

Midwestern Higher Education Compact

MHEC
Electrical Components Solution

REQUEST FOR PROPOSAL

Prepared by the
Midwestern Higher Education Compact
Energy Advisory Committee

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The Midwestern Higher Education Compact is a nonprofit regional organization established by compact statute to assist Midwestern states in advancing higher education through interstate cooperation and resource sharing. Member states are: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin.

MHEC seeks to fill its interstate mission through programs which:

- enhance productivity through reductions in administrative costs
- encourage student access, completion and affordability
- facilitate public policy analysis and information exchange
- facilitate regional cooperation
- encourage quality education programs and services in higher education
- encourage innovation in the delivery of educational services

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A. Introduction

The Energy Committee of the Midwestern Higher Education Compact is requesting proposals from electrical component equipment vendors on behalf of the Midwestern Higher Education Compact. The purpose of this Request For Proposal is to establish a comprehensive Electrical Components Solution consisting of electrical energy reducing equipment and services for the Eligible Participants in the 12 state region of the Compact. MHEC is not seeking financing for energy savings projects undertaken by Eligible Participants through this solution; instead MHEC is seeking electrical component replacements for Eligible Participants. At a minimum this solution will offer competitive price agreements with qualified vendor(s) who shall provide electrical energy reducing equipment, materials, support services, training and related materials and or services in accordance with the specifications of this Request For Proposal. Accordingly, MHEC seeks responses to this RFP from electrical component vendors and manufacturers. This solution shall provide the Eligible Participants with overall cost-savings that could only be achieved by working collaboratively.

B. The Midwestern Higher Education Compact

The Midwestern Higher Education Compact (MHEC) is an instrumentality of twelve Midwestern states (Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin). The Compact was established in 1991 through a common statute enacted into law by each of the member states. The purpose of the Compact is to promote higher education through interstate cooperation and resource sharing.

A 60 member Commission composed of five delegates from each state who are appointed by their respective Governors, House Speakers and Senate Presidents govern the Compact. The Commission has been conferred very broad authority to enact solutions and enter into agreements on behalf of its member states. Once a state enacts the necessary legislation to become a member of the Compact, all of the public and private non-profit colleges, universities, community colleges and technical colleges in the state are eligible to participate in the solutions established by the Compact. The Commission receives its primary financial support from member state appropriations, from foundations having special interests in specific solutions, and from administrative service fees.

The primary constituents served by the Midwestern Higher Education Compact are the approximately 1000 public and private non-profit institutions in the member states whose combined enrollments total over 4 million students. In addition, where appropriate, state and local government agencies, and local school districts are also invited to participate in MHEC solutions.

One of the Compact's top priorities is to establish public-private relationships to improve services to higher education, and reduce administrative costs for both providers and institutions. Since 1992, the Compact has engaged in several highly successful initiatives in cooperation with leading corporations. These relationships have been quite innovative, and have produced financial benefits for all of the involved parties. Beyond excellent

pricing and terms, MHEC agreements deliver a primary benefit to institutions and vendors by avoiding the time and expense of the RFP process since MHEC has already completed the RFP and awarded the contract on behalf of all institutions in the twelve states.

C. Lumina Foundation for Education Grant Project

In late 2008 MHEC received a grant from Lumina Foundation for Education for the purpose of, among other things, developing collaborative programs to reduce energy costs for higher education institutions. The grant project's overarching goal is to develop and execute collaborative programs that provide opportunities for colleges and universities to realize financial savings in two areas where costs are rising at a significant rate: (1) energy and utilities; and (2) health care benefits and insurance for employees and for students. A related goal is to provide institutions with the tools and resources needed to measure the extent of their savings and to reinvest strategically to improve student success while reducing total operating cost per degree or credential awarded. The primary target population of the proposed grant project is the college and university sector in the Midwest. However, depending on the specifics of the solutions and purchasing agreements that are eventually negotiated and developed, benefits could also be extended to school districts and state and municipal governments as well as colleges and universities in states outside the MHEC region.

By the end of the three-year grant period MHEC expects to have at least one group purchasing solution in place in each of the two discussed domains—health care and energy—with enough colleges and universities enrolled to make each solution viable. The extent of cost savings realized as a result of these solutions will be dependent on the nature of the solutions that are developed and the terms of the agreements negotiated with service providers.

This RFP and any solution developed as a result will play an important part in the grant's overall objective of helping institutions realize energy savings which can then be used to help improve student success.

D. The MHEC Energy Advisory Committee

As part of the grant project, the Commission established the MHEC Energy Advisory Committee in 2009 to develop innovative approaches to expand access to energy reducing equipment, technology and services, while reducing costs to institutions. The committee consists of a wide cross section of experts in energy from campuses across the MHEC states.

The task facing the MHEC Energy Advisory Committee is not an easy one. While other purchasing cooperatives and consortia exist, the complexities of the energy/utility markets have made it very difficult for any of them to develop viable, scalable solutions that enable colleges and universities to reduce their overall energy costs. As part of MHEC's overall energy initiative, MHEC's Energy Advisory Committee is charged with identifying and developing such solutions. MHEC's governance structure also provides a unique advantage in achieving this objective by bringing together educators, legislators, and industry leaders to develop mutually beneficial solutions to vexing problems.

Any solution and agreement(s) resulting from this RFP will be a major piece in the overall MHEC energy initiative. The committee is looking to enter into agreement(s) with vendors of electrical energy conserving equipment and systems that will enable colleges and universities to obtain products and services at a lower cost than they would be able to obtain by acting independently or even within state systems or existing consortia. The committee is responsible for developing this RFP.

The Commission believes that the services and scalability of the solution envisioned by the Energy Advisory Committee under this RFP will offer unique advantages and benefits to private sector partners and to participating colleges and universities that cannot be readily achieved through individual actions. Participation will enable significant streamlining of marketing, administration and service functions; improved service support and training options; and operational efficiency across a variety of Eligible Participants and their individual scenarios. In order for this solution to be successful, it must be profitable for both the providers and the institutions. The Commission is committed to making that happen.

E. Electrical Components Solution

The MHEC Energy Committee intends to provide an electrical energy reducing equipment solution for Eligible Participants. In addition to the applicable equipment and systems, any proposed solution needs to have as options: the maintenance, technical support and training necessary to allow the institution to fully utilize the equipment purchased. Because institutions have differing equipment needs, the solution must be flexible enough to meet those varying needs. Amongst different types of institutions and even within a single institution, differences in equipment requirements exist. Therefore, the solution should allow adaptation to the specific needs and circumstances of each Eligible Participant as well as streamline and simplify the procurement and distribution process for them.

Furthermore, respondents are encouraged to offer innovative solutions, recognizing that to compete effectively they need to deal with a range of institutions: some will search for a rock bottom price because they have sufficient internal resources and expertise to provide their own pre- and post- sales support and servicing; whereas other institutions (perhaps having no or little facility support staff whatsoever) may need complete support. Some institutions will be willing to buy exclusively from one vendor; others will not. Some institutions will be willing to standardize purchases, do bulk buys, or provide local warranty services, while others will be unable to do so. Each of these factors provides the vendor an opportunity to show initiative and ultimately cement a long-term relationship with specific institutions.

The successful respondent(s) will be responsible for delivery of equipment and services awarded. Respondents may propose the use of servicing subcontractor or resellers. However, MHEC will consider the respondent(s) to be the sole point of contact with regard to contractual matters, including pricing structure, delivery, warranty, and payment of any and all charges resulting from the purchase of products specified in this proposal, unless a separate contract addendum to the master agreement is executed with said subcontractors or resellers.

If subcontractors or resellers are utilized, MHEC encourages the consideration of minority owned and/or economically disadvantaged businesses.

It is MHEC's belief that it has a successful history of creating renewable and reviewable purchasing vehicles for its institutions, and that its ability to foster relationships with vendors puts it in a unique position to bring the best value to all involved. It is our hope that by means of this RFP we will establish a purchasing vehicle for our eligible participants that will:

1. Represent enough volume that the pricing is aggressive, thereby making this the most attractive purchasing vehicle available to our institutions.
2. Use that volume to provide vendors with a more predictable business model so that they may reliably invest in providing those services that establish relationships and to reestablish in our institutions the value of value-added services so that vendors also have a more predictable space in which to market advanced fee-based services.
3. Allow MHEC to bring its educational, collaboration, and communications capabilities to bear in assisting vendors to build relationship with our smaller institutions without incurring substantial cost.

MHEC is seeking vendors and manufacturers who are willing to work with MHEC to provide creative solutions that will be effective within the confines of the purchasing regulations to which member institutions are bound.

The Electrical Components Solution will be offered to eligible higher education institutions, k-12 and state and municipal governments. The solution will:

1. Be designed as a renewable multiple-year offering capable of serving the entire MHEC region.
2. Offer Eligible Participants a streamlined and simplified procurement process that meets their electrical component needs.
3. Make available an electrical components solution that is flexible enough to adapt to the specific needs and circumstances of each Eligible Participant.
4. Offer the highest quality electrical products and services.
5. Clearly provide the best pricing structures in the region to avoid repeated RFPs from Eligible Participants (testing the market).
6. Assist Eligible Participants in the conversion, installation, training and support of the products as necessary.
7. Enable Eligible Participants, consortia of institutions, and systems currently under separate contract with the selected vendor(s) to convert to the Electrical Components Solution.
8. Be structured to enable institutions, consortia of institutions, and systems in MHEC member states to participate as they deem appropriate and in their own best interests.

9. Offer the selected vendor(s) the opportunity to deal with groups of Eligible Participants in unique ways, facilitated by MHEC.
10. Offer the selected vendor(s) opportunities to address the MHEC Commission on topics of mutual interest.

Depending upon the responses received and the solutions presented, the Energy Committee may select more than one vendor to work with in developing and implementing each of the primary equipment solutions.

F. Eligible Participants

All public and private non-profit colleges, universities, community colleges, technical colleges and higher education agencies in MHEC member states shall be eligible to participate in the Electrical Components Solution.

Optionally, MHEC is open to participation by any or all of the following groups:

- K-12 schools and districts, including public libraries
- cities, counties, hospitals, and local subdivisions
- state agencies

Contract benefits may differ for each of these optional groups.

MHEC will also entertain proposals that would expand this solution to states within the other three Education Compacts in the country; WICHE-Western states, SREB-Southern states, NEBHE-New England states (subject to their approval), thereby making the agreement(s) national contract(s).

G. The MHEC RFP Process

This RFP is issued by the Midwestern Higher Education Compact's Energy Advisory Committee. The person responsible for managing the procurement process is Mr. Grant Wolters ((612) 625-6568 or grantw@mhec.org) who is the sole point of contact for the Committee during the RFP process.

The purpose of the RFP is to provide interested parties with information to enable them to prepare and submit a proposal to provide an electrical component solution under the auspices of the Midwestern Higher Education Compact. MHEC has determined that developing a region-wide electrical component acquisition strategy through one or more providers will benefit both the higher education community and the provider(s). The Committee intends to use the results of this process to enter into a Master Agreement(s) to make the solutions available to the entire constituency of the Compact. Consequently, it will afford providers a truly competitive opportunity to advance product sales and services and to further penetrate a specific market niche.

H. The Request for Proposal (RFP)

In preparing responses to this RFP, prospective providers are asked to address the following questions pertaining to the manner in which they would envision the development of the solution:

- The strategies that they would employ to assure the solution’s success.
- The qualifications and unique features that they would bring to the solution.

As used in this RFP, the terms “must”, “shall”, “should” and “may” identify the criticality of requirements. “Must” and “shall” identify requirements whose absence will have a major negative impact on the suitability of the proposed solution. Items labeled as “should” or “may” are highly desirable, although their absence will not have as large an impact as requirements labeled as “must” or “shall”. Depending on the overall response to the RFP, some individual “must” and “shall” items may not be fully satisfied, but it is the intent to satisfy most, if not all, “must” and “shall” requirements. The inability of a Respondent to satisfy a “must” or “shall” requirement does not automatically remove that Respondent from consideration; however, it may seriously affect the overall rating of the Respondent’s proposal.

1. General Information and Qualifications

1. The successful vendor(s) shall provide the products, maintenance, installation, training and service solutions as described in this RFP. Respondents shall completely review the requirements specified in this request for proposal. It shall be the respondent’s responsibility to make certain that all equipment and support is included in their proposal to guarantee a fully functional products and systems.
2. The successful vendor must warranty all equipment and ensure that this product works to its maximum capacity for a minimum period of twelve (12) months (or longer period if so indicated in the product description below) after final acceptance by the Eligible Participant that purchased it.
3. The successful vendor must agree that additional products relative to obtaining the solution not covered herein may be added by an Eligible Participant to this contract without voiding provisions of the existing contract. The successful vendors with additional consideration may be allowed to furnish additional products and services to institutions covered within the MHEC region.
4. The bidder's order fulfillment process shall be considered an important process with regards to the existing business practices of Eligible Participants. Invoices must be received separately for campus business units. The Vendor’s order fulfillment system must work seamlessly in conjunction with common ERP system and/or member institutions’ purchasing card systems that Eligible Participants may choose to use.
5. Performance of the successful vendor(s) will be closely monitored by an oversight committee for the Master Agreement(s) throughout the contract period. Individual institutions have the ability to control their own ordering process under the contract’s Master Agreement(s). If deliveries prove to be unsatisfactory, or other problems arise, MHEC reserves the right to delete product or services from the Master Agreement(s) and/or cancel Master Agreement(s) for cause, and may award to the next acceptable respondent, or

cancel and request new proposals. Similarly, if deliveries prove to be unsatisfactory or other problems arise under the agreement(s) for an Eligible Participant, the Eligible Participant retains all of its remedies for a default. Failure of the Eligible Participant to exercise its rights of termination for cause or other remedies for default due to a respondent's failure to perform as required in any instance shall not constitute a waiver of termination rights or other default remedies in any other instance.

