

# Beckstrom Electric

37277 East Richardson Lane Purcellville,  
Virginia 20132

**RFP Title: Electrical Repair Services &  
PM Services on Switch Gears**

**Sow #1 & Sow #2**

**RFP Number: GMU-1586-19**

**Due Date: 05/31/2019 at 2:00 pm**

**Katherine Sirotin, Assistant  
Director, Purchasing**

**\*\*\* ORIGINAL SIGNED COPY \*\*\***

## **PROPOSAL PACKAGE**

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- b. Attachment A - Vendor Data Sheet.
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###### **4. Qualifications and Experience:**

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###### **5. References:**

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Purchasing Department  
4400 University Drive, Mailstop 3C5  
Fairfax, VA 22030  
Voice: 703.993.2580 | Fax: 703.993.2589  
<http://fiscal.gmu.edu/purchasing/>



## REQUEST FOR PROPOSALS GMU-1586-19

**ISSUE DATE:** April 17, 2019

**TITLE:** Electrical Repair Services and Preventive Maintenance (PM)  
Services of Switchgears

**PRIMARY PROCUREMENT OFFICER:** Katherine Sirotin, Assistant Director, [ksirotin@gmu.edu](mailto:ksirotin@gmu.edu)

**SECONDARY PROCUREMENT OFFICER:** Chi Nguyen, Senior Buyer, [cnugyen@gmu.edu](mailto:cnugyen@gmu.edu)

**MANDATORY PRE-PROPOSAL CONFERENCE:** A Mandatory Pre-Proposal Conference is scheduled for May 09<sup>th</sup>, 2019 at 10AM. See Section XVI Item 12 for additional information regarding conference details.

**QUESTIONS/INQUIRIES:** E-mail all inquiries to both Procurement Officers listed above, no later than 4:00 PM EST on May 16, 2019. Include the RFP number, GMU-1586-19 in the subject line of your email. Failure to do so may result in your question not being captured/included in the Q&A document. **All questions must be submitted in writing.** Responses to questions will be posted on the Mason Purchasing Website by 5:00 PM EST on May 21, 2019.

**PROPOSAL DUE DATE AND TIME:** May 31, 2019 @ 2:00 PM EST. Hand deliver or mail proposals directly to the address above. Electronic submissions will not be accepted. A public opening will not be held. Late proposals will not be accepted.

**Note:** A return envelope is not being provided. It is the responsibility of the Offeror to ensure the proposal is submitted in a sealed envelope, box, container, etc. that clearly identifies the contents as a proposal submission in response to this Request for Proposal. See Section X Paragraph C herein. If delivering proposals by hand, deliver to the Purchasing Department located in Suite 4200 of Alan and Sally Merten Hall (Merten Hall), Fairfax Campus. Campus Map. Office hours are 8:30AM to 5:00PM.

**In Compliance With This Request For Proposal And To All The Conditions Imposed Therein And Hereby Incorporated By Reference, The Undersigned Offers And Agrees To Furnish The Goods/Services In Accordance With The Attached Signed Proposal Or As Mutually Agreed Upon By Subsequent Negotiations.**

Name and Address of Firm:

Legal Name: Beckstrom Electric CO., Inc.

Date: 05/30/2019

DBA: Beckstrom Electric

By: 

Address: 37277 East Richardson Lane

Signature

Purcellville, Va 20132

FBI/FIN No. 54-1520353

Name: Mick Beckstrom

Fax No. n/a

Title: President

Email: [Mick@beckstromelectric.com](mailto:Mick@beckstromelectric.com)

Telephone No. 540-338-2344

SWaM Certified: Yes: ☒ No: ☐ (See Section VII. SWaM CERTIFICATION for complete details).

SWaM Certification Number: 683671

This public body does not discriminate against faith-based organizations in accordance with the *Governing Rules*, § 36 or against a Bidder/Offeror because of race, religion, color, sex, national origin, age, disability, or any other prohibited by state law relating to discrimination in employment.

