect Exterior HID replacement above 400W HID retrofit	11	per fixture	1,363	14,997	0.00	0.00
SelfDirect LED Canopy replacing 251-400W HID	20	per fixture	818	16,362	0.00	0.00
SelfDirect LED Panel 1x4 replacing or in lieu of T8 FL	17	per fixture	70	1,195	0.01	0.25
SelfDirect LED Panel 2x4 replacing or in lieu of T8 FL	45	per fixture	125	5,628	0.03	1.20
SelfDirect LED Panel 2x4 replacing or in lieu of T8 FL	3	per fixture	1,876	5,628	0.03	0.08
SelfDirect LED Panel 2x2 replacing or in lieu of T8 FL	20	per fixture	31	620	0.01	0.13
SelfDirect LED Exit Signs Electronic Fixtures (Retrofit Only)	7	per fixture	244	1,711	0.03	0.23
SelfDirect Exterior HID replacement to 175W HID retrofit	6	per fixture	299	1,795	0.00	0.00
SelfDirect Exterior HID replacement above 400W HID retrofit	2	per fixture	1,363	2,727	0.00	0.00
SelfDirect LED Canopy replacing 251-400W HID	16	per fixture	818	13,090	0.00	0.00
SelfDirect Exterior HID replacement to 175W HID retrofit	2	per fixture	299	598	0.00	0.00
SelfDirect Exterior HID replacement above 400W HID retrofit	5	per fixture	1,363	6,817	0.00	0.00
	282			105,652		5.06

Existing Energy kWh (Per Unit)	New Energy kWh (Per Unit)	kWh Savings (Per Unit)	Total kWh Savings	Existing Demand- kW (Per Unit)	New Demand (Per Unit)	kW Savings (Per Unit)	Total kW Savings
310	202	108	6065	0.09	0.06	0.03	1.68
162	134	29	375	0.05	0.04	0.01	0.10
261	32	229	2745	0.04	0.00	0.03	0.37
2190	1314	876	7008	0.25	0.15	0.10	0.80
1733	962	770	12327	0.45	0.25	0.20	3.22
199	137	61	1043	0.06	0.04	0.02	0.29
680	400	280	1680	0.18	0.10	0.08	0.48
3113	1837	1276	14036	0.81	0.48	0.33	3.63
1733	962	770	15409	0.45	0.25	0.20	4.02
199	137	61	1043	0.06	0.04	0.02	0.29
310	202	108	4874	0.09	0.06	0.03	1.35
310	202	108	325	0.09	0.06	0.03	0.09
162	134	29	578	0.05	0.04	0.01	0.16
261	32	229	1601	0.04	0.00	0.03	0.22
680	400	280	1680	0.18	0.10	0.08	0.48
3113	1837	1276	2552	0.81	0.48	0.33	0.66
1733	962	770	12327	0.45	0.25	0.20	3.22
680	400	280	560	0.18	0.10	0.08	0.16
3113	1837	1276	6380	0.81	0.48	0.33	1.65
			92,607				22.86

Appendix 3 – Cash

Rebate 5. The Utility's incentive/rebate costs Utility Incentive Costs/rebate costs = Incentive Amounts Measure Amount SelfDirect LED Panel 2x4 replacing or in lieu of T8 FL \$1,120.00 SelfDirect LED Panel 2x2 replacing or in lieu of T8 FL \$260.00 SelfDirect LED Exit Signs Electronic Fixtures (Retrofit Only) \$60.00 SelfDirect Garage HID replacement above 175W to 250W HID retrofit \$600.00 SelfDirect LED Canopy replacing 251-400W HID \$1,360.00 SelfDirect LED Panel 1x4 replacing or in lieu of T8 FL \$340.00 SelfDirect Exterior HID replacement to 175W HID retrofit \$135.00 SelfDirect Exterior HID replacement above 400W HID retrofit \$1,100.00 SelfDirect LED Canopy replacing 251-400W HID \$1,700.00 SelfDirect LED Panel 1x4 replacing or in lieu of T8 FL \$340.00 SelfDirect LED Panel 2x4 replacing or in lieu of T8 FL \$900.00 SelfDirect LED Panel 2x4 replacing or in lieu of T8 FL \$60.00 SelfDirect LED Panel 2x2 replacing or in lieu of T8 FL \$400.00 SelfDirect LED Exit Signs Electronic Fixtures (Retrofit Only) \$35.00 SelfDirect Exterior HID replacement to 175W HID retrofit \$135.00 SelfDirect Exterior HID replacement above 400W HID retrofit \$200.00 SelfDirect LED Canopy replacing 251-400W HID \$1,360.00 SelfDirect Exterior HID replacement to 175W HID retrofit \$45.00 SelfDirect Exterior HID replacement above 400W HID retrofit \$500.00 \$10,650.00 Appendix 4 – Utility Cost Test

2. Utility costs Test (UCT = Column J)	
Measure	UCT
SelfDirect LED Panel 2x4 replacing or in lieu of T8 FL	5.86
SelfDirect LED Panel 2x2 replacing or in lieu of T8 FL	1.61
SelfDirect LED Exit Signs Electronic Fixtures (Retrofit Only)	15.00
SelfDirect Garage HID replacement above 175W to 250W HID retrofit	3.35
SelfDirect LED Canopy replacing 251-400W HID	5.71
SelfDirect LED Panel 1x4 replacing or in lieu of T8 FL	3.48
SelfDirect Exterior HID replacement to 175W HID retrofit	3.53
SelfDirect Exterior HID replacement above 400W HID retrofit	3.59
SelfDirect LED Canopy replacing 251-400W HID	5.71
SelfDirect LED Panel 1x4 replacing or in lieu of T8 FL	3.48
SelfDirect LED Panel 2x4 replacing or in lieu of T8 FL	5.86
SelfDirect LED Panel 2x4 replacing or in lieu of T8 FL	5.86
SelfDirect LED Panel 2x2 replacing or in lieu of T8 FL	1.61
SelfDirect LED Exit Signs Electronic Fixtures (Retrofit Only)	15.00
SelfDirect Exterior HID replacement to 175W HID retrofit	3.53
SelfDirect Exterior HID replacement above 400W HID retrofit	3.59
SelfDirect LED Canopy replacing 251-400W HID	5.71
SelfDirect Exterior HID replacement to 175W HID retrofit	3.53
SelfDirect Exterior HID replacement above 400W HID retrofit	3.59

# Appendix 5 – Avoided Supply Costs

3. Avoided Supply Costs					
Total Avoided Costs = T&D + Prod + Capacity X Qty (Upload Amt)					
					Total
					Avoided
Measure	T&D	Production	Capacity	Quantity	Costs
SelfDirect LED Panel 2x4 replacing or in lieu of T8 FL	\$13.52	\$111.60	\$23.14	56	\$8,303
SelfDirect LED Panel 2x2 replacing or in lieu of T8 FL	\$3.41	\$27.68	\$5.83	13	\$480
SelfDirect LED Exit Signs Electronic Fixtures (Retrofit Only)	\$17.44	\$172.27	\$29.92	12	\$2,635
SelfDirect Garage HID replacement above 175W to 250W HID retrofit	\$29.65	\$324.84	\$49.69	8	\$3,233
SelfDirect LED Canopy replacing 251-400W HID	\$0.00	\$652.53	\$0.00	16	\$10,440
SelfDirect LED Panel 1x4 replacing or in lieu of T8 FL	\$7.57	\$62.71	\$12.96	17	\$1,415
SelfDirect Exterior HID replacement to 175W HID retrofit	\$0.00	\$127.58	\$0.00	6	\$766
SelfDirect Exterior HID replacement above 400W HID retrofit	\$0.00	\$581.42	\$0.00	11	\$6,396
SelfDirect LED Canopy replacing 251-400W HID	\$0.00	\$652.53	\$0.00	20	\$13,051
SelfDirect LED Panel 1x4 replacing or in lieu of T8 FL	\$7.57	\$62.71	\$12.96	17	\$1,415
SelfDirect LED Panel 2x4 replacing or in lieu of T8 FL	\$13.52	\$111.60	\$23.14	45	\$6,672
SelfDirect LED Panel 2x4 replacing or in lieu of T8 FL	\$13.52	\$111.60	\$23.14	3	\$445
SelfDirect LED Panel 2x2 replacing or in lieu of T8 FL	\$3.41	\$27.68	\$5.83	20	\$738
SelfDirect LED Exit Signs Electronic Fixtures (Retrofit Only)	\$17.44	\$172.27	\$29.92	7	\$1,537
SelfDirect Exterior HID replacement to 175W HID retrofit	\$0.00	\$127.58	\$0.00	6	\$766
SelfDirect Exterior HID replacement above 400W HID retrofit	\$0.00	\$581.42	\$0.00	2	\$1,163
SelfDirect LED Canopy replacing 251-400W HID	\$0.00	\$652.53	\$0.00	16	\$10,440
SelfDirect Exterior HID replacement to 175W HID retrofit	\$0.00	\$127.58	\$0.00	2	\$255
SelfDirect Exterior HID replacement above 400W HID retrofit	\$0.00	\$581.42	\$0.00	5	\$2,907
					\$73,058

# Appendix 6 – Utility Program Costs

4. Utility's program costs			
Administrative costs = Admin + Implementation X Qty (Upload Amt)			
Measure	Qty	Admin Costs	Total Costs
SelfDirect LED Panel 2x4 replacing or in lieu of T8 FL	56	\$2.51	\$140
SelfDirect LED Panel 2x2 replacing or in lieu of T8 FL	13	\$2.28	\$30
SelfDirect LED Exit Signs Electronic Fixtures (Retrofit Only)	12	\$4.34	\$52
SelfDirect Garage HID replacement above 175W to 250W HID retrofit	8	\$23.88	\$191
SelfDirect LED Canopy replacing 251-400W HID	16	\$11.32	\$181
SelfDirect LED Panel 1x4 replacing or in lieu of T8 FL	17	\$2.37	\$40
SelfDirect Exterior HID replacement to 175W HID retrofit	6	\$7.11	\$43
SelfDirect Exterior HID replacement above 400W HID retrofit	11	\$32.14	\$354
SelfDirect LED Canopy replacing 251-400W HID	20	\$11.32	\$226
SelfDirect LED Panel 1x4 replacing or in lieu of T8 FL	17	\$2.37	\$40
SelfDirect LED Panel 2x4 replacing or in lieu of T8 FL	45	\$2.51	\$113
SelfDirect LED Panel 2x4 replacing or in lieu of T8 FL	3	\$2.51	\$8
SelfDirect LED Panel 2x2 replacing or in lieu of T8 FL	20	\$2.28	\$46
SelfDirect LED Exit Signs Electronic Fixtures (Retrofit Only)	7	\$4.34	\$30
SelfDirect Exterior HID replacement to 175W HID retrofit	6	\$7.11	\$43
SelfDirect Exterior HID replacement above 400W HID retrofit	2	\$32.14	\$64
SelfDirect LED Canopy replacing 251-400W HID	16	\$11.32	\$181
SelfDirect Exterior HID replacement to 175W HID retrofit	2	\$7.11	\$14
SelfDirect Exterior HID replacement above 400W HID retrofit	5	\$32.14	\$161
			\$1,957



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## **Ohio Mercantile Self Direct Program**

Application Guide & Cover Sheet

Questions? Call 1-866-380-9580 or visit www.duke-energy.com.

Email this form along with <u>completed Mercantile Self Direct Prescriptive or Custom applications</u>, proof of payment, energy savings calculations and spec sheets to <u>SelfDirect@Duke-Energy.com</u>. You may also fax to 1-513-629-5572.

Mercantile customers, defined as using at least 700,000 kWh annually or having an account in multiple locations are eligible for the Mercantile Self Direct program. Indicate which applies:

a single Duke Energy Ohio account with 700,000 kWh annual usage

an account with multiple locations

Please list Duke Energy account numbers below (attach listing of multiple accounts and/or billing history for other utilities as required):

Account Number	Annual Usage	Account Number	Annual Usage
2740-0759-01-0	36,000,000		

Self Direct rebates are available for completed Custom projects that have not previously received a Duke Energy Smart \$aver® Custom Incentive. Self Direct rebates are applicable to Prescriptive measures that were installed more than 90 days prior to submission to Duke Energy and have not previously received a Duke Energy Prescriptive rebate.

Self Direct Program rules allow for, though do not require, certain projects that are Prescriptive in nature under the Smart \$aver program to be evaluated using the Custom process in the Self Direct program. Use the list on page two as a guide to determine which Self Direct program best fits your project(s). Apply for Self Direct projects using the appropriate application forms in conjunction with this cover sheet.

Self Direct Program rules also allow for behaviorally based and/or no cost and low cost projects to receive rebates.

Please check each box to indicate completion/inclusion of the following program requirements:

All sections of	Proof of payment.*	Manufacturer's Spec	Energy
appropriate		sheets	model/calculations and
application(s) are			detailed inputs for
completed			Custom applications

\*If a single payment record is intended to demonstrate the costs of both Prescriptive & Custom projects, please include an additional document with an estimated breakout of costs for each Prescriptive and Custom energy conservation measure.

\*\*Behavioral energy efficiency and demand reduction projects must be both measurable and verifiable. Provide justification with your application. Rebates for such projects may be small in magnitude.