6. Delivery of purchases will be made within 30 calendar days after receipt of order, F.O.B. destination (interior/ground floor or inside dock), and freight pre-paid and allowed, to any and all locations of the Eligible Participant. Bid prices must include all packing, freight, insurance charges and installation/operation manuals.
7. Vendor agrees to notify the Eligible Participant within five working days after receipt of the order if they are unable to deliver within the required time frame. Failure of the vendor to adhere to delivery schedules as specified or to promptly replace defective product shall render the vendor liable for all costs in excess of the contract price when alternate procurement is necessary. Respondents need note that all locations of any particular Eligible Participant may not be within the MHEC region.
8. Purchase orders will be placed by each Eligible Participant, on their institution's Purchase Order Form or by using a credit card on the vendor-supplied purchasing web site.
9. Vendor(s) must not substitute any item(s) that has been ordered by the Eligible Participant using this contract without the prior written or electronic approval by the appropriate purchasing officer of the Eligible Participant. The substitute item must be at the same or better technology level than the original product ordered, and pricing at the same or lower price. Failure to comply may result in return of merchandise at vendor's expense.
10. Successful vendor(s) must offer a "total satisfaction" return policy. The vendor must provide a thirty (30) day no-questions-asked return option, from the date of delivery to end-user.
11. Successful vendor(s) shall be responsible for replacing at no cost to Eligible Participants any damaged or inoperable-on-receipt products received under this contract within 30 days from notification by that institution. This includes all shipping costs for returning non-functional items to the vendor for replacement.
12. Any price reductions from manufacturer from the time of submission of a purchase order to product delivery must be passed on to the Eligible Participant that issued the purchase order.
13. Successful vendor(s) shall retain and maintain all records and documents relating to this Contract for six years after final payment by the Eligible Participant hereunder or any applicable statutory requirements of Eligible Participant, whichever is longer, and shall make them available for inspection

and audit by authorized representatives of the Eligible Participant, including the procurement officer or designee, at all reasonable times.

14. MHEC reserves the right, but is not obligated, to request that each respondent provide a formal presentation of its proposal at a date, time and place to be determined. If required by the MHEC Energy Advisory Committee, it is anticipated that such presentation will not exceed two (2) hours. No respondent will be entitled to be present during, or otherwise receive any information regarding, any other presentation of any other respondent.
15. MHEC reserves the right to require a Financial Capacity report consisting of the following:
 - a. Sources of financing (shareholders, venture capital, etc.)
 - b. Bank references and name of auditing firm
 - c. Last two annual reports and all quarterly reports since the last annual report
 - d. Identification of the Parent Corporation and any subsidiaries
 - e. List of all current customers in the MHEC region, and all customers for whom similar work was performed during the past 2 years
16. Successful vendor(s) must provide an account executive/team for MHEC. This team must establish and maintain fundamental familiarity/understanding with MHEC and MHEC's Eligible Participants. The account team must be able to recommend appropriate equipment and support products based on their knowledge of that specific Eligible Participant.
17. Respondents wishing to offer services must do so in at least eight of our member states. For service to be considered offered in a state it must be offered in the whole state.
18. MHEC has incurred and will continue to incur, costs and expenses in the development, implementation, administration and marketing of this program. To help recover some of these costs, the Energy Advisory Committee requires an administration fee in this solution. Please include an administration fee component in your proposal. The Respondent will be responsible for the administration fee. The administration fee may be a flat rate, or it may be a variable rate based on volume or a percentage of savings. However, it is important to remember that regardless of the makeup of the administration fee, the overall pricing must remain extremely competitive for Eligible Participants.
19. Vendor should, to the degree possible, indicate country of manufacture and country of assembly.

I. Functional Specifications of Electrical Components

1. General Equipment Specifications and Guidelines

While MHEC recognizes that utilization of proprietary methods or protocols sometimes provides competitive advantage, MHEC will give preference to those

vendors whose products support open source or also support recognized industry standard methods and protocols.

Equipment bid shall be new, current models manufactured with 100% new OEM parts. All products should be offered in **current production** as of the date of the award. ***For purpose of this contract “current production” shall mean that the equipment model is being manufactured as new equipment for the United States market.***

Refurbished equipment is not acceptable.

All equipment ordered as stated in the RFP must be shipped fully configured with the required components, and selected or specified sub-systems.

2. Specifications

MHEC is requesting proposals from Prospective Providers on five separate electrical components: Electrical Lamps; Electronic Ballasts; Motion/Occupancy Sensors; Motors; and Variable Frequency Drives. Understanding that not all Prospective Providers offer all five of these electrical component types, MHEC is requiring Prospective Providers to fully respond to the specifications as set forth in the RFP of at least one of the component types. The only exception to this requirement is Electrical Lamps. Should Prospective Provider desire to respond to the Electrical Lamps section, it is only required to fully respond to the specifications as set forth in the RFP of at least one entire category. Providers may reply to all LED and Induction lamps types as a package, or to a select lamp type which represent the individual Provider's product line for LED and/or Induction Lamps. If a Prospective Provider carries a complete line of fixtures covering fluorescent, LED and Induction lamps, the Prospective Provider is encouraged to respond to the entire lighting line.

Where equipment is specified using particular manufacturer specifications, it is not intended to be an exclusive specification. Like materials from other manufacturers will be accepted when meeting the criteria.

Electrical Lamps

- Linear Fluorescent Replacements: For purpose of pricing linear fluorescent and linear fluorescent upgrade kits, product specifications are broken down into two basic categories. The first being pricing for individual lamps meeting high efficiency and long life criteria most advantageous to the higher education market. The second area being retrofit kits containing lamps and matching ballasts for conversion of commonly experienced existing fluorescent fixture assemblies allowing a proper conversion by fixture that is most advantageous to the institution. Ballast type shall be verified with user as to type of use and cycling periods to determine most appropriate ballast to maintain expected life and energy efficiency.
- Vendor shall provide pricing and provide services for the removal and disposal of fluorescent lamps and ballasts on a one for one ratio relative to the

purchase of lamps and ballasts. Disposal shall include providing boxes, disposal devices, removal and final disposal/recycling of the material all in accordance with legal requirements for the jurisdiction of the institution procuring those services. In recognition of the fact that some institutions have existing contracts for disposal of fluorescent lamps and ballasts, final contracts will be established allowing the individual institution or entity to purchase lamps and ballasts with or without procuring the services for disposal of materials. Procurement of disposal services without the purchase of lamps and/or ballasts will not be allowed under these contracts.

- For all fluorescent and LED lamps and ballasts, voltages and light color shall be as required and as requested by each individual institution for the duty anticipated for the lamps and systems.
- The named manufacturer equipment specifications used throughout this RFP are for illustrative purposes only. Where lamps specified are using GE equipment specifications or any other specific manufacturer specifications, it is not intended to be an exclusive specification. Like materials from Westinghouse, Phillips or Sylvania or any other manufacturer will be accepted when meeting the following criteria:

o **Category 1: Individual Lamps**

- A) GE 28 Watt F28T8/XL
- B) GE 25 Watt F32T8/25W
- C) GE 26 Watt F28T5/
- D) GE 33 Watt F35T5/
- E) GE 51 Watt F54T5/
- F) GE Watt-Miser® Mod-U-line® T12 35 Watt
- G) GE Medium Screw Self Ballasted Spiral Compact Fluorescent lamps, color as selected by Institutions, lamp equivalent to standard incandescent bulbs with 40, 60, 75 and 100 Watt power consumption, Energy Star Compliant

o **Category 2: Retrofit Kits per Fixture**

- A) Existing 4 lamp fixture with T-12 Fluorescent lamps and generic magnetic ballast to achieve similar lighting level.
 - Replace with 4 lamp GE 25 watt F32T8/25W lamps with GE432MAX-N/Ultra electronic Ballast, color and voltage to match institutional needs, 120, 208, 277 volt capacity having a system watts and lumens of 84 and 7891 respectively at 277 volts.
- B) Existing 3 lamp fixture with T-12 Fluorescent lamps and generic magnetic ballast to achieve similar lighting level.
 - Replace with 3 lamp GE 25 watt F32T8/25W lamps with GE332MAX-L/Ultra electronic Ballast, color and voltage to match institutional needs, 120, 208, 277 volt capacity having a system watts and lumens of 64 and 5918 respectively at 277 volts.

- C) Existing 2 lamp fixture with T-12 Fluorescent lamps and generic magnetic ballast to achieve similar lighting level.
 - Replace with 2 lamp GE 25 watt F32T8/25W lamps with GE432MAX-N/Ultra electronic Ballast, color and voltage to match institutional needs, 120, 208, 277 volt capacity having a system watts and lumens of 84 and 7891 respectively at 277 volts.
- D) Existing 4 lamp fixture with T-12 Fluorescent lamps and generic magnetic ballast to achieve a reduced light level of 10 to 25%.
 - Replace with 4 lamp GE 25 watt F32T8/25W lamps with GE432MVPS-L/Ultra Start electronic Ballast, color and voltage to match institutional needs, 120, 208, 277 volt capacity having a system watts and lumens of 69 and 5984 respectively at 277 volts.
- E) Existing 3 lamp fixture with T-12 Fluorescent lamps and generic magnetic ballast to achieve a reduced light level of 10 to 25%.
 - Replace with 3 lamp GE 25 watt F32T8/25W lamps with GE332MAX-L/Ultra electronic Ballast, color and voltage to match institutional needs, 120, 208, 277 volt capacity having a system watts and lumens of 58 and 5082 respectively at 277 volts.
- F) Existing 2 lamp fixture with T-12 Fluorescent lamps and generic magnetic ballast to achieve a reduced light level of 10 to 25%.
 - Replace with 2 lamp GE 25 watt F32T8/25W lamps with GE232MAX-L/Ultra electronic Ballast, color and voltage to match institutional needs, 120, 208, 277 volt capacity having a system watts and lumens of 39 and 3388 respectively at 277 volts.
- G) Existing 4 lamp fixture with T-8 32 W Fluorescent lamps and generic instant start N ballast to achieve similar lighting level.
 - Replace with 4 lamp GE High Lumen lamps with GE432VPSL/Ultra electronic Ballast, color and voltage to match institutional needs, 120, 208, 277 volt capacity having a system watts and lumens of 88 and 8279 respectively at 277 volts.
- H) Existing 3 lamp fixture with T-8 32W Fluorescent lamps and generic instant start N ballast to achieve similar lighting level.
 - Replace with 3 lamp GE High Lumen lamps with GE332MVPS-L/Ultra electronic Ballast, color and voltage to match institutional needs, 120, 208, 277 volt capacity having a system watts and lumens of 68 and 6209 respectively at 277 volts.
- I) Existing 2 lamp fixture with T-8 32 W Fluorescent lamps and generic Instant Start N ballast to achieve similar lighting level.
 - Replace with 2 lamp GE High Lumen lamps with GE232MAX-N/Ultra electronic Ballast, color and voltage to match institutional needs, 120, 208, 277 volt capacity having a system watts and lumens of 84 and 7891 respectively at 277 volts.

- J) Existing 4 lamp fixture with T-8 32W Fluorescent lamps and generic magnetic ballast to achieve a reduced light level of 10 to 25%.
 - Replace with 4 lamp GE 28 watt lamps with GE432MVPS-L/Ultra Start electronic Ballast, color and voltage to match institutional needs, 120, 208, 277 volt capacity having a system watts and lumens of 76 and 6969 respectively at 277 volts.
- K) Existing 3 lamp fixture with T-8 32W Fluorescent lamps and generic Instant Start N ballast to achieve a reduced light level of 10 to 25%.
 - Replace with 3 lamp GE 25 watt F32T8/25W lamps without ballast change, color and voltage to match institutional needs, 120, 208, 277 volt capacity having a system watts of and lumens of 62 and 5276 respectively at 277 volts.
- L) Existing 2 lamp fixture with T-12 Fluorescent lamps and generic magnetic ballast to achieve a reduced light level of 10 to 25%.
 - Replace with 2 lamp GE 25 watt F32T8/25W lamps with GE232MAX-N/UltraMax L electronic Ballast, color and voltage to match institutional needs, 120, 208, 277 volt capacity having a system watts of and lumens of 43 and 3945 respectively at 277 volts.

MHEC recognizes that technologies are changing and significant improvements to the efficiency of lighting systems are being provided which may not be represented in the fluorescent replacement descriptions above. Thus we believe it is in the Compact's best interest to solicit and review Manufactures proposals that represent best available technologies and that achieve improved efficiencies and similar financial returns to those represented above. Vendor should submit any additional replacement technologies you feel represent "Best Practices" with your proposal by providing similar pricing information, complete system descriptions and specification, case studies and references where the technology has been deployed and any other information you feel may aid the Energy Advisory Committee in its review and selection process.

o Category 3: LED Linear Fluorescent Tube Replacement

- A) LED T12/T8 48" Fluorescent Tube Light Replacement. Multiple LEDs, 65 to 80 lm/W efficiency to replace standard F40T12 lamps with standard G4.5 Bi Pin lamp base and accommodating ballast removal. Unit shall include plastic tube housing, have an operating temperature less than 110 degrees F at the Bi Pins and less than 90 degrees F on the tube, suitable for environmental conditions of -10 to 113 degrees F, 3 year warranty with expected life of 5 years or more. Lamps shall be humidity/moisture resistant and be available in at least two color ranges, white 6000 Kelvin and daylight white 4100 Kelvin color temperature.
- B) LED T12/T8 24" Fluorescent Tube Light Replacement. Multiple LEDs, 65 to 80 lm/W efficiency to replace 24" T12/T8 lamps with standard G4.5 Bi Pin lamp base and accommodating ballast removal.