Option#3- Net 30 Payment Terms. Vendor will enroll in Paymode-X where all payments will be made electronically to the vendor's bank account. For additional information or to sign up for electronic payments, go to <http://www.paymode.com/gmu>. There is no charge to the vendor for enrolling in this service.

**Please state your payment preference in your proposal response.**

**XVI. SOLICITATION TERMS AND CONDITIONS:**

- A. GENERAL TERMS AND CONDITIONS – GEORGE MASON UNIVERSITY:  
<http://fiscal.gmu.edu/purchasing/do-business-with-mason/view-current-solicitation-opportunities/>
- B. SPECIAL TERMS AND CONDITIONS – GMU-1586-19 (Also see ATTACHMENT B – SAMPLE CONTRACT which contains terms and conditions that will govern any resulting award).

- BEST AND FINAL OFFER (BAFO): At the conclusion of negotiations, the Offeror(s) may be asked to submit in writing, a best and final offer (BAFO). After the BAFO is submitted, no further negotiations shall be conducted with the Offeror(s).
- 2. CANCELLATION OF CONTRACT: Mason reserves the right to cancel and terminate any resulting contract, in part or in whole, without penalty, upon 60 days written notice to the Contractor. In the event the initial Contract period is for more than 12 months, the resulting contract may be terminated by either party, without penalty, after the initial 12 months of the Contract period upon 60 written notice to the other party. Any contract cancellation notice shall not relieve the Contractor of the obligation to deliver and/or perform on all outstanding orders issued prior to the effective date of cancellation.
- 3. COMPLIANCE WITH LAW: (If Applicable): All goods and services provided to George Mason University shall be done so in accordance with any and all local, state and federal laws, regulations and/or requirements. This includes any applicable provisions of FERPA or the "Government Data Collection and Dissemination Practices Act" of the Commonwealth of Virginia.
- 4. CONFLICT OF INTEREST: By submitting a proposal the contractor warrants that he/she has fully complied with the Virginia Conflict of Interest Act; furthermore certifying that he/she is not currently an employee of the Commonwealth of Virginia.
- 5. CONTRACTOR/SUBCONTRACTOR LICENSE REQUIREMENT: By my signature on this solicitation, I certify that this firm/individual and subcontractor is properly licensed for providing the goods/services specified.

Contractor Name: Beckstrom Electric Co., Inc.

License # 2705011774 Type A

Subcontractor Name: \_\_\_\_\_

License # \_\_\_\_\_ Type \_\_\_\_\_

- 6. CONTRACTOR'S TITLE TO MATERIALS: No materials or supplies for the work shall be purchased by the contractor or by any subcontractor subject to any chattel mortgage or under a conditional sales or other agreement by which an interest is retained by the seller. The contractor warrants that he has clear title to all materials and supplies for which he invoices for payment.
- 7. CONTINUITY OF SERVICES:
  - i. The Contractor recognizes that the services under this contract are vital to Mason and must be continued without interruption and that, upon contract expiration, a successor, either Mason or another contractor, may continue them. The Contractor agrees:
    - To exercise its best efforts and cooperation to effect an orderly and efficient transition to a successor;
    - To make all Mason owned facilities, equipment, and data available to any successor at an

**ATTACHMENT A  
VENDOR DATA SHEET  
TO BE COMPLETED BY OFFEROR**

1. **QUALIFICATION OF OFFEROR:** The Offeror certifies that they have the capability and capacity in all respects to fully satisfy all of the contractual requirements.

2. **YEARS IN BUSINESS:** Indicate the length of time in business providing this type of service:

Type of Business: Electrical Contractor      30 Years 4 Months

3. **BUSINESS STATUS:**

A. Type of organization (circle one):

Individual  
Sole Proprietor

Partnership  
Government

Corporation  
Other (explain)

B. Category (circle one):

Manufacturer/Producer  
Service Establishment  
Other (explain)

Mfg.'s Agent  
Distributor

Retailer  
Wholesaler

C. Status: If your classification is certified by the Virginia Department of Small Business and Supplier Diversity (SBSD), provide your certification number \_\_\_\_\_. For certification assistance, please visit <http://www.sbsd.virginia.gov/>. (Please check all applicable classifications. Must be certified with **VIRGINIA SBSBD** to qualify)