**CUSTOMER:** 



Remit to: P.O. Box 701620

;

Cincinnati, OH 45270-1620

BILLED BY: JULIE B. #513-527-8137

	INVOICE	DATE
JOB ADDRESS:	00724526	7/31/13

21962 PAM JONES LANG LASALLE AMERICAS-P&G ACCOUNTING PO BOX 5126 CINCINNATI, OH 45201-5126 698-6547

JLL/P&G / WHBC / CHILLERS-2013/201 6083 CENTER HILL AVENUE CINCINNATI, OH 45224

Customer PO No.: 978771-OP-4014409200	Job Number: 244453 Bill Contract: 244453
REFERENCE DESCRIPTION	
JLL P&G @ WHBC / CHILLER CHILLER MAINTENANCE 2013	

PREVENTIVE MAINTENANCE

AMOUNT

# 2/ 27

7,304.00

Now Accepting Visa/MC/AMX for	SUB-TO:	FAL	7,304.00
Payment of Invoices.	TAX		474.76
A Service Charge of 1.5% per Month	AMOUNT	PAID	7,778.76
will be charged on All Past Due Accts.	AMOUNT	DUE	.00
	FILE	DUE ON RECEIPT	

DeBra-Kuempel 3976 Southern Avenue Cincinnati, Ohio 45227 Phone 513-271-6500 Fax 513-271-4676

				Mechanical-El An EMCOR Company	lectrical (
Job #: 2 4 4 4	53 Date: 0	1 1 / 1 1 / 1 3	Tech:	173 Unit	:
Equip/Mfg: YOR	K	Model: Y K 8	5 R 4 J	. 1	
Serial #:					
Status:	Complete	ncomplete 🖉 🗌 Follow-up	•		Tag Out
Customer Name:	PIG WINTON	<u> </u>	Acct Mgr: .	Ladder (	Tie Off)
Site Address:					qpt/Manp
City:		State:	Zip:	PPE Hare	d Hat, Gja
Bill To:				Fall Prote	ection
Equipment Location:				Proper G	FCI Usag
Purpose of Call			·····	Hot Work	<b>4</b>
Fine or infine of Martin	WORKEN W/ CA MA	DANK AN COMER MAINTED	HAVE AL VA	Fire Al	arm Syst
Lawan Allin	KARVAL Allow	THE RIS FUTTOR AUTOR SI	HALE OF TOP		atch
T. GITCHL CHILLE	TUMATA CHANG	HI OIL FILIER ON #3-E	VHCIMINO 7 CH		lon
TOP LEARS, CHECKED	<u>COUPLINS - TIGHINI</u>	GETWEAR, EMPTILO OIL	PRAIN FROM S	EAL Chemica	l Hazard
HAD 112" IN IT (ANN)	VAI). LEAK CHECKED (	WIT. WENT THROUGH STAR	ER & LAGGED (	HILLER # 2 Custome	r Sito Sr
					r alle ap
				( ) ) 001000	
D					ermit
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		An	EMCOR Company
Job #: 244453 Date:	01/07/13	Tech: 12/9	Unit:
Equip/Mfg: 402K	Model: 9K5B	R401	
Serial #:			
Status: Complete			Lock Out/Tag Out
Customer North PAGI, Date	a Had III		LO/TO Permit
Customer Name: 100 ()-11/00	111 The	Acct Mgr:	Ladder (Tie Off)
Site Address	All Mak		Lifting Eqpt/Manpower
City: CA	Ştate: <u>0</u> 6	Zip:	PE Hard Hat, Glasses
Bill To: Janes hall	g handle		Fall Protection
Equipment Location:			🌅 Proper GFCI Usage
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Purpose of Call, <u>Purpose</u>	Cell Casting		Fire Alarm Syst Disabled
Description of Work: P. J. OUL	18the Caning Togas	and	Hol Work Permit
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Dayton . 1948 W. Dorothy En. • Dayton, OH 45439 937.531.5455 Maysville 702 Parker Dr. • Maysville, KY 41056 606.536.8505 Cincinnati Louisville 3600 Chamberiah Drive, Suite 356 • Louisville, KY 40241 502.368.0454 3976 Southern Ave. • Cincinnati, DH 45227 513,271.6500 24 Hour Service 513.271.6500

05-19-14;07:16AM;

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Authorized Signature: \_\_\_\_

Cincinnati 3976 Southern Ave. • Cincinnati, OH 45227 513.271.6500

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KY MASTER # M04348 OH CONTRACTOR # 25061			
Page of	SERVICE REPORT	    	<b>lempel</b> chapical Electrical
		An Ei	VCOR Company
Job #: 244453 Dat	e: 01/14/1 <b>3</b>	Tech: 149	Unit: #ZB
Equip/Mfg: GORK	Model: YCW2	77000	
Serial #: UBKMQ00	970		
Status: D Complete	Incomplete L Follow-up		C Lock Oul/Tag Out
Customer Name: HCG Win	Jon Hills / JLL	Acct Mar:	LO/TO Permit
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city: Ch 1	State: Ch		LITING Eqpt/Manpower
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Equipment Location:	Placet i		Proper GFCI Usage
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24 Hour Service 513.271.6500 OFFICE

**Dayton** 1948 W. Dorothy Ln. • Dayton, OH 45439 937.531.5455

I have authority to order this work; which has been satisfactorily performed. I agree to the terms and conditions described on the reverse side.

\_ Customer P.O.#:\_\_

Maysville 702 Parker Dr. • Maysville, KY 41056 606.536.8805 Total:

Louisville 3600 Chamberlah Orive, Suite 358 • Louisville, KY 40241 502,368.0454 05-19-14;07:16AM;

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OFFICE

# YORK<sup>®</sup> Water-Cooled Chillers



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(A	Il chillers are electric-drive and use refrigerant HFC-134a unless otherwise r	noted *)
CAPACITY	MODEL and DESCRIPTION	
<b>215 - 380 TR</b> 755 - 1340 kW	Model YMC <sup>2</sup> – magnetic centrifugal compressor Unique Features: 30% less refrigerant, 73 dBA, OptiView <sup>™</sup> control panel, OptiSound <sup>™</sup> control, OptiSpeed <sup>™</sup> variable–speed drive Ideal Applications: comfort cooling, facilities requiring low sound levels, green / LEED <sup>®</sup> buildings	
<b>250 - 3000 TR</b> 880 - 10,550 kW	Model YK – centrifugal compressor Unique Features: OptiSpeed <sup>™</sup> variable-speed drive, heat-recovery capability, quick start feature, OptiSound <sup>™</sup> control, OptiView <sup>™</sup> control panel Ideal Applications: comfort cooling, heat-recovery sites, data centers	
<b>2500 - 3500 TR</b> 8800 - 12,000 kW	Model YK-EP – centrifugal compressors with economizer Unique Features: higher efficiency at design and off-design conditions, OptiSpeed <sup>™</sup> variable-speed drive, single control panel Ideal Applications: district cooling, process / industrial cooling, data centers, turbine inlet-air cooling	
<b>1500 - 6000 TR</b> 5300 - 21,100 kW	Model YD – dual centrifugal compressors Unique Features: smallest footprint per cooling ton in the industry, single OptiView™ control panel Ideal Applications: district cooling, retrofits, building additions	
<b>300 - 2500 TR</b> 1050 - 8800 kW	Model CYK – compound centrifugal compressors Unique Features: high-head and heat-pump capability Ideal Applications: air-cooled condensing, brine chilling, heat pump, and process / industrial cooling	
<b>700 - 2800 TR</b> 2460 - 9850 kW	Model YST – steam-turbine-drive centrifugal compressor * Unique Features: packaged steam condenser, automatic start-up, OptiView™ control panel Ideal Applications: co-generation, hybrid plants	
<b>3000 - 5500 TR</b> 10,550 - 19,350 kW	Titan Model OM – centrifugal compressor with electric-motor, steam-turbine, or gas-engine drive * Unique Features: flexibility, longest life expectancy, easily retrofitted Ideal Applications: district cooling, air-cooled condensing, brine chilling, heat pump, and process / industrial cooling	

YORK<sup>®</sup> MODEL YK CENTRIFUGAL CHILLERS

# Best route to real-world energy performance





# YORK<sup>®</sup> YK chillers deliver maximum efficiency



YORK YK chillers can utilize ECWTs as low as 55°F (13°C) to reach 0.20 kW/ton (18 COP) at off-design conditions, reducing instantaneous energy consumption by as much as 50%.



The capacity range of the YORK model YK chiller is 250 to 3,000 TR (880 to 10,540 kW). Both low-voltage (250 to 575 V) and medium-voltage (2,300 to 13.800 V) designs are available.

#### Real-world energy performance is essential

YORK<sup>®</sup> model YK centrifugal chillers, manufactured by Johnson Controls, provide the best route to real-world energy performance – the combined performance at all operating conditions, not just design. Because chillers in the real world operate nearly 99% of the time at off-design conditions, off-design performance is the major factor in energy consumption. That's why YK centrifugal chillers are engineered for maximum efficiency at both design and off-design conditions.

#### **Unsurpassed Integrated Part Load Value**

The Air-conditioning, Heating, and Refrigeration Institute (AHRI) Chiller Certification Program endorses the validity of off-design analysis to compare chiller energy consumption. Measured with AHRI's Integrated Part Load Value (IPLV), YK centrifugal chillers are unsurpassed in energy efficiency. Equipped with an OptiSpeed<sup>TV</sup> variable-speed drive, they can reduce energy usage as low as 0.20 kW/TR at off-design conditions.

#### Adaptive capacity control optimizes performance

When a YORK YK chiller is equipped with an OptiSpeed drive, it incorporates advanced Adaptive Capacity Control logic, which continually optimizes chiller operation. It closely examines critical operating parameters, and then determines the most efficient way to operate. In addition, it lets you optimize your savings when using intelligent control strategies, such as chilled-water reset. Adaptive Capacity Control logic also accommodates the characteristics of the refrigerant used in the chiller – today and tomorrow. Take advantage of colder entering-condenser water Unlike competitive chillers which require entering condenser-water temperature (ECWT) from the cooling tower to be held artificially high, YORK YK centrifugal chillers can utilize ECWT as low as 55°F (13°C). The lower ECWT reduces the compressor workload, and that can reduce instantaneous energy consumption as much as 50%.

#### Powerful control center saves energy

YK chillers feature the OptiView<sup>®</sup> Control Center, which uses microprocessor capabilities to save you energy. Operation at just 1° below the designed chilledwater-temperature setpoint can increase chiller energy consumption by as much as 3%, wasting thousands of kilowatt-hours and dollars each year. The digital precision of the OptiView Control Center lets you set chilled-water temperature to a resolution of ± 0.1°. As a result, you eliminate the energy wasted by drifting a degree or more from the setpoint. The OptiView Control Center can also be used to schedule daily operating hours and holidays. No longer is energy accidentally wasted cooling the facility when it's not needed.



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The OptiView Control Center helps you operate your YORK YK chiller more efficiently by allowing for the precise setting of chilled-water temperature and operating schedule.

3

# Maximum control with OptiView<sup>™</sup> Control Center

#### Easy to operate

The intuitive, full-color OptiView Control Center offers you a higher level of monitoring and control. Data input is foolproof, and data outputs are shown in association with illustrations of the appropriate chiller components. For convenience, all data can be displayed in eleven different languages, in addition to Imperial or SI units.

#### Easy to monitor

The OptiView Control Center allows on-board trending of up to six different values, selected from over 100 variables. The values and sampling interval are all user-selectable. This flexibility allows you to select parameters that are critical for your operation and to perform trending without a BAS interface and separate monitor.

#### Easy to integrate

Energy savings and ease-of-use can be fully realized when the HVAC system is an integrated part of the building-automation system. The OptiView Control Center is designed to communicate with the Johnson Controls Metasys<sup>®</sup> system. It can also communicate with most control systems on the market today using its optional ELink communication card.



Data outputs on the OptiView Control Center are accompanied with an illustration of the appropriate chiller component, making chiller operation more intuitive.



The trending screen provided performance insights not possible with snap shot observations.

# Versatile design provides superior sustainability and flexibility

#### **Environmental responsibility**

The environmental impact of your chiller can be significant. You can reduce your impact by specifying YORK YK chillers. You'll get the benefit of refrigerant HFC-134a, which has zero ozone depletion potential (ODP). Plus, the high efficiency of the chillers reduces the indirect global warming potential (GWP), which is 98% of the total impact, caused by greenhouse-gas emissions produced by your utility to power the chiller. In addition, because of the chillers' high efficiency, your building could earn points for the Optimize Energy Performance (EAc1) credit in the Leadership in Energy and Environmental Design® (LEED) program.

Falling-film technology, utilized in the evaporator of YK chillers, reduces the refrigerant charge by up to 40%. It is available in YK chillers up to about 1,000 TR (based on conditions), and will help your building to qualify for maximum LEED points for Enhanced Refrigerant Management (EAc4).

#### **Reduced noise levels**

Traditional centrifugal chillers can generate a substantial amount of objectionable noise, but the YORK YK chiller is equipped with the innovative OptiSound<sup>™</sup> Control, which reduces noise at off-design conditions. The control continuously monitors the characteristics of the compressordischarge gas and optimizes the diffuser spacing of the compressor to minimize noisy gas-flow disruptions from the impeller. Chiller operation is also stabilized.

#### Flexible heating option

The YORK YK chiller can also be configured as a heatrecovery chiller, for use in facilities with simultaneous heating and cooling requirements. The heat-recovery unit takes advantage of the free heat that is typically rejected by the cooling towers. The heat can be used to control humidity, reheat the air, and preheat domestic hot water. Heat-recovery units have outstanding heating coefficients of performance that can reach up to 11.4.

#### Quick restart and return to setpoint

The Quick Start feature available on the YORK YK chiller reduces the risks that temperature-sensitive facilities experience after a power interruption. YK chillers equipped with this feature restart and return to the specified chilled-water temperature faster, reducing the risks of expensive downtime.



A falling-film evaporator is more efficient because refrigerant is sprayed over the tubes, reducing refrigerant charge up to 40%.