Unit shall include plastic tube housing, have an operating temperature less than 110 degrees F at the Bi Pins and less than 90 degrees F on the tube, suitable for environmental conditions of -10 to 113 degrees F, 3 year warranty with expected life of 5 years or more. Lamps shall be humidity/moisture resistant and be available in white 6000 Kelvin and daylight white 4100 Kelvin color temperature.

o **Category 4: LED Recessed Down Light Replacement**

- A) Par 38 Lamp replacement light output up to 1200 Lumens, 75-85W incandescent equivalent with maximum 12.0 Watt power consumption and life greater than 30,000 hours. Lamps shall be available in 6500 Kelvin white, 4000-5000 Kelvin soft white and 3000 Kelvin warm white, spot and flood configurations, with aluminum body and suitable for voltage range of 85 VAC - 265 VAC. Approximate size is 4.76 inch diameter x 5 inch Height.
- B) Par 30 Lamp replacement light output up to 550 Lumens, 50-65W incandescent equivalent with maximum 8.0 Watt power consumption and life greater than 30,000 hours. Lamps shall be available in 6500 Kelvin white and 3000 Kelvin warm white, spot and flood configurations, with aluminum body and suitable for voltage range of 85 VAC - 265 VAC. Approximate size is 3.7 inch diameter x 4 inch Height.

o **Category 5: Fluorescent to LED Lamp Retrofit Kits**

Retrofit Existing 4 foot multi-tube fluorescent fixture with T-12 or T8 Fluorescent lamps and generic magnetic or electronic ballast with LED lighting modules, tubes, reflectors and any other material required to achieve similar lighting level. Provide fixture modifications to upgrade the fixture to LED lighting, multi-tube system with daylight white color temperature (or other colors as may be required by the Institution). Under the alternate pricing column, provide as an add to the base material pricing, pricing for providing services to oversee replacement and retrofit process by the Institution. Also under the alternate pricing column, provide as an add to the base material pricing, a per unit price to furnish all labor, materials and supplies to complete the retrofit process. Entire upgrade module, lamps and reflectors shall have a 3 year warranty for material and workmanship regardless of installing entity.

- A) Existing 4 lamp fixture with T-12 or T8 Fluorescent lamps and generic magnetic or electronic ballast to achieve similar lighting level. Provide fixture modifications to upgrade the fixture to LED lighting, multi-tube system with white color temperature and voltage as required by the Institution.
- B) Existing 3 lamp fixture with T-12 or T8 Fluorescent lamps and generic magnetic or electronic ballast to achieve similar lighting level. Provide fixture modifications to upgrade the fixture to LED lighting, multi-

tube system with white color temperature and voltage as required by the Institution.

- C) Existing 2 lamp fixture with T-12 or T8 Fluorescent lamps and generic magnetic or electronic ballast to achieve similar lighting level. Provide fixture modifications to upgrade the fixture to LED lighting, multi-tube system with white color temperature and voltage as required by the Institution. Vendor shall provide pricing and provide services for the removal and disposal of fluorescent lamps and ballasts on a one for one ratio relative to the purchase of LED replacement lamps and kits. Disposal shall include providing boxes, disposal devices, removal and final disposal/recycling of the material all in accordance with legal requirements for the jurisdiction of the institution procuring those services. In recognition of the fact that some Institutions have existing contracts for disposal of fluorescent lamps and ballasts, final contracts will be established allowing the individual institution or entity to purchase lamps and ballasts with or without procuring the services for disposal of materials. Procurement of disposal services without the purchase of lamps and/or ballasts will not be allowed under these contracts.

o Category 6: LED Down Light Retrofit Housing Modules

Similar to the Halo LED ML706830 modules designed for retrofit applications with an Edison screw base adapter for use in existing housings. LED module shall be rated for 50,000 hours life, be warranted for a minimum of 3 years, deliver more than 600 lumens and be provided with choice of 494SC06, 494P06, 494H06 or 494WB06 trim with white trim ring), maximum of 14 watts power input, color temperature of 3000K, dimmable down to 15% of lumen output. The LED retrofit module and trim shall exceed high efficiency requirements for Energy Star, Title 24-2008 and IECC-2009 approval and/or rating.

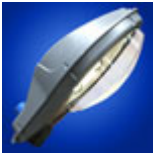
Step Down Transformer Accessory:

- A) H277 Transformer - Steps 277 line voltage down to 120 volts. Attaches to knockout on junction box and is 300VA (18 modules max.) rated. H277 is a UL Recognized Component that is listed for use under the luminaire UL/cUL listing for use with non-IC housings and LED Module).
- B) H347 Transformer - Steps 347 line voltage down to 120 volts. Attaches to knockout on junction box and is 75VA (4 modules max.) rated. H347 is a CSA/UL Listed Component that is listed for use under the luminaire UL/cUL listing for use with non-IC housings and LED Module).

o **Category 7: LED Exterior Parking, Street and Parking Ramp Lighting Systems**

High Efficiency LED/Induction lighting retrofit for exterior parking, walkway and street lighting, parking garage lighting and interior high-bay applications shall be as manufactured by Everlast Induction Lighting Inc of Jackson Michigan or approved equal. Lighting shall:

- Be rated for nominal 100,000 hour rated bulb life
- Be provided in voltages as required by the Institution.
- Be available with and without step-dim and on/off sensor controls
- Achieve a minimum of 50% reduction in energy consumption when compared to HPS/HID
- Be provided with a factory 10 year warranty for the lamp(s) and housing assembly.
- Maintain at least 70% Lumen output over 10 years
- Lowest lifetime cost of any light source
- Be provided with optimized specular reflector for induction lamp geometry
- Demonstrate an increased lateral throw by 50% and forward throw by 15%
- Be provided with integrated heat sink system for extended life
- Heavy duty aluminum/hybrid interior design with increased durability for harsh environments
- Be provided with lamps with 5000K, 85CRI scotopically enhanced white light source characteristics for improved vision and color recognition
- Pricing for Lamps shall cover the following fixture and retrofit types:

Type III Cobra head 	<u>40w Type III Cobra Head</u> <u>70w Type III Cobra Head</u> <u>100w Type III Cobra Head</u> <u>120w Type III Cobra Head</u>	Type III or V Acorn Walkway 	<u>40w Type III Acorn Walkway</u> <u>70w Type III Acorn Walkway</u> <u>100w Type III Acorn Walkway</u>
Step-Dimming Garage 	<u>70w Step-Dimming Garage</u> <u>100w Step-Dimming Garage</u>	Smart Light Shoe Box 	<u>70w Smart Light Shoe Box</u> <u>100w Smart Light Shoe Box</u>

- Fixtures and systems meeting the above criteria may be either LED type lighting or Induction type Lighting meeting the performance characteristics and energy performance as described above. All fixtures shall be Energy Star compliant.

MHEC recognizes that technologies are changing and significant improvements to the efficiency of lighting systems are being provided which may not be represented in the fluorescent or HID to LED/Induction replacement descriptions above. Thus we believe it is in the Compact's best interest to solicit and review Manufacturers proposals that represent best available technologies and that achieve improved efficiencies and similar financial returns to those represented above. Vendor should submit any additional replacement technologies you feel represent "High efficiency Induction and LED lighting Best Practices" with your proposal by providing similar pricing information, complete system descriptions and specification, case studies and references where the technology has been deployed and any other information you feel may aid the Energy Advisory Committee in its review and selection process. In addition, Manufacturer shall submit information on how the prices may be adjusted as the new generation Induction and LED technology becomes more cost competitive in the future and how price reduction for this contract will be accommodated.

Electronic Ballast

- Manufacturers must meet all of the following. All ballasts shall be Energy Star rated and meet or exceed NEMA Premium Efficiency Electronic Ballasts similar to GE's UltraMax, UltraStart, ProLine and MultiVolt ProLine series. All evaluations will be based upon manufacturer published data. Utilities can require independent verification of performance data for any rebate program participation.
 - Electronic ballasts covered by this specification shall meet ANSI C82.11-1993 (High-Frequency Fluorescent Lamp Ballasts). All ballasts shall be Underwriters Laboratory (UL 935) listed, Class P, Type1 Outdoor, and CSA Certified where applicable. The manufacturer shall provide written warranty against defects in material or workmanship, including replacement, for five years from date of manufacture.
 - Ballast shall have a Class A sound rating.
 - Ballast shall be a high frequency electronic type and operate lamps at a frequency above 42 kHz to avoid interference with Infrared devices.
 - Ballast shall comply with FCC Part 18 Non-Consumer Equipment, Class A for EMI (Conducted) and (Radiated).
 - Ballast shall not contain any PCB's (Polychlorinated Biphenyl).
 - Ballasts shall be "Program Start" with end-of-life detection and control circuit protection.
 - The power factor (PF) for all ballasts shall be greater than 95%.
 - Total harmonic distortion (THD) of the input current shall not exceed 10% of the fundamental 60 Hz current for low and normal light output ballasts.

20% of the fundamental 60 Hz current for high light output ballasts (ballast factor greater than 1.0).

- Vendor shall provide pricing and provide services for the removal and disposal of ballasts on a one for one ratio relative to the purchase of ballast replacement kits. Disposal shall include providing boxes, disposal devices, removal and final disposal/recycling of the material all in accordance with legal requirements for the jurisdiction of the institution procuring those services. In recognition of the fact that some institutions have existing contracts for disposal of ballasts, final contracts will be established allowing the individual institution or entity to purchase ballasts with or without procuring the services for disposal of materials. Procurement of disposal services without the purchase of ballasts will not be allowed under these contracts.
- Vendors shall provide pricing for step dimmable, continuous dimmable and non-dimmable ballasts.
- **Approvals:** Product submittals must include PF, THD and system watts for the specified system.

Motion / Occupancy Sensors

1.0 General Data

- **Motion / Occupancy Sensors:** For the purpose of pricing occupancy sensors and motion detectors, product specifications are generic and relative to all individual and kit type pricing programs described immediately after the general specifications. Pricing for the two basic forms of supplies are broken down into 2 basic categories. The first being pricing for individual motion / occupancy sensors meeting the configuration and operational criteria most advantageous to the higher education market. The second area being retrofit kits containing motion sensors, relays, transformers and other items as described in each kit, the sum of which is normally required to install systems for a totally operational system based on various types of spaces described for each system. In the case of kit purchases, wiring, labor and any other items not described in the equipment list will be provided by the institution and are not expected to be provided as part of the base price per system.
- Vendor shall provide support services to the institutions preparing purchase orders for equipment or kits to assure the institution that equipment being purchased is the most appropriate for each space being considered for control integration of motion and occupancy sensors. This could include services such as on-site assistance, telephone assistance and/or video training applications. Describe the extent that assistance will be provided with your submitted bid package.

- Equipment described is based on Leviton Equipment. Equal equipment meeting the following criteria and manufactured by Watt-Stopper, GE or approved equal may also be submitted.

1.1 Summary

Section includes all OD & OS sensors including multi-technology, ultrasonic, and passive infrared (PIR) technologies. This includes self-contained PIR sensors that are switch-mounted and ceiling-mounted, as well as a low voltage line, which works with a power pack and add-a-relay units.

- Self-contained wall switch with infrared: ODS15-ID, ODS10-ID, ODS0D-ID, ODS0D-TD
- Self-contained wall switch with infrared and LED night light: OSSNL-ID, OSS10-ID
- Self-contained wall switch with multi-technology: OSSMT-MD
- Self-contained infrared ceiling-mount: ODC0S-I1, ODC0S-I7
- Low-voltage multi-technology ceiling-mount: OSC20-M, OSC10-M, OSC05-M
- Low-voltage ultrasonic ceiling-mount: OSC20-U, OSC10-U, OSC05-U
- Low-voltage infrared ceiling-mount: OSC15-I, OSC04-I
- Low-voltage multi-technology wall/corner wide view: OSW12-M
- Low-voltage infrared wall/corner wide view: OSWWV-I
- Low-voltage infrared wall/corner high bay: OSWHB-I
- Low-voltage wall/corner long range: OSWLR-I
- Power pack for low voltage sensors: ODP20-010, ODP20-020, ODP20-070, ODP15-030, OSP20-0D0, OSP20-RD0, OSP15-RD0, OSA15-R00, OPB15-0DW
- Add-A-Relay Power Pack - OSA20-000

1.2 System Description

- Performance Requirements: Provide occupancy sensor lighting controls and power packs that have been manufactured, assembled, and installed to maintain performance criteria stated by manufacturer without defects, damage, or failure.
- Performance Testing Requirements
 - Manufacturer shall 100% test all equipment prior to shipment. Sample testing is not acceptable.
- Code Requirements
 1. All occupancy sensor lighting controls and power packs shall be UL listed and either CSA or CUL/US listed.