\_\_\_\_ (MB) MINORITY OWNED. "Minority-owned business" means a business that is at least 51% owned by one or more minority individuals who are U.S. citizens or legal resident aliens, or in the case of a corporation, partnership, or limited liability company or other entity, at least 51% of the equity ownership interest in the corporation, partnership, or limited liability company or other entity is owned by one or more minority individuals who are U.S. citizens or legal resident aliens, and both the management and daily business operations are controlled by one or more minority individuals.

\_\_\_\_ (WB) WOMAN OWNED. "Women-owned business" means a business that is at least 51% owned by one or more women who are U.S. citizens or legal resident aliens, or in the case of a corporation, partnership, or limited liability company or other entity, at least 51% of the equity ownership interest is owned by one or more women who are citizens of the United States or legal resident aliens, and both the management and daily business operations are controlled by one or more women.

\_\_\_\_ (SB) SMALL BUSINESS: "Small business" means a business that is at least 51% independently owned and controlled by one or more individuals who are U.S. citizens or legal resident aliens, and together with affiliates, has 250 or fewer employees, or average annual gross receipts of \$10 million or less averaged over the \_\_\_\_\_ previous three years. One or more of these individual owners shall control both the management and daily business operations of the small business.

  X   LARGE BUSINESS

I certify the accuracy of this information.

Signed: \_\_\_\_\_

Title: President

Printed Name: Mick Beckstrom

Date: 5/30/2019

**ATTACHMENT B**  
**PRICING SCHEDULE**  
**TO BE COMPLETED BY OFFEROR**

**Labor and Equipment Rates**

Enter hourly rates for labor services used in performing all work which may be required during the period of the contract. Labor rates shall be paid on the basis of **Time on the Job Site**. Labor rates shall include all direct and indirect costs such as transportation, G&A, contract supervision, and profit, etc.

NOTE: The Contractor shall invoice all materials, equipment rentals or subcontracts, **based on the actual cost of the materials, equipment or subcontractors**. No additional costs of any kind will be allowed.

**INVOICES WHICH INCLUDE MATERIALS COSTS AND EQUIPMENT RENTAL CHARGES SHALL BE ACCOMPANIED BY SUPPLIERS INVOICES TO SUBSTANTIATE COSTS TO CONTRACTOR.**

**1. Electrical Repair Services (including "As-Needed" Repairs and Emergency Repair/Installation Services)**  
**Labor Rates – Regular time – 8:00AM to 5:00PM, Monday through Friday**

1.	Project Manager – Regular Time	HR	\$62
2.	Foreman – Regular Time	HR	\$82
3.	Master Electrician – Regular Time	HR	\$82
4.	Journeyman – Regular Time	HR	\$ 82
5.	Apprentice/Helper – Regular Time	HR	\$42

**Labor Rate –After Hours - 5:00PM to 8:00AM, Mon. through Fri., Weekends and Holidays**

1.	Project Manager – After Hours	HR	\$84
2.	Foreman – After Hours	HR	\$110
3.	Master Electrician – After Hours	HR	\$110
4.	Journeyman – After Hours	HR	\$110
5.	Apprentice/Helper – After Hours	HR	\$66

**Scope of Work #2: Preventative Maintenance (PM) Services on Switchgears (All Campuses)**  
**Labor Rates – Regular time – 8:00AM to 5:00PM, Monday through Friday**

1.	Journeyman – Regular Time	HR	\$ 82
2.	Apprentice/Helper – Regular Time	HR	\$42

**Labor Rate –After Hours - 5:00PM to 8:00AM, Mon. through Fri., Weekends and Holidays**

4.	Journeyman – After Hours	<b>HR</b>	\$ <u>110</u>
5.	Apprentice/Helper – After Hours	<b>HR</b>	\$ <u>66</u>

XV. PAYMENT TERMS / METHOD OF PAYMENT:

**Option#3**- Net 30 Payment Terms. Vendor will enroll in Paymode-X where all payments will be made electronically to the vendor's bank account. For additional information or to sign up for electronic payments, go to <http://www.paymode.com/gmu>. There is no charge to the vendor for enrolling in this service.





