Ohio | Public Utilities Commission

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

Case No.: 13-1606 -EL-EEC

Mercantile Customer: **Hyatt Regency**

Electric Utility: **Duke Energy**

Program Title or Description: **VFD Pumps**

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. 10-834-EL-POR

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 ee-pdr@puc.state.oh.us.

Section 1: Mercantile Customer Information

Name: **Hyatt Regency**

Principal address: **71 South Wacker Drive Chicago, Illinois 60606**

Address of facility for which this energy efficiency program applies:

151 West Fifth Street Cincinnati, Ohio 45022

Name and telephone number for responses to questions:

Grady Reid Jr, 513-287-1038

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**. (**Refer to Attachment 1 - Appendix 1**)

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):

✓ Installation of new equipment for new construction or facility expansion. The customer installed new equipment on the following date(s): **April 2012**

□ Behavioral or operational improvement.

B) Energy savings achieved/to be achieved by the energy efficiency program:

1) 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.

3) 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: **122,972 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.

_____

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.)
- □ 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?

April 2012

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

26.4 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 **$3,600.00 (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 16.73 (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 **$67,680 (See Attachment 1 - Appendix 5).**

The utility's program costs were **$1,680 (See Attachment 1 - Appendix 6).**

The utility's incentive costs/rebate costs were **$3,600 (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.

DUKE ENERGY
Mercantile Self Direct Program
139 East Fourth Street
Cincinnati, OH 45202
513 629 5572 fax

September 18, 2012

Mr. Darrell Johnson
Hyatt Regency
151 West Fifth Street
Cincinnati, Ohio 45202

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

Dear Mr. Johnson:

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 $3600.00 has been proposed for your VFD projects completed in the 2012 calendar year. **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,

Grady Reid, Jr
Product Manager
Mercantile Self Direct Rebates

cc: Terry Holt, Duke Energy
Rob Jung, WECC
John Succo, Step Resources

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

☒ Rebate is accepted. ☐ Rebate is declined.

By accepting this rebate, Hyatt Regency 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, Hyatt Regency 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, Hyatt Regency 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):

Darrell Johnson 6-27-13

Customer Signature Printed Name Date

Proposed Rebate Amounts

Measure ID	Energy Conservation Measure (ECM)	Proposed Rebate Amount
ECM-1	VFD Process Pump 30 HP (Qty – 1)	$600.00
ECM-2	VFD Process Pump 50 HP (Qty – 1)	$1000.00
ECM-3	VFD HVAC Pump 40 HP (Qty – 2)	$2000.00
Total		$3600.00

Ohio | Public Utilities Commission

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

Case No.: ____-____-EL-EEC

13-1606-EL-EEC

State of Ohio :

Darrell Johnson, Affiant, being duly sworn according to law, deposes and says that:

1. I am the duly authorized representative of:

Hyatt Regency Cincinnati

[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.

Darrell Johnson Director of Eng.

Signature of Affiant & Title

Sworn and subscribed before me this 21 day of June, 2013 Month/Year

Adam Burgess

Signature of official administering oath

Adam Burgess - Banker/Notary

Print Name and Title

My commission expires on 9-13-17

NOTARIAL SEAL STATE OF OHIO

Adam M. Burgess
Notary Public, State of Ohio
My Commission Expires 09-13-2017

Attachment 1 –Hyatt Regency

Appendix 1 – Electric History

35600842 01		
HYATT REGENCY CINTI		
151 5TH W		
CINCINNATI, OH 45202		
Date	Days	Actual KWH
7/23/2012	32	753,284
6/21/2012	30	612,134
5/22/2012	29	534,213
4/23/2012	32	531,831
3/22/2012	29	453,728
2/22/2012	29	502,440
1/24/2012	34	567,077
12/21/2011	30	489,044
11/21/2011	31	526,734
10/21/2011	29	529,154
9/22/2011	30	623,924
8/23/2011	29	669,430
Total		**6,792,993**

Appendix 2 – Annual kWh losses and annual KW losses

Measure	Annual kWh Gross with losses	Upload Amount	TOTAL Annual kWh losses	KW Per Measure	Total KW Savings
VFD Process Pump - 1-50 HP	1024.77	120	122972.4	0.22	26.4

Existing Equipment Assumptions	New Equipment Assumptions	Annual kWh Savings Per Measure	Annual KW Savings Per Measure	Total kWh Savings	Total kW Savings
Base efficiency is assumed to be a constant volume pump. A market average of building types and HVAC air distribution schemes are assumed	New efficiency is assumed to be a variable volume pump with VFD. A market average of building types and HVAC air distrubition schemes are assumed.	3540	0.60	424,855	71.44

Note: After consideration of line losses, total energy savings are122982 kWh and 26 summer coincident kW. These values may also reflect minor DSMore software rounding error

Appendix 3 – Cash Rebate

Measure	Amount
VFD Process Pump - 1-50 HP	$3,600

Appendix 4 – Utility Cost Test

Measure	UCT
VFD Process Pump - 1-50 HP	16.73

Appendix 5 – Avoided Supply Costs

Measure	T&D	Production	Capacity	Quantity	Total Avoided Costs
VFD Process Pump - 1-50 HP	$54.00	$380.00	$130.00	120	$67,680

Appendix 6 – Utility Program Costs

Measure	Qty	Admin Costs	Total Costs
VFD Process Pump - 1-50 HP	120	$14.00	$1,680

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 completed Mercantile Self Direct Prescriptive or Custom applications, proof of payment, energy savings calculations and spec sheets to SelfDirect@Duke-Energy.com. You may also fax to 1-513-629-5572.

Mercantile customers, defined as using at least 700,000 kWh annually are eligible for the Mercantile Self Direct program. Please indicate mercantile qualification:

- ☒ a single Duke Energy Ohio account
- ☐ multiple accounts in Ohio (energy usage with other utilities may be counted toward the total)

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
3560-0842-01-1	7,392,759		

Self Direct rebates are available for completed Custom projects that have not previously received a Duke Energy Smart $aver® Custom Incentive. Self Direct incentives 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 requirements dictate that certain projects that may be Prescriptive in nature under the Smart $aver program must be evaluated using the Custom process. Use the table on page two as a guide to determine which Self Direct program fits your project(s). Apply for Self Direct projects using the appropriate application forms in conjunction with this cover sheet. Where Mercantile Self Direct Prescriptive applications are listed, please refer to the measure list on that application. If your measure is not listed, you may be eligible for a Self Direct Custom rebate. Self Direct Custom applications, like Smart $aver Custom applications, should include detailed analysis of pre-project and post-project energy usage and project costs. Please indicate which type of rebate applications are included in the table provided on page two.

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

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

Application Type	Replaced equipment at end of lifetime or because equipment failed**	Replaced fully operational equipment to improve efficiency***	New Construction
Lighting	MSD Custom Part 1 ☐ Custom Lighting Worksheet ☐	MSD Prescriptive Lighting ☐	MSD Prescriptive Lighting ☐
		MSD Custom Part 1 ☐ Custom Lighting Worksheet ☐	MSD Custom Part 1 ☐ Custom Lighting Worksheet ☐
Heating & Cooling	MSD Custom Part 1 ☐ MSD Custom General Worksheet ☐	MSD Custom Part 1 ☐ MSD Custom General Worksheet ☐	MSD Prescriptive Heating & Cooling ☐
			MSD Custom Part 1 ☐ MSD Custom General Worksheet ☐
Window Films, Programmable Thermostats, & Guest Room Energy Management Systems	MSD Custom Part 1 ☐ MSD Custom General and/or EMS Worksheet(s) ☐	MSD Prescriptive Heating & Cooling ☐	MSD Custom Part 1 ☐ MSD Custom General and/or EMS Worksheet(s) ☐
Chillers & Thermal Storage	MSD Custom Part 1 ☐ MSD Custom General Worksheet ☐	MSD Custom Part 1 ☐ MSD Custom General Worksheet ☐	MSD Prescriptive Chillers & Thermal Storage ☐
			MSD Custom Part 1 ☐ MSD Custom General Worksheet ☐
Chiller Tune-ups	MSD Prescriptive Chiller Tune-ups ☐	MSD Prescriptive Chiller Tune-ups ☐	MSD Prescriptive Chiller Tune-ups ☐
Motors & Pumps	MSD Custom Part 1 ☐ MSD Custom General Worksheet ☐	MSD Custom Part 1 ☐ MSD Custom General Worksheet ☐	MSD Prescriptive Motors, Pumps & Drives ☐
			MSD Custom Part 1 ☐ MSD Custom General Worksheet ☐
VFDs	Not Applicable	MSD Prescriptive Motors, Pumps & Drives ☒	MSD Custom Part 1 ☐ MSD Custom VFD Worksheet ☐
		MSD Custom Part 1 ☐ MSD Custom VFD Worksheet ☐	
Food Service	MSD Custom Part 1 ☐ MSD Custom General Worksheet ☐	MSD Custom Part 1 ☐ MSD Custom General Worksheet ☐	MSD Prescriptive Food Service ☐
			MSD Custom Part 1 ☐ MSD Custom General Worksheet ☐
Air Compressors	MSD Custom Part 1 ☐ MSD Custom Compressed Air Worksheet ☐	MSD Custom Part 1 ☐ MSD Custom Compressed Air Worksheet ☐	MSD Prescriptive Process ☐
			MSD Custom Part 1 ☐ MSD Custom Compressed Air Worksheet ☐
Process	MSD Custom Part 1 ☐ MSD Custom General Worksheet ☐	MSD Prescriptive Process ☐	MSD Custom Part 1 ☐ MSD Custom General Worksheet ☐
		MSD Custom Part 1 ☐ MSD Custom General Worksheet ☐	
Energy Management Systems	MSD Custom Part 1 ☐ MSD Custom EMS Worksheet ☐	MSD Custom Part 1 ☐ MSD Custom EMS Worksheet ☐	MSD Custom Part 1 ☐ MSD Custom EMS Worksheet ☐
Behavioral* & No/Low Cost**	MSD Custom Part 1 ☐ MSD Custom General Worksheet ☐		

** Under the Self Direct program, failed equipment and equipment at the end of its useful life are evaluated differently than early replacement of fully functioning equipment. **All equipment replacements due to failure or old age will be evaluated via the Custom program.**

*** Please ensure that you include the age of the replaced equipment for measures classified as "Early Replacement" in your application as well as the estimated date that you would have otherwise replaced the existing equipment if you had not chosen a more energy efficient option.

**** Behavioral energy efficiency and demand reduction projects must be both measurable and verifiable. Provide justification with your application.

MERCANTILE SELF DIRECT Ohio Premium Motor/Pump/VFD Incentive 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 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	☒ Lodging	☐ Religious Worship/Church
☐ Food Sales/Grocery	☐ Retail (Small Box)	☐ Service
☐ Fast Food Restaurant	☐ Retail (Big Box)	☐ Warehouse
☐ Other:		
How did you hear about the program? (check one)		
☒ 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	☒ Customer/vendor agree to Terms and Conditions

Customer Information					
Customer/Business	**Hyatt Regency**	Contact		**Darrell Johnson**	
Phone	**15136352826**	**Account Number**		**3560-0842-01-1**	
Street Address (Where incentive should be mailed)		**151 West Fifth Street**			
City	**Cincinnati**	State	**Ohio**	Zip Code	**45202**
Installation Street Address	**151 Weset Fifth Street**				
City	**Cincinnati**	State	**Ohio**	Zip Code	**45202**
E-mail Address	**darrell.johnson@hyatt.com**				

Failure to provide the account number associated with the location where the installation took place will result in rejection of the application.