2. All sensors shall be FCC compliant where applicable.
3. All sensors shall be California Title 24 compliant and listed.
4. Building Codes: All units shall comply with local building codes applicable to each institution's jurisdiction.
5. All sensors shall use microprocessor for motion signal analysis and internal, adaptive self-adjustment. No manual adjustment shall be required at the time of installation or during operation. All sensors shall:
 - a. Automatically adapt to changing room conditions—with the ability to disable adaptive features.
 - b. Save learned and adjusted settings in non-volatile memory that retains all settings during power outages.

1.3 Submittals

General: With each order placed by the individual institution, submit the following information with each order:

1. Bill of Materials: Complete list of all parts needed to fully install selected occupancy sensors.
2. Product Data: Submit product data, including catalog cut sheets for specified products, detailed maintenance instructions and warranty documents for all components furnished.
3. Installation Instructions and Wiring Drawings: Submit instructions and drawings detailing all equipment including one-line diagrams, wire counts, coverage patterns, and physical dimensions of each item.
4. Fixture Compatibility: List of ballasts and lamp combinations compatible with occupancy sensors, by manufacturer and catalog number.
5. Samples: If requested by the Institution prior to submitting order, submit samples for finish, color, and texture.

1.4 Warranty

- Manufacturer's Warranty: All equipment shall be warranted free of defects in materials and workmanship for a period of five years from date of purchase.

2.0 Products

Manufacturer shall provide a web-based ordering process which shall be accessed through the MHEC web page either directly or with the use of linking. Standard forms shall be provided which clearly use the Manufactures catalogue number system along with the MHEC item or kit reference names as appropriate. Exposed wall mounted equipment shall be available in at least the following colors: ivory, white, almond, and gray. Exposed ceiling mounted equipment shall be available in white.

2.1 Self-contained (Line voltage) units

A) General to all types of Wall Switches

1. Shall be compatible with incandescent, magnetic or electronic low voltage, and magnetic or electronic fluorescent, as well as motor loads.
2. Switch shall be microprocessor controlled.
3. Shall be capable of detecting occupancy with true, 180° field of view.
4. Shall utilize zero crossing circuitry for increased relay life, protection from inrush current, and increased sensor longevity.
5. Wall switch shall have integral shutters that narrow the field of view from 180°, a pushbutton for manual on and off that will time out based upon occupancy detection and an LED to indicate occupancy status.
6. Manual range, time settings and ultrasonic sensitivity and/or photocell settings shall be user-configurable.
7. Switch shall be rated at 120/277V in one unit.
8. Unit shall fit in a standard box, be provided with matching, standard size wallplate and be gangable.

B) Additional General requirements for wall switches with Infrared: ODSXX-ID and OSSXX-ID

1. Shall use passive infrared motion detection.

C) ODS15-ID

1. Shall use microprocessor for motion signal analysis and internal, adaptive self-adjustment.
2. No manual adjustment shall be required at the time of installation or during operation.
3. Shall automatically adapt to changing room conditions—with the ability to disable adaptive features.
4. Shall save learned and adjusted settings in non-volatile memory that retains all settings during power outages.
5. Shall recognize motion detected within 20 seconds of turning off lighting as a false off. In response to a false off, the microprocessor shall increase the time-off setting.
6. Maximum adapted time-out shall not exceed 30 minutes.
7. Walk through feature shall shut off lights within 2.5 minutes after momentary occupancy.
8. Shall beep before load is automatically switched off.
9. Shall have a 3-position service switch: off, auto, and on.
10. Four, selectable manual timer settings shall be available from 30sec to 20min.
11. Rating: 1800W/VA @120V, 4000VA @277V, and 1/4HP @120VAC

D) ODS10-ID

1. Sensor shall have four, selectable manual timer settings from 30sec to 30min.
2. Rating: 800W @ 120V, 1200VA @120V, 2700VA @ 277V, and 1/4HP @ 120VAC

E) OSSNL-ID

1. Sensor shall have four, selectable manual timer settings from 30sec to 2hr.
2. Sensor shall have a LED night light that illuminates when ambient light levels are below 1 footcandle and turn off when ambient exceeds 5 footcandles present at the device.
3. Sensor shall have selectable operation for manual on/auto off or auto on/auto off.
4. Sensor shall have selectable LED night light levels using an adjustable dial.
5. Sensor shall have selectable LED night light operation for continuous on or a dimmed mode in which the LED night light lowers the illumination output to approximately 5% of full when no occupancy is detected after two minutes.
6. Rating: 800W @ 120V, 1200VA @120V, 2700VA @ 277V, and 1/4HP @ 120VAC

F) OSSNL-ID

1. Sensor shall have four, selectable manual timer settings from 30sec to 30min.
2. Sensor shall have a LED night light that illuminates when ambient light levels are below 1 footcandle and turn off when ambient exceeds 5 footcandles present at the device.
3. Sensor shall have a manual on/auto off only to comply with CEC Title 24 requirements.
4. Sensor shall have selectable LED night light levels using an adjustable dial.
5. Sensor shall have selectable LED night light operation for continuous on or a dimmed mode in which the LED night light lowers the illumination output to approximately 5% of full when no occupancy is detected after two minutes.
6. Rating: 800W @ 120V, 1200VA @120V, 2700VA @ 277V, and 1/4HP @ 120VAC

G) ODS0D-ID and ODS0D-T (Title 24 Version)

1. Shall provide switching for 2 separate banks from a single unit.
2. Shall use microprocessor for motion signal analysis and internal,

adaptive self-adjustment.

3. Shall save learned and adjusted settings in non-volatile memory that retains all settings during power outages.
4. No manual adjustment shall be required at the time of installation or during operation.
5. Shall automatically adapt to changing room conditions—with the ability to disable adaptive features.
6. Maximum adapted time-out shall not exceed 30 minutes.
7. Walk through feature shall shut off lights within 2.5 minutes after momentary occupancy.
8. Shall offer two modes of operation:
 - a. Only one relay responds to photocell.
 - b. Both relays respond to photocell and lights return to the previous state on the next cycle. (not available on ODS0D-T)
9. Shall beep before load is automatically switched off.
10. Shall have a 3-position service switch: off, auto, and on. (not available on ODS0D-T)
11. Four, selectable manual timer settings shall be available from 30sec to 20min.
12. ODS0D-T secondary relay shall be manual-on/automatic-off.
13. Ratings: Primary Relay - 800W @ 120V, 1200VA @120V, 2700VA @ 277V @ 120VAC; Secondary Relay - 800W @ 120V, 800VA @120V, 1200VA @ 277V.

H) Additional General requirements for all wall switches with multi-technology OSSMx-xD

1. Shall incorporate Doppler shift ultrasonic and passive infrared motion detection technologies.
2. Shall use passive infrared to turn on and use either Doppler shift ultrasonic or passive infrared motion technology to keep on.
3. Shall be available in 40 kHz ultrasonic frequencies.
4. Shall have “vacancy confirmation” where if a false off occurs, the sensor shall wait for 45 seconds to determine if space is vacant or not. If occupancy is detected within the 45 second period, either ultrasonic or passive infrared technology can immediately turn the lights back on. If no occupancy is detected within the 45 second period, the sensor will turn off and reset to normal operation of passive infrared on only.

I) OSSMT-ID

1. Shall use microprocessor for motion signal analysis and internal, adaptive self-adjustment.
2. No manual adjustment shall be required at the time of installation or

during operation.

3. Shall automatically adapt to changing room conditions—with the ability to disable adaptive features.
4. Shall save learned and adjusted settings in non-volatile memory that retains all settings during power outages.
5. Maximum adapted time-out shall not exceed 30 minutes.
6. Walk through feature shall shut off lights within 2.5 minutes after momentary occupancy.
7. Sensor shall have four, selectable manual timer settings from 30sec to 30min.
8. Rating: 800W @ 120V, 1200VA @120V, 2700VA @ 277V, and 1/4HP @ 120VAC

J) Self-Contained Infrared Ceiling-Mount: ODC0S-IXW (120 VAC or 277 VAC applications)

1. Shall mount on the ceiling.
2. Shall incorporate a real-time motion indicator LED, which is visible from the front of unit.
3. Shall feature manual timer settings between 20 seconds and 15 minutes.
4. Infrared lenses shall have 360° field of view.
5. Shall be equipped with tamper resistant cover.
6. All controls shall be accessible from front of unit.
7. Rugged, plastic housing shall be available in white.
8. Ratings: ODCOS-I1 – 1000W/VA @ 120V, and ODC0S-I7 – 2700W/VA @ 277V.

2.2 Low-Voltage Sensors and Accessories

A) General to Low Voltage Sensors

1. Shall use microprocessor for motion signal analysis and internal, adaptive self-adjustment.
2. No manual adjustment shall be required at the time of installation or during operation.
3. Shall automatically adapt to changing room conditions.
4. Shall identify, record and learn a room's normal occupancy cycles to automatically adjust the sensitivity threshold.
5. Shall save learned and adjusted settings in non-volatile memory that retains all settings during power outages.
6. Shall recognize motion and detect within 20 seconds of turning off lighting, as a false off. In response to a false off, the microprocessor shall increase sensitivity, and increase the time-off setting.

7. Sensor shall recognize as a false on the failure. The sensor shall decrease the sensitivity in response to a false on.
 8. Sensor shall feature a 6-second time-out install test mode, which will automatically revert to standard time-out no longer than one hour after test mode is initiated. Sensor shall have manual controls and override switches to force manual adjustments.
 9. Shall provide a concealed bypass switch to force on lighting.
 10. Sensitivity shall be adjustable from 0% to 100%.
 11. Control knobs shall set the initial settings for automatic sensitivity adjustments.
 12. Shall have a switch for restoring factory settings.
 13. Timer shall be manually selectable between 30 sec. and 30 minutes.
 14. Photocell shall be available. Photocell shall prevent lighting from coming on when the ambient light levels are above the set point.
 15. Shall be equipped with tamper resistant cover.
 16. All controls shall be accessible from front of unit.
 17. Rugged, plastic housing shall be available in white.
 18. Shall accept Class 2 wiring.
- B) Low-Voltage Multi-Technology Ceiling-Mount: OSCXX-MXW with coverage patterns of 500, 1,000 and 2,000 sq. ft. options.
1. Shall incorporate Doppler shift ultrasonic and passive infrared motion detection technologies.
 2. Shall mount on the ceiling.
 3. Shall be available in 180° and 360° coverage patterns.
 4. Infrared lenses shall have a 360° field of view.
 5. Shall be available in 40 kHz ultrasonic frequencies.
 6. Shall automatically adapt to changing room conditions—including background PIR levels and continuous airflow.
 7. Sensor shall have two modes of operation:
 - a. Multi-technology mode: where the sensors send infrared signal to the microprocessor, which makes the decision to turn on lighting based on the level of the signal.
 - b. Single technology mode: where the user chooses technology that will turn on lighting.
 8. Shall incorporate a real-time motion indicator LED, which is visible from the front of unit.
 9. Shall have mask inserts for PIR rejection to prevent false tripping.
- C) Low-Voltage Ultrasonic Ceiling-Mount: OSCXX-UXW
1. Shall utilize Doppler shift ultrasonic detection technology.

2. Shall mount on the ceiling with coverage selections of 500, 1000 and 2000 sq ft.
3. Shall be available in 180° and 360° coverage patterns.
4. Shall be available in 40 kHz ultrasonic frequencies.
5. Shall automatically adapt to continuous airflow conditions.
6. Shall incorporate a real-time motion indicator LED, which is visible from the front of unit.
7. Operating status and setting confirmation shall be available via LED motion indicators.

D) Low-Voltage Infrared Ceiling-Mount: OSC04-I, OSC15-I

1. Shall utilize passive infrared motion detection.
2. Shall mount on the ceiling.
3. Shall automatically adapt to changing background PIR levels.
4. Shall incorporate a real-time motion indicator LED, which is visible from the front of unit.
5. Infrared lenses shall have 360° field of view.
6. Shall have mask inserts for PIR rejection to prevent false tripping.

E) Low-Voltage Infrared Ceiling-Mount: OSW12-MXW

1. Shall incorporate Doppler shift ultrasonic and passive infrared motion detection technologies.
2. Shall mount on ceiling or wall via supplied mounting bracket.
 - a. Mounting bracket shall have a place to conceal the wiring connections.
3. Shall automatically adapt to changing room conditions—including background PIR levels and continuous airflow.
4. Sensor shall have two modes of operation:
 - a. Multi-technology mode: where the sensors send infrared and ultrasonic signals to the microprocessor, which makes the decision to turn on lighting based on the level of each signal.
 - b. Single tech mode: where the user chooses technology which will turn on lighting.
5. Shall incorporate a real-time motion indicator LED, which is visible from the front of unit.
6. Shall have at least a 110° coverage pattern.
7. Shall utilize 40 kHz ultrasonic frequency.

F) Low-Voltage Infrared Wall/Corner Sensors: OSWXX-IXW

1. Shall utilize passive infrared motion detection.
2. Shall be available in wide view, long range, and high bay infrared

lenses.

3. Shall mount on ceiling or wall via supplied mounting bracket.
 - a. Mounting bracket shall have a place to conceal the wiring connections and provide knockout for surface wire raceway.
4. Shall automatically adapt to changing background PIR levels.
5. Shall incorporate a real-time motion indicator LED, which is visible from the front of unit.
6. High bay sensor shall have a linear range of at least 60 feet.