# Business Portfolio

*"I am personally committed to growing the organization with talented individuals who have both the right skills and attitude that make Beckstrom the electrical contractor of choice."*

**-Mick Beckstrom**



## INTRO.PAGE



- **What We Do?**

Beckstrom Electric offers a complete list of services that will satisfy all of your low to medium voltage electrical needs from ground up construction, renovation and ongoing service and maintenance. We enjoy solid relationships with many of the area's top contractors, facility managers and owners resulting in years of valuable repeat business.

- **Our Aim:**

Working with an electrical contractor to perform either your construction or electrical service needs from the smallest to the most complex projects should not be difficult. We hope our commitment and dedication to exceed your expectations will have you calling us back as your contractor of choice from small repairs, additions or large commercial projects.

*"The only source of knowledge is experience." – Albert Einstein*

# ABOUT.US



- **Short Company Detail**

Beckstrom Electric began operations in 1990 and is a full service commercial electrical contractor. Now with over 160 employees (130 field employees) serving Northern Virginia, Washington D.C., West Virginia Panhandle, and Maryland, we depend on our experienced team to deliver best of class results that keep your projects running smooth. We are anticipating over \$40 million in sales for 2019. We are licensed in Virginia, Maryland, Washington DC, and West Virginia.

- **Company History**

Beckstrom Electric was founded in 1989 by Ken Beckstrom. Determined to perform honest electrical services for the property management and business community. Ken Beckstrom with his technical knowledge of 20 years and project leadership experience, mortgaged his home, and purchased a pickup truck. With much hard work and dedication; Ken Beckstrom set out to build Beckstrom Electric into one of the most respected full service commercial electrical contractors in the greater Northern Virginia area.

Beckstrom Electric's thriving success is due to their superior relationships with clients and coworkers as well as completing projects on time and within a set steady budget. "Becoming a business owner was one of the most challenging undertakings of my life, but one of the best decisions I have ever made. I am proud that it has become a stable, steady, and flourishing business." -Ken Beckstrom

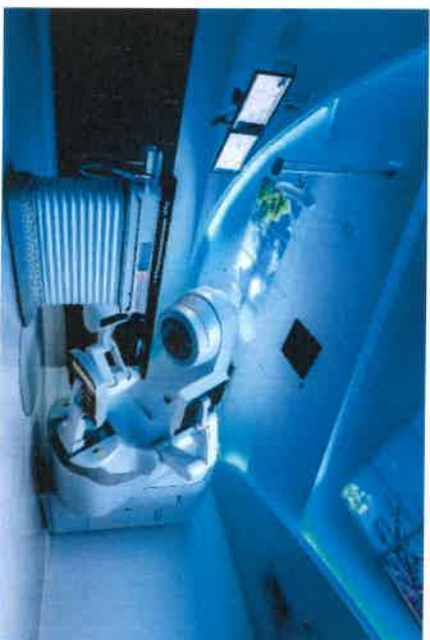
In 2013, the company switched ownership as long-time employees, Mick Beckstrom and Rob Kizer purchased Beckstrom Electric. Together they continue the successful legacy of Beckstrom Electric established by Ken Beckstrom.

- **Financial Statistics**

- 2018 revenue: \$43 Million
- 2017 revenue: \$34 Million
- 2016 revenue: \$38 Million
- Aggregate Bonding Capacity \$60 Million
- Single Project Bonding Capacity \$25 Million

Client Quote: "Ken's trustworthiness has trickled down to the entire organization."

## OUR.FOCUS



**Safety. Quality. Production efficiency.** Plan the work and work the plan. These are the bedrocks of Beckstrom Electric's construction operations. Starting with a project manager led estimating process, procedures for handoff, kick off, planning, communications, change orders and closeouts ensure that our projects are delivered with consistent success.