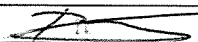
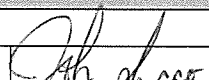
Vendor Information					
Vendor	**Step Resources**	Contact		**John Succo**	
Phone	**5132883288**	Fax		**5132883288**	
Street Address	**1382 Hicks Blvd**				
City	**Fairfeild**	State	**Ohio**	Zip Code	**45014**
E-mail Address	**jsucco@stepresources.com**				

If Duke Energy has questions about this application, who should we contact? ☒ **Customer** ☐ **Vendor**

Payment Information		
Who should receive incentive payment?	☒ Customer	☐ Vendor (Customer must sign below)
I hereby authorize payment of incentive directly to the vendor:	Customer Signature (written signature)	
	Date	**8/15/2012**
Provide Tax ID Number for Payee	Customer Tax ID #	**941649123**
	Vendor Tax ID #	**205086709**

Terms and Conditions

I have read and hereby agree to the Terms & Conditions and Program Requirements.

Customer Signature		Vendor Signature	
Date	**8/15/2014**	Date	**8/15/2014**
Title	**General Manager**	Title	**Engineer**

Incentives 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 incentives. As Federal Energy Policy Law changes, equipment efficiency requirements are subject to change.

Motor incentives will be removed from the Prescriptive Program effective March 31, 2011. To qualify for the current incentives, motors must be purchased by March 31, 2011 and installed by June 30, 2011. Applications must be received by September 30, 2011.

Certain motors will still be eligible for incentives using the custom program. Please refer to the Duke Energy Mercantile Self Direct website for further detail.

The Equipment below is (check one): ☐ New Equipment / New Construction
Early replacement of existing equipment or replacement of failed equipment must apply for Self Direct Custom program.

Motor

Motor	Make/Model or Catalog #	Quantity	Type	RPM	Incentive	HP	Installed Nominal Efficiency*	Annual Operating Hrs (Minimum of 2000)	Equipment Cost	Date Installed and Operable (mm/yy)	Total Incentive
1-5 HP			☐ OPEN ☐ TEFC	☐ 1200 ☐ 1800 ☐ 3600	$5/HP	HP	%	Hrs			
7.5-20 HP			☐ OPEN ☐ TEFC	☐ 1200 ☐ 1800 ☐ 3600	$4/HP	HP	%	Hrs			
25-100 HP			☐ OPEN ☐ TEFC	☐ 1200 ☐ 1800 ☐ 3600	$2.50/HP	HP	%	Hrs			
125 – 250 HP			☐ OPEN ☐ TEFC	☐ 1200 ☐ 1800 ☐ 3600	$2/HP	HP	%	Hrs			

*** See page four for required efficiency levels for motors.**

*Incentive capped at 50% of project cost (equipment and external labor).

- Qualifying motors must be three-phase open drip (ODP) or totally enclosed fan cooled (TEFC) units with nominal speeds of 1200, 1800, or 3600 RPM.
- Efficiencies are to be full-load nominal efficiencies tested in accordance with IEE Standards 112, Method B. Please refer to attached table to determine qualifying efficiencies.
- Installed equipment must be new. Used, rebuilt or rewound equipment is ***not*** eligible.
- Motor shall be squirrel cage design and conform to NEMA Premium design A, B or C torque characteristics.
- Motor/pump load must be served by Duke Energy and installed in customer's facility.
- Replaced motors shall be disposed of or recycled (not to be resold or rewound).
- Motor(s) and pump(s) must operate a minimum of 2000 hours annually to be eligible.

The Equipment below is (check one): ☐ New Equipment / New Construction
Early replacement of existing equipment or replacement of failed equipment must apply for Self Direct Custom program.

High Efficiency Pumps								
Pump	Make/Model or Catalog #	Quantity	Incentive	Installed Nominal Efficiency* (pump curve)	Annual Operating Hrs (Minimum of 2000)	Equipment Cost	Date Installed and Operable (mm/yy)	Total Incentive
1.5 HP			$61.00/PUMP	%	Hrs			
2 HP			$87.50.00/PUMP	%	Hrs			
3 HP			$87.50/PUMP	%	Hrs			
5 HP			$85.00./PUMP	%	Hrs			
7.5 HP			$124.50/PUMP	%	Hrs			
10 HP			$82.50.00/PUMP	%	Hrs			
15 HP			$145.00/PUMP	%	Hrs			
20 HP			$200.00/PUMP	%	Hrs			

*** See on page four for required efficiency levels for pumps. Pump curves are required.**

*Incentive capped at 50% of project cost (equipment and external labor).

- Installed equipment must be new. Used, rebuilt or rewound equipment is ***not*** eligible.
- Motor/pump load must be served by Duke Energy and installed in customer's facility.
- Pump efficiency is based on the design point on the pump curve. Documentation of the pump curve is required to receive an incentive.
- The pump efficiency at the design point on the pump curve must meet nominal efficiencies as stated in table on page 4.
- Duplicative to the first bullet point.

The Equipment below is (check one): ☒ Retrofit
Replacement of failed equipment or new construction is not eligible for incentives.

Variable Frequency Drives (VFDs) – For Process Fluid Pumping Only
(Retrofit* Application only)

Process pumping does not include HVAC or swimming pool fluid pumping systems.

List Process Pumping Application Domestic Water Supply

VFD**	Make/Model or Catalog #	Quantity	Incentive***	Annual Operating Hrs (Minimum of 2000)	Project Cost	Date Installed and Operable (mm/yy)	Total Incentive
5 HP			$20.00/HP	Hrs			
7.5 HP			$20.00/HP	Hrs			
10 HP			$20.00/HP	Hrs			
15 HP			$20.00/HP	Hrs			
20 HP			$20.00/HP	Hrs			
25 HP			$20.00/HP	Hrs			
30 HP	ACH550 PCR - 045 - 4	3	$20.00/HP	8760Hrs	$99,879.00	04/12	$1,800.00
40 HP			$20.00/HP	Hrs			
50 HP			$20.00/HP	Hrs			

***Retrofit only – incentives are only available for new VFDs installed on existing fluid process pump systems.**
**** VFDs over 50 HP and VFDs on new equipment are not eligible for prescriptive incentives, but may qualify through the custom program. Please refer to the custom webpage for guidance.**
*****Incentives are capped at 50% of project cost (equipment and external labor).**

- Installed equipment must be new. Used, rebuilt or rewound equipment is ***not*** eligible.
- Variable Frequency Drive Fans & Pumps qualifying equipment must have 2000 annual run hours or more.
- A 3% impedance reactor on the AC input to the VSD is recommended to prevent damage to the VSD due to overvoltage from power factor correction and should be properly sized by your supplier. A 5% reactor may be recommended if there is additional harmonic distortion on the AC input lines due to other plant-specific causes.
- VFDs on new equipment do not qualify under this program; but may qualify through the custom program. Please refer to the Custom website for guidance. Incentives will be paid for the installation of ***NEW*** VFDs on existing fan/pump systems and process equipment only.
- Replacement of existing VFDs does not qualify for incentives.
- VFDs installed on redundant pumps do not qualify.
- VFDs installed in newly constructed facilities do not qualify for incentives.
- VFD speed must be automatically controlled by differential pressure, flow, temperature, or other variable signal.
- Existing throttling devices including inlet vanes, bypass dampers, and throttling valves must be removed or permanently disabled.
- . Duplicative to the first bullet point.

The Equipment below is (check one): ☐ Retrofit
Replacement of failed equipment or new construction is not eligible for incentives.

Variable Frequency Drives (VFDs) – Applied to HVAC Fans Only (Retrofit* Application only)

VFD HVAC Applications (please check one):

☐ Supply Fan ☐ Cooling Tower Fan ☐ Return Fan

☐ Exhaust Fan

VFD**	Make/Model or Catalog #	Quantity	Incentive***	Annual Operating Hrs (Minimum of 2000)	Project Cost	Date Installed and Operable (mm/yy)	Total Incentive
1.5 HP			$50.00/HP	Hrs			
2 HP			$50.00/HP	Hrs			
3 HP			$50.00/HP	Hrs			
5 HP			$50.00/HP	Hrs			
7.5 HP			$50.00/HP	Hrs			
10 HP			$50.00/HP	Hrs			
15 HP			$50.00/HP	Hrs			
20 HP			$50.00/HP	Hrs			
25 HP			$50.00/HP	Hrs			
30 HP			$50.00/HP	Hrs			
40 HP			$50.00/HP	Hrs			
50 HP			$50.00/HP	Hrs			

*** Retrofit only – incentives are only available for new VFDs installed on existing HVAC fan systems.**
****VFDs over 50 HP and VFD's on new equipment are not eligible for prescriptive incentives, but may qualify through the custom program.**
*****Incentives are capped at 50% of project cost (equipment and external labor).**

- Installed equipment must be new. Used, rebuilt or rewound equipment is ***not*** eligible.
- Variable Frequency Drive Fans & Pumps qualifying equipment must have 2000 annual run hours or more.
- A 3% impedance reactor on the AC input to the VSD is recommended to prevent damage to the VSD due to overvoltage from power factor correction and should be properly sized by your supplier. A 5% reactor may be recommended if there is additional harmonic distortion on the AC input lines due to other plant-specific causes.
- VFDs on new equipment do not qualify under this program; but may qualify through the custom program. Please refer to the Custom website for guidance. Incentives will be paid for the installation of ***NEW*** VFDs on existing fan/pump systems and process equipment only.
- Replacement of existing VFDs does not qualify for incentives.
- VFDs installed on redundant pumps do not qualify.
- VFDs installed in newly constructed facilities do not qualify for incentives.
- VFD speed must be automatically controlled by differential pressure, flow, temperature, or other variable signal.
- Existing throttling devices including inlet vanes, bypass dampers, and throttling valves must be removed or permanently disabled.
- Duplicative to the first bullet point.

The Equipment below is (check one): ☒ Retrofit
Replacement of failed equipment or new construction is not eligible for incentives.

Variable Frequency Drives (VFDs) – Applied to HVAC Pumps Only (Retrofit* Application only)

VFD HVAC Applications (please check one):

☐ Chilled Water Pump ☒ Condenser Pump ☐ Hot Water Pump

VFD**	Make/Model or Catalog #	Quantity	Incentive***	Annual Operating Hrs (Minimum of 2000)	Project Cost	Date Installed and Operable (mm/yy)	Total Incentive
1.5 HP			$50.00/HP	Hrs			
2 HP			$50.00/HP	Hrs			
3 HP			$50.00/HP	Hrs			
5 HP			$50.00/HP	Hrs			
7.5 HP			$50.00/HP	Hrs			
10 HP			$50.00/HP	Hrs			
15 HP			$50.00/HP	Hrs			
20 HP	ABB-ACH550VCR-031A	2	$50.00/HP	5015Hrs	70850	04/12	2000
25 HP			$50.00/HP	Hrs			
30 HP			$50.00/HP	Hrs			
40 HP			$50.00/HP	Hrs			
50 HP			$50.00/HP	Hrs			

*** Retrofit only – incentives are only available for new VFDs installed on existing HVAC pumps systems.**
****VFDs over 50 HP and VFDs on new equipment are not eligible for prescriptive incentives, but may qualify through the custom program. Please refer to the custom webpage for guidance.**
*****Incentives are capped at 50% of project cost (equipment and external labor).**

- Installed equipment must be new. Used, rebuilt or rewound equipment is ***not*** eligible.
- Variable Frequency Drive Fans & Pumps qualifying equipment must have 2000 annual run hours or more.
- A 3% impedance reactor on the AC input to the VSD is recommended to prevent damage to the VSD due to overvoltage from power factor correction and should be properly sized by your supplier. A 5% reactor may be recommended if there is additional harmonic distortion on the AC input lines due to other plant-specific causes.
- VFDs on new equipment do not qualify under this program; but may qualify through the custom program. Please refer to the Custom website for guidance. Incentives will be paid for the installation of ***NEW*** VFDs on existing fan/pump systems and process equipment only.
- Replacement of existing VFDs does not qualify for incentives.
- VFDs installed on redundant pumps do not qualify.
- VFDs installed in newly constructed facilities do not qualify for incentives.
- VFD speed must be automatically controlled by differential pressure, flow, temperature, or other variable signal.
- Existing throttling devices including inlet vanes, bypass dampers, and throttling valves must be removed or permanently disabled.
- . Duplicative to the first bullet point.