G) Power Pack: OSPXX-XXX, OSP15-XXX

1. Shall be compatible with incandescent, magnetic or electronic low voltage, and magnetic or electronic fluorescent, as well as motor loads.
2. Ratings: OSP20-XD0 – 20A incandescent, 20A fluorescent; OSP20-XD0 – 20A fluorescent @ 50Hz or 60Hz; OSP20-070 – 20A fluorescent; and ODP15-030/OPB15-0DW – 15A fluorescent. Shall utilize normally open, silver alloy dry contacts rated for a 20A-ballast load at 120V, 230V, 277V, and 15A at 347V.
3. Relay function shall not require more than 5-ma control current to operate.
4. Power Pack shall allow for separation of Class 1 and Class 2 wiring.
5. Power Pack Mounting Specifications (OSPXX-XXX):
 - a. Shall fit inside the ballast cavity of a fluorescent fixture, and shall be qualified for installation in a ballast cavity.
 - b. Shall be sized to fit inside a standard, 4" x 4" junction box.
 - c. Shall be mountable to a ½ in. knockout within a ballast cavity on the line voltage end, such that it may be mounted to the outside of a junction box with the line voltage wiring internal to the box and the low voltage wiring external.
 - d. Shall be mountable to a ½ in. knockout within a ballast cavity on the low voltage end, such that it may be mounted to the inside of a ballast cavity with the box and line voltage wiring internal to the cavity and the low voltage wiring external.
6. Power Pack Mounting Specifications (OP15-0DW)
 - a. Shall fit inside a 4" x 2.125" deep octagon or a 4" x 2.125" deep square with mud ring electrical junction box.
7. Models OSPXX-RXX – The 1st R after dash indicates HVAC Relay included in power pack.
8. HVAC Relay – SPDT 500ma@24VDC three-wire isolated. Ratings: .5A, 125VAC; 1A, 30VDC

H) Add-A-Relay: OSA-R00

1. Relay shall be compatible with incandescent, magnetic or electronic

low voltage, and magnetic or electronic fluorescent, as well as motor loads.

2. Control module shall interface with and control two- and three-wire relays from GE, Reliant and Douglas.
 3. Add-A-Relay shall accept 24VAC full-wave or half-wave rectified power.
 4. Control module Output:
 - a. Output for relay control shall be dry contact closure, not solid state switching.
 - b. Shall be an “ON” dry contact closure of at least 150 ms when blue wire transitions from low to high.
 - c. Shall be an “OFF” dry contract closure of at least 150 ms when blue wire transitions from high to low.
 5. Add-A-Relay Mounting Specifications:
 - a. Shall fit inside the ballast cavity of a fluorescent fixture, and shall be qualified for installation in a ballast cavity.
 - b. Shall be sized to fit inside a standard, 4” x 4” junction box.
 - c. Shall be mountable to a ½ in. knockout within a ballast cavity on the line voltage end, such that it may be mounted to the outside of a junction box with the line voltage wiring internal to the box and the low voltage wiring external.
 - d. Shall be mountable to a ½ in. knockout within a ballast cavity on the low voltage end, such that it may be mounted to the inside of a ballast cavity with the box and line voltage wiring internal to the cavity and the low voltage wiring external.
 6. Models OSPXX-RXX – The 1st R after dash indicates HVAC Relay included in power pack.
 7. HVAC Relay – SPDT 500ma@24VDC three-wire isolated. Ratings: .5A, 125VAC; 1A, 30VDC
- I) Site Verification: To the degree necessary and as may be requested by the institution, Manufacturer shall verify the site conditions and provide recommendation and selection assistance as appropriate to confirm that the equipment being ordered by the institution is appropriate for the intended use and locations.

Motors

Provide base motor pricing for the following specification. Modifications to this specification and special order configuration may be required by the institution for which the successful vendor and the institution will agree to final prices for special or modified configurations for each motor. The motors shall be suitable for use in material handling, pump, fan, compressor and other industrial applications. Motors shall be TEFC, GE X\$D Ultra or equal, shall meet or exceed

NEMA Premium nominal efficiencies and exceed all NEMA minimum guaranteed efficiencies. Performance Specifications:

- 3/4 to 60 HP range minimum
- 1.15 service factor, 40°C ambient
- 3600, 1800 or 1200 RPM
- 3 phase, 60 Hz; 208-230/460 and 575 volt operation
- Class F insulation, Class B temperature rise @ 1.0 SF
- NEMA Design B, Continuous Duty UL Listed Division II locations
- Suitable for variable speed drives
- 36 month operation / 42 month Manufacturers' warranty covering both mechanical and efficiency performance

Variable Frequency Drives

1.0 General Information

1.1 Purpose

This specification shall establish minimum requirements for adjustable frequency drive equipment. Drives that do not meet these requirements shall not be acceptable. The adjustable frequency drive equipment shall be the AF-600 FP variable torque application drive or the AF-650 variable speed-constant torque application drive as furnished by GE or similarly meeting the following specification as manufactured by ABB, Siemens, Toshiba, Danfoss or approved equal. It is required that the distributor have an existing Sales representative exclusively for products, with expertise in systems & controls anticipated for the institutions.

1.2 Driven Equipment

The Drive shall be capable of operating a NEMA design B squirrel cage induction motor with a full load current equal to or less than the continuous output current rating of the Drive. At base speed (60 Hz) and below, the Drive shall operate in a constant V/Hz mode or a constant voltage extended frequency mode.

1.3 Drive Construction

The Adjustable Frequency Drive shall be a sinusoidal PWM type Drive with sensor-less dynamic torque vector control (DTVC) capability. The Drive shall be provided with enclosure for NEMA 1 rating. The Drive shall be UL approved for mounting inside air handling ducts and plenums. The Drive shall be of modular construction for ease of access to control and power wiring as

well as Maintenance requirements. The Drive shall consist of the following general components:

- 1.3.1 Full-Wave Diode Rectifier Bridge to convert AC supply to a fixed DC voltage.
- 1.3.2 Built in DC link Reactor / Harmonic Filter.
- 1.3.3 Insulated Gate Bipolar Transistor (IGBT) inverter output section.
- 1.3.4 The Drive shall be microprocessor based with an LCD display to program and monitor Drive parameters.
- 1.3.5 The keypad shall be divided into four (4) functional groups: Numeric Displays, Menu Key, Navigation Keys, and Operation Keys and LED's.
- 1.3.6 Separate control and power terminal boards shall be provided.
- 1.3.7 The Drive shall provide an RS-485 Modbus serial communications port standard.
- 1.3.8 The keypad shall have copy functionality to enable copying of the parameter sets from one VFD to another.
- 1.3.9 The Drive shall have an onboard detailed description of all parameters, displays and alarms that can eliminate hardcopy of Drive Manuals.
- 1.3.10 The Drive shall have a built-in logic controller.

2.0 Operating Conditions

- 2.0.1 The Drive's operating ambient temperature range shall be -10°C to 40°C.
- 2.0.2 The Drive's storage temperature shall be -25° to 65°C.
- 2.0.3 The Drive's relative humidity range shall be 5-95%, non-condensing.
- 2.0.4 The Drive shall be capable of sustaining a 1.0 g vibration test.

3.0 Standards

- 3.0.1 The Drive shall be UL and cUL listed and not require any external fusing.
- 3.0.2 The Drive shall also be CE labeled and comply with standards 61800-3 for EMC Compliance and EN 61800-2 for Low Voltage Compliance.
- 3.0.3 The Drive shall be designed in accordance with applicable NEMA Standards.
- 3.0.4 The Drive shall be compatible with the installation requirements of interpretive Codes such as National Electric Code (NEC) and the Occupational Safety & Health Act (OSHA).
- 3.0.5 The Drive shall have EN954-1/Safety Stop Category 3 certification.

4.0 Input Power Section

- 4.0.1 The Drive shall be designed to operate at 380-500Vac Three-Phase input voltage.
- 4.0.2 System frequency shall be 60 Hz, +/- 5%.

- 4.0.3 The Drive shall be able to withstand input voltage variation of +/- 10%.
- 4.0.4 The Drive shall operate with an input voltage imbalance of 3.0% maximum between phases.
- 4.0.5 The displacement power factor of the Drive shall be greater than 0.98 lagging.
- 4.0.6 The true (real) power factor of the Drive shall be equal to or greater than 0.9 nominal at rated load.
- 4.0.7 The Drive shall be capable of switching the input voltage on and off a maximum of two (2) times per minute.
- 4.0.8 Drive efficiency at rated load shall be 98% or higher, depending on carrier frequency selection and load.
- 4.0.9 Line notching, transients, and harmonics on the incoming voltage supply shall not adversely affect Drive performance.
- 4.0.10 The Drive is suitable for use on circuits capable of delivering no more than 100,000 RMS symmetrical amps.

5.0 Output Power Section

- 5.0.1 The Drive model line shall be capable of Horsepower ratings from 1 to 60 HP at 208/230Vac, from 1 to 150 HP at 460Vac, and Output Frequencies from 0 to 1000 Hz. The Drive shall have an energy saver feature with the capability of selecting a V/Hz Automatic Control Function that will modify the V/Hz curve based on load conditions that will minimize power used.
- 5.0.2 Drive output voltage shall vary with frequency to maintain a constant V/Hz ratio up to base speed (60 Hz) output. Constant or linear voltage output shall be supplied at frequencies greater than base speed (60 Hz).
- 5.0.3 The output voltage of the Drive will be capable of 0-100% of the input voltage applied at the input voltage terminals.
- 5.0.4 Ramp times shall be programmable from 1 to 3,600 seconds.
- 5.0.5 The output voltage may be switched on and off an unlimited amount of times.
- 5.0.6 The Drive shall be capable of a minimum of 100% rated current in continuous operation in accordance with the requirements of NEC Table 430-150.
- 5.0.7 The Drive shall be capable of 110% overload current rating for one (1) minute.

6.0 Drive Keypad

- 6.0.1 The Drive shall be supplied with a backlit 6 line alphanumeric Liquid Crystal Display (LCD) Multi-Function Keypad. The Keypad shall be capable of programming, monitoring, and controlling the Drive.
- 6.0.2 Keypad is divided into 4 functional groups:
 - 6.0.2.1 Graphical display with status lines

- 6.0.2.2 Menu keys and LEDs – for selecting mode, changing parameters and switching between display functions
- 6.0.2.3 Navigation keys and LEDs
- 6.0.2.4 Operation keys and LEDs
- 6.0.3 The Drive shall have a Quick Menu feature that allows for quick access to the most commonly modified Drive Parameters for quick and easy setup.
- 6.0.4 The Drive shall be capable of being operated in “hand” mode via the keypad to allow for local control of the motor at the Drive.
- 6.0.5 The Drive Keypad shall have three (3) Indication LED’s as follows:
 - 6.0.5.1 Green – The Drive is “on”
 - 6.0.5.2 Yellow – The Drive has an alarm “warning”
 - 6.0.5.3 Flashing Red – The Drive has an “alarm”
- 6.0.6 The Drive shall display operating data, fault information, and programming parameters in English.
- 6.0.7 The Drive LCD Keypad shall be remote mountable by using an option kit which will allow for mounting the LCD Keypad up to 10 ft from the Drive.
- 6.0.8 The Drive LCD Keypad shall be capable of copying the parameter set from one VFD to another at different HP ratings.
- 6.0.9 The info key provides detailed information on the drive when needed and eliminates the need for a hard copy manual
- 6.0.10 The Drive Keypad is hot pluggable and can be removed & connected under power. No tools are required to plug out and plug in the Keypad.
- 6.0.11 Keypad shall have an Alarm Log, which shows the last 5 alarms and provides detailed information on drive operating conditions at the time of alarm occurrence.
- 6.0.12 The LCD Keypad display can be adjusted for brightness
- 6.0.13 LCD Keypad shall have Password protection to drive parameters. User can define either full access, read only access or no access.
- 6.0.14 The drive is capable of tracking parameter changes from the keypad.

7.0 Drive Features

- 7.0.1 The Drive shall be capable of remote mounting with simple wiring connections or via an RS-485 serial communications port.
- 7.0.2 Upon a fault condition, the Drive shall display drive parameters captured at the time the fault occurred to aid in trouble-shooting of the fault. The Drive will store the last ten (10) fault trips in a Fault Log Parameter.
- 7.0.3 The Drive shall operate as an open-loop system requiring no motor feedback device.
- 7.0.4 The Drive shall accept and follow a selectable external frequency reference of 0-10Vdc, 0-20ma, or 4-20mA.