The YK chiller is available in a heat-recovery configuration. Recovered heat can be used in the HVAC or domestic hot-water systems.

5

# Maximum reliability with minimum maintenance

**OptiView Control Center keeps you well-informed** The OptiView Control Center provides complete information on your chiller's operating condition. Safety-shutdown information includes day, time, cause of shutdown and type of restart required. Color-coding of fault messages allows easy determination of chiller status. Yellow messages signify shutdowns with automatic restart, requiring no operator intervention. Red messages are displayed for shutdowns requiring manual restart, alerting the operator that a system check may be required.

The Trending Screen can show changes in motor current, oil temperature and pressure, refrigerant pressures, or water temperatures, all of which can be valuable indicators of developing problems. This capability gives you ample time to take corrective measures before any expensive downtime is incurred. With the OptiView Control Center, you can see when to schedule routine maintenance in advance of actual need.

#### Open drive is easy to maintain

The YORK YK centrifugal chiller uses an open-motor driveline, which means less downtime. If a motor failure occurs, the chiller can be brought back online much faster and at a reduced cost. The motor is easy to remove, and can be repaired at a local motor shop. As a result, downtime due to motor failure is dramatically reduced.

#### Electrical protection extends motor life

Equipped with an OptiSpeed drive, the YK chiller starts "softly," never letting the inrush current exceed 100% of the full-load amps. By limiting the inrush, the motor windings do not rub together with expansion, which results in longer motor life and less chiller downtime. Lower inrush also reduces torque stresses on the motor and compressor driveline.

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#### Start maximizing today

For more information on how YORK YK chillers can deliver real-world energy performance, visit johnsoncontrols.com or contact your Johnson Controls representative.



Color-coded fault messages allow early determination of chiller status and required operator action.

Printed on recycled paper.

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# PACKAGED LIQUID CHILLERS WATER COOLED & REMOTE-RECIPROCATING

HERMETIC

Supersedes: Nothing

795 FORM 150.55-RP3

# WATER COOLED MODELS

YCWZ33AB, YCWZ44AB, YCWZ47CC, YCWZ77CC, YCWZ88CC, YCWZ88HD, YCWZ89HD, YCWZ99HD

# **REMOTE CONDENSER MODELS**

YCRZ33AO, YCRZ44AO, YCRZ47CO, YCRZ77CO, YCRZ88CO, YCRZ88HO, YCRZ89HO, YCRZ99HO

> STYLE A 50 & 60 HZ



# 14/ 27

# WARNING

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### HIGH VOLTAGE is used in the operation of this equipment DEATH OR SERIOUS INJURY may result if personnel fail to observe precautions.

Work on electronic equipment should not be undertaken unless the individual(s) has (have) been trained

in the proper maintenance of the equipment and is (are) familiar with its potential hazards.

Shut off power supply to equipment before beginning work and follow lockout procedures. When working inside equipment with power off, take special care to discharge every capacitor likely to hold dangerous potential.

Be careful not to contact high voltage connections when installing or operating this equipment.

### LOW VOLTAGE

**DO NOT** be misled by the term "low voltage". Voltages as low as 50 volts may cause death.

# NOMENCLATURE

The model number denotes the following characteristics of the unit:



FORM 150,55-RP3

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**MAJOR UNIT COMPONENTS** 

## **COMPRESSOR NOMENCLATURE**

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## COMPRESSOR MODEL NUMBERS (WATER COOLED AND REMOTE CONDENSER UNIT MODELS)

	DEL	YCWZ33AB YCRZ33AO	YCWZ44AB YCRZ44AO	YCWZ47CC YCRZ47CO	YCWZ77CC YCRZ77CO
COMPRESSOR	SYSTEM NO. 1	ZB4K1-B	ZB4M1-C	ZB4M1-C	ZB6S2-D
	SYSTEM NO. 2	ZB4K1-B	ZB4M1-C	ZB6S2-D	ZB6S2-D
	DEL	YCWZ88CC YCRZ88CO	YCWZ88HD YCRZ88HO	YCWZ89HD YCRZ89HO	YCWZ99HD YCRZ99HO
COMPRESSOR MODEL	SYSTEM NO. 1	ZB6W2-E	ZB6W2-E	ZB6W2-E	ZB6AE2-E
	SYSTEM NO. 2	ZB6W2-E	ZB6W2-E	ZB6AE2-E	ZB6AE2-E

For replacement compressors and/ or parts, refer to Form 180.45-RP2.

Remanufactured compressors are available from the Wheeling, Illinois manufacturing facility, Contact the local YORK Applied Systems Office.

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FORM 150.55-RP3

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	TVDE			UNIT	AODEL	. " <u> </u>
CODE	START	SYSTEM	YCWZ33AB YCRZ33AO	YCWZ44AB YCRZ44AO	YCWZ47CC YCRZ47CO	YCWZ77CC YCRZ77CO
-17	A	1,2		-	-	-
-11	P	1,2	024-25551	024-25551	024-25550	024-25550
	A	1,2	-	-	-	-
-20	Р	1,2	024-25551	024-25551	024-25550	024-25550
40	A	1,2	024-25551	024-25551	024-25549	024-25549
-40	Р	1,2	024-25551	024-25551	024-25549	024-25549
.46	A	1,2	024-25551	024-25551	024-25551	024-25551
-40	P	1,2	024-25551	024-25551	024-25551	024-25551
-50	A	1,2	024-25551	024-25551	024-25551	024-25551
-50	Р	1,2	024-25551	024-25551	024-25551	024-25551
-58	Α	1,2	024-25551	024-25551	024-25551	024-25551
-00	Р	1,2	024-25551	024-25551	024-25551	024-25551
-64	A	1,2	024-25551	024-25551	024-25550	024-25550
-04	Р	1,2	024-25551	024-25551	024-25550	024-25550

## <sup>S</sup>COMPRESSOR MOTOR CONTACTORS

	TYPE			UNIT	IODEL	
CODE	START	SYSTEM	YCWZ88CC YCRZ88CO	YCWZ88HD YCRZ88HO	YCWZ89HD YCRZ69HO	YCWZ99HD YCRZ99HO
-17	A	1, 2	•	-	-	-
-17	Р	1,2	024-25549	024-25549	024-25549	024-25549
-28	A	1,2	-	-	-	-
-20	P	1, 2	024-25549	024-25549	024-25549	024-25549
-40	А	1, 2	024-25549	024-25549	024-25549	024-25549
	P	1,2	024-25549	024-25549	024-25549	024-25549
-46	A	1, 2	024-25550	024-25550	024-25549	024-25549
	Р	1,2	024-25550	024-25550	024-25549	024-25549
-50	A	1, 2	024-25550	024-25550	024-25549	024-25549
	P	1,2	024-25550	024-25550	024-25549	024-25549
-58	A	1, 2	024-25550	024-25550	024-25550	024-25550
	Р	1,2	024-25550	024-25550	024-25550	024-25550
-64	A	1,2	024-25549	024-25549	024-25549	024-25549
	Р	1,2	024-25549	024-25549	024-25549	024-25549

NOTES:

<sup>s</sup> = Recommended Stock Spare Parts

P = Part Winding

Part Winding (Start) compressors require two (2) contactors per compressor (system).

A = Across-the-Line

Across-the-Line (Start) compressors require one (1) contactor per compressor (system). Contactors include suppressors.

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2	1	Control, Micro Board	031-01095-001
:3	1	Control, Power Supply	031-01094-000
°4	1	Control, Relay Board	031-01093-000
5	1	Transformer, Control	025-27911-000
6	14	Block, Terminal	025-20945-000
7	1	End, Terminal Block	025-20946-000
8	1	Strip, Marker (14 Pole)	025-29159-000
10	5	Scr., Tap TH. #8 x 3/8 Lg	021-13783-000
11	16	Nut, Expansion	021-14661-000
12	16	Scr., Tap Pan Hd, #8 x 1-1/4	021-14667-000
13	4	Lock Washer, TH. Int. 3/8	021-01155-000
14	4	Nut, Hex 3/8 UNC-2B	021-00467-000
15	15	Lock Washer, TH. Int. #10	021-01137-000
16	15	Nut, Hex #10-24	021-08282-000
17	3	Hsg., Connr. Plug, Mini-Univ. <sup>1</sup>	025-28383-000
18	1	Harness, Hinged Panel <sup>1</sup>	571-01226-212
19	12	Scr., Tap, Pan Hd. #10 x 1/2	021-13789-000
20	4	Lock Washer, Hel. Spg. #4	021-17576-000
21	4	Nut, Hex #4-40	021-10056-000
22	1	Switch, Unit ON/OFF	024-25517-000
23	1	Display, LCD	031-01110-000
24	1	Ribbon Cable	031-01109-211
25	2	Ribbon Cable	031-01109-212
26	4	Ribbon Cable	031-01109-213
27	3	Clamp, Ribbon Wire	025-25156-000
28	1	Switch, Keypad	024-25504-000
29	4	Spacer, Nylon 7/16 Lg.	021-17575-000
32-1	1	Harness, Sensor - Suct. #1 <sup>2</sup>	371-01263-231
32-2	1	Harness, Sensor - Oll #1 <sup>2</sup>	371-01263-233
32-3	1	Harness, Sensor - Suct. #2 <sup>2</sup>	371-01263-232
32-4	1	Harness, Sensor - Oil #2 <sup>2</sup>	371-01263-234
32-5	1	Harness, Sensor - LWT <sup>2</sup>	371-01263-241
32-6	1	Harness, Sensor - EWT <sup>2</sup>	371-01263-242
33	1	Lable, Caution <sup>1</sup>	035-03908-000
34	1	Strap, Cable 1	025-18167-000
<sup>\$</sup> 35	1	EPROM	031-01096-001
36	3	Suppressor for Options <sup>3</sup>	031-00808-000

#### NOTES:

<sup>s</sup> = Recommended Stock Spare Parts

- 1. Not Shown
- 2. Not Showm. Sensor Harness without Sensor.
- Not shown, shipped loose for field use to place across the coll of any relay or contactor connected to the Control Panel or its 115VAC Power Supply including the application of:
  - Alarm Circuit Relays
  - Pump Starter (Contactor)
  - Flow Switch Inputs
  - BAS Inputs

J3

VIEW A

(35)

ITEM

#### FORM 150.55-RP3

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POWER PANEL (SHOWN IS FOR PART-WINDING STARTING)

## POWER PANEL CONTROL COMPONENTS

ITEM NO.	ርፓንዣ <del>የሚ</del> ሉ UNIT	DESCRIPTION	'WLT. CODE	'ዮአዊቭ ነላው. ALL MODELS
<u></u> ,1	See p. 5	Contractor (w/Suppressor), Compressor	ALL	SEE PAGE 5
<u></u> \$2	1	FUSE Control (7 amp), 1FU	ALL	025-25515-000
3	1	Fuseholder (Use with item 2)	ALL	025-17407-000
4	2	Transformer, Current	ALL	025-27408-000

\* Recommended Stock Spare Part

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4 CYLINDER COMPRESSOR

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6 CYLINDER COMPRESSOR



"Z" COMPRESSOR SYSTEM TYPICAL COMPRESSOR MOTOR TERMINAL BOX

## **CONTROL COMPONENTS**

ITEM NO.	QTY PER UNIT	DESCRIPTION	VOLT. CODE	PART NO. ALL MODELS
		SENSORS		
<sup>s</sup> 1	2	Water Temperature (LWT,RWT)	ALL	025-29964-000
2	÷ 1	Heat Conductive Compound (Use with Item 1)	ALL	013-00898-000
۶3	2	High Pressure Cutout	ALL	025-28399-000
<sup>\$</sup> 4	4	Transducer (Oil & Suction Pressure)	ALL	025-29139-002
5	4	Brass Adaptor (Use with Item 4)	ALL	023-15272-000
6	2	Module, Motor Protector	ALL	025-07522-000
\$7	See Table Below	Suppressor, Compressor Unloading Solenoids and Liquid Line Solenoids	ALL	031-01117-000

UNIT MODEL	YCWZ33AB, YCRZ33AO	YCWZ44AB, YCRZ44AO	YCWZ47CC, YCRZ47CO	YCWZ77CC, YCRZ77CO
QUANTITY	4	4	5	6
UNIT MODEL	YCWZ88CC, YCRZ88CO	YCWZ88HD, YCRZ88HO	YCWZ69HD,YCRZ89HO	YCWZ99HD, YCRZ99HO
QUANTITY	6	6	4	4

<sup>s</sup> Recommended Stock Spare Part

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ITEM NO.	QTY	DESCRIPTION	UNIT MODEL				
	PER UNIT		YCWZ33AB YCRZ33AO	YCWZ44AB YCRZ44AO	YCWZ47CC YCRZ47CO	YCWZ77CC YCRZ77CO	
1	1	Cooler, Less Insulation (Includes Items 2 thru 6)	375-17501	375-17501	375-17505	375-17505	
2	1	Head, Connection End	375-17525	375-17525	375-17553	375-17553	
3	1	Head, Back End	375-17523	375-17523	375-17554	375-17554	
4	1	Pass Baffle, Connection End	075-17031	075-17031	075-17544	075-17544	
5	1	Pass Baffle, Back End	375-18173	375-18173	375-18174	375-18174	
<sup>s</sup> 6 <sup>1</sup>	4	Gasket, Pass Baffie & Head	075-17033	075-17033	075-17546	075-17546	
7	3	insulation, 3/4" x 49" x 65"	010-04198	010-04198	010-04198	010-04198	