Efficiencies for Premium Motor/Pump Measures

Nominal Efficiencies for "NEMA Premium" Induction Motors Rated 600 volts or less (random wound)						
	Open Drip Proof			Totally Enclosed Fan-Cooled		
HP	1200 RPM	1800 RPM	3600 RPM	1200 RPM	1800 RPM	3600 RPM
1	82.5	85.5	77.0	82.5	85.5	77.0
1.5	86.5	86.5	84.0	87.5	86.5	84.0
2	87.5	86.5	85.5	88.5	86.5	85.5
3	88.5	89.5	85.5	89.5	89.5	86.5
5	89.5	89.5	86.5	89.5	89.5	88.5
7.5	90.2	91.0	88.5	91.0	91.7	89.5
10	91.7	91.7	89.5	91.0	91.7	90.2
15	91.7	93.0	90.2	91.7	92.4	91.0
20	92.4	93.0	91.0	91.7	93.0	91.0
25	93.0	93.6	91.7	93.0	93.6	91.7
30	93.6	94.1	91.7	93.0	93.6	91.7
40	94.1	94.1	92.4	94.1	94.1	92.4
50	94.1	94.5	93.0	94.1	94.5	93.0
60	94.5	95.0	93.6	94.5	95.0	93.6
75	94.5	95.0	93.6	94.5	95.4	93.6
100	95.0	95.4	93.6	95.0	95.4	94.1
125	95.0	95.4	94.1	95.0	95.4	95.0
150	95.4	95.8	94.1	95.8	95.8	95.0
200	95.4	95.8	95.0	95.8	96.2	95.4
250	95.4	95.8	95.0	95.8	96.2	95.8

Nominal Efficiencies for Pumps	
HP	Efficiency
1.5	efficiency of 65% or more for system
2	efficiency of 65% or more for system
3	efficiency of 67% or more for system
5	efficiency of 70% or more for system
7.5	efficiency of 73% or more for system
10	efficiency of 75% or more for system
15	efficiency of 77% or more for system
20	efficiency of 77% or more for system

Program Requirements

Incentive Eligibility

- Incentives are only available to customers on a Duke Energy Ohio non-residential rate.
- Duke Energy Customers who purchase electric generation from an alternative supplier are eligible to participate.
- Incentive 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 incentive levels and/or qualifying efficiency levels at any time.
- Customer may assign the incentive to the vendor who installed/supplied the equipment. The customer's signature is required in the Payment Information section on page 1 of this form to assign the incentive to the vendor. Customer agrees that such an action constitutes an irrevocable assignment of the incentive. This assigned incentive must reduce the purchase price paid for the equipment by an equivalent amount.
- Leased equipment is eligible for incentives providing the equipment meets the program requirements and the customer provides the required documentation noted on the Incentive Application Process page of this application.
- Any equipment which, either separately or as part of a project, has or will receive an incentive from any other Duke Energy program is ineligible.
- In no case will Duke Energy pay an incentive above the actual cost of the new equipment.
- Incentive recipient assumes all responsibilities for any tax consequences resulting from Duke Energy incentive payment.
- To qualify for Duke Energy incentives, 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. Incentive applications are processed by a 3rd party vendor. The 3rd party vendor is responsible for mailing the 1099 form at the end of the calendar year for tax filing. Duke Energy and the 3rd 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 incentive program.

Terms and Conditions

I certify that this premise is served by Duke Energy (or an affiliate of Duke Energy), that the information provided herein is accurate and complete, and that I have purchased and installed the high efficiency equipment (indicated herein) for the business facility listed herein and not for resale. Attached is an itemized invoice for the indicated installed equipment. In understand that the proposed incentive payment from Duke Energy is subject to change based on verification and Duke Energy approval. I agree to Duke Energy verification of both the sales transaction and equipment installation which may include a site inspection from a Duke Energy representative or Duke Energy agent. I understand that I am not allowed to receive more than one incentive from Duke Energy on any piece of equipment. I also understand that my participation in the program may be taxable and that my company is solely responsible for paying all such taxes. I hereby agree to indemnify, hold harmless and release Duke Energy and it's affiliates from any actions or claims in regards to the installation, operation and disposal of equipment (and related materials) covered herein including liability from an incidental or consequential damages. Duke Energy does not endorse any particular manufacturer, product or system design within these programs; does not expressly or implicitly warrant the performance of installed equipment (Contact your contractor for details regarding equipment warranties and is not liable for any damage caused by the installation of the equipment nor for any damage caused by the malfunction of the installed equipment.

Incentive Application Instructions

IMPORTANT NOTICE
Delays in processing incentive payments will occur if required documentation is not included with completed application(s).

1. Contact Duke Energy toll free at 866-380-9580 to confirm customer eligibility. Applications are available for download at www.duke-energy.com.

2. Review program and equipment requirements on the incentive application. (Page7)

3. Purchase and install eligible energy-efficient equipment.

4. Complete and submit application for equipment that was installed after 1/1/2008.

5. **The following items must be included to verify projects. If they are not included, it will delay payment of incentive.**

   A. Itemized invoice for all equipment installed to include:
      a. Equipment cost
      b. Quantity per equipment type installed
      c. Model # for each equipment type
      d. Manufacturer's data sheet for each equipment model #.

   B. Make sure the account number provided on the cover page (customer information section) is associated with the location where the equipment was installed. If the account # does not match the address where the equipment was installed, the application will be rejected as ineligible.

   C. Provide required tax ID# for payee.

   D. Customer must sign and date the application after reviewing the Terms and Conditions. If customer wishes to **assign payment of the incentive directly to the vendor**, the customer should circle the appropriate payee in the Payment Information section of the application and sign their name to authorize payment.

6. Duke Energy may require site verification of projects that have been self-installed, prior to payment of incentive.

8. Email the complete, signed application with all required documents to SelfDirect@duke-energy.com or fax to 513-629-5572.

8. A percentage of equipment installations will be site verified for quality assurance purposes. Once selected, a Duke Energy representative will contact the customer to arrange for the inspection. All incentive payments related to the project will be withheld until site verification is complete. There is no charge to the customer for these inspections.

Mercantile Self Direct Incentive Program
Requirements for Vendor Participation

Program Overview

- Duke Energy offers it's eligible non-residential customers the opportunity to increase profitability through energy cost savings and contribute to a cleaner environment by participating in our Mercantile Self Direct Incentive Program.

- Under the Duke Energy Mercantile Self Direct Incentive Program, Vendor is defined as any third party who:

  - Promotes the sale and installation of the high efficiency equipment for the customer. The Vendor will ensure that the eligible equipment is installed and operating before submitting the application or assisting the customer in completing the application.

  - Is responsible for the product sale only and is not required to ensure installation of the eligible equipment.

- All license requirements, if any, are solely the Vendor's responsibility. Participating Vendors include equipment contractors, equipment Vendors, equipment manufacturers and distributors, energy service companies, etc. The typical Vendor role is to contact/solicit eligible customers building new or retrofitting existing facilities and encourage the installation of the energy-efficient equipment offered in Duke Energy's program.

- Incentives are paid directly to customers unless the customer assigns the incentive to the Vendor. The assigned incentive must reduce the purchase price paid for the equipment by an equivalent amount. Incentives are taxable to the entity who receives the rebate check. Rebates greater than $600 will be reported to the IRS unless documentation of tax exempt status is provided.

Vendors can sign up to be on Duke Energy's Web site as a participating Vendor and be added to Duke Energy's e-mail distribution by emailing the Vendor Participation Agreement (VPA) to SelfDirect@duke-energy.com or faxing to **513-629-5572.**

Guidelines for Vendor Activities

- Vendors shall sign and return the attached VPA to Duke Energy prior to soliciting customer participation or when submitting an application. Rebate payments will not be released to a Vendor unless a signed VPA is on file.

- Vendors shall not misrepresent the nature of their role in the program. In particular, Vendors shall not state or imply to customers, or any persons, that the Vendor is employed by or working on Duke Energy's behalf.

- Vendors may not represent to customers that Duke Energy endorses their specific products or services. Duke Energy does not endorse specific products, services, or companies – only energy-efficient technologies.

- Vendors may advise customers of their option to have Duke Energy make their rebate check(s) payable to the Vendor if the customer's rebate amount is being deducted from the total sale price in advance. The customer must complete and sign the Payment Release Authorization section of the Mercantile Self Direct Incentive Program Application.

- Vendors may use the words "Duke Energy's Mercantile Self Direct Incentive Program" in promotional materials or advertisements. Vendors may use the name Duke Energy in a text format to describe the Mercantile Self Direct Incentive Program, but are not permitted to use Duke Energy's logos.

- For Vendors who properly install the qualifying equipment, the equipment shall be installed and operating prior to an application being submitted. A percentage of each Vendor's installations will be subject to inspection by Duke Energy for verifying that the equipment is installed and operating. Vendors demonstrating high failure rates (based on a statistically significant sample) will have 100% of subsequent jobs inspected or may have their participation in the Mercantile Self Direct Incentive Program revoked by Duke Energy in it's sole discretion.

- Vendors shall provide customers with applicable equipment warranty information for all measures installed. Vendors shall provide the required documentation for customers to apply for the rebate (invoices with model numbers and quantities, specification sheets for installed equipment, etc.) and assist customers in filling out the application.

- Vendors shall comply with all applicable local, state, and federal laws and codes when performing installation and related functions.

- Duke Energy reserves the right to revoke a Vendor's participation in Mercantile Self Direct Incentive Program if, in Duke Energy's sole judgment, the Vendor fails to comply with the program's guidelines and requirements.

- Mercantile Self Direct Incentive Program offerings may be modified or terminated without prior notice. Check Duke Energy's Web site for current program status.

For more information, call **1-866.380.9580** or visit **www.duke-energy.com.**

Mercantile Self Direct Rebate Program

Technology	Responsible for sales and **not** installs*	Responsible for sales **and** Installation*	Technology	Responsible for sales and **not** installs*	Responsible for sales **and** Installation*
Lighting	☐	☐	Thermal Storage	☐	☐
Heating Ventilation & Cooling	☐	☐	Pumps/Motors/VFDs	☒	☐
Food Service	☐	☐	Chillers	☐	☐
Water Heating	☐	☐	Refrigeration	☐	☐
Process Equipment (air compressors, injection molding, etc.)	☒	☐	Window Film	☐	☐

* Check all that apply

Vendors who wish to be listed as a Mercantile Self Direct Incentive Program participating Vendor shall complete this form. A signed copy of this form must be on file at Duke Energy in order for the Vendor to receive incentive payments. Fax form to **513-629-5572** or email to SelfDirect@duke-energy.com.

I have read and understand the Mercantile Self Direct Incentive Program Requirements for Vendor Participation, and I agree to comply with all requirements set forth therein. By signing this agreement, I agree to provide my customers with information and documentation that is true and accurate to the best of my knowledge. I hereby represent and warrant that the Tax ID and Vendor Tax Status provided below are true and accurate. I agree that any confidential information concerning my customer, including but not limited to Duke Energy service account information, will be used for the sole purpose of facilitating the customer's participation in the Mercantile Self Direct Incentive Program. Further, I understand that I am responsible for making sure everyone working for me understands the requirements prior to soliciting customer participation.