- 7.0.5 The Drive will also follow an internal frequency set point off the up and down arrows on the LCD Keypad, parameter preset speeds, or serial communications speed set-point via RS-485.
- 7.0.6 The Drive shall maintain the output frequency to within 0.2% of reference when the reference is analog, and to within 0.01% of reference when the reference is digital (keypad, contact closure, or serial communications)
- 7.0.7 The Drive shall maintain set-point frequency regardless of load fluctuations.
- 7.0.8 The Drive shall be able to operate in three (3) modes: Hand, Off, or Auto.
- 7.0.9 The Drive shall be password protected to protect against unintended change of sensitive parameters.
- 7.0.10 The Drive shall have the capability of determining motor characteristics to optimize its operation through the use of pre-programmed motor data information or auto-tuning operation where the Drive can determine the motor characteristics automatically.
- 7.0.11 The Drive shall have an Electronic Thermal Overload that will protect the Motor from over-heating without the use of a motor thermistor. The motor temperature is calculated based on frequency, speed and time by the Electronic Thermal Overload.
- 7.0.12 The Drive shall be capable of alarming on low or high motor current.
- 7.0.13 The Drive shall have a selectable Automatic Torque Boost function that will adjust motor torque based on the operating load conditions.
- 7.0.14 All Drive Operating Function Codes shall be stored in non-volatile (EEPROM) memory. The Drive will have a default set of factory function code settings that can be reset via parameter setting.
- 7.0.15 The Drive shall be capable of selecting the switching frequency via parameter setting from 1, 1.5, 2.0, 2.5, 3.0, 3.5, 4, 5, 6, 7, 8, 10, 12, 14 or 16 kHz.
- 7.0.16 The Drive shall be able to operate with its output disconnected for trouble-shooting and start-up.
- 7.0.17 The Drive shall have a built-in A2 RFI Filter that reduces radio frequency interference generated by the Drive/Motor System
- 7.0.18 The Drive shall have IGBT soft-switching transistors and low-noise control power supply system to reduce the reflected electrical noise from the Drive.
- 7.0.19 The Drive shall have a built-in Logic Controller (LC) which includes timers, counters, comparators, logic rules, and states to process a sequence of user defined actions executed by the LC when the associated user defined event is set to *true*. The logic controller is a sequence controller capable of 20 program states.
- 7.0.20 The Drive shall have 4 built-in Auto Tune Process PID Controllers for closed-loop process control. The 4 PID Controllers shall control the proportional, integral and derivative variables of process related variables.

- 7.0.21 The Drive shall have the ability to operate in a sensor-less dynamic torque vector control mode for applications that require improved motor speed control and operating characteristics.
- 7.0.22 The Drive shall have the capability to catch a Spinning Motor (Flying Start) for fan applications. Parameter setting enables this function.
- 7.0.23 The drive shall have a realtime clock.
- 7.0.24 Drive Control Card & Options can be powered by an external 24V power supply in the absence of 3 phase AC power.
- 7.0.25 Interface to a PC will be via RS485 or USB port.
- 7.0.26 Drive shall have built-in communications to support Modbus RTU as standard.
- 7.0.27 The drive should be capable of calculating the energy consumption & savings.
- 7.0.28 The drive shall have a “Fire Mode” of operation, which keeps the drive running regardless of the normal drive protective features.
- 7.0.29 The drive can be programmed to switch to an automatic bypass under certain conditions.
- 7.0.30 The drive should be capable of programming 20 preventive maintenance events & displaying the last 10 preventive maintenance logs.
- 7.0.31 The drive should be able to go into Sleep mode by monitoring load conditions.
- 7.0.32 The drive should be capable of detecting a broken belt.
- 7.0.33 Drive should be capable of 10 Timed Actions.
- 7.0.34 Drive should be capable of being Auto Tuned to optimize dynamic motor performance.
- 7.0.35 Drive should be capable of Automatic Energy Savings to reduce energy consumption.
- 7.0.36 Drive Cooling Fan should be field replaceable without needing to remove the field wiring & other drive components.
- 7.0.37 Drive should be capable of trending critical drive parameters on keypad.
- 7.0.38 Dry Pump Protection and End of Curve to protect against low pressure, dry pumps, or pipe leaks. Drive shall set off an alarm, shut off pump, or other programmed action.

8.0 Drive Speed Control

- 8.0.1 The Drive shall be capable of at least two (2) different acceleration and deceleration ramp rates. Each ramp rate shall be independently adjustable from 1 to 3,600 seconds.
- 8.0.2 The Drive shall be capable of selecting between Linear and S-Ramp type ramp rate curves via parameter selection.
- 8.0.3 The Drive shall be capable of eight (8) independently programmable Preset Frequencies, selectable by programming three (3) digital inputs.

- 8.0.4 The Drive shall be capable of four (4) Skip Frequencies via parameter settings that enables the Drive to by-pass frequencies that cause mechanical resonance in the system.
- 8.0.5 The Drive shall have a programmable Start Delay function, adjustable from 0.0-120.0 seconds. The motor start will be delayed by the amount of time selected.
- 8.0.6 The Drive shall be capable of output frequency from 0.0–1000 Hz.
- 8.0.7 The Drive shall provide selectable motor slip compensation that will sense output current and adjust output frequency to improve motor speed fluctuations.

9.0 Drive I/O Control

- 9.0.1 The Drive shall accept 6 digital inputs (0-24Vdc @ 4k Ω), sink or source selectable, and programmable for the following functions:
 - 9.0.1.1 No Operation – The Drive will not react to signals at this terminal.
 - 9.0.1.2 Reset – Reset the Drive after a trip/alarm. Not all alarms can be reset.
 - 9.0.1.3 Coast Inverse – Coasting stop, inverted input (n/c).
 - 9.0.1.4 Coast and Reset Inverse – Coasting stop, inverted input (n/c) with reset.
 - 9.0.1.5 DC-Brake Inverse – Inverted input for DC Braking (n/c).
 - 9.0.1.6 Stop Inverse – Generates stop function when terminal goes from 1 to 0.
 - 9.0.1.7 External interlock – Used to generate an external fault alarm on display.
 - 9.0.1.8 Start – Selects start for a start/stop command.
 - 9.0.1.9 Latched Start – Motor starts if a pulse is applied for 2ms.
 - 9.0.1.10 Reversing – Change direction of motor shaft direction.
 - 9.0.1.11 Start Reversing – Use for stop/start and for reversing at the same time.
 - 9.0.1.12 Jog – Use for activating Jog Speed.
 - 9.0.1.13 Preset reference on – Use for shifting between an external reference and a preset reference.
 - 9.0.1.14 Preset Ref Bit 0 – Enables a choice between one of eight preset speeds.
 - 9.0.1.15 Preset Ref Bit 1 – Enables a choice between one of eight preset speeds.
 - 9.0.1.16 Preset Ref Bit 2 – Enables a choice between one of eight preset speeds.
 - 9.0.1.17 Freeze Reference – Freezes actual speed reference for up/down functions.
 - 9.0.1.18 Freeze Output – Freezes the actual motor frequency (Hz).
 - 9.0.1.19 Speed Up – Speeds up the digital control of the Speed Potentiometer.

- 9.0.1.20 Slow – Slows down the digital control of the Speed Potentiometer.
- 9.0.1.21 Setup Select bit 0 – Used to select one of the four setups.
- 9.0.1.22 Setup Select bit 1 - Same as setup select bit 0.
- 9.0.1.23 Pulse Input – Selects a pulse input when using a pulse sequence for control.
- 9.0.1.24 Ramp Bit 0 – Use with Ramp Bit 1 to select one of four ramps.
- 9.0.1.25 Ramp Bit 1 – Used with Ramp Bit 0.
- 9.0.1.26 Line failure inverse – Select to activate Line Failure.
- 9.0.1.27 Run Permissive – Use this as a logic AND with START, JOG or Freeze output.
- 9.0.1.28 Hand Start – Used to put the VFD in Hand Mode.
- 9.0.1.29 Auto Start – Used to put the VFD into AUTO Mode.
- 9.0.1.30 DigiPot increase – Use the input as an increase signal of the digital pot.
- 9.0.1.31 DigiPot decrease – Use the input as a decrease signal to the digital pot.
- 9.0.1.32 DigiPot clear – Use the input to CLEAR the digital pot reference.
- 9.0.1.33 Counter A (up) – Input for Counter A increasing.
- 9.0.1.34 Counter A (down) – Input for Counter A decreasing.
- 9.0.1.35 Reset Counter A – Input for reset of Counter A.
- 9.0.1.36 Counter B (up) - Input for Counter B increasing.
- 9.0.1.37 Counter B (down) – Input for Counter B decreasing.
- 9.0.1.38 Counter B Reset – Input for reset of Counter B.
- 9.0.1.39 Sleep Mode – Forces the VFD into Sleep Mode.
- 9.0.1.40 Reset Maintenance Word – Resets all data in Preventative Maintenance Word to zero.
- 9.0.1.41 Lead Pump Start – Start / Stops the lead pump.
- 9.0.1.42 Lead Pump Alternation – Forces the alternation of the lead pump in a cascade controller.
- 9.0.1.43 Pump 1 Interlock – Used for Pump interlocks.
- 9.0.1.44 Pump 2 Interlock – Used for Pump interlocks.
- 9.0.1.45 Pump 3 Interlock – Used for Pump interlocks.
- 9.0.2 The Drive shall provide two digital outputs programmable for the following functions:
 - 9.0.2.1 No Operation – Default for all digital and relay outputs.
 - 9.0.2.2 Control Ready – Control board receiving supply voltage.
 - 9.0.2.3 Drive Ready – Drive is ready for operation; supply signal on control board.
 - 9.0.2.4 Drive Ready, Remote – Drive is ready for operation in Auto Mode.
 - 9.0.2.5 Stand By – Drive is ready for operation; no warnings present.
 - 9.0.2.6 Drive Running – Motor is running.

- 9.0.2.7 Running/No Warning – Motor is running; no warnings present.
- 9.0.2.8 Run On Ref – Motor is running at reference speed.
- 9.0.2.9 Alarm – An alarm is present on the Drive.
- 9.0.2.10 Alarm on Warning – An alarm or warning is present on the Drive.
- 9.0.2.11 At Torque Limit – Torque limit has been exceeded.
- 9.0.2.12 Out of Current Range – Motor current is outside range of parameter settings.
- 9.0.2.13 Below Current, Low – Motor current is below parameter settings.
- 9.0.2.14 Above Current, High – Motor current is above parameter settings.
- 9.0.2.15 Out of speed range – Output speed is outside parameter settings.
- 9.0.2.16 Below speed – Output speed is lower than parameter settings.
- 9.0.2.17 Above speed – Output speed is higher than parameter settings.
- 9.0.2.18 Out of feedback range – The feedback is outside the parameter settings.
- 9.0.2.19 Below feedback – The feedback is below the parameter setting.
- 9.0.2.20 Above feedback – The feedback is above the parameter setting.
- 9.0.2.21 Thermal Warning – High temperature in motor, drive, or brake.
- 9.0.2.22 Reverse - Motor running in reverse in regards to configuration.
- 9.0.2.23 Bus OK – Serial Communication Link (RS-485) OK; no time-out present.
- 9.0.2.24 Torque Limit & Stop – Coasting stop in torque limit condition.
- 9.0.2.25 Brake, No Warning – Brake is active; no warnings present.
- 9.0.2.26 Brake Ready/No Fault – Brake is ready for operation; no fault present.
- 9.0.2.27 Brake Fault (IGBT) – Protects Drive if brake fault is present; removes voltage.
- 9.0.2.28 External interlock – External interlock function is activated via one of the DI's.
- 9.0.2.29 Out of Ref range –
- 9.0.2.30 Below Reference –
- 9.0.2.31 Above Reference –
- 9.0.2.32 Bus Control –
- 9.0.2.33 Bus Control 1 if timeout –
- 9.0.2.34 Bus Control 0 if timeout –

- 9.0.2.35 Pulse Output –
- 9.0.2.36 Comparator 0 – If Comparator 0 = TRUE; output goes “high”.
- 9.0.2.37 Comparator 1 – If Comparator 1 = TRUE; output goes “high”.
- 9.0.2.38 Comparator 2 – If Comparator 2 = TRUE; output goes “high”.
- 9.0.2.39 Comparator 3 – If Comparator 3 = TRUE; output goes “high”.
- 9.0.2.40 Comparator 4 – If Comparator 4 = TRUE; output goes “high”.
- 9.0.2.41 Comparator 5 – If Comparator 5 = TRUE; output goes “high”.
- 9.0.2.42 Logic Rule 0 – If Logic Rule 0 = TRUE; output goes “high”.
- 9.0.2.43 Logic Rule 1 – If Logic Rule 1 = TRUE; output goes “high”.
- 9.0.2.44 Logic Rule 2 – If Logic Rule 2 = TRUE; output goes “high”.
- 9.0.2.45 Logic Rule 3 – If Logic Rule 3 = TRUE; output goes “high”.
- 9.0.2.46 Logic Rule 4 – If Logic Rule 4 = TRUE; output goes “high”.
- 9.0.2.47 Logic Rule 5 – If Logic Rule 5 = TRUE; output goes “high”.
- 9.0.2.48 LC Digital Output A – Status of Logic Controller Set Relay.
- 9.0.2.49 LC Digital Output B – Status of Logic Controller Set Relay.
- 9.0.2.50 LC Digital Output C – Status of Logic Controller Set Relay.
- 9.0.2.51 LC Digital Output D – Status of Logic Controller Set Relay.
- 9.0.2.52 LC Digital Output E – Status of Logic Controller Set Relay.
- 9.0.2.53 LC Digital Output F – Status of Logic Controller Set Relay.
- 9.0.2.54 No Alarm – No alarms present on Drive.
- 9.0.2.55 Running Reverse – Motor is running in reverse.
- 9.0.2.56 Local Reference Active – Drive is being controlled by local controls.
- 9.0.2.57 Remote Reference Active – Drive is being controlled by remote speed control.
- 9.0.2.58 Start Command Active – A start command is present on the Drive.
- 9.0.2.59 Drive in Hand Mode – Drive is being controlled by keypad controls.
- 9.0.2.60 Drive in Auto Mode – Drive is being controlled by remote controls.
- 9.0.2.61 Clock Fault – Clock has been reset to default at power failure.
- 9.0.2.62 Preventive Maintenance – One or more events programmed.
- 9.0.2.63 No Flow – A no flow or minimum speed detected.
- 9.0.2.64 Dry Pump – A dry pump condition has been detected.
- 9.0.2.65 Sleep Mode – VFD has entered into sleep mode.
- 9.0.2.66 Broken Belt – A broken belt condition detected.
- 9.0.2.67 Bypass Valve Control – Used in compressor systems.
- 9.0.2.68 Fire Mode – VFD is operating in Fire Mode.