## **COOLER COMPONENTS**

ITEM NO.	QTY	DESCRIPTION	UNIT MODEL				
	PER UNIT		YCWZ88CC YCRZ88CO	YCWZ88HD YCRZ88HO	YCWZ89HD YCRZ89HO	YCWZ99HD YCRZ99HO	
1	1	Cooler, Less Insulation (Includes Items 2 thru 6)	375-17505	375-17511	375-17511	375-17511	
_ 2	1	Head, Connection End	375-17553	375-18009	375-18009	375-18009	
3	1	Head, Back End	375-17554	375-18008	375-18008	375-18008	
4	1	Pass Baffle, Connection End	075-17544	375-17085	375-17085	375-17085	
5	1	Pass Baffle, Back End	375-18174	075-17084	075-17084	075-17084	
<sup>5</sup> 6 <sup>1</sup>	4	Gasket, Pass Baffle & Head	075-17546	075-17082	075-17082	075-17082	
7	3	Insulation, 3/4" x 49" x 65"	010-04198	010-04198	010-04198	010-04198	

NOTES:

<sup>5</sup> Recommended Stock Spare Part
 1. When replacing gasket, Item 6, use: <sup>5</sup> Sealer, Gasket, 013-02827 <sup>5</sup> Primer, 013-01753

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# UNIT COMPONENTS

ITEM NO.	QTY PER	DESCRIPTION	UNIT MODEL				
	UNIT		YCWZ33AB	YCWZ44AB	YCWZ47CC	YCWZ77CC	
<sup>s.</sup> 1	2	Valve, Thermal Expansion	025-23211	025-23211	025-21955	025-21955	
<u>\$2</u>	2	Valve, Reliet	022-08870	022-08870	022-08870	022-08870	
3	1	Condenser	SEE PAGE 14				
			UNIT MODEL				
			YCWZ88CC	YCWZ88HD	YCWZ89HD	YCWZ99HD	
<sup>\$</sup> 1	Ż	Valve, Thermal Expansion	025-21955	025-21955	025-21955	025-21965	
*2	2	Valve, Relief	022-08870	022-08870	022-08870	022-08870	
3	1	Condenser	SEE PAGE 14				

#### WATER COOLED MODELS

### REMOTE CONDENSER MODELS

ITEM OTY NO. PER		DESCRIPTION	UNIT MODEL				
	UNIT		YCRZ33AO	YCRZ44AO	YCRZ47CO	YCRZ77CO	
<u> </u>	2	Valve, Thermal Expansion	025-21954	025-21954	025-23211	025-23211	
			UNIT MODEL				
			YCRZ88CO	YCRZ88HO	YCRZ89HO	YCR299HO	
<u> </u>	2	Valve, Thermal Expansion	025-23211	025-23211	025-23211	025-23211	

\* Recommended Stock Spare Part

1
## UNIT COMPONENTS (Continued) (See Fig. 1)

### WATER COOLED AND REMOTE CONDENSERMODELS

ITEM NO.	QTY	DESCRIPTION	UNIT MODEL				
	UNIT		YCWZ33AB YCRZ33AO	YCWZ44AB YCRZ44AO	YCWZ47CC YCRZ46CO	YCWZ77CC YCRZ77CO	
<sup>s</sup> 4	2	Dehydrator, Body (Permanent Core)	026-20145	026-20145	_	-	
5	2	Dehydrator, Body (Replaceable Core)	-	-	026-30598	026-30598	
<sup>\$</sup> 6	4	Dehydrator, Core (Use with Item 5)	-	-	026-18328	026-18328	
7	2	Valve, Liquid Solenoid	025-17513	025-17513	025-17513	025-17513	
8	2	Moisture Indicator, Body	026-32397	026-32397	026-32397	026-32397	
9	2	Moisture Indicator, Cap Assembly	026-32800	026-32800	026-32800	026-32800	
10	2	Valve, Liquid Stop	025-10510	025-10510	025-10510	025-10510	
11	2	Compressor		SEE P	AGE 4		
12	16	Pad Isolator	075-00820	075-00820	075-00820	075-00820	
13	1	Cooler		SEE P	AGE 9		

ITEM		DESCRIPTION	UNIT MODEL				
NO.	UNIT		YCWZ88HD YCRZ88CO	YCWZ88HD YCRZ88HD	YCWZ89HD YCRZ88HO	YCWZ99HD YCRZ99HO	
5	2	Dehydrator, Body (Replaceable Core)	026-30598	026-30598	026-30598	026-30598	
<sup>s</sup> 6	4	Dehydrator, Core (Use with Item 5)	026-18328	026-18328	026-18328	026-18328	
7	2	Valve, Liquid Solenoid	025-17513	025-17513	025-17513	025-17513	
8	2	Moisture Indicator, Body	026-32397	026-32397	026-32397	026-32397	
9	2	Moisture Indicator, Cap Assembly	026-32800	026-32800	026-32800	026-32800	
10	2	Valve, Liquid Stop	025-10510	025-10510	025-10510	025-10510	
11	2	Compressor		SEE F	PAGE 4	,	
12	16	Pad Isolator	075-00820	075-00820	075-00820	075-00820	
13	1	Cooler		SEE F	 AGE 9	1	

<sup>s</sup> Recommended Stock Spare Part

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## COMPONENTS FOR UNIT OPTIONS<sup>1</sup>

ITEM NO.	QTY PER UNIT	DESCRIPTION	VOLT. CODE	ALL MODELS
POWER DIS	CONNECT SWIT	CH (PDS)		
A	1	Switch, Disconnect (Across-the-Line Start) Switch, Disconnect (Part-Winding Start)	-17 -28 -40 -46 -50 -58 -64 -17 -28 -40 -46 -50 -58 -58 -64	SEE PAGE 13 FOR MODELS

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		· · · · · · · · · · · · · · · · · · ·		
ITEM	QTY	DESCRIPTION	VOLT.	ALL
NO.	PER		CODE	MODELS

<u> </u>	2	Valve Relief (YCW Units Only)	ALL	022-08894-000
		· · · · · · · · · · · · · · · · · · ·		
ONTROL TR	ANSFORME	R (1T)		
c	1	Transformer	-17	025-28664-001
			-28	025-28664-002
		}	-40	025-28664-003
			-46	025-28664-002
			-50	025-28664-003
1			-58	025-28664-004
··			-64	N.A.
D	2	Fuse, Transformer	-17	025-27972-000
			-28	025-27971-000
			-40	025-27970-000
ľ			-46	025-27922-000
			-50	025-27970-000
			-58	025-17360-000
			-64	<u>N.A.</u>
ε	1	Relay Control Board	ALL	031-01093-000
SCHARGE I	PRESSURE R	EADOUT		
F	2*	Transducer, Discharge Pressure	ALL	025-29139-001
G	2*	Adaptor, Transducer (Use with Item F)	ALL	023-16272-000
		SYPASS) 4		
		MODEL YCWZ	1	- <u>-</u>
н	2	Valve, Regulator, Hot Gas	Δ1 I	025-27647 000
1	2,	Suppressor		023-27047-000
	_	MODEL YCRZ	/146	
	-		1 .	

NOTES (For Pages 12 - 13):

One required per compressor

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- Not Applicable
- N.A. Not Available
- Parts listed on pages 12 and 13 are for single replacement parts contained in the Option Kits. Part Numbers provided DO NOT reflect part numbers for complete Option Kits. See the Installation Operation Manual, Form 150.55-NM3 for complete Option Kit Part Numbers.

2

Suppressor

2. All other parts for this option are the same as standard, including cooler, controls, and unit components.

031-01117-000

- 3. This option also requires Relay Board Kit, Item I, and Discharge Pressure Readout Kit, Items J and K.
- 4. Loadminder Option also requires Relay Board Kit, Item E.
- 5. Used with Remote Control Center (If Specified).

ALL

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FORM 150.55-RP3

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## COMPONENTS FOR UNIT OPTIONS<sup>1</sup>

ITEM	UNIT MODEL								
NO.	YCWZ33AB YCRZ33AO	YCWZ44AB YCRZ44AO	YCWZ47CC YCRZ47CO	YCWZ77CC YCRZ77CO	YCWZ88CC YCRZ88CO	YCWZ68HD YCRZ88HO	YCWZ89HD YCRZ89HO	YCWZ99HD	YCBZ99HC
POWER	DISCONNECT	SWITCH (PDS)	)						
	N.A.	N.A.	N.A.	N.A.	N.A,	N.A.	N.A.	N.A.	NA
	N.A.	N.A.	N.A.						
	024-25565	024-25565	024-25565	024-25565	024-25565	024-25565	024-25565	024-25565	024-25564
	024-25565	024-25565	024-25565	024-25565	024-25565	024-25565	024-25565	024-25565	024-25565
	024-25565	024-25565	024-25565	024-25565	024-25565	024-25565	024-25565	024-25565	024-25565
	024-25565	024-25565	024-25565	024-25565	024-25565	024-25565	024-25565	024-25565	024-25565
Δ	024-25565	024-25565	024-25565	024-25565	024-25565	024-25565	024-25565	024-25565	024-25565
7	024-25564	024-25564	024-25564	024-25564	024-25563	024-25563	024-25563	024-25563	024-25563
	024-25565	024-25565	024-25564	024-25564	024-25564	024-25564	024-25564	024-25564	024-25563
	024-25565	024-25565	024-25565	024-25565	024-25565	024-25565	024-25565	024-25565	024-25564
	024-25565	024-25565	024-25565	024-25565	024-25565	024-25565	024-25565	024-25565	024-25565
	024-25565	024-25565	024-25565	024-25565	024-25565	024-25565	024-25565	024-25565	024-2556
	024-25565	024-25565	024-25565	024-25565	024-25565	024-25565	024-25565	024-25565	024-2556
	024-25565	024-25565	024-25565	024-25565	024-25565	024-25565	024-25565	024-25565	024-2556

ITEM NO.	QTY PER UNIT	DESCRIPTION	VOLT. CODE	ALL MODELS
FLOW CONT	ROL SWITCH			· · · · · · · · · · · · · · · · · · ·
L	1	Switch, Flow	ALL	024-26116-000
REMOTE CO	NTROL CENTE	<u> </u>		• <u></u>
<u>M</u>	1	Control, Micro Board	ALL	031-01196-000
WALL-MOUN	ITED TRANSFO	DRMER <sup>5</sup>		
N	1	Primary Voltage 115/1/60	-	025-29917-001
	··	Primary Voltage 230/1/50	-	025-29917-002
	NIT SEQUENC			
0	1	Sensor, Temperature	ALL	025-28935-000
P	1	Resistor, 180 Ohm Fixed	ALL	025-29900-000
BAS INTERF	ACE			
Q	1	Control, Remote Reset	ALL	031-00814-000
MUFFLER, DI	SCHARGE		· _ ,	
R	2	Muffler, Discharge (YCR Units Only)	ALL	029-20225-000
		PERATURE READOUT	<u></u>	
S	2	Sensor, Temperature (YCW Units Only)	ALL	025-29964-000

NOTES (For Pages 12 - 13);

- One required per compressor
   Not Applicable
- N.A. Not Available
- Parts listed on pages 12 and 13 are for single replacement parts contained in the Option Kits. Part Numbers provided **DO NOT** reflect part numbers for complete Option Kits. See the Installation Operation Manual, Form 150.55-NM3 for complete Option Kit Part Numbers.
- 2. All other parts for this option are the same as standard, including cooler, controls, and unit components.
- 3. This option also requires Relay Board Kit, Item I, and Discharge Pressure Readout Kit, Items J and K.
- 4. Loadminder Option also requires Relay Board Kit, Item E.
- 5. Used with Remote Control Center (if Specified).



## CONDENSER COMPONENTS

ITEM	άτγ	DESCRIPTION	UNIT MODEL				
NO.	PER UNIT		YCWZ33AB	YCWZ44AB	YCWZ47CC	YCWZ77CC	
1	1	Condenser (Includes Items 2 thru 7)	375-01016-000	375-01016-000	375-01017-000	375-01017-000	
2	1	Head, Front End	375-00390-001	375-00390-001	375-00390-001	375-00390-001	
3	1	Head, Back End	375-00391-001	375-00391-001	375-00391-001	375-00391-001	
4	-	Tube Condenser No. Tubes per Condenser	007-07864-000 73	007-07864-000 73	007-07864-000 95	007-07864-000 95	
* 5 <sup>1</sup>	1	Gasket, Head, Front	075-00394-001	075-00394-001	075-00394-001	075-00394-001	
<sup>s</sup> 6 <sup>1</sup>	1	Gasket, Head, Back	075-00394-001	075-00394-001	075-00394-001	075-00394-001	

ITEM	άτγ	DESCRIPTION	UNIT MODEL				
NO.	PER UNIT		YCWZ88CC	YCWZ86HD	YCWZ89HD	YCWZ99HD	
1	1	Condenser (Includes Items 2 thru 7)	375-01017-000	375-01018-000	375-01018-000	375-01018-000	
2	1	Head, Front End	375-00390-001	366-90688-000	366-90688-000	366-90688-000	
3	1	Head, Back End	375-00391-001	366-92136-000	366-92136-000	366-92136-000	
4	-	Tube Condenser End No. Tubes per Condenser	007-07864-000 95	007-07864-000 134	007-07864-000 134	007-07864-000 134	
\$5 <sup>1</sup>	1	Gasket, Head, Front	075-00394-001	067-77469-000	067-77469-000	067-77469-000	
*6 <sup>1</sup>	1	Gasket, Head, Back	075-00394-001	067-77469-000	067-77469-000	067-77469-000	

NOTES:
 <sup>8</sup> Recommended Stock Spare Part
 1. When replacing gaskets, Items 5 & 6, use:
 <sup>8</sup> Sealer, Gasket, 013-02827
 <sup>9</sup> Primer, 013-01753



## **Ohio Mercantile Self Direct Program**

Application Guide & Cover Sheet

Questions? Call 1-866-380-9580 or visit www.duke-energy.com.