Vendor Federal Tax ID Number	205086709

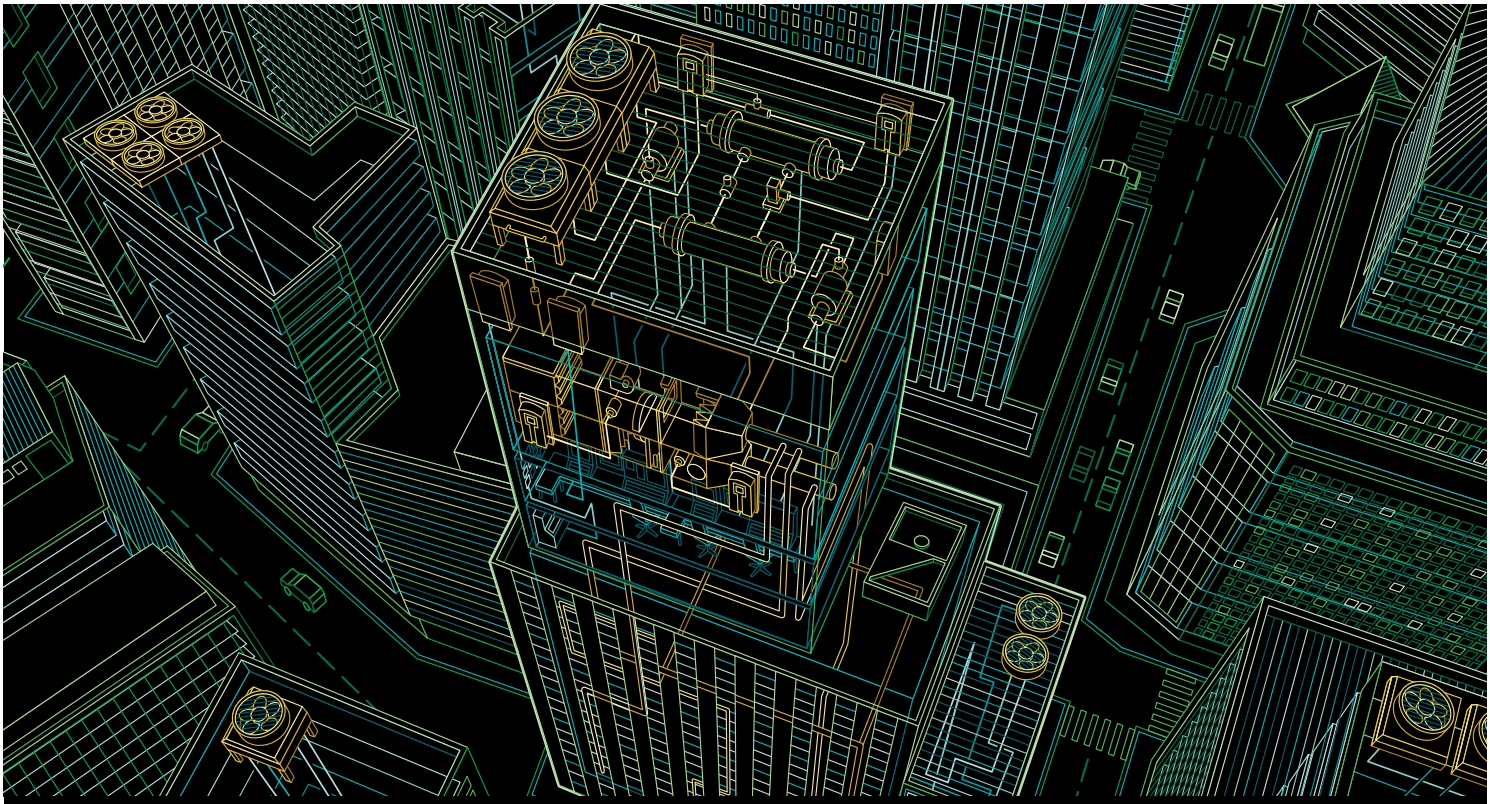
To qualify for Duke Energy incentives, applicants who provide their social security number as their federal tax identification number for tax purposes must sign and return the "Customer consent to release personal information" form ("Consent Form") along with the application. Incentive applications are processed by a third-party vendor. The third-party vendor is responsible for mailing the 1099 form at the end of the calendar year for tax filing. Duke Energy and the third-party vendor have signed 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 incentive program.

Vendor Tax Status	☐ Corporation	☒ Individual/Sole Proprietor	☐ Partnership	☐ Other

Contact me via	☒ Phone	☐ E-Mail	☐ Mail

Company Name	Step Resources
Mailing Address	1382 Hicks Bldv
City, State, Zip	Fairfeild, Ohio, 45014
Phone/Fax	5132883288/5132883288
Primary E-mail Address	jsucco@stepresources.ocm
Secondary E-mail Address	
Vendor Signature	John Succo
Title	engineer
Print Name	John Succo
Date	8/15/2012

For more information, call 1-866-380-9580 or visit www.duke-energy.com.

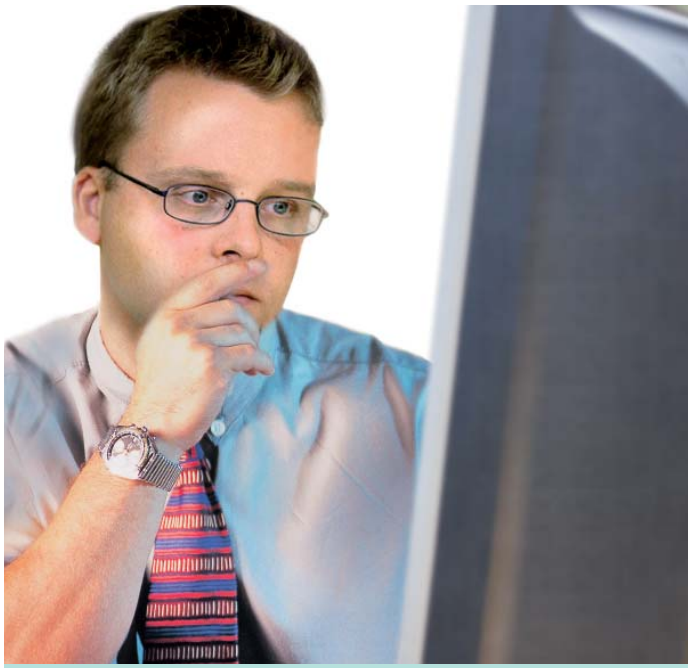


Low voltage AC drives

ABB drives for HVAC
Committed to your comfort zone

Power and productivity
for a better world™

Peace of mind as standard



Design engineer

“We specify ABB drives and have them running in more than 3,000 buildings. Their simplicity and reliability allow me to concentrate on my job without having to worry about the HVAC installation.”

“When I call ABB, I know I get the right answer.”

“With ABB’s energy saving tools, I can prove that the money saved helps justify the investment. Some people like the general idea of saving energy, some people want to go into the smallest detail. Either is possible with the ABB drive for HVAC.”

“I don’t have to look for external components like timers and PID controllers and then worry about their compatibility.”

“The ABB drive for HVAC does precisely what it is engineered to do - when the building gets hot the drive delivers air flow to suit.”

“The documentation for the ABB drive for HVAC is simple and clear to understand. For the first time in a long while I never get calls from our personnel on site.”

“Once the ABB drive for HVAC is installed, that’s the last time I hear about it.”

“Override is an invaluable function that minimizes the number of components and facilitates my job.”

Keeps you out of trouble

- EMC filters for building sector, class C2 (1st environment).
- Meets mandatory harmonic current standard EN 61000-3-12.
- Coated electronic boards improve reliability and extend the life-time of the drive.
- Ambient temperature up to 50 ˚C.

Override

Override can be used, for example, during a fire for extracting fumes rapidly and efficiently from a building. When override is activated the drive operates in a pre-defined direction at a pre-set speed while ignoring the drive’s other control commands and internal protective functions.

Real-time clock and calendar

The built-in real-time clock and calendar function provides true time and date stamps to drive events and enables the use of timers. Information is displayed clearly on the control panel. Further, daylight saving times can be easily selected according to different time zones.

Built-in timers

External timer circuits are no longer needed. Built-in timers - utilizing the real-time clock - allow starting and stopping the drive or changing the speed, according to the time of day or night. Relay outputs can be operated with timers to control any auxiliary equipment on site.

BACnet MS/TP, N2, FLN and Modbus RTU embedded

Commonly used HVAC communication protocols are embedded into the drive, ensuring that they are always there if you need them. ABB has supplied, to building automation, tens of thousands of drives utilizing serial communications, including more than 30,000 BACnet installations.

Makes your life comfortable

- Multilingual control panel with HELP-button
- 14 HVAC application macros are preprogrammed and selectable without programming.
- A printed user's manual is delivered with each drive.
- Miniature circuit breakers can be used instead of fuses.

Swinging choke - up to 25% less harmonics

ABB's swinging choke lets the drive for HVAC deliver up to 25% less harmonics at partial loads, compared to a conventional choke of equal size.

Main switch as option for local safety

Integrated drive specific disconnect solution for

- easy installation
- easy serviceability
- space savings

Interactive startup assistants

Startup assistants help to commission the drive. Easy step-by-step assistants show how to use the PID controllers, timer functions and serial communications settings.

Tailor-made HVAC software

The ABB drive for HVAC delivers a complete solution with a tailor-made configuration that will save you time and money. For example, actual process values like differential pressure signals can be converted inside the drive and displayed in engineering units like bar, l/s and °C.

Contractor

"A great feature is the startup assistant. It guides me through the startup routine of the drive, very quickly and easily, enabling me to put a less experienced person on the job."

"The ABB drive for HVAC speaks my language - even in full sentences! I save time and money."

"Thanks to smart design, control and power cables are extremely easy to connect."

"The ABB drive for HVAC has all the functionality I need, built-in. So I don't have to check for the order handling to see if all add-ons have been included. One less thing to worry about."

"With the timer function I can leave out building management system (BMS) automation completely on smaller jobs."

"ABB's no-quibble warranty means just that - no questions are asked, so paperwork is kept to a minimum."

Intelligent and intuitive AC drives for improved energy efficiency

ABB drives for HVAC make maintaining a building's comfort zone easy, quick and energy efficient. The drives control the speed of pump, fan and compressor motors used in air handling units, cooling towers, chillers and other heating, ventilation and air conditioning (HVAC) applications. They help reduce the HVAC system's energy consumption by up to 70 percent, and quite often have payback times of less than a year. With more than 500,000 drives for HVAC installed globally, these highly reliable drives with built-in BACnet easily integrate into building management systems. The drives are stocked globally for quick delivery.

The user interface, designed with the simplicity and intuitiveness of a mobile phone, helps make drive startup quick and easy. Configuring the drive to control HVAC applications takes only seconds using the drive's built-in application macros, that come as standard with the drive. The drive's seamless connectivity to building management systems through embedded communication protocols along with the drive's wide range of inputs and outputs make integration into HVAC systems cost efficient and easily adaptable to future upgrades.

The drive is programmed with several HVAC applications, including supply and return fans, cooling tower fans, booster pumps and condensers. The intelligence within the HVAC control panel means that the user is given direct and understandable instructions in clear text at all times.

Harmonics and RFI emissions are major concerns within many HVAC installations. The ABB drive for HVAC fulfils demanding requirements for electromagnetic compatibility. A swinging choke cuts harmonics emissions by up to 25 percent.

Smaller carbon footprint through improved energy efficiency

One of the biggest benefits of using ABB drives for HVAC applications is the energy saving opportunity over fixed speed motors or conventional flow control methods. Rather than have an electric motor running continuously at full speed, an AC drive allows the user to steplessly control the motor speed, depending on the demand.