- 9.0.2.69 Fire Mode was active – VFD was in Fire Mode.
- 9.0.2.70 Drive Bypass – Activates external bypass.
- 9.0.2.71 Full capacity – All pumps running at full speed.
- 9.0.2.72 Pump 1 Running – Pump 1 is running.
- 9.0.2.73 Pump 2 Running – Pump 2 is running.
- 9.0.2.74 Pump 3 Running – Pump 3 is running.
- 9.0.3 The Drive shall accept two (2) analog input reference signals as follows:
 - 9.0.3.1 0-10Vdc @10k Ω , maximum voltage - 20Vdc.
 - 9.0.3.2 0/4-20mA @ 200 Ω , maximum current - 30mA.
- 9.0.4 The Drive shall output one (1) analog output signal as follows:
 - 9.0.4.1 0/4-20mA @ 500 Ω ; max error – 0.8%; 8 bit resolution or 0/2-10Vdc.
- 9.0.5 The Drive shall communicate via a RS485 Serial Communication Link.
 - 9.0.5.1 Protocol: Modbus RTU
 - 9.0.5.2 Address: 1-247
 - 9.0.5.3 Baud Rate: 2400, 4800, 9600, 19200, 38400, 57600, 76800, or 115200
 - 9.0.5.4 Parity: No or Odd
 - 9.0.5.5 Stop Bits: 1 or 2
 - 9.0.5.6 Minimum Response Delay: 1-500ms
 - 9.0.5.7 Maximum Response Delay: .01-10s

10.0 Drive Protective and Diagnostic Features

The drive shall be capable of selecting warnings & alarms through parameterization. A warning or an alarm is signaled by the relevant LED on the front of the adjustable frequency drive, indicated by a code on the display. A warning remains active until its cause is no longer present and under certain circumstances, operation of the motor may be continued. In the event of an alarm, the drive will have tripped. Alarms must be reset to restart operation once their cause has been rectified.

11.0 Quality Assurance

- 11.0.1 All Drives shall be 100% Factory Tested to ensure proper performance upon delivery.
- 11.0.2 The Drive Vendor shall provide a Warranty for material and workmanship for a period of twelve (12) months from date of commissioning or eighteen (18) months after shipment, whichever occurs first. If required by the drive manufacturer to maintain warranty, on-site factory start-up assistance shall be provided as part of the base price.

11.0.3 All equipment provided under this agreement shall be Energy Star compliant.

12.0 Start-Up and Service Training

12.0.1 Drive operational and maintenance Training and/or Start-Up Service shall be available for trouble-shooting and/or start-up assistance by Factory or Field representative from locations convenient to the installation site.

12.0.2 Each Institution that purchases Drives under this agreement shall be provided on-site training to allow the Institution to provide Factory authorized start-up and trouble-shooting if so requested by the Institution.

13.0 Documentation

13.0.1 An Instruction Manual complete with wiring diagrams, schematics, operating and maintenance instructions, and parameter descriptions shall be provided with the Drive at the time of shipment.

13.0.2 Programming & Design Guides that can be downloaded from the Factory website.

14.0 Options and Spare Parts

14.0.1 Drive Option Kits and Spare Parts shall be available locally through local stocking Distributors or from Factory directly.

15.0 PC Software

15.0.1 PC based software shall be provided with equipment to startup & commission the drive and can be used for:

- Setting of the frequency converter parameters
- Copying of parameter sets to and from a frequency converter
- Documentation/print-out of set-up
- Servicing and fault analysis

3. Training

The successful respondent shall provide details and outline their capability to provide equipment technical support training to the degree it is required and/or requested by the Eligible Participant member. Vendors will specifically address the following areas in their response (Where training is not applicable, indicate by inserting N/A in the appropriate space):

- Training required and provided as part of purchase of equipment.
- Types of training provided. Responses shall differentiate between on customer site, in class, on line, or self study method of delivery.

- To the degree required by the Vendor and equipment provided here-in, indicate capacity and location of training sites.

4. Maintenance

The successful vendor(s) shall provide an option for on-going support beyond the warranty period. Warranty and on-going support requirements are outlined below.

- The warranty period shall begin upon successful installation and Eligible Participant acceptance of installation of the equipment acquired from respondent.
- Warranty coverage shall be for a minimum period of 12 months from the service date of the equipment or 18 months from the delivery of the equipment or for the length of days as defined in the equipment description above, whichever is longer.
- The Eligible Participant has the right to on-site assistance when equipment is not operating as designed upon request of the purchaser. The on-site warranty service shall be provided in accordance with the Master Agreement(s) and any cost associated with this requirement shall also be governed by the Master Agreement(s).
- Respondents shall provide the name, address and toll free telephone number of the nearest authorized manufacturer's services center.
- When equipment purchased on this contract requires installation, the Vendor may provide the cost of installation as a separate line item on their quotation. The installation cost would then include all packing, freight, insurance, set-up, instruction and operation manual charges. Equipment would be installed in a location designated by Eligible Participant personnel, demonstrated to be in operating condition, and approved by Eligible Participant personnel. All debris must be removed from the University premises and properly disposed of by the vendor. Upon installation all operating instructions, and an operating and maintenance manual should be furnished to the Eligible Participant personnel identified on the purchase order.
- Eligible Participants must have the ability to have toll-free telephone access to technical support from the successful vendor.
- Respondent shall provide the conditions under which Eligible Participants may perform their own certified maintenance.

J. Pricing

Technological advances are anticipated over the term of this contract. Vendors should include pricing in at least one of the following formats:

- Discount percentage from published retail price list
- Discount percentage from best published higher education price list

Respondents may also propose alternate pricing arrangements in addition to those above. MHEC may choose to accept or reject such alternative arrangements.

Some additional factors, which might modify pricing in specific instances are:

- Eligible Participants who are willing to standardize their purchases to a small number of configurations should receive some consideration.
- Respondents offer a limited number of preconfigured product selections discounted beyond their general product offerings.
- Eligible Participants that are willing to give an exclusive purchasing contract (of at least one year's duration) to a respondent should receive special consideration.
- Eligible Participants willing to guarantee purchase volume by year or quarter should be offered lower prices.
- Differential pricing based on market segment (e.g. higher education, K-12, local governments and state governments) may be proposed.

The following tables are provided as guides for respondents concerning the pricing of the requested equipment in this Request For Proposal:

Lamp Replacement Product/Model/Description	% Discount from Retail/Education Price List (Furnish current List Price)	Fixed Price per unit	Alternate Pricing Arrangements (If more space needed, reference page number and section where response can be found)	Minimum Order Quantity per order	Add Alternate—Unit Price for disposal of lamp/ballast per unit ordered
Category 1 - Individual Lamps					
GE 28 Watt F28T8/XL Fluorescent Tube					
GE 25 Watt F32T8/25W Fluorescent Tube					
GE 26 Watt F28T5/ Fluorescent Tube					
GE 33 Watt F35T5/ Fluorescent Tube					
GE 51 Watt F54T5 Fluorescent Tube					
GE 35 Watt Watt-Miser® Mod-U-line® T12					
Medium Screw Self Ballasted Spiral Compact Fluorescent	Provide pricing matrix for all Compact Fluorescent Lighting lamps as described above.				
Category 2 - T12 to T8 Fluorescent Lamp Retrofit Kits (See schedule above for Description)					
Item A					
Item B					
Item C					
Item D					
Item E					
Item F					
Item G					
Item H					
Item I					
Item J					
Item K					
Item L					

Lamp Replacement Product/Model/Description	% Discount from Retail/Education Price List (Furnish current List Price)	Fixed Price per unit	Alternate Pricing Arrangements (If more space needed, reference page number and section where response can be found)	Minimum Order Quantity per order	Add Alternate—Unit Price for disposal of lamp/ballast per unit ordered
Category 3 - LED Linear Fluorescent Tube Replacement					
LED T12/T8 48” Fluorescent Tube Light Replacement					
LED T12/T8 24” Fluorescent Tube Light Replacement					
Category 4 - LED Recessed Down Light Fixture Replacement (See schedule above for Description)					
LED Par 38 Lamp replacement 75-85W incandescent equivalent					
LED Par 30 Lamp replacement 50-65W incandescent equivalent					
Category 5 - Fluorescent to LED Lamp Retrofit Kits (See schedule above for Description)					
Item A) Existing 4 lamp-4’ fixture with T-12/T8 Fluorescent lamps and ballast to achieve similar lighting level.					
Item B) Existing 3 lamp-4’ fixture with T-12/T8 Fluorescent lamps and ballast to achieve similar lighting level.					
Item C) Existing 2 lamp-4’ fixture with T-12/T8 Fluorescent lamps and ballast to achieve similar lighting level.					

Lamp Replacement Product/Model/Description	% Discount from Retail/Education Price List (Furnish current List Price)	Fixed Price per unit	Alternate Pricing Arrangements (If more space needed, reference page number and section where response can be found	Minimum Order Quantity per order	Add Alternate—Unit Price for disposal of lamp/ballast per unit ordered
Category 6 - LED Down Light Retrofit Housing Modules					
277v line-voltage Step Down Transformer					
347v line-voltage Step Down Transformer					
Category 7 - LED Exterior parking, Street and Parking Ramp Lighting Systems (See schedule above for Description)					
LED Exterior Parking, Street and Parking Ramp Lighting Systems	Provide pricing matrix for all Induction and LED Lighting retrofit kits as described above				
Provide information on any applicable discounts in addition to the above					
Volume Purchase Discounts per order					
Monthly/Quarterly Batched Purchase					
Exclusive Contract					
Guaranteed Quarterly/Annual Volume					
On-Site Sales Assistance					

Premium Efficient Electronic Ballasts/Model/Description	% Discount from Retail/Education Price List (Furnish current List Price)	Fixed Price per unit	Alternate Pricing Arrangements (If more space needed, reference page number and section where response can be found)	Minimum Order Quantity per order	Add Alternate—Unit Price for disposal of existing motor per unit ordered
<i>Individual Electronic Ballasts</i>					
Provide pricing matrix for all premium efficient electronic ballasts as defined in the description above.					
Provide information on any applicable discounts in addition to the above					
Volume Purchase Discounts per order					
Exclusive Contract					
On-Site Sales Assistance					

Occupancy / Motion Sensors Model/ Description	% Discount from Retail/ Education Price List (Furnish current List Price)	Fixed Price per unit	Alternate Pricing Arrangements (If more space needed, reference page number and section where response can be found	Minimum Order Quantity per order	Add Alternate— Unit Price for disposal of lamp/ballast per unit ordered
<i>Individual Motion Sensors</i>					
Provide pricing matrix for all line- voltage and low- voltage motion sensors and equipment per description above					
Provide information on any applicable discounts in addition to the above					
Volume Purchase Discounts per order					
Standardized Configurations					
Exclusive Contract					
Guaranteed Quarterly/Annual Volume					
On-Site Sales					
On-Site Service					

Premium High Efficiency Motors Replacement Product/Model/Description	% Discount from Retail/Education Price List (Furnish current List Price)	Fixed Price per unit	Alternate Pricing Arrangements (If more space needed, reference page number and section where response can be found)	Minimum Order Quantity per order	Add Alternate—Unit Price for disposal of existing motor per unit ordered
<i>Individual Motors</i>					
Provide pricing matrix for all motors from ¾ HP to 60 HP in voltages and speeds as defined in the description above.					
Provide information on any applicable discounts in addition to the above					
Volume Purchase Discounts per order					
Exclusive Contract					
On-Site Sales Assistance					

Variable Frequency Drives Model/ Description	% Discount from Retail/ Education Price List (Furnish current List Price)	Fixed Price per unit	Alternate Pricing Arrangements (If more space needed, reference page number and section where response can be found	Minimum Order Quantity per order	Add Alternate— Unit Price for disposal of lamp/ballast per unit ordered
<i>Individual Variable Frequency Drives</i>					
Provide pricing matrix for all drives from ¾ HP to 60 HP in voltages per description above					
Provide information on any applicable discounts in addition to the above					
Volume Purchase Discounts per order					
Individual Standardized Configurations					
Exclusive Contract					
On-Site Sales Assistance					
On-Site Service Assistance					

Submission of innovative program ideas to increase vendor penetration of the market or satisfaction of the Eligible Participants as well as provide opportunity for stronger partnerships is encouraged.

Respondents are encouraged to provide a contract mechanism for their current eligible customers to roll into this agreement at any time after the inception of the contract.

Successful Respondent agrees not to sell awarded equipment (or bundles) to Eligible Participants at a price higher than that awarded via the MHEC Master Agreement.

All pricing on future equipment offered under this proposal must, at a minimum, reflect the same percentage discounts or better as established with this contract award. Greater discounts are permissible and encouraged.

Any price reductions from suppliers from the time of proposal submission to time of purchase order must be passed on to the Eligible Participants.

Respondents must identify any and all associated costs, fees or charges for which the Eligible Participant may be billed. Costs not indicated in your proposal will not be paid.