Email this form along with <u>completed Mercantile Self Direct Prescriptive or Custom applications</u>, proof of payment, energy savings calculations and spec sheets to <u>SelfDirect@Duke-Energy.com</u>. You may also fax to 1-513-629-5572.

Mercantile customers, defined as using at least 700,000 kWh annually or having an account in multiple locations are eligible for the Mercantile Self Direct program. Indicate which applies:

- a single Duke Energy Ohio account with 700,000 kWh annual usage
- an account with multiple locations

Please list Duke Energy account numbers below (attach listing of multiple accounts and/or billing history for other utilities as required):

Account Number	Annual Usage	Account Number	Annual Usage
6930-2121-01-0	38,000,000		

Self Direct rebates are available for completed Custom projects that have not previously received a Duke Energy Smart \$aver® Custom Incentive. Self Direct rebates are applicable to Prescriptive measures that were installed more than 90 days prior to submission to Duke Energy and have not previously received a Duke Energy Prescriptive rebate.

Self Direct Program rules allow for, though do not require, certain projects that are Prescriptive in nature under the Smart \$aver program to be evaluated using the Custom process in the Self Direct program. Use the list on page two as a guide to determine which Self Direct program best fits your project(s). Apply for Self Direct projects using the appropriate application forms in conjunction with this cover sheet.

Self Direct Program rules also allow for behaviorally based and/or no cost and low cost projects to receive rebates.

Please check each box to indicate completion/inclusion of the following program requirements:

All sections of	Proof of payment.*	Manufacturer's Spec	Energy
appropriate		sheets	model/calculations and
application(s) are			detailed inputs for
completed			Custom applications

\*If a single payment record is intended to demonstrate the costs of both Prescriptive & Custom projects, please include an additional document with an estimated breakout of costs for each Prescriptive and Custom energy conservation measure.

\*\*Behavioral energy efficiency and demand reduction projects must be both measurable and verifiable. Provide justification with your application. Rebates for such projects may be small in magnitude.



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Application Type	Prescriptive Measures with Optional Custom Processing				
Heating & Cooling and Window Films, Programmable Thermostats, &	Energy Star Window/Sleeve/Room AC	Air Source Heat Pump Water Heater			
Guest Room Energy Management Systems	Setback/Programmable Thermostat Guestroom Energy Management Control	U Window Film			
Chillers & Thermal Storage	Air Cooled Chiller	Water Cooled Chiller			
Motors, Pumps and Variable Frequency Drives (VFDs)	VFD – Applied to Process Pump VFD – Applied to HVAC Pump	└ VFD applied to HVAC Fan			
Food Service	<ul> <li>ENERGY STAR Hot Food Holding Cabinet</li> <li>Night Covers for Display</li> <li>ECM Cooler, Freezer, and Display Case Motors</li> <li>ENERGY STAR Solid or Glass Door Reach-in Freezer of</li> </ul>	Anti-Sweat Heater Control Cooking Equipment ENERGY STAR ICE MACHINE Refrigerator			
Process Equipment	Engineered Nozzle – COMPRESSED AIR     Air compressor equipped with VFD	Pellet Dryer Duct Insulation			
Chiller Tune-ups	Air cooled chiller tune-up	X Water cooled chiller tune-up			

Please indicate above any Prescriptive energy conservation measures to be evaluated through the Custom process. Only Prescriptive measures listed above are eligible for this option. To receive a Self Direct Custom rebate, a detailed analysis of pre-project and post-project energy usage and project costs must be included in the application.

Although some Self Direct Prescriptive measures are eligible for evaluation through Custom processes, such an approach may not be most effective for certain measures.



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## **MERCANTILE SELF DIRECT** Ohio Chiller Tune-up Service Application

Questions? Call 1-866-380-9580 or visit www.duke-energy.com. Email the complete, signed application with all required documents to SelfDirect@duke-energy.com or fax to 513-629-5572.

Is this application: 🛛 NEW	(original) or REVISED (changes made to or	iginal application)
Building Type – Required (check are)		
Data Centers	Full Service Restaurant	Office
Education/K-12	Healthcare	Public Assembly
Education Other	Industrial	Public Order/Safety
Elder Care/Nursing Home	Lodging	Religious Worship/Church
Food Sales/Grocery	Retail (Small Box)	Service
Fast Food Restaurant	🗋 Retail (Big Box)	Warehouse
Other: Office/Research Building		<u>.</u>
How did you haar about the program? (check	() () ()	
Duke Energy Representative	Web Site	🔲 Radio
Contractor / Vendor	Other	

Please check each box to indicate completion of the following program requirements:

	 <u> </u>			
All sections of application	Invoice with make, model number, quantity and equipment manufacturer	⊠ Tax ID number for payee ⊠ W-9 for payee	$\boxtimes$	Customer/vendor agree to Terms and Conditions

alimitation and a second	· · · · ·						
Customer/Business	Procte	er & Gamble	Contact	Contact		Quentin Graves (JLL)	
Phone	513-69	8-4540	Account Nu	Account Number		-0	
Street Address (Where rebate sh	ould be ma	ailed)	11510 Reed Hartman Hwy		<b></b>		
City	Blue A	sh	State	Ohio	Zip Code	45241	
Installation Street Address	8340 N	lason Montgomery R	load		· · _ · _ · · · · ·	· · · · · · · · · · · · · · · · · · ·	
City	Masor	) 	State	Ohio	Zip Code	45040	
E-mail Address	graves	.q@pg.com					
*Failure to provide the account nu	mber assoc	iated with the location	where the installation	took place will resu	It in rejection of the	e application.	
Vender Information							
Vendor			Contact		· · · · · · · · · · · · · · · · · · ·	······································	
Phone			Fax			- ·-	
Street Address					•	··· .	
City		<u>"</u>	State		Zip Code		
E-mail Address				—			
If Duke Energy has questions a	about this	application, who sho	uld we contact?	Customer	🗌 Vendo	r	
Payment Information							
Who should receive rebate paym	ent?	Customer		Vendor (Custo	omer must sign be	low)	
I hereby authorize payment of rel	bate	Customer Signature (	(written signature)				
directly to the vendor:		Date	· · · · · · · · · · · · · · · · · · ·				
Provide Tax ID Number for Paye	e	Customer Tax ID #		31-0411980			
· · ·		Vendor Tax ID #					

Verme and Conditions			
I have read and hereby	agree to the Terms & Conditions and Program	n Requirements.	
Customer Signature (written signature)	Heats Dralles	Vendor Signature (written signature)	
Date	5/15/2014	Date	
Title	JLL Facility Manager	Title	· · · · · · · · · · · · · · · · · · ·



Rebates are subject to change and may be discontinued at the sole discretion of Duke Energy. Equipment must be installed and operable to be eligible for rebates. As Federal Energy Policy Law changes, equipment efficiency requirements are subject to change.

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Air Cooled and Water Cooled Chill	ույնաշ-գիշ					
Manufacturer and Model #	# of Units	Tons Per unit*	Total Project Cost	Current Service Date	Previous Service Date	Total Rebate
York YK S2 S2 J2 DH AS	5	2000	\$6,804.00	02/18/2013	02/10/2012	\$3,402.00
· · · · ·						

\*Provide manufacturer's spec sheet documenting the size of the unit

To Calculate your tunc-up relation	
A. Add up equipment capacity of all units serviced (in tons) and multiply by \$2/ton =	\$20,000.00
B. Cost of service = \$6,804.00 x 50% of total service cost =	\$3,402.00
Total Rebate (lesser amount of row A or row B)=	3402
*Rebates cannot exceed 50% of total service invoice (external labor and equipment).	

### Service Requirements:

- 1. This rebate is available only once per unit in a 12 month period.
- 2. An individual chiller is considered one unit.
- 3. Copy of paid invoice must be included with this application
- 4. Self serviced (internal) labor should not be included as part of the total service cost. Only external labor will be considered as part of the total service invoice.
- 5. Cooling service must include the following normal maintenance items (please check if completed):

Air cooled condenser coil cleaning	Compressor amp draw	Low Pressure controls
System Pressure check and adjust	Supply motor amp draw	High Pressure controls
Filter inspect or replace	Condenser fan(s) amp draw	Crankcase heater operation
Belt inspect or replace	Liquid line temperature	Water cooled chiller condenser tube cleaning
Contactors condition	Suction pressure & temperature	Water cooled chiller evaporator tube cleaning
Evaporator condition	Oil level & pressure	

### Rebate Eligibility

- · Rebates are only available to customers on Duke Energy Ohio non-residential rate.
- Duke Energy Customers who purchase electric generation from an alternative supplier are eligible to participate.
- Rebate will not be paid until eligible equipment has been installed, is available to operate, and verification has been completed by Duke Energy staff as noted in the Term & Conditions stated below.
- Duke Energy reserves the right to revise rebate levels and/or qualifying efficiency levels at anytime.
- Customer may assign the rebate to the vendor who installed/supplied the equipment. The customer's signature is required in the
  appropriate places on this form to assign the rebate to the vendor. Customer agrees that such an action constitutes an irrevocable
  assignment of the rebate. This assigned rebate must reduce the purchase price paid for the equipment by an equivalent amount.
- · Any equipment which, either separately or as part of a project, has or will receive a rebate from any other Duke Energy program
- In no case will Duke Energy pay a rebate above the actual cost of the service.
- · Rebate recipient assumes all responsibilities for any tax consequences resulting from Duke Energy rebate payment.
- To qualify for Duke Energy rebates, applicants who provide their social security number as their federal tax identification number for tax purposes must sign and return the "Customer consent to release personal information" form ("Consent Form") along with the application. Rebate applications are processed by a 3<sup>rd</sup> party vendor. The 3<sup>rd</sup> party vendor is responsible for mailing the 1099 form at the end of the calendar year for tax filing. Duke Energy and the 3<sup>rd</sup> party vendor have signed a confidentiality agreement to protect your personal information. If your social security number is your federal tax ID number and you elect not to sign the Consent Form, please do not send Duke Energy the application, as you will not be qualified to participate in the rebate program.

(Rev. December 2011)

Internal Revenue Service

Department of the Treasury

Form

## Request for Taxpayer Identification Number and Certification

Give Form to the requester. Do not send to the IRS.

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Name (as shown on your income tax return)

	The Procter & Gamble Company				
ge 2.	Business name/disregarded entity name, if different from above				
or type ructions on pa	Check appropriate box for federal tax classification:          Individual/sole proprietor       Image: C Corporation       S Corporation       Partnership       Trust/estate         Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=partnership)				
Print ic Inst	□ Other (see instructions) ►				
ecif	Address (number, street, and apt. or suite no.)	Requester's name and address (optional)			
ଟ୍ଥ	City, state, and ZIP code				
Sec	Cincinnati, OH 45202				
	List account number(s) here (optional)				
	Customer #'s 2559, 3524				
Par	t I Taxpayer Identification Number (TIN)				
Enter to avo reside entitie <i>TIN</i> or	your TIN in the appropriate box. The TIN provided must match the name given on the "Name' and backup withholding. For individuals, this is your social security number (SSN). However, fo ant alien, sole proprietor, or disregarded entity, see the Part I instructions on page 3. For other is, it is your employer identification number (EIN). If you do not have a number, see <i>How to ge</i> in page 3.	ra Social security number			
Note.	If the account is in more than one name, see the chart on page 4 for guidelines on whose	Employer identification number			
numbe	er to enter.	3 1 - 0 4 1 1 9 8 0			
Part	II Certification				

Under penalties of perjury, I certify that:

1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me), and

2. I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding, and

3. I am a U.S. citizen or other U.S. person (defined below).

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions on page 4.

Sign Signature of Here U.S. person ►

### **General Instructions**

Section references are to the Internal Revenue Code unless otherwise noted.

### Purpose of Form

A person who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) to report, for example, income paid to you, real estate transactions, mortgage interest you paid, acquisition or abandonment of secured property, cancellation of debt, or contributions you made to an IRA.

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN to the person requesting it (the requester) and, when applicable, to:

1. Certify that the TIN you are giving is correct (or you are waiting for a number to be issued),

2. Certify that you are not subject to backup withholding, or

3. Claim exemption from backup withholding if you are a U.S. exempt payee. If applicable, you are also certifying that as a U.S. person, your allocable share of any partnership income from a U.S. trade or business is not subject to the withholding tax on foreign partners' share of effectively connected income. Date 🕨

Note. If a requester gives you a form other than Form W-9 to request your TIN, you must use the requester's form if it is substantially similar to this Form W-9.

**Definition of a U.S. person.** For federal tax purposes, you are considered a U.S. person if you are:

An individual who is a U.S. citizen or U.S. resident alien,

;

- A partnership, corporation, company, or association created or
- organized in the United States or under the laws of the United States,
- An estate (other than a foreign estate), or
- A domestic trust (as defined in Regulations section 301.7701-7).