We understand that the electrical scope of work is always on the critical path. Our depth of field talent ensures we can staff the project with the correct resources to push the project to completion. Our goal is to exceed expectations for safety awareness and compliance so we can work on your highest visibility projects and you will have the confidence you need to deliver results.

*"I would like to thank you and your team for the generator work completed for our program. We realize this project took a lot of coordination. However, your team managed to work through the chaos and produce quality results. You are a perfect example of what we look for in all our vendors: the ability to provide innovative solutions and timely services that exceed customer expectations. We look forward to continuing this positive relationship with Beckstrom Electric in the future."*

Megan K. Parker - SCM Program Analyst - Health and Civilian Solutions Division (GDI7)



# OUR PROMISE



- **Safety**

Company policy requires that all personnel adhere to a 100% eye protection policy. Safety vests are worn during all site work operations. Our goal is to plan safety into our work and in doing so protect the most important resource we have – people. This keeps our costs lower and our production higher. The customer will never have to worry if Beckstrom Electric employees are working safely.

- **Quality**

Quality starts with skilled tradesmen committed to understanding the project requirements. Quality is achieved through training, habitual inspection and oversight and results in work performed correctly the first time. Our commitment to quality means the project stays on schedule. If we do need to correct items, we always make it right.

- **Planning**

The key to success is planning our work and communicating the plan to others. This means collaborating with the project team regarding the overall project schedule and critical milestones and converting those plans to realistic short interval plans by the field leaders.

*"The greatest reward for doing is the opportunity to do more." – Jonas Saik*



## OUR EXPERTISE



Professional, technically proficient electricians on call 24 hours/day – 365 days a year. Beckstrom Electric can handle electrical maintenance, testing, inspection and small to large size electric projects in either new construction or retrofit applications. Our skilled technicians have the experience and capability to work independently in secure or class A rated commercial spaces to keep operations running smoothly with minimal disruption.

### Beckstrom Electric specializes in commercial service and construction projects including:

- Medical
- Government
- Hospitality
- Institutional
- Tenant Fit-Out
- Warehouse Facilities
- Retail
- Office Build-Out
- Data Centers
- Athletic Fields/Sports Lighting
- Pole Lighting
- Waste Water and Water Treatment

### Preconstruction services such as:

- Building Information Modeling
- CAD Design
- Conceptual Budgeting
- Design/Build
- Electrical Engineering
- Value Engineering



*Client Quote: "Your tech provided excellent communication...and called ahead. Our maintenance engineer commented that he was well organized and efficient. He demonstrated a thorough electrical knowledge and a fantastic sense of humor. He covered our needs excellently."*

## SPECIALTY SERVICES

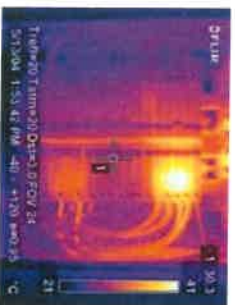
Beckstrom Electric uses state of the art equipment and employs highly trained technicians to identify and resolve issues in a timely manner. Through retaining and training our field forces, this experience base continues to grow to meet the growing demands of complex electronics, multi-source electrical service and the highest end testing and troubleshooting. Beckstrom owns all the proper equipment, tools and safety gear including lifts, bucket trucks and a fully stocked emergency trailer.



### Design, Installation, Maintenance and Troubleshooting of:

- Power
- UPS Systems
- Lighting Retrofits
- Interior Lighting
- Generator
- Solar Energy
- Site Lighting
- Fire Alarm
- Energy Saving ROI's
- Tenant Improvements
- Low Voltage Systems

Electrical equipment failures disrupt business operations and account for millions of dollars of damage each year. This can be prevented with routine preventative maintenance performed by Beckstrom Electric's highly trained electricians. We use state of the art equipment and the latest diagnostic techniques designed to keep your electrical systems free from failure. Having been trained in Arc Flash safety per NFPA 70E standards, you can rest assured our licensed electricians will perform maintenance safely.



### Preventative