In HVAC applications, the most of which being pumps and fans, AC drives can cut energy bill as much as 70 percent. As such ABB is a world leader in assessing the energy saving potential within the HVAC sector.

ABB offers energy appraisals coupled with a series of energy saving tools and calculators built-in within drives. Energy appraisals can rapidly determine just where and how much energy can be saved. By reducing the motor speed by 20 percent, power required can be lowered by up to 50 percent. In addition, ABB drives for HVAC offer a return on investment usually within months on the basis of energy savings alone.

For over 30 years ABB has delivered millions of AC drives worldwide. In 2010 these drives cut electricity consumption by 260 TWh (260 000 000 000 kWh). This is equivalent to the average annual consumption of electricity of more than 65 million European households. This corresponds to an average CO_2 emission reduction of 220 million tonne.

A clean standard against dirty electricity - IEC/EN 61000-3-12

The ABB drive for HVAC fulfils IEC/EN 61000-3-12 and carries manufacturer's written statement of compliance. This means security and simplicity for specifying engineers and facility managers.

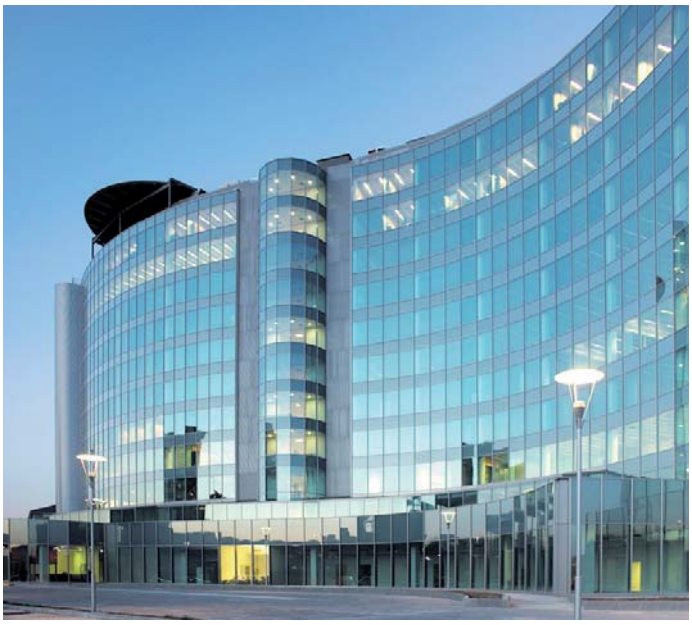
This European standard sets strict limits for harmonic currents produced by products connected to the electrical network.

Harmonic currents are forms of pollution on the electrical network. The harmonics can cause several undesired effects - flickering lights, failing computers and overheating of electrical equipment.

Ambient temperature up to 50 °C in 24/7/365

Ambient temperatures affect the output performance of each drive. The hotter it is outside - or inside the cabinet in which the drive is installed - the less current the drive can deliver. This means that the designer has to select the drive according to the peak temperature.

To make the selection easier, the identical output current values for both IP21 and IP54 units are available at different ambient temperatures.



Facility managers

“The energy saving capability of the ABB drive for HVAC means it pays back in less than two years. After that the drive provides profit straight to my bottom line. Using ABB’s remote access and diagnostics tools gives me real-time proof on the energy savings”

“With the swinging choke taking care of harmonics, I only pay for the electricity that works for me and not for the electricity that just causes losses.”

“My system delivers the output I require, when I need it, and especially when it is hot outside.”

“Reaction to load change is fast and I only pay for the peak capacity when it is needed.”

“I love the HELP button. I call it my panic button - it is always there to guide me.”

“The silence of the ABB drive for HVAC is music to my ears.”

“In case of an alarm or fault situation, the diagnostic assistant automatically tells me in clear language what to do.”

“With built-in and snap-on fieldbusses I’m flexible for all future automation needs.”

“The maintenance assistant is another great feature of the ABB drive for HVAC. I simply do not have to worry about when to service the equipment. The drive tells me when it is time to send people to do maintenance.”

“ABB will be here in 10 years time and beyond. That is the biggest guarantee you can give me.”

Interactive maintenance assistant

Maintenance scheduling no longer requires guesswork. The drive alerts you when maintenance is required based on your individual requirements.

Interactive diagnostic assistant

Should a fault occur, the diagnostic assistant displays, in plain language, possible causes and potential solutions.

Fault logger

The fault logger of the ABB drive for HVAC is especially useful in tracking down drive failures through its use of the real-time clock.
In addition to recording both time and date, the fault logger also takes a snapshot of 7 diagnostic values - like motor speed and output current. You know what happened and when.

Tools for

- calculating energy savings and payback times
- commissioning
- remote access and diagnostics

Noise smoothing

Software function to reduce the audible noise.

Tailor-made control panel for HVAC applications

- Interactive assistants advise on the use of PID (incl. air flow calculation), timers, fieldbus and facilitate commissioning
- HELP button always available
- Up- and downloading of parameters from one drive to another
- Easily detachable by hand (both IP21 and IP54)
- Built-in real-time clock
- 18 languages available in one single panel, including Russian, Turkish, Czech, Polish and Chinese

Energy efficiency

– Advanced motor control features, such as flux optimization, help lower energy use. With flux optimization, the magnitude of the flux is controlled according to the actual load. This results in reduced energy consumption and lower noise.
– Built-in calculators monitor energy used and saved in kilowatt-hours and megawatt-hours, as well as show the saving as a monetary value in local currency and as reduced carbon dioxide (CO_2) emissions.

Flange mounting

The drive can be flange-mounted to the side of an air duct or integrated with an air handling unit (AHU). By placing the heat sink of the drive in the air flow, additional cooling is achieved efficiently.

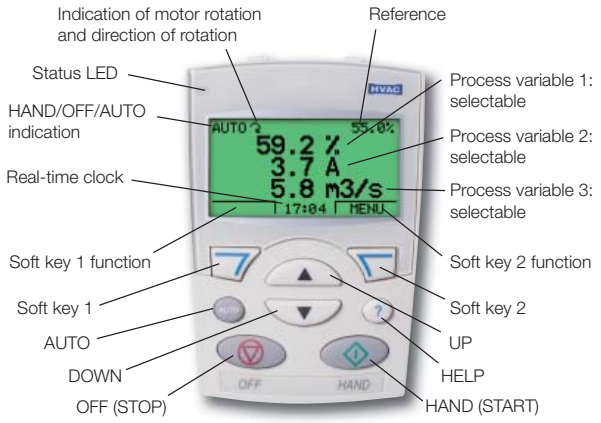
Two PID controllers as standard

The ABB drive for HVAC has two independent PID controllers built in. As an example: one PID controller works with the drive to maintain the duct static pressure. Simultaneously, the other PID controller can be used to control a separate external device, eg, a chilled water valve. All of this can, of course, be monitored and controlled through serial communications.

Mounting side by side

The ABB drive for HVAC is optimized for installing into cabinets: no space is needed between the units, whether IP21 or IP54, even with the covers on.

Motor protection with PTC or PT 100.

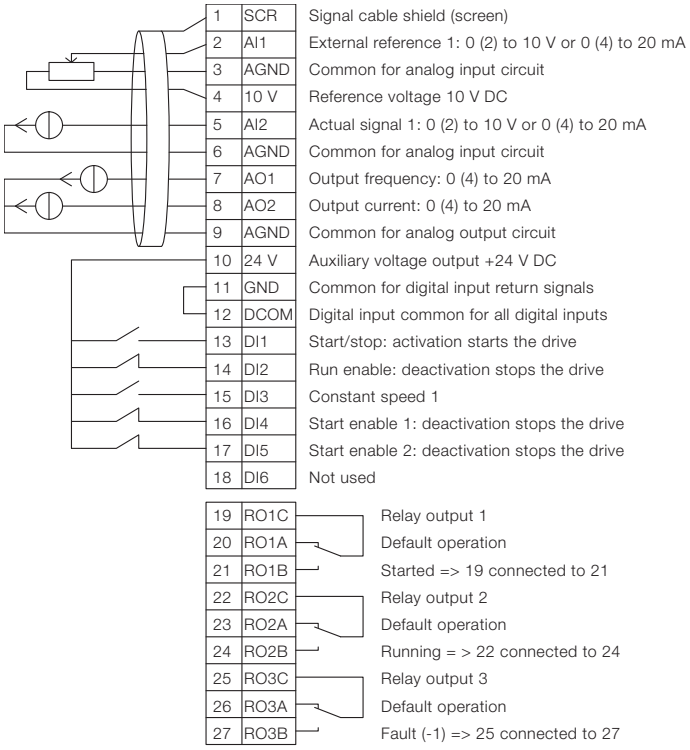


Options

– Relay extension module for three additional outputs (module fits under the cover of the drive)
– BACnet/IP router, LonWorks adapter (LonMark approved) or other option module. Modules fit under the cover of the drive
– Control panel mounting kit for cabinet door mounting
– Output filters, please contact ABB
– External module for remote access and diagnostics

Inputs and outputs

The diagram below shows the inputs and outputs of the ABB drive for HVAC. The sample connections are suitable for a number of HVAC applications like supply and return fans, condensers and booster pumps.



– All inputs and outputs are short-circuit protected.
– All connectors are individually numbered, reducing possible causes of misunderstandings and errors

Technical data

Supply connection	
Voltage and power range	3-phase, 380 to 480 V, +10/-15% (0.75 to 355 kW) 3-phase, 208 to 240 V, +10/-15% (0.75 to 75 kW) 1-phase, 208 to 240 V, +10/-15% (50% derating) auto-identification of input line
Frequency	48 to 63 Hz
Power factor	0.98
Efficiency at rated power	
	98%
Motor connection	
Voltage	3-phase, from 0 to U_N
Frequency	0 to 500 Hz
Rated currents (apply to both IP21 and IP54)	Current at ambient temperature of -15 to +40 °C: rated output current (I_{2N}), no derating needed Current at ambient temperature of +40 to +50 °C: derating of 1%/ °C above 40 °C
Switching frequency	Selectable 0.75 to 37 kW: 1 kHz, 4 kHz, 8 kHz or 12 kHz 45 to 110 kW: 1 kHz, 4 kHz or 8 kHz 132 to 355 kW: 1 kHz or 4 kHz
Environmental limits	
Ambient temperature **Transportation and storage** **Operation**	 -40 to 70 °C -15 to 50 °C (no frost allowed)
Altitude **Output current**	 Rated current available at 0 to 1000 m reduced by 1% per 100 m over 1000 to 2000 m 2000 to 4000 m, please consult ABB
Relative humidity	Lower than 95% (without condensation)
Protection classes	IP21 or IP54 IP21 for wall mounted and free standing units IP54 for wall mounted units
Inputs and outputs	
2 analog inputs **Voltage signal** **Current signal** **Potentiometer reference value**	Selectable both for current and voltage 0 (2) to 10 V, R_{in} > 312 kΩ single-ended 0 (4) to 20 mA, R_{in} = 100 Ω single-ended 10 V ±2% max. 10 mA, R < 10 kΩ
2 analog outputs **Internal auxiliary voltage**	0 (4) to 20 mA, load < 500 Ω 24 V DC ±10%, max. 250 mA
6 digital inputs	12 to 24 V DC with internal or external supply
3 relay outputs	Maximum switching voltage 250 V AC/30 V DC Maximum continuous current 2 A rms
PTC and PT 100	Any of the 6 digital inputs or analog inputs can be configured for PTC. Both analog outputs can be used to feed the PT 100 sensor.
Communication	Protocols as standard (RS 485): BACnet MS/TP, Modbus RTU, N2 and FLN Available as plug-in options: BACnet/IP router, LonWorks, Ethernet etc. Available as an external option: Ethernet adapter for remote monitoring
Protection functions	
	Overvoltage controller Undervoltage controller Earth-leakage supervision Motor short-circuit protection Output and input switch supervision Overcurrent protection Phase-loss detection (both motor and line) Underload supervision - can be used also for belt-loss detection Overload supervision Stall protection
Product compliance	
Harmonics	IEC/EN 61000-3-12
Standards and directives	Low Voltage Directive 2006/95/EC Machinery Directive 2006/42/EC EMC Directive 2004/108/EC Quality assurance system ISO 9001 and Environmental system ISO 14001 CE, UL, cUL, and GOST R approvals Galvanic isolation according to PELV RoHS (Restriction of Hazardous Substances)
EMC (according to EN61800-3)	Class C2 (1st environment restricted distribution) as standard