Special rules for partnerships. Partnerships that conduct a trade or business in the United States are generally required to pay a withholding tax on any foreign partners' share of income from such business. Further, in certain cases where a Form W-9 has not been received, a partnership is required to presume that a partner is a foreign person, and pay the withholding tax. Therefore, if you are a U.S. person that is a partner in a partnership conducting a trade or business in the United States, provide Form W-9 to the partnership to establish your U.S. status and avoid withholding on your share of partnership income. 698-6547

DeBra-Kuempel MECHANICAL - ELECTRICAL	Remit to:         P.O. Box 701620           AUG 0.5 2013         Cincinnati, OH 45270-1620
BILLED BY:JULIE B. #513-527-8137 CUSTOMER: 21962	1300/3/3 invoice date 00724524 7/31/13 JOB ADDRESS:
PAM JONES LANG LASALLE AMERICAS-P&G ACCOUNTING PO BOX 5126	JLL/P&G / MBC / CHILLERS-12/13 8700 MASON MONTGOMERY ROAD MASON, OH 45040

Customer PO No.: 4014407000-OP-951897

CINCINNATI, OH 45201-5126

REFERENCE DESCRIPTION

JLL / P&G @ MBC-CHILLER PM 2013 MAINTENANCE

PREVENTIVE MAINTENANCE

RECENTED. 高级 化香水油 ALL ACCOUNTING

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Job Number...: 244423 Bill Contract: 244423 # 6/ 18

AMOUNT

8,233.00

13

*GRDDD* AUG 0 5 2013

Now Accepting Visa/MC/AMX for	SUB-TOTAL	8,233.00
Payment of Invoices.	TAX	535.15
A Service Charge of 1.5% per Month	AMOUNT PAID	.00
will be charged on All Past Due Accts.	AMOUNT DUE	8,768.15
-	ORIGINAL DUE C	N RECEIPT

DeBra-Kuempel 3976 Southern Avenue Cincinnati, Ohio 45227 Phone 513-271-6500 Fax 513-271-4676

Page of	SERVICE REPORT	DeBra-Kuempa Mechanical- Au EMCR Campa	B <b>I</b> Electrical
Job #: 244423, D	Pate: 02/ /13	Tech: 149 Un	it: 1-5
quip/Mfg: 4072K	Model: 4K5	25252	
Serial #:	20	20 Ton chill	-415
Status: Complete	Follow-up	L took O	Ut/Tag Out
Customer Name: 115 M	NET OLL	_ Acct Mgr: Kolu V	O Permit (Tie Off)
Site Address:	4 - Coursolyory Cit.	Lifting	Eqpt/Manpower
City:	State: Off	_Zip: 7PE Ha	rd Hat, Glasses
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## YORK<sup>®</sup> Water-Cooled Chillers



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(All chillers are electric-drive and use refrigerant HFC-134a unless otherwise noted \*) CAPACITY MODEL and DESCRIPTION 215 - 380 TR Model YMC<sup>2</sup> - magnetic centrifugal compressor 755 - 1340 kW Unique Features: 30% less refrigerant, 73 dBA, OptiView™ control panel, OptiSound™ control, OptiSpeed™ variable-speed drive Ideal Applications: comfort cooling, facilities requiring low sound levels, green / LEED® buildings 250 - 3000 TR Model YK - centrifugal compressor 880 -/10,550 kW Unique Features: OptiSpeed<sup>™</sup> variable-speed drive, heat-recovery capability, quick start feature, OptiSound<sup>™</sup> control, OptiView<sup>™</sup> control panel Ideal Applications: comfort cooling, heat-recovery sites, data centers 2500 - 3500 TR Model YK-EP - centrifugal compressors with economizer 8800 - 12,000 kW Unique Features: higher efficiency at design and off-design conditions. OptiSpeed<sup>™</sup> variable-speed drive, single control panel Ideal Applications: district cooling, process / industrial cooling, data centers, turbine inlet-air cooling 1500 - 6000 TR Model YD - dual centrifugal compressors 5300 - 21,100 kW Unique Features: smallest footprint per cooling ton in the industry, single OptiView<sup>™</sup> control panel Ideal Applications: district cooling, retrofits, building additions 300 - 2500 TR Model CYK - compound centrifugal compressors 1050 - 8800 kW Unique Features: high-head and heat-pump capability Ideal Applications: air-cooled condensing, brine chilling, heat pump, and process / industrial cooling 700 - 2800 TR Model YST - steam-turbine-drive centrifugal compressor \* 2460 ~ 9850 kW Unique Features: packaged steam condenser, automatic start-up, OptiView<sup>™</sup> control panel Ideal Applications: co-generation, hybrid plants 3000 - 5500 TR Titan Model OM - centrifugal compressor with 10,550 - 19,350 kW electric-motor, steam-turbine, or gas-engine drive \* Unique Features: flexibility, longest life expectancy, easily retrofitted Ideal Applications: district cooling, air-cooled condensing, brine chilling, heat pump, and process / industrial cooling

Johnson Controls

YORK' MODEL YK CENTRIFUGAL CHILLERS

# Best route to real-world energy performance





# YORK<sup>®</sup> YK chillers deliver maximum efficiency



YORK YK chillers can utilize ECWTs as low as 55°F (13°C) to reach 0.20 kW/ton (18 COP) at off-design conditions, reducing instantaneous energy consumption by as much as 50%.



The capacity range of the YORK model YK chiller is 250 to 3,000 TR (880 to 10,540 kW). Both low-voltage (250 to 575 V) and medium-voltage (2,300 to 13.800 V) designs are available.

### Real-world energy performance is essential

YORK<sup>®</sup> model YK centrifugal chillers, manufactured by Johnson Controls, provide the best route to real-world energy performance – the combined performance at all operating conditions, not just design. Because chillers in the real world operate nearly 99% of the time at off-design conditions, off-design performance is the major factor in energy consumption. That's why YK centrifugal chillers are engineered for maximum efficiency at both design and off-design conditions.

### Unsurpassed Integrated Part Load Value

The Air-conditioning, Heating, and Refrigeration Institute (AHRI) Chiller Certification Program endorses the validity of off-design analysis to compare chiller energy consumption. Measured with AHRI's Integrated Part Load Value (IPLV), YK centrifugal chillers are unsurpassed in energy efficiency. Equipped with an OptiSpeed<sup>™</sup> variable-speed drive, they can reduce energy usage as low as 0.20 kW/TR at off-design conditions.

### Adaptive capacity control optimizes performance

When a YORK YK chiller is equipped with an OptiSpeed drive, it incorporates advanced Adaptive Capacity Control logic, which continually optimizes chiller operation. It closely examines critical operating parameters, and then determines the most efficient way to operate. In addition, it lets you optimize your savings when using intelligent control strategies, such as chilled-water reset. Adaptive Capacity Control logic also accommodates the characteristics of the refrigerant used in the chiller'--- today and tomorrow. Take advantage of colder entering-condenser water Unlike competitive chillers which require entering condenser-water temperature (ECWT) from the cooling tower to be held artificially high, YORK YK centrifugal chillers can utilize ECWT as low as 55°F (13°C). The lower ECWT reduces the compressor workload, and that can reduce instantaneous energy consumption as much as 50%.

## Powerful control center saves energy

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YK chillers feature the OptiView<sup>™</sup> Control Center, which uses microprocessor capabilities to save you energy. Operation at just 1° below the designed chilledwater-temperature setpoint can increase chiller energy consumption by as much as 3%, wasting thousands of kilowatt-hours and dollars each year. The digital precision of the OptiView Control Center lets you set chilled-water temperature to a resolution of ± 0.1°. As a result, you eliminate the energy wasted by drifting a degree or more from the setpoint. The OptiView Control Center can also be used to schedule daily operating hours and holidays. No longer is energy accidentally wasted cooling the facility when it's not needed.



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The OptiView Control Center helps you operate your YORK YK chiller more efficiently by allowing for the precise setting of chilled-water temperature and operating schedule.

## Maximum control with OptiView<sup>™</sup> Control Center

### Easy to operate

The intuitive, full-color OptiView Control Center offers you a higher level of monitoring and control. Data input is foolproof, and data outputs are shown in association with illustrations of the appropriate chiller components. For convenience, all data can be displayed in eleven different languages, in addition to Imperial or SI units.

### Easy to monitor

The OptiView Control Center allows on-board trending of up to six different values, selected from over 100 variables. The values and sampling interval are all user-selectable. This flexibility allows you to select parameters that are critical for your operation and to perform trending without a BAS interface and separate monitor.

### Easy to integrate

Energy savings and ease-of-use can be fully realized when the HVAC system is an integrated part of the building-automation system. The OptiView Control Center is designed to communicate with the Johnson Controls Metasys<sup>®</sup> system. It can also communicate with most control systems on the market today using its optional ELink communication card.







The trending screen provided performance insights not possible with snap shot observations.

## Versatile design provides superior sustainability and flexibility

### **Environmental responsibility**

The environmental impact of your chiller can be significant. You can reduce your impact by specifying YORK YK chillers. You'll get the benefit of refrigerant HFC-134a, which has zero ozone depletion potential (ODP). Plus, the high efficiency of the chillers reduces the indirect global warming potential (GWP), which is 98% of the total impact, caused by greenhouse-gas emissions produced by your utility to power the chiller. In addition, because of the chillers' high efficiency, your building could earn points for the Optimize Energy Performance (EAc1) credit in the Leadership in Energy and Environmental Design® (LEED) program.

Falling-film technology, utilized in the evaporator of YK chillers, reduces the refrigerant charge by up to 40%. It is available in YK chillers up to about 1,000 TR (based on conditions), and will help your building to qualify for maximum LEED points for Enhanced Refrigerant Management (EAc4).

#### **Reduced noise levels**

Traditional centrifugal chillers can generate a substantial amount of objectionable noise, but the YORK YK chiller is equipped with the innovative OptiSound<sup>™</sup> Control, which reduces noise at off-design conditions. The control continuously monitors the characteristics of the compressordischarge gas and optimizes the diffuser spacing of the compressor to minimize noisy gas-flow disruptions from the impeller. Chiller operation is also stabilized.

#### Flexible heating option

The YORK YK chiller can also be configured as a heatrecovery chiller, for use in facilities with simultaneous heating and cooling requirements. The heat-recovery unit takes advantage of the free heat that is typically rejected by the cooling towers. The heat can be used to control humidity, reheat the air, and preheat domestic hot water. Heat-recovery units have outstanding heating coefficients of performance that can reach up to 11.4.

#### Quick restart and return to setpoint

The Quick Start feature available on the YORK YK chiller reduces the risks that temperature-sensitive facilities experience after a power interruption. YK chillers equipped with this feature restart and return to the specified chilled-water temperature faster, reducing the risks of expensive downtime.



A falling-film evaporator is more efficient because refrigerant is sprayed over the tubes, reducing refrigerant charge up to 40%.



The YK chiller is available in a heat-recovery configuration. Recovered heat can be used in the HVAC or domestic hot-water systems.

## Maximum reliability with minimum maintenance

### OptiView Control Center keeps you well-informed

The OptiView Control Center provides complete information on your chiller's operating condition. Safety-shutdown information includes day, time, cause of shutdown and type of restart required. Color-coding of fault messages allows easy determination of chiller status. Yellow messages signify shutdowns with automatic restart, requiring no operator intervention. Red messages are displayed for shutdowns requiring manual restart, alerting the operator that a system check may be required.

The Trending Screen can show changes in motor current, oil temperature and pressure, refrigerant pressures, or water temperatures, all of which can be valuable indicators of developing problems. This capability gives you ample time to take corrective measures before any expensive downtime is incurred. With the OptiView Control Center, you can see when to schedule routine maintenance in advance of actual need.

### Open drive is easy to maintain

The YORK YK centrifugal chiller uses an open-motor driveline, which means less downtime. If a motor failure occurs, the chiller can be brought back online much faster and at a reduced cost. The motor is easy to remove, and can be repaired at a local motor shop. As a result, downtime due to motor failure is dramatically reduced.

### Electrical protection extends motor life

Equipped with an OptiSpeed drive, the YK chiller starts "softly," never letting the inrush current exceed 100% of the full-load amps. By limiting the inrush, the motor windings do not rub together with expansion, which results in longer motor life and less chiller downtime. Lower inrush also reduces torque stresses on the motor and compressor driveline.

### Start maximizing today

For more information on how YORK YK chillers can deliver real-world energy performance, visit johnsoncontrols.com or contact your Johnson Controls representative.



Color-coded fault messages allow early determination of chiller status and required operator action.

Printed on recycled paper.

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## **Ohio Mercantile Self Direct Program**

Application Guide & Cover Sheet

Questions? Call 1-866-380-9580 or visit www.duke-energy.com.

Email this form along with <u>completed Mercantile Self Direct Prescriptive or Custom applications</u>, proof of payment, energy savings calculations and spec sheets to <u>SelfDirect@Duke-Energy.com</u>. You may also fax to 1-513-629-5572.

Mercantile customers, defined as using at least 700,000 kWh annually or having an account in multiple locations are eligible for the Mercantile Self Direct program. Indicate which applies:

a single Duke Energy Ohio account with 700,000 kWh annual usage

an account with multiple locations

Please list Duke Energy account numbers below (attach listing of multiple accounts and/or billing history for other utilities as required):

Account Number	Annual Usage	Account Number	Annual Usage
0040-2121-01-7	24,000,000		

Self Direct rebates are available for completed Custom projects that have not previously received a Duke Energy Smart \$aver® Custom Incentive. Self Direct rebates are applicable to Prescriptive measures that were installed more than 90 days prior to submission to Duke Energy and have not previously received a Duke Energy Prescriptive rebate.

Self Direct Program rules allow for, though do not require, certain projects that are Prescriptive in nature under the Smart \$aver program to be evaluated using the Custom process in the Self Direct program. Use the list on page two as a guide to determine which Self Direct program best fits your project(s). Apply for Self Direct projects using the appropriate application forms in conjunction with this cover sheet.

Self Direct Program rules also allow for behaviorally based and/or no cost and low cost projects to receive rebates.

Please check each box to indicate completion/inclusion of the following program requirements:

All sections of	Proof of payment.*	Manufacturer's Spec	Energy
appropriate		sheets	model/calculations and
application(s) are			detailed inputs for
completed			Custom applications

\*If a single payment record is intended to demonstrate the costs of both Prescriptive & Custom projects, please include an additional document with an estimated breakout of costs for each Prescriptive and Custom energy conservation measure.