1. Price/Fee Increases

MHEC reserves the right to accept or reject all or any part of successful supplier's subsequent request to increase pricing. At a minimum, any proposed price increase will become effective only upon thirty (30) days prior written notice and written acceptance by MHEC. In addition to the provision of an e-commerce web site for this contract, successful respondents will be expected to provide complete updated price lists to MHEC on a quarterly basis. All line item price increases or decreases and product additions or deletions must be identified.

Vendor must provide an identified capped annual increase rate for the life of the contract.

2. Certification of Independent Price Determination

By submitting a proposal, the vendor certifies, and in the case of a joint proposal, to its own firm, that in connection with this proposal:

1. The proposal has been arrived at independently, without consultation, communication or agreement with any competitor for the purpose of restricting competition; and
2. Unless otherwise required by law, the offer cited in this proposal has not been and will not be knowingly disclosed by the vendor prior to opening directly or indirectly to any other vendor; and
3. No attempt has been made nor will be made by the vendor to induce another person or firm to submit or not to submit a proposal for the purpose of restricting competition.

K. Signatory Authority

Each person signing this proposal certifies that:

1. The signer is the person in the vendor's firm responsible for the decision to offer the proposal; or
2. The signer is not the person in the vendor's firm responsible within that firm for the decision to offer, but has been authorized in writing to act as agent to quote for the persons responsible for such decisions.

L. Conflict of Interest

In submitting a response to the RFP, the Provider certifies that no relationship exists between the Provider and the Midwestern Higher Education Compact or the members of its Energy Advisory Committee that interferes with fair competition or is a conflict of interest, and that no relationship exists between the Provider, and other persons or firms that constitutes a conflict of interest that is adverse to the Midwestern Higher Education Compact.

M. RFP Development Process

1. Schedule of Events

The following schedule lists meetings and deadlines related to this Request For Proposal (RFP) on the development of a Master Price Agreement(s) for the Electrical Components Solution. Deadline dates are as indicated unless otherwise changed by the Committee. In the event that the Committee finds it necessary to change any of the dates or activities listed in this calendar, it will do so by issuing a written statement or an amendment to the RFP to Prospective Providers.

<u>Event</u>	<u>Target Completion Date</u>
1. Formal issuance of RFP	January 22, 2010
2. Last day for submitting inquiries about RFP by e-mail	1:00 pm February 10, 2010
3. Deadline to state Intent to participate in pre-proposal conference	1:00 pm CT February 10, 2010
4. Pre-proposal conference to review RFP	1:00 pm CT February 17, 2010
5. e-mail delivery to Prospective Providers of answers and amendment(s) to the RFP	February 24, 2010
6. Proposals due from Prospective Providers	March 10, 2010
7. Notification of Finalists	March 29, 2010
8. Individual meetings with Finalists (Chicago) to review proposals submitted by each Prospective Provider Finalist (if required)	Week of April 5th 2010
9. Deadline for submitting responses to Committee's questions and inquiries	Week of April 12, 2010
10. Selection and announcement of Solution and Provider(s)	TBD
11. Execution of Agreement and Solution start date	TBD

N. Pre-proposal Conference and Requests for Clarification

The Committee will hold a pre proposal conference at the Big Ten Conference Center in Rosemont, Illinois at 1:00 p.m. CT on February 17, 2010. Information about the Compact, its member states, the Energy Advisory Committee, MHEC Energy Initiative and this RFP will be discussed. Representatives of the Committee will be present to answer any questions regarding the services requested or proposal procedures.

Prospective Providers must respond to Grant Wolters via phone (612-625-6568) or e-mail (grantw@mhec.org) on or before 1:00 p.m. CT February 10, 2010 with firm name and number of attendees if planning on attending the pre-proposal conference. Given the unique nature of this RFP, participation in the pre-proposal conference is strongly encouraged. Those unable to participate in the pre-proposal conference may submit requests for clarification, revisions to requirements, or technical questions concerning this RFP by e-mail. All written requests should arrive in our office by 1:00 p.m. CT February 10, 2010. If a Prospective Provider discovers a significant ambiguity, error, conflict, discrepancy, omission, or other deficiency in the RFP, the Provider should *immediately* notify Mr. Grant Wolters of such error and request modification or clarification of the RFP document.

All questions submitted prior to and during the pre-proposal conference and subsequent answers will be provided in writing to potential respondents by February 24, 2010. Only information supplied by MHEC in writing through Mr. Grant Wolters or this RFP or amended RFP should be used as a basis for the preparation of Provider responses.

O. Submission Deadlines and Format

The deadline for submission of proposals and related information is 5 p.m. Central Time on March 10, 2010. One (1) sealed bound original and twelve (12) identical CD copies of the response should be forwarded to the following address prior to the deadline:

Energy Committee
c/o Mr. Grant Wolters
Midwestern Higher Education Compact
1300 South Second Street, Suite 130
Minneapolis, MN 55454-1015
Phone: (612) 625-6568
Fax: (612) 626-8290

Allowable formats are PDF and Microsoft Office. Spreadsheet data such as price lists may be submitted in MS Excel format. Proposals should be organized and presented in a manner that addresses all of the RFP provisions and requirements.

Responses received after this time will not be considered.

Proposals submitted prior to the Proposal opening time of 5 p.m. Central Time on March 10, 2010 may be modified or withdrawn only by written notice to MHEC. Such notice must be received by Mr. Wolters prior to the proposal opening time. Proposers may change or withdraw the proposal at any time prior to proposal opening; however, no oral modifications will be allowed. Only letters or other formal written requests for

modifications or corrections of a previously submitted proposal that are addressed in the same manner as the proposal and that are received prior to the scheduled proposal opening time will be accepted. The proposal, when opened, will then be corrected in accordance with such written requests, provided that the written request is contained in a sealed envelope that is clearly marked “*Confidential: Modification of Response to Electrical Components Solution RFP*”. No modifications of the proposal will be accepted at any time after the Proposal opening date.

A withdrawn proposal may be resubmitted up to the time designated for the receipt of proposal provided that it is then fully in conformance with the requirements of the RFP.

P. Selection of Finalists and Best and Final Offers from Finalists

The Committee will select and notify the finalist(s) on the date identified in the Table above. Only finalist(s) will be invited to participate in the subsequent steps of the RFP process. Prospective Provider Finalist(s) may be asked to make a presentation to the Committee in Chicago during the period identified in the Table above. Prospective Provider Finalist(s) may be asked to submit best and final offers following the presentations. If two or more providers are similar in their bids and are finalists, the committee reserves the right to add another level of review that requires the providers to bid on additional information not previously mentioned in the RFP.

Q. Provider Selection

All proposals received on or before the deadline date of submission will be forwarded to each Committee member. The Committee will conduct its evaluations of responses based upon its assessment of the quality and comprehensiveness of the Prospective Provider’s responses to the criteria set forth in the RFP. During this initial evaluation time, the Committee may, at its option, initiate discussions with Prospective Providers who submit responsive or potentially responsive proposals for the purpose of clarifying aspects of the proposals, but proposals may be accepted and evaluated without such discussion. The Prospective Providers shall not initiate discussion. The Committee reserves the right to waive or modify any informalities, irregularities or inconsistencies in the responses received. Following initial evaluations, Finalist(s) may be selected. Each Prospective Provider Finalist(s) may be invited to give a presentation on and discuss their response.

The Committee will evaluate each response based on the extent to which:

1. Proposal meets the requirements of this RFP;
2. Provider demonstrates experience with projects like this one;
3. Provider possess financial stability and strength;
4. Provider has the capacity to deliver the services;
5. Provider’s required costs and fees;
6. Proposal shows a willingness to explore solutions beyond a standard purchase agreement;
7. Provider displays innovation;
8. Provider brings value added benefits to Eligible Participants; and
9. Any other quality or characteristic deemed in the best interests of the Compact.

Award(s) may be granted to the highest scoring responsive and responsible proposer(s). Alternatively, the highest scoring proposer or proposers may be requested to submit best and final offers. MHEC reserves the right to not choose solely based on price. The winning proposal will be the best value for the product and services.

Upon completion of the evaluation process, the Committee (through the MHEC President) will recommend one or more Prospective Providers to the Commission, and the Commission will establish an agreement(s) with the recommended Provider(s). Once an agreement(s) is successfully consummated, the Commission will so notify all providers who responded to the RFP. The Committee reserves the right to not recommend any Prospective Providers to the Commission, and the Commission reserves the right not to enter into an agreement(s) with a recommended Provider(s) at its own discretion.

All proposals and documents pertaining to the proposals submitted in response to the RFP becomes the property of MHEC upon delivery to MHEC. After the agreement(s) are executed, all proposals and documents pertaining to the proposals will be open to the public. If the Prospective Provider submits information in response to this RFP that it believes to be trade secret materials as defined by the laws of the MHEC member states, the Prospective Provider must:

1. Clearly mark all trade secret materials in its response at the time the response is submitted;
2. Include a statement with its response justifying with specificity the trade secret designation for each item; and
3. Defend any action seeking release of the materials it believes to be a trade secret, and indemnify and hold harmless MHEC, its Commissioners, agents and employees, from any judgments awarded against MHEC in favor of the party requesting the materials, and any and all costs connected with the defense. This indemnification survives MHEC's award of a contract. In submitting a response to this RFP, the Prospective Provider agrees that this indemnification survives as long as the trade secret materials are in possession of MHEC.

In the event a request is made for information which the Prospective Provider has identified as trade secret, MHEC agrees to notify Prospective Provider of said request and provide its determination as to whether disclosure is legally required, in addition to anticipated disclosure dates, if any, and to allow the Prospective Provider an opportunity, in its discretion and at its sole expense, to seek a protective order or otherwise protect the confidentiality of the information.

R. Contract Term

The MHEC Master Price Agreement(s) shall be effective on the date that the parties to the Agreement(s) sign the Agreement(s). It shall remain in effect for three (3) years from that date with options by mutual agreement (of the parties to the Agreement) to annually renew for up to four (4) additional one (1) year periods. Eligible Participants may procure equipment, equipment software, or services from the Provider(s) under the terms of the MHEC Master Price Agreement(s) at any time during the duration of the Agreement(s), as they see fit and at their sole discretion.

S. Incurring Costs

MHEC is not liable for any cost incurred by Prospective Providers in replying to this RFP.

T. Method of Operation

The Committee, at the direction of the Commission and its compact authority, will negotiate the pricing structures, terms and conditions and related services provided under the Master Price Agreement(s). Any terms and conditions which may be the subject of negotiation, will be discussed only between MHEC and the selected Provider(s) and shall not be deemed an opportunity to amend the Provider's proposal. MHEC reserves the right to terminate negotiations and select the next response providing the best value for MHEC, prepare and release a new RFP, or take such other actions as MHEC deems appropriate if negotiations fail to result in a successful contract. Once a Master Price Agreement(s) is formally established, Eligible Participants will be responsible for procurement and payment of any charges associated with the equipment, equipment software, and related services provided to them in accordance with the established pricing structure. MHEC will not be liable for the failure of any Eligible Participant to make any payment or for the breach of any term or condition under the Master Agreement(s).

The Commission will appoint a Committee composed of representatives of the MHEC Energy Advisory Committee to oversee the solution and assure that it operates in an effective and efficient manner. The Commission will also assist in promoting the solution and assist Eligible Participants with problems as requested, working in conjunction with the Committee. The Committee will periodically review and evaluate the performance of the solution and submit its recommendations to the Commission. The Commission will provide program officer support to the solution, and will support information exchanges, conferences and related activities.

In advance of each contract anniversary representatives from each successful Respondent will meet separately with representatives from the Energy Advisory Committee to discuss contract performance over the past year and amend the contract to improve its performance for the Respondent and Eligible Participants. These annual 'health checks' are crucial success factor.

The Commission and the members of the Energy Advisory Committee make no guarantee that any Eligible Participant or number of Eligible Participants will participate in the Electrical Components Solution and/or make any purchase under the Master Agreement(s).

U. Analysis of Information

The Energy Advisory Committee will analyze all responses to this RFP. The analysis will be based upon the criteria set forth in this RFP. The findings and recommendations of the Committee will be submitted to the MHEC President for approval who will then submit the Committee recommendations onto the Commission.

V. MHEC Support for the Electrical Components Solution

The Compact will assist in introducing and marketing the solution to Eligible Participants and in developing communication mechanisms to facilitate successful implementation of and support for the solution over the term of the Master Agreement(s).

As previously stated, the purpose of this RFP is to establish an electrical components solution that will provide electrical energy reducing equipment and services to the colleges and universities in the MHEC region (at a minimum), while providing the institutions with cost savings that could only be achieved by working collaboratively. The Provider(s) selected will be recommended by MHEC to all Eligible Participants in the MHEC member states (and other regions of the country if mutually agreed upon). Each Eligible Participant will procure the product or services in accordance with the terms of the Master Agreement(s) resulting from the RFP. The Master Agreement(s) is not a purchase agreement/purchase order, nor does it guarantee any purchases to be made by any Eligible Participant.

W. Contacting MHEC

For further information about the Midwestern Higher Education Compact, its programs and services you are referred to the Compact web site at: <http://www.mhec.org>

For Further information about the Compact's Energy Advisory Committee, contact:

Mr. Grant Wolters,
Midwestern Higher Education Commission
1300 South Second Street, Suite 130
Minneapolis, MN 55454-1015
Phone: 612/625-6568
Fax: 612/626-8290
E-mail: grantw@mhec.org
Web Site: <http://www.mhec.org>