Types and ratings

P_N kW	I_{2N} A	Frame size	Type designation (order code)
U_N = 380 to 480 V (380, 400, 415, 440, 460, 480 V)			
HVAC control panel and EMC filter are included.			
0.75	2.4	R1	ACH550-01-02A4-4 [1]
1.1	3.3	R1	ACH550-01-03A3-4 [1]
1.5	4.1	R1	ACH550-01-04A1-4 [1]
2.2	5.4	R1	ACH550-01-05A4-4 [1]
3	6.9	R1	ACH550-01-06A9-4 [1]
4	8.8	R1	ACH550-01-08A8-4 [1]
5.5	11.9	R1	ACH550-01-012A-4 [1]
7.5	15.4	R2	ACH550-01-015A-4 [1]
11	23	R2	ACH550-01-023A-4 [1]
15	31	R3	ACH550-01-031A-4 [1]
18.5	38	R3	ACH550-01-038A-4 [1]
22	45	R3	ACH550-01-045A-4 [1]
30	59	R4	ACH550-01-059A-4 [1]
37	72	R4	ACH550-01-072A-4 [1]
45	87	R4	ACH550-01-087A-4 [1]
55	125	R5	ACH550-01-125A-4 [1]
75	157	R6	ACH550-01-157A-4 [1]
90	180	R6	ACH550-01-180A-4 [1]
110	205	R6	ACH550-01-195A-4 [1]
132	246	R6*	ACH550-01-246A-4 [1]
160	290	R6*	ACH550-01-290A-4 [1]
200	368	R8	ACH550-02-368A-4
250	486	R8	ACH550-02-486A-4
280	526	R8	ACH550-02-526A-4
315	602	R8	ACH550-02-602A-4
355	645	R8	ACH550-02-645A-4

[1] This type code is valid for the IP21 unit. For the IP54 unit, add +B055 at the end of the code.

I_{2N} = Nominal output current 1,1 x I_{2N} overload is allowed for 1 minute every 10 minutes through the entire speed range.

P_N = Typical motor power. The ABB drive for HVAC can deliver P_N continuously at an ambient temperature of 50 °C.

U_N = Nominal supply voltage

Dimensions

Wall mounted units

Frame size	Dimensions and weights								
	IP21 / UL type 1					IP54 / UL type 12			
	H1 mm	H2 mm	W mm	D mm	Weight kg	H mm	W mm	D mm	Weight kg
R1	369	330	125	212	6,5	449	213	234	8.2
R2	469	430	125	222	9	549	213	245	11.2
R3	583	490	203	231	16	611	257	253	18.5
R4	689	596	203	262	24	742	257	284	26.5
R5	739	602	265	286	34	776	369	309	38.5
R6	880	700	302	400	69	924	410	423	80
R6*	986	700	302	400	73	1119	410	423	84

Free standing units

Frame size	Dimensions and weights				
	H1 mm	H2 mm	W mm	D mm	Weight kg
R8	2024	N/A	347	617	230

N/A = not applicable

H1 = Height with cable connection box
H2 = Height without cable connection box
W = Width
D = Depth

Contact us

For more information please contact your local ABB representative or visit:

www.abb.com/drives
www.abb.com/drivespartners

3AFE68295378 REV K EN 15.2.2012 #16084

Power and productivity
for a better world™

iCapEx HYATT

Change Password | Logout | Help | Switch Applications | iCaps | Go

Home | Projects | Reports | Admin

Select 20110629.10:45:18

List | Edit | **Commitment**

Welcome, Darrell. You are working with Hyatt Regency Cincinnati. Currency values shown in **USD**. Your 2013 plan status is: **ownrrevw**

Edit Commitment

Close Commitment | Show Approval History | Print Purchase Order | Apply | Save | Cancel

Project Information

Project Name	Chiller Replacement Project	Module	Building System	Approved Budget	
Project Number	391O-2010-U07432	Project Type Code	Unplanned	Approved Funding Source	Owner

Commitment

Description	Refrigeration monitoring and vfd system	ID	53022
Type	Purchase Order	**Date Needed**	**20/Mar/2012**
Funding Source	Owner	Status	APPROVED
Vendor Name	Frank Werk	Commitment Code	391O-2010-U07432-0013
Ordered By	Darrell Johnson	Hotel Commitment Code	
Department	Engineering		

▼Vendor Information

Vendor Attn	Frank	Vendor State	OH
Vendor Address 1	4673 Spring Grove Ave.	Vendor Zip	45232
Vendor Address 2		Vendor Phone	513.681.1200
Vendor City	Cincinnati	Vendor Fax	513.681.0311

▶Billing Information

▶Shipping Information

▼Commitment Details

Bid Vendor 1	Peck Hanniford and Briggs	GL Account Name	FF&E
Bid Vendor 2		GL Account Number	11342501
Bid Vendor 3			

Remarks (for PO) See ownerships approval attachment.

Comments (internal)

Tags

Select	Tag	Removable
◉	Controller	Y

Attachments

Select and Open / View Attachment | Edit Attachment Information | Remove Attachment | Add New Attachment

Select	Attachment Name
◉	Ownerships approval
○	Peck Hanniford

Commitment Lines

Show All Details | Hide All Details

Select	Details	* Description	* Qty	* Unit Price	Ext * Asset Amount	Category	* Asset Location	* Asset Type	Depreciate This Asset
◉	▶Show	Refrigeration monitoring & vfds	1	70,850.00	70,850.00	Buildings	4th flr mechanincal room	Capitalized	☑

Tax Amount 0.00 **Freight Amount** 0.00 **Total Commitment Amount** 70,850.00

▶**Payments**

Close Commitment | Show Approval History | Print Purchase Order | Apply | Save | Cancel

Peck Hannaford + Briggs
Service Corporation
4673 Spring Grove Ave.
Cincinnati, OH 45232
513/681.1200
513/681.0311 fax

www.peckhannafordbriggs.com

REMIT TO:

4673 SPRING GROVE AVENUE
CINCINNATI, OH 45232

- Code -
MAREASNER

INVOICE

HYATT REGENCY CINCINNATI
151 WEST FIFTH STREET
CINCINNATI, OHIO 45202

INVOICE: 54625
INVOICE DATE: 1-31-2012
CUSTOMER NO.: HYA035

DESCRIPTION OF SERVICES:

- INSTALLATION OF A REFRIGERANT LEAK DETECTION AND VENTILATION SYSTEM FOR THE FOURTH FLOOR MECHANICAL EQUIPMENT ROOM: 90% COMPLETE.
- CONTROL OF CHILLED AND CONDENSER WATER PUMPS FROM NEW CHILLERS: 75% COMPLETE.
- INSTALLATION OF VARIABLE FREQUENCY DRIVES ON CONDENSER PUMPS: 75% COMPLETE.
- CONTROL OF TOWER FAN VARIABLE FREQUENCY DRIVES FROM THE NEW CHILLERS: 75% COMPLETE.
- REPLACEMENT OF COOLING TOWER BYPASS VALVES: 90% COMPLETE.
- CONTROL OF TOWER BYPASS VALVES FROM NEW CHILLERS: 75% COMPLETE.

TOTAL PROJECT: $70,850.00

THIS PARTIAL INVOICE, 75% OF TOTAL PROJECT: $53,137.50

TERMS: NET 15 DAYS

Equal Opportunity Employer

Peck Hannaford + Briggs
Service Corporation
4673 Spring Grove Ave.
Cincinnati, OH 45232
513/681.1200
513/681.0311 fax

- Cubs -
MARRIOTT

www.peckhannafordbriggs.com

REMIT TO:
4673 Spring Grove Ave.
Cincinnati, Ohio 45232

INVOICE

FF+E

HYATT REGENCY CINCINNATI
151 WEST FIFTH STREET
CINCINNATI, OH 45202

INVOICE NO.: 54625
INVOICE DATE: 03/27/12
CONTRACT NO.:
CUSTOMER NO.: HYA035

SERVICE LOCATION: HYATT REGENCY CINCINNATI

DESCRIPTION OF SERVICES:

- INSTALLATION OF A REFRIGERANT LEAK DETECTION AND VENTILATION SYSTEM FOR THE FOURTH FLOOR MECHANICAL EQUIPMENT ROOM.
- CONTROL OF CHILLED AND CONDENSER WATER PUMPS FROM NEW CHILLERS.
- INSTALLATION OF VARIABLE FREQUENCY DRIVES ON CONDENSER PUMPS.
- CONTROL OF TOWER FAN VARIABLE FREQUENCY DRIVES FROM THE NEW CHILLERS.
- REPLACEMENT OF COOLING TOWER BYPASS VALVES.
- CONTROL OF TOWER BYPASS VALVES FROM NEW CHILLERS.

TOTAL PROJECT: $70,850.00

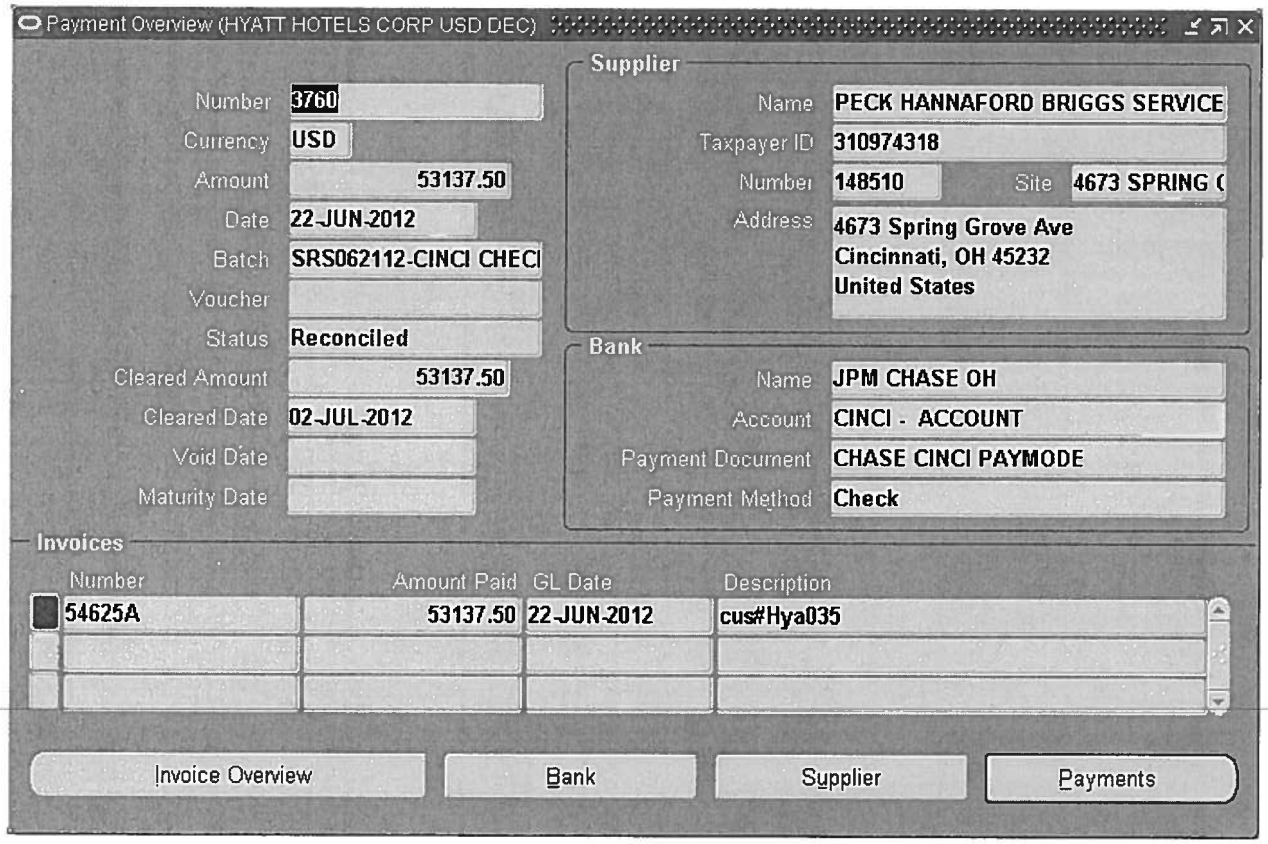
CHANGE ORDERS:

REMOVE CHILLER 3 TOWER STAND	2,200.00
REPLACE CHILLER 3 MCC SWITCH HANDLE	1,600.00
UPGRADE SPEED DRIVES TO 20 HP	1,800.00
	$5,600.00

TOTAL PROJECT INCLUDING CHANGE ORDERS:	$76,450.00
LESS INVOICE DATED 1-31-12:	$53,137.50
TOTAL THIS INVOICE:	**$23,312.50**

TERMS NET 15 DAYS

Equal Opportunity Employer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Cleared Amount 53137.50
Cleared Date 02-JUL-2012
Void Date
Maturity Date
Supplier
Name PECK HANNAFORD BRIGGS SERVICE
Taxpayer ID 310974318
Number 148510
Site 4673 SPRING (
Address 4673 Spring Grove Ave
Cincinnati, OH 45232
United States
Bank
Name JPM CHASE OH
Account CINCI - ACCOUNT
Payment Document CHASE CINCI PAYMODE
Payment Method Check
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Number
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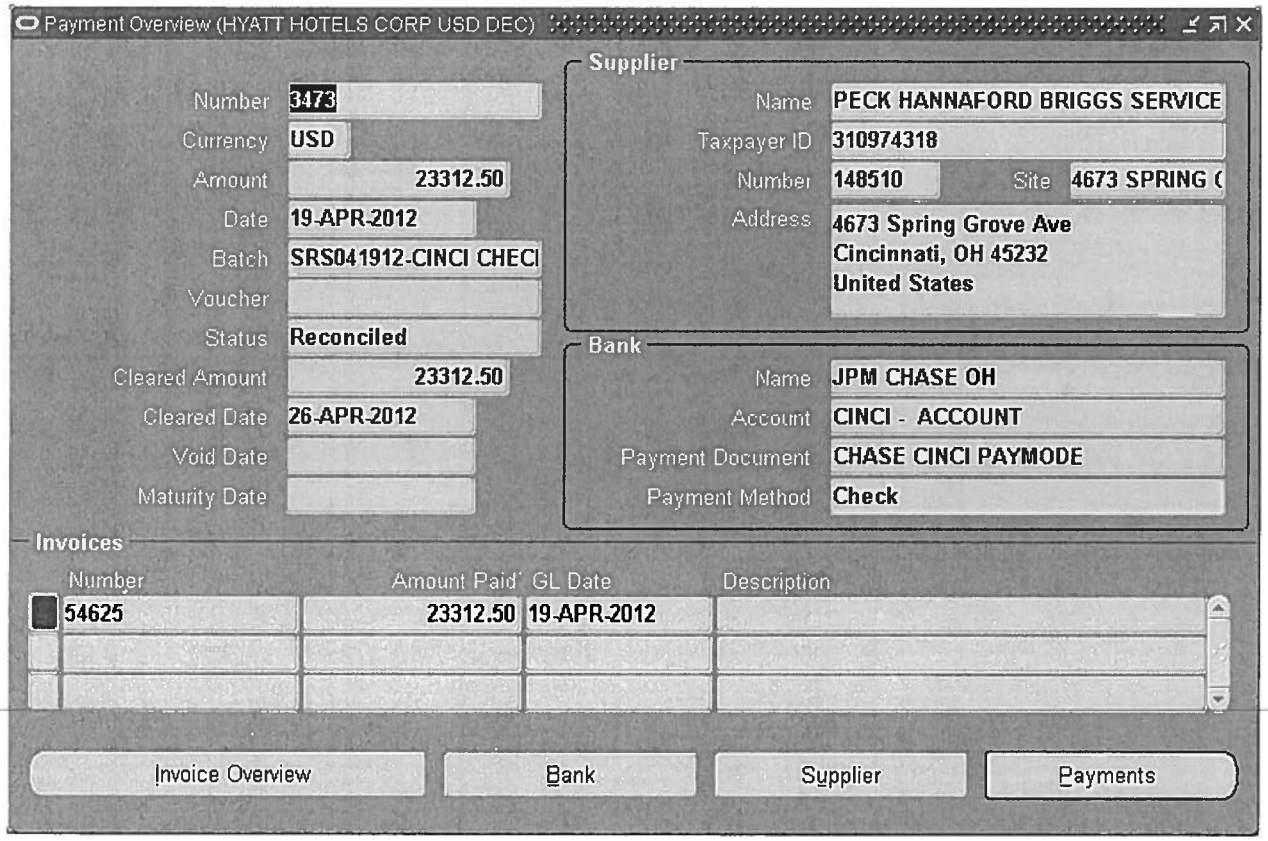
Supplier
Payments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Currency USD
Amount 23312.50
Date 19-APR-2012
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Voucher
Status Reconciled
Cleared Amount 23312.50
Cleared Date 26-APR-2012
Void Date
Maturity Date
Supplier
Name PECK HANNAFORD BRIGGS SERVICE
Taxpayer ID 310974318
Number 148510
Site 4673 SPRING (
Address 4673 Spring Grove Ave
Cincinnati, OH 45232
United States
Bank
Name JPM CHASE OH
Account CINCI - ACCOUNT
Payment Document CHASE CINCI PAYMODE
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Invoices
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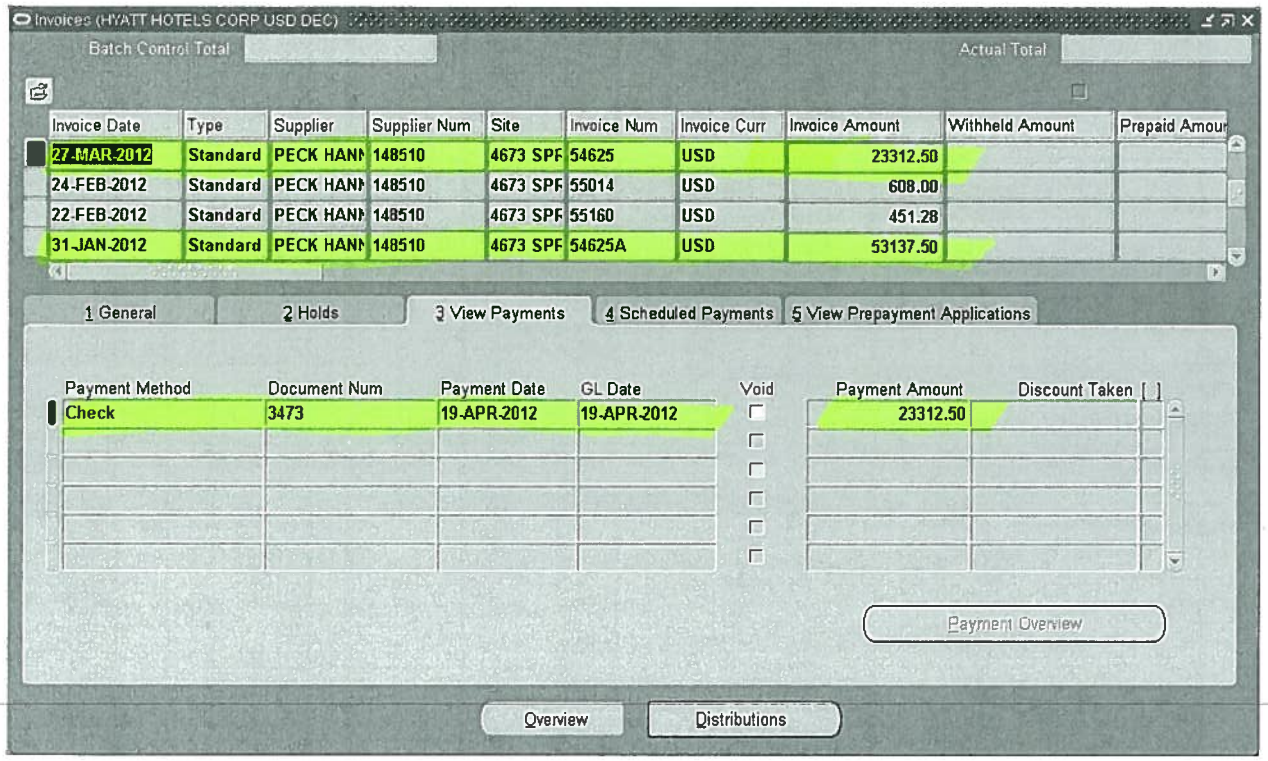
Invoices (HYATT HOTELS CORP USD DEC)
Batch Control Total
Actual Total
Invoice Date
Type
Supplier
Supplier Num
Site
Invoice Num
Invoice Curr
Invoice Amount
Withheld Amount
Prepaid Amour
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GL Date
Void
Payment Amount
Discount Taken
Check
3473
19-APR-2012
19-APR-2012
23312.50
Payment Overview
Overview
Distributions

Capital and F&E Expenditure Purchase Order

Bill To Information:

Hyatt Corporation, as agent for OH 151 West Fifth LLC, d/b/a Hyatt Regency Cincinnati
ATTN: Hyatt Regency Cincinnati
Attn: Acct Payable
151 West Fifth Street
Cincinnati, OH 45202

Phone: 513-579-1234

Currency: USD

Order Date: 08-FEB-10
Department: Engineering
Date Needed: 12-FEB-10
Date Ordered: 10-FEB-10
Ordered By: Bernard Issa
Terms:

Purchase Order No.: 391F-2010-U06848-0001

Note: All instructions must be followed or merchandise will not be accepted.
1. This order must be acknowledged by executing returning copy within 14 days of receipt.
Definite shipping date must be stated with acknowledgement.
It is understood that if vendor does not return signed acknowledgement copy within 14 days of recopt of this order that vendor has accepted all the terms and conditions as set forth in the purchase order.
2. Do not fill order at higher price than state on purchase order.
3. All deliveries must be accompanied by packing slip. Packing slip must be attached to the outside of carton or carton containing packing slip to be clearly marked on outside.
4. Show quantity, description, and this purchase order on all packages.
5. This order is subject to vendor's compliance with applicable sales tax, and such taxes are in addition to purchase prices.
6. All shipping charges are prepaid vendor and added to invoice unless otherwise indicated.
7. To insure prompt payment, mail invoice showing purchase order number with bill of lading to customer (as specified in the "Bill To" address at left)
8. This order is subject to all terms and conditions on "Exhibit A - Terms and Conditions".

Vendor Information:

Company Name: Feldkamp Enterprises Inc.
Address: 3642 Muddy Creek
City, St, Zip: Cincinnati, OH 45238
Attn: Pat Heeney
Phone: 513-347-4588
Fax: 513-347-4506

Ship To Information:

Company Name: Hyatt Regency Cincinnati
Address: 151 West Fifth Street
City, St, Zip: Cincinnati, OH 45202
Attn:
Phone: 513-579-1234
Fax: 513-354-4039

Quantity Ordered	MEAR/Purchase Order Item Description	Price/Total Unit Price	Total
1	Booster Pumps For Domestic water System	93783.50	93783.50
Remarks:	Booster Pumps For Domestic water System	**SubTotal**	**93783.50**
		Tax	**6095.93**
		Freight	**0.00**
		Total	**99879.43**

Accepted by Vendor: Signature(Title): _____ **Date:** _____
Company Name: Feldkamp Enterpris
Shipping Date:

For Internal Use Only:	
GL Acct Name:	**F&E Purchases**
GL Acct Number:	**0085-12**

Capital and F&E Expenditure Purchase Order

EXHIBIT A
TERMS AND CONDITIONS

In addition to the terms and conditions specified on the face hereof, including but not limited to any special conditions as set forth thereon, and any drawings or specifications referred to thereon, Customer (for its own account or as AGENT, as the case may be) and Vendor, as they are designated in the Purchase Order, shall be subject to and governed by the following terms and conditions. (The terms, conditions, descriptions and specifications in the Purchase Order and in this Exhibit A are hereinafter collectively referred to as the "Contract"):

*1. Vendor acknowledges that the personal property covered by the Contract (the "Subject Property") has been ordered by Customer, as Agent for the principal herein designated and that the Subject Property is ordered solely for the account of such principal.

2. Time is the essence in the Contract. If, in the sole and exclusive judgment of Customer, Vendor has failed or will fail or if the Vendor has refused or will refuse to expeditiously proceed with delivery and/or installation pursuant to the terms of the Contract, then Customer may terminate the whole or any part of the Contract, provided Customer gives Vendor two days prior written notice of such termination, and purchase elsewhere and hold Vendor accountable for any and all damages sustained by Customer as result of termination.

3. Vendor shall maintain adequate books and records so as to be able to segregate and physically identify the Subject Property, including all components thereof. Further, upon total or partial payment by Customer to Vendor for the Subject Property, title to all the Subject Property or any portion thereof shall vest in Customer and Customer shall have the right to immediate possession thereof. Vendor warrants and represents that when Customer takes title to the Subject Property under the terms and conditions of the Contract, title will be free and clear of all liens and encumbrances. Vendor further agrees to execute any and all documents which Customer deems necessary to effectuate said transfer of title.

4. Until such time as the Subject Property or any part thereof has been (i) delivered or installed by Vendor and (ii) accepted by Customer, Vendor hereby assumes the entire risk of loss of the Subject Property or any part thereof from any cause whatsoever. Vendor further agrees that until acceptance by Customer, the loss, damage, or destruction of the Subject Property or any part thereof shall not release Vendor from its obligation to fully perform under the Contract.

5. Final inspection and acceptance by Customer shall be at the location of delivery and/or installation such other place as is designated by Customer. Customer reserves the right to reject and/or return at Vendor's risk and expense or to hold subject to Vendor's risk and disposal, all goods or any part thereof which do not conform to samples or specifications, or which are delivered in quantities different from those ordered hereunder, or if colors and sizes are not in accordance with the written requirements hereof or are in any way contrary to terms and conditions of the Contract, and Customer shall have the right to reject and/or return, in whole or in part, and at the expense of Vendor, any goods not delivered to premises on the delivery date herein set forth.

6. During the term of the Contract, Vendor agrees to maintain (i) all risk property damage insurance with limits sufficient to satisfy the requirements as stated in section 4 herein above and (ii) public liability insurance, including but not limited to coverage for contractual liability, products liability and breach of warranty both express and implied and automobile liability insurance with combined single limits of one million dollars ($1,000,000.00) per occurrence, unless otherwise specified in writing by Customer and (iii) if Vendor is to install subject property, then Vendor shall comply with all applicable Workers¿ Compensation laws and regulations. All insurance policies provided for by this paragraph shall be maintained by Vendor's sole cost and expense and shall name Customer as additional insured thereunder. Evidence of such insurance coverage shall be delivered to Customer within ten days from the date of execution of the Contract. If Vendor fails to comply with the provisions of this paragraph, Customer shall have the right to either obtain said insurance on behalf of Vendor at Vendor's sole cost and expense or terminate the Contract. If Customer does secure said insurance, the cost thereof shall be deducted from the purchase price set forth in the Contract. Vendor does hereby agree to indemnify and hold harmless Customer from and against and, at Vendor's sole and expense shall include but shall not be limited to all attorney's fees), defend, settle and satisfy any demand, cause of cost and expense (which cost action, claim or judgment of any kind whatsoever made against Customer on account of any injury, damage or loss to any person or property of any kind whatsoever arising out of the Contract and the performance or failure to perform pursuant to the terms of the Contract of Vendor, its agents or employees, whether said injury, damage or loss arises before, during or after the installation of the Subject Property.

7. Vendor agrees to deliver and/or install specified by Customer the Subject Property on or before the delivery date set forth in the Contract, unless Customer designates a date for delivery and/or installation by Vendor later than that provided for in the Contract. All provisions herein to the contrary notwithstanding, Vendor shall have the obligation and duty to be informed, by physical inspection or otherwise, as to the progress of work at the installation location and, in the absence of specific instructions from Customer, Vendor shall make delivery and installation at such times as the delivery and installation may be required for the expeditious progress of said work. Time shall be the essence, and delivery to a carrier shall not be deemed delivery.

8. Final Payment by Customer, less any amounts required by law to be retained by Customer, shall not be due and payable until all the Subject Property to be furnished by Vendor pursuant to the Contract has been fully accepted by Customer. All claims for monies due or to become due from Customer shall be subject to deduction by Customer for any set-off or counter claim arising out of this or any other purchase order of Customer with Vendor.

9. Customer or its duly authorized representatives has the rights to examine and inspect all Vendor¿s books and records and such other evidence of payment to Vendor for the purpose of verifying the utilization of deposits or accuracy of any invoices received by Customer or compliance by Vendor with the terms and conditions of the Contract.

10. Vendor agrees to indemnify and hold harmless Customer, and its successors, assigns, customers and users of its products from any liability, loss, damage, judgments or awards, including but not limited to all costs, expenses and attorneys' fees resulting from any actions, claims or proceedings from infringement of any patent purporting to cover the Subject Property or its intended use and of any trade marks appearing with the material on delivery to Customer. Vendor agrees, at its sole cost and expense, to defend Customer and its successors, assigns, customers, agents and users in all such actions, provided that Vendor shall be given prompt notice in writing of all such actions, claims, notices of infringements and threats of suit for infringement and opportunity for Vendor to settle or defend the same through agents or counsel of its own choice.

11. Vendor agrees not to give gratuities or rebates of any nature or form whatsoever to Customer's employees, consultants, agents or to any of its affiliated entities, whether the gratuity be in the form of a loan or direct gift. Vendor also agrees not to enter into any collusive agreements with any party which would adversely affect Customer.

12. The Equal Opportunity Clause in Section 60-1.40, Section 60-250.4, and Section 60-741.4 of Executive Order 11246, as amended, relative to equal employment opportunity and the implementing rules and regulations of the Office of Federal Contract Compliance are incorporated herein by specific reference. Vendor warrants that the Subject Property conforms with the requirements of applicable standards specified by current rules or regulations under the Occupational Safety and Health Act of 1970, and any amendments thereto, and also that the Subject property has not and will not be manufactured in violation of any federal or state law, rule or regulation, including any Child Labor and Wage and Hour Law. Furthermore, Vendor warrants that in all respects it is in compliance with all laws, rules and regulations of all federal, state and local governmental entities, and that it will comply with all covenants set forth in applicable laws.

13. Vendor shall not delegate any duties nor assign any rights or claims under the Contract without the prior written consent of Customer. Any such delegation or assignment shall be null, void, and of no effect whatsoever.

14. Vendor warrants that the Subject property shall be free from defects of workmanship and material, shall comply with the requirements of the Contract and shall be fit for the purpose intended in the Contract. All warranties shall run in favor of Customer, its successors, and assigns.

15. Customer shall have the right to make, from time to time and without notice to any sureties or assignees, changes as to packing, testing, designations, specifications, designs, and delivery schedules (postponements only). Vendor shall immediately notify Customer of any increases or decreases in costs and expenses caused by such changes and an equitable adjustment in price or other terms hereof shall be agreed upon in a written amendment to the Contract.

16. In the event of any default by Vendor of any of the provisions of the Contract or misapplication of Customer's funds, then Customer may, in its sole discretion, terminate the Contract or any part thereof and Vendor shall be liable to Customer for any and all damages resulting directly or indirectly therefrom. Waiver by Customer of any breach hereof shall not constitute a waiver of any other breach.

17. In the event of any proceedings, voluntary or involuntary, in bankruptcy or insolvency by or against Vendor or in the event of appointment, with or without Vendor's consent, of an assignee for the benefit of creditors or a receiver, then Customer, without any liability on its part whatsoever, shall be entitled to cancel any part of the Contract which has not been performed.

18. Customer shall at all times have title to all drawings and specifications furnished by it to Vendor and intended for use in connection with the Contract. Vendor shall use such drawings and specifications only in connection with the Purchase Order and shall not disclose such drawings and specifications to any person, firm, or corporation, other than government inspectors or the employees or subcontractors of Customer. Vendor shall, upon the request of Customer or upon performance of all terms and conditions of the Contract, promptly return all drawings and specifications to Customer.

19. Vendor agrees to pay all costs and expenses, including all attorneys' fees and court costs, incurred by Customer in enforcing the terms and conditions of the Contract.

20. Vendor specifically warrants that the Subject Property covered by the Contract shall have the appropriate government approvals or testing laboratory certifications and shall conform to local governmental codes applicable to the Subject Property where it is delivered and/or installed.

21. All rights and remedies of Customer upon Vendor's breach of the terms and conditions of the Contract are cumulative and nothing contained in the Contract is intended to limit any other rights which Customer may have under law or agreement.

22. All rights of the parties under the Contract shall be determined in accordance with the prevailing law of the state in which the Subject Property is delivered and any suit by Vendor under the Contract must instituted and tried in said state.

23. The Contract is intended to be the final and exclusive agreement between the parties hereto. Any prior agreements, whether written or oral, between the parties hereto relating to the subject matter of the Contract shall be of no force or effect. There shall be no modifications, alterations, amendments or deviations from the provisions of the Contract without prior written consent of Customer.

*Strike if inapplicable

Capital and F&E Expenditure Purchase Order

Approval History

Purchase Order No.: 391F-2010-U06848-0001

Date Assigned	Date Completed	Action Taken	Username	Tag Name	Approval Comment
08-FEB-10 11:05:31		SUBMITTED	Bernard Issa		
08-FEB-10 11:05:31		SKIPPED - Approver s	Bernard Issa	Director of Engineering	
08-FEB-10 11:05:31		REJECTED	Paul Wilder	Controller	Change funding source from F&E to Owner, then re-submit.
08-FEB-10 12:14:18		SUBMITTED	Paul Wilder		
08-FEB-10 12:14:18		APPROVED	Bernard Issa	Director of Engineering	
08-FEB-10 13:39:42		SKIPPED - Approver s	Paul Wilder	Controller	
08-FEB-10 13:39:42		APPROVED	Herb Rackliff	General Manager	
08-FEB-10 14:57:31		FINAL APPROVAL: A	Ted Lorenzi	Operations - Engineerin	