\*\*Behavioral energy efficiency and demand reduction projects must be both measurable and verifiable. Provide justification with your application. Rebates for such projects may be small in magnitude.

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## **MERCANTILE SELF DIRECT** Ohio Chiller Tune-up Service Application

Questions? Call 1-866-380-9580 or visit <u>www.duke-energy.com</u>. Email the complete, signed application with all required documents to <u>SelfDirect@duke-energy.com</u> or fax to 513-629-5572.

ls this application: 🛛 NEW (original) or 🔤 REVISED (changes made to original application)

Building Type=Required (check one)		
Data Centers	Full Service Restaurant	Office
Education/K-12	Healthcare	Public Assembly
Education Other	Industrial	Public Order/Safety
Elder Care/Nursing Home		Religious Worship/Church
Food Sales/Grocery	Retail (Small Box)	
E Fast Food Restaurant	Retail (Big Box)	U Warehouse
Other: Office/Research & Development		·
How did you hear about the program? (check	ON)	
Duke Energy Representative	Web Site	🗌 Radio
Contractor / Vendor	Other	

Please check each box to indicate completion of the following program requirements:

All sections of application Invoice with make, model number, quantity and equipment manufacturer	⊠ Tax ID number for payee ⊠ W-9 for payee	Customer/vendor agree to Terms and Conditions
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Customerlinformation							
Customer/Business	Procter	& Gamble	Contact		Quentin Graves (JLL)		(JLL)
Phone	513-626	5-4646	Account Number		0040-2121-01-7		
Street Address (Where rebate should	d be mai	iled)	11510 Reed H	lartman Hwy	•		
City	Blue As	sh	State	Ohio	Zip Co	de	45241
Installation Street Address	11473 (	Grooms Rd	·				· · · · · · · · · · · · · · · · · · ·
City	Blue As	sh	State	Ohio	Zip Co	de	45241
E-mail Address	Graves	.q@pg.com		··· · · ·			
*Failure to provide the account number	er associ	ated with the location where i	the installation t	ook place will result i	in rejectio	on of the ap	plication.
VendorInformation				40 			
Vendor		-	Contact				
Phone			Fax				
Street Address			•				
City			State		Zip Co	de	
E-mail Address			- <b>4_</b> .		•		-1
If Duke Energy has questions abo	ut this a	pplication, who should we	e contact?	Customer		Vendor	
Payment-Information	$< \alpha / b$						
Who should receive rebate payment	?	Customer		U Vendor (Custon	ner must	sign below	/)
I hereby authorize payment of rebate	•	Customer Signature (writter	n signature)				
directly to the vendor:		Date					
Provide Tax ID Number for Payee		Customer Tax ID #		31-0411980			
		Vendor Tax ID #					· · ·

Terms and Conditio	ns, the second		に通知者はないたちの時代になって
I have read and here	by agree to the Terms & Conditions and Program	Requirements.	
Customer Signature (written signature)	Stats Graves	Vendor Signature (written signature)	
Date	5/9/2014	Date	
Title	JLL Facility Manager	Title	



3/ 15

Rebates are subject to change and may be discontinued at the sole discretion of Duke Energy. Equipment must be installed and operable to be eligible for rebates. As Federal Energy Policy Law changes, equipment efficiency requirements are subject to change.

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Manufacturer and Model #	# of Units	Tons Per unit*	Total Project Cost	Current Service Date	Previous Service Date	Total Rebate
YKSDRCJ4-DHCS	2	2000	\$2,666.00	12/30/2013	04/16/2012	\$1,333.00
YK P1 Q2 H2-DB AS	1	1200	\$1,342.00	12/27/2013	02/29/2012	\$671.00
Carrier 30HK-040-D-611	2	40	\$3,240.00	12/16/2013	04/27/2012	\$1620

\*Provide manufacturer's spec sheet documenting the size of the unit

To Calculate yourstune; up rebate :	
A. Add up equipment capacity of all units serviced (in tons) and multiply by \$2/ton =	\$10,560.00
B. Cost of service = \$7,248.00 x 50% of total service cost =	\$3,624.00
Total Rebate (lesser amount of row A or row B)=	\$3624
*Bebates cannot exceed 50% of total service invoice (external labor and oquinmont)	

ates cannot exceed 50% of total service invoice (external labor and equipment).

### Service Requirements:

- 1. This rebate is available only once per unit in a 12 month period.
- 2. An individual chiller is considered one unit.
- 3. Copy of paid invoice must be included with this application
- Self serviced (internal) labor should not be included as part of the total service cost. Only external labor will be considered as part 4. of the total service invoice,
- 5. Cooling service must include the following normal maintenance items (please check if completed):

Air cooled condenser coil cleaning	Compressor amp draw	Low Pressure controls
System Pressure check and adjust	Supply motor amp draw	High Pressure controls
Filter inspect or replace	Condenser fan(s) amp draw	Crankcase heater operation
Belt inspect or replace	🛛 🖾 Liquid line temperature	Water cooled chiller condenser tube cleaning
Contactors condition	Suction pressure & temperature	Water cooled chiller evaporator tube cleaning
Evaporator condition	Oil level & pressure	

#### Rebate Eligibility

- Rebates are only available to customers on Duke Energy Ohio non-residential rate.
- Duke Energy Customers who purchase electric generation from an alternative supplier are eligible to participate.
- Rebate will not be paid until eligible equipment has been installed, is available to operate, and verification has been completed by Duke Energy staff as noted in the Term & Conditions stated below.
- Duke Energy reserves the right to revise rebate levels and/or qualifying efficiency levels at anytime.
- Customer may assign the rebate to the vendor who installed/supplied the equipment. The customer's signature is required in the appropriate places on this form to assign the rebate to the vendor. Customer agrees that such an action constitutes an irrevocable assignment of the rebate. This assigned rebate must reduce the purchase price paid for the equipment by an equivalent amount.
- Any equipment which, either separately or as part of a project, has or will receive a rebate from any other Duke Energy program
- In no case will Duke Energy pay a rebate above the actual cost of the service.
- Rebate recipient assumes all responsibilities for any tax consequences resulting from Duke Energy rebate payment.
- To qualify for Duke Energy rebates, applicants who provide their social security number as their federal tax identification number for tax purposes must sign and return the "Customer consent to release personal information" form ("Consent Form") along with the application. Rebate applications are processed by a 3<sup>rd</sup> party vendor. The 3<sup>rd</sup> party vendor is responsible for mailing the 1099 form at the end of the calendar year for tax filing. Duke Energy and the 3<sup>rd</sup> party vendor have signed a confidentiality agreement to protect your personal information. If your social security number is your federal tax ID number and you elect not to sign the Consent Form, please do not send Duke Energy the application, as you will not be qualified to participate in the rebate program.

## Request for Taxpayer Identification Number and Certification

4/ 15

Name (as shown on your income tax return)

	The Procter & Gamble Company									
ge 2.	Business name/disregarded entity name, if different from above									
r type Ictions on pa	Check appropriate box for federal tax classification:	ust/estate			<u>, 1</u>			Exem	pt paye	9
Print o ic Instru	☐ Other (see instructions) ►									
ecif	Address (number, street, and apt. or suite no.)	Requester's	nam	e and a	addres	s (optio	nal)			
Š	One Procter & Gamble Plaza									
, Gee	Cincinneti OLI 45000									
	List recourt number / here (asting-0									
	Civitament #1= 2550, 2504									-
Day	Customer # \$ 2559, 3524									
Par	I axpayer Identification Number (TIN)									
Enter to avo reside entitie <i>TIN</i> or	your TIN in the appropriate box. The TIN provided must match the name given on the "Name" id backup withholding. For individuals, this is your social security number (SSN). However, for int alien, sole proprietor, or disregarded entity, see the Part I instructions on page 3. For other s, it is your employer identification number (EIN). If you do not have a number, see <i>How to get</i> page 3.	line So a a	cial s		y num	ber	-			
Note.	If the account is in more than one name, see the chart on page 4 for guidelines on whose	En	nploy	er ider	tifica	tion nu	mbei	r		
numb	er to enter.	3	1	- (	) 4	1	1	9 8	0	
Pari	t II Certification									

Under penalties of perjury, I certify that:

1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me), and

 I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding, and

3. I am a U.S. citizen or other U.S. person (defined below).

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions on page 4.

Sign Signature of U.S. person ►

### General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

### Purpose of Form

A person who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) to report, for example, income paid to you, real estate transactions, mortgage interest you paid, acquisition or abandonment of secured property, cancellation of debt, or contributions you made to an IRA.

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN to the person requesting it (the requester) and, when applicable, to:

 Certify that the TIN you are giving is correct (or you are waiting for a number to be issued),

2. Certify that you are not subject to backup withholding, or

3. Claim exemption from backup withholding if you are a U.S. exempt payee. If applicable, you are also certifying that as a U.S. person, your allocable share of any partnership income from a U.S. trade or business is not subject to the withholding tax on foreign partners' share of effectively connected income. Date 🕨

Note. If a requester gives you a form other than Form W-9 to request your TIN, you must use the requester's form if it is substantially similar to this Form W-9.

Definition of a U.S. person. For federal tax purposes, you are considered a U.S. person if you are:

An individual who is a U.S. citizen or U.S. resident alien,

;

- A partnership, corporation, company, or association created or
- organized in the United States or under the laws of the United States,
- An estate (other than a foreign estate), or
- A domestic trust (as defined in Regulations section 301.7701-7).

**Special rules for partnerships.** Partnerships that conduct a trade or business in the United States are generally required to pay a withholding tax on any foreign partners' share of income from such business. Further, in certain cases where a Form W-9 has not been received, a partnership is required to presume that a partner is a foreign person, and pay the withholding tax. Therefore, if you are a U.S. person that is a partner in a partnership conducting a trade or business in the United States, provide Form W-9 to the partnership to establish your U.S. status and avoid withholding on your share of partnership in come.

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DeBra-Kuempel MECHANICAL - ELECTRICAL An EMCOR Company	<b>Remit to:</b> JAN 0 3 2014	P.O. Box 7016 Cincinnati, Oh	20 1 45270-1620
BILLED BY:JULIE B. #513-527-8137	13006881	INVOICE	DATE
CUSTOMER: 21962 Pam	JOB ADDRESS	00737693 S:	12/31/13
JONES LANG LASALLE AMERICAS-P&G ACCOUNTING PO BOX 5126 CINCINNATI, OH 45201-5126 698-6547	JLL/P&G / 11510 REEI CINCINNATI	SWIC / CHILL D HARTMAN HWY 1, OH 45241	ERS-12/13

Customer PO No.: 934794-OP-4014409100

REFERENCE DESCRIPTION

JLL /P&G @ SWTC/ CHILLER CHILLER MAINTENANCE 2013

PREVENTIVE MAINTENANCE

RECEIVED

Job Number...: 244443 Bill Contract: 244443

7,248.00

AMOUNT

JAN 0 8 2814 **JLLACCOUNTING** 

Male Down 1.6.14

GR'DDD

JAN 03 2014

SUB-TOTAL 7,248.00 Now Accepting Visa/MC/AMX for 489.24 Payment of Invoices. TAX .00 A Service Charge of 1.5% per Month AMOUNT PAID 7,737.24 AMOUNT DUE will be charged on All Past Due Accts. DUE ON RECEIPT ORIGINAL

Cincinnati, Ohio 45227 Fax 513-271-4676 Phone 513-271-6500 3976 Southern Avenue DeBra-Kuempel

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HVAC Guide Specifications Water-Cooled and Condenserless Reciprocating Chillers

Size Range:

15 to 60 Tons (53 to 210 kW)

Carrier Model Number:

30HW018-040 30HK040-060 30HL050,060

### Part 1 — General

**1.01 SYSTEM DESCRIPTION** 

Microprocessor controlled water-cooled (HWB,HWC, HWS,HK) or condenserless (HWA,HL) liquid chiller utilizing serviceable, semi-hermetic type compressor.

1.02 QUALITY ASSURANCE

- A. The 30HWB,HWC,HK 60-Hz unit performance shall be rated per ARI (U.S.A.) Standard 550/590-98 at standard rating conditions. All other unit performance shall be based on ARI Standard 550/590-98.
- B. Unit construction shall comply with ANSI/ASHRAE 15, latest revision Safety Standard, NEC, and applicable ASME codes (U.S.A. codes).
- C. Unit shall be certified in accordance with ISO 9002 manufacturing quality standard.
- D. Unit shall be UL listed and UL, Canada certified (30HWA, HWB, HWC, HK 60-Hz units only) (U.S.A. standards).

## 1.03 DELIVERY, STORAGE AND HANDLING

Unit shall be shipped factory-assembled with all piping and wiring, precharged with a complete operating charge (30HWB,HWC,HWS,HK) or a holding charge (30HWA,HL) of R-22 and shall be stored and handled according to manufacturer's recommendations.

### Part 2 — Products

2.01 EQUIPMENT

A. General:

Single-piece liquid chiller consisting of compressor(s), direct expansion cooler, condenser(s) (30HWB,HWC,HWS,HK), controls, safeties, and any hardware required before start-up.

- B. Unit Cabinet:
  - 1. Frame shall be of heavy-gage galvanized steel with an electrostatically applied baked enamel finish.
  - The 30HW units shall pass through a standard 30-in. (762 mm) door and shall not exceed 36 in. (914 mm) in length (30HWA,B). The 30HK,HL units shall not exceed 36 in. (762 mm) in width.
- C. Compressor:

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- 1. Reciprocating, serviceable, semi-hermetic type only.
- 2. Equipped with an automatically reversible oil pump, operating oil charge, suction and discharge shutoff valves, oil sight glass, and a refrigerant suction gas-cooled motor.
- 3. Each shall be mounted on spring vibration isolators with an isolation efficiency of no less than 95%.
- 4. Each compressor shall have a crankcase heater, muffler, and suction cutoff unloaders.
- 5. Speed not to exceed 1750 rpm (29.2 r/s) for 60 Hz units, and 1450 rpm (24.2 r/s) for 50 Hz units.
- 6. Shall be same manufacturer as chiller.
- D. Cooler:
  - 1. 30HW: Single-pass ANSI type 316, stainless-steel, brazed-plate construction. 30HK,HL: Single-pass, shell-and-tube type with removeable heads and multiple internal polypropylene baffles. Seamless copper tubes shall be rolled into tube sheets.
  - 2. Direct expansion refrigerant circuit.
  - 3. Equipped with grooved-end-type fluid connections at least 8 in. (203 mm) above floor level.
  - 4. Insulated with 3/4-in. (19 mm) closed cell foam or equivalent.

5. Cooler shall be tested and stamped according to ASME code (U.S.A.) for working pressures of 430 psig (2965 kPa) on the refrigerant side for 30HW units and 235 psig (1620 kPa) for 30HK,HL units. Cooler shall have a maximum of 300 psig (2069 kPa) fluid-side working pressure for 30HW units and 150 psig (1034 kPa) for 30HK,HL units.

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- E. Condenser (30HWC,30HK):
  - 1. Water-cooled shell-and-tube type with seamless, integrally-finned copper tubes and removable heads (2 condensers on 30HK units).
  - 2. Design and construction shall provide positive subcooling of liquid refrigerant.
  - 3. Each unit shall be equipped with a pressure relief device, purge cock, and liquid line shutoff valve.
  - 4. Condenser shall be tested and stamped in accordance with ASME code for refrigerant-side working pressure of 365 psig (2517 kPa) for 30HWC units and 385 psig (2655 kPa) for 30HK units. Condenser shall have a maximum water-side working pressure of 300 psig (2069 kPa) for 30HWC units and 250 psig (1724 kPa) for 30HK units.
- F. Condenser (30HWB):
  - 1. Single-pass, water-cooled, ANSI type 316, stainless-steel brazed-plate construction that shall provide positive subcooling of liquid refrigerant.
  - 2. Condensers shall be tested and stamped per ASME code for working pressures of 430 psig (2965 kPa) on the refrigerant side. Condenser shall have a maximum of 300 psig (2069 kPa) water-side working pressure.
  - 3. Equipped with grooved-end-type water connections at least 25 in. (635 mm) above floor level.
  - 4. Each condenser has a liquid line shutoff valve.
- G. Condenser (30HWS):
  - 1. Water-cooled shell-and-tube type with seamless, integrally-finned 90/10 cupro-nickel tubes and tube sheets with removable heads and zinc anodes.
  - 2. Design and construction shall provide positive subcooling of liquid refrigerant.
  - 3. Each unit shall be equipped with a pressure relief device, purge cock, and liquid line shutoff valve.
  - 4. Condenser shall be tested and stamped in accordance with ASME code for refrigerant-side working pressure of 365 psig (2517 kPa). Condenser shall have a maximum water-side working pressure of 300 psig (2069 kPa).
  - 5. Heads shall include replaceable zinc anodes for condenser corrosion protection.
- H. Refrigerant Components:

Each chiller shall contain the following: high side pressure relief device; liquid, suction, and discharge shutoff valves; sight glass; filter drier; thermostatic expansion valve; and charging valve.

- I. Controls and Safeties:
  - 1. Controls:
    - a. Unit controls shall include the following minimum components:
      - 1) Microprocessor.
      - 2) Power and control circuit terminal blocks.
      - 3) ON/OFF control switch.
      - Single set point dial (50 Hz unit) or Scrolling Marquee Display (60 Hz unit). NOTE: Scrolling Marquee Display shall be available as a factory-installed option for 50 Hz unit.
      - 5) Thermistor installed to measure saturated condensing temperature, cooler saturation temperature, compressor return gas temperature, and cooler entering and leaving fluid temperatures.
      - 6) Terminal block for temporary and/or permanent interface to the Carrier Comfort Network or similar building system control.
    - b. Unit controls shall be capable of performing the following functions:
      - 1) Automatic circuit lead/lag (30HK,HL only).
      - 2) Pumpout at beginning and end of every circuit cycle.
      - Capacity control based on leaving chilled fluid temperature and compensated by rate of change of return-fluid temperature.
      - 4) Limiting of the chilled fluid temperature pulldown rate at start-up to 1° F (.56° C) per minute to prevent excessive demand spikes (charges) at start-up.
  - 2. Safeties:

a. Unit shall be equipped with sensors and all necessary components in conjunction with the control system to provide the unit with the following protections:

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- 1) Loss of refrigerant charge protection.
- 2) Low fluid flow detection.
- 3) Low chilled fluid temperature protection.
- 4) Low control voltage (to unit) protection.
- 5) High-pressure switch.
- b. Compressors shall be equipped with the following manual-reset type protections:
  - 1) Pressure overload.
  - 2) Electrical overload through the use of definite-purpose contactors and calibrated, ambient compensated, magnetic trip circuit breakers. Circuit breakers shall open all 3 phases in the event of an overload in any one phase (single-phasing condition).
- J. Operating Characteristics:
  - 1. Unit shall be capable of starting with up to 95 F (35 C) fluid temperature entering the cooler.
  - 2. Unit shall be capable of operating with variable cooler fluid flow.
- K. Electrical Requirements:
  - 1. Single-point electrical power connection with terminal block. Shall include power for control circuit.
  - 2. Control points shall be accessed through terminal block.
- L. Special Features:
  - 1. Oil Safety Switch (standard on HWA,HL, and brine units, field-installed accessory on HWB,HWC,HWS,HK standard units):
  - This switch senses differential oil pressure and prevents unit operation at low oil pressures. 2. Hot Gas Bypass:

This factory-installed option (30HW) or field-installed accessory (30HK,HL) shall permit chiller unloading capacity down to 10% of maximum loaded capacity.

3. Pressure Gage Panel:

This field-installed accessory shall include both suction and discharge pressure gages with shutoff valves.

- Sound Enclosure Panels: This acoustic package shall be either factory (30HW units only) or field installed and shall entirely enclose the compressor section to reduce radiated sound by approximately 5 dBA.
- Mobility Package (30HW units only):
   This package shall be either factory (30HWA,B only) or field installed and shall include 4 swivel wheels for easy unit mobility.
  - NOTE: The 30HWC, S units require 2 packages.
  - 6. Vibration Isolators (30HW units only):

Vibration isolators shall be field installed before the unit is set into its final location and shall reduce vibration transmission through the mounting area of the chiller.

7. Multi-Chiller Control:

The multi-chiller control shall be field installed, and shall sequence up to 8 chillers in parallel. 8. Proof-of-Flow Switch:

This field-installed accessory shall sense fluid pressure differential across the chiller, and shall be compatible with the multi-chiller control accessory.

- Compressor Ground Fault Sensor: Ground-current sensing shall deenergize the compressor on sensing of a 2.5 ± 2 amps current imbalance from primary to ground to prevent formation of acids from motor burnout. It shall be a field-installed accessory.
- 10. Part-Wind Start (option on 30HW025-040; special order on HK040-060 and HL050,060): Part-wind start shall be factory installed to reduce compressor inrush current.
- Non-Fused Disconnect (30HW units only): The non-fused disconnect shall be factory installed and shall disconnect all power to the unit (including control circuit power).
- 12. Medium Temperature Brine (30HW units only): Special modifications shall be made at the factory to permit operation with leaving chilled fluid temperatures between 15 to 39 F (-9.4 to 3.9 C). NOTE: This is a special order for 30HK,HL units.
- 13. Condenser Manifold Package (HK only):
This field-installed accessory shall provide common fluid inlet and outlet connections.

- 14. Scrolling Marquee Display (standard on 60 Hz unit; available as a factory-installed option for 50 Hz unit):
  - a. Single leaving water temperature set point potentiometer.
  - b. The diagnostic display module shall be capable of indicating the safety lockout condition by displaying a code for which an explanation may be scrolled at the display. Information included for display shall be:

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- 1) Compressor lockout.
- 2) Loss of charge.
- 3) Low fluid flow.
- 4) Low oil pressure.
- 5) Cooler freeze protection.
- 6) Thermistor malfunction.
- 7) Entering and leaving-fluid temperature.
- 8) All set points.
- 9) Time of day.
- c. Display module, in conjunction with the microprocessor, must also be capable of displaying the output (results) of a service test. Service test shall verify operation of every switch, thermistor, fan, and compressor before chiller is started.
- 15. Energy Management Module (EMM):
  - EMM shall be capable of:
  - a. Leaving temperature reset form space temperature, outdoor temperature, or 4 to 20 mA signal.
  - b. Demand limit or load shed via field supplied 4 to 20 mA signal or 2-step discrete contact closure.



DUKE ENERGY Mercantile Self Direct Program 139 East Fourth Street Cincinnati, OH 45202 З

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513 629 5572 fax

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June 19, 2014

Graves Quentin Proctor & Gamble 11510 Reed Hartman Hwy Blue Ash, OH 45241

Subject: Your Application for a Duke Energy Mercantile Self-Direct Rebate

Dear Mr. Quentin:

Thank you for your Duke Energy Mercantile Self Direct rebate application. As noted in the Energy Conservation Measure (ECM) chart on page two, a total rebate of \$8,466 has been proposed for your Chiller Tune Ups completed in the 2012 and 2013 calendar years. All Self Direct Rebates are contingent upon approval by the Public Utilities Commission of Ohio (PUCO).

At your earliest convenience, please indicate if you accept this rebate by

- providing your signature on page two
- completing the PUCO-required affidavit on page three.

Please return the documents to my attention via fax at 513-629-5572 or e-mail to SelfDirect@Duke-Energy.com. Upon receipt, Duke Energy will submit the necessary documentation to PUCO. Following PUCO's approval, Duke Energy will remit payment.

At Duke Energy, we value your business and look forward to working with you on this and future energy efficiency projects. We hope you will consider our Smart \$aver® incentives, when applicable. Please contact me if you have any questions.

Sincerely,

Megan Fox

Megan Fox Product Manager Mercantile Self Direct Rebates

cc: Mike Harp, Account Executive

Please indicate your response to this rebate offer within 30 days of receipt.

Rebate is accepted.

Rebate is declined.

By accepting this rebate, Proctor & Gamble affirms its intention to commit and integrate the energy efficiency projects listed on the following pages into Duke Energy's peak demand reduction, demand response and/or energy efficiency programs.

Additionally, Proctor & Gamble also agrees to serve as joint applicant in any future filings necessary to secure approval of this arrangement as required by PUCO and to comply with any information and reporting requirements imposed by rule or as part of that approval.

Finally, Proctor & Gamble affirms that all application information submitted to Duke Energy pursuant to this rebate offer is true and accurate. Information in question would include, but not be limited to, project scope, equipment specifications, equipment operational details, project costs, project completion dates, and the quantity of energy conservation measures installed.

If rebate is accepted, will you use the monies to fund future energy efficiency and/or demand reduction projects?

🗶 YES 🗌 NO

If rebate is declined, please indicate reason (optional):

Anne First

aventin Groves

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Customer Signature

Printed Name

Date

## **Proposed Rebate Amounts**

Measure : ID	Energy Conservation Weasure (ECM)	- Proposed Rebate
ECM-1	Air Cooled Chiller Tune Up (Qty. 10,000 tons)	\$3,402.00
ECM-2	Air Cooled Chiller Tune Up (Qty. 4,000 tons)	\$1,333.00
ECM-3	Air Cooled Chiller Tune Up (Qty. 1,200 tons)	\$671.00
ECM-4	Air Cooled Chiller Tune Up (Qty. 80 tons)	\$160.00
ECM-5	Air Cooled Chiller Tune Up (Qty. 2,500 tons)	\$1,320.00
ECM-6	Air Cooled Chiller Tune Up (Qty. 3,000 tons)	\$1,372.00
ECM-7	Air Cooled Chiller Tune Up (Qty. 104 tons)	\$208.00
Total		\$8,466.00

**2** | P a g e



**Application to Commit Energy Efficiency/Peak Demand Reduction** Programs (Mercantile Customers Only)

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# 3/

Case No.: \_\_\_\_\_-EL-EEC

14-1256-EL-EEC

State of Ohio :

Quent: Graves, Affiant, being duly sworn according to law, deposes and says

1. I am the duly authorized representative of:

Jones Long LaSalle [insert customer or EDU company name and any applicable name(s) doing business as]

- 2. I have personally examined all the information contained in the foregoing application, including any exhibits and attachments. Based upon my examination and inquiry of those persons immediately responsible for obtaining the information contained in the application, I believe that the information is true, accurate and complete.
- 3. I am aware of fines and penalties which may be imposed under Ohio Revised Code Sections 2921.11, 2921.31, 4903.02, 4903.03, and 4903.99 for submitting false information.

Just Draw Facility Monoser Signature of Affiant & Title

Sworn and subscribed before me this 27 day of Gunu, <u>*Ole*/14</u> Month/Year

Signature of official administering oath

April Schnelle/SR. Admin Asst. Print Name and Title

My commission expires on <u>9-24-3017</u>

APRIL L. SCHNELLE Notary Public, State of Ohio My Commission Expires 09-24-2017

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This foregoing document was electronically filed with the Public Utilities

Commission of Ohio Docketing Information System on

7/14/2014 12:45:44 PM

in

Case No(s). 14-1256-EL-EEC

Summary: Application Application to Commit Energy Efficiency/Peak Demand Reduction Programs (Mercantile Customers Only)- P&G, Air Cooled Chiller Tune Ups electronically filed by Carys Cochern on behalf of Duke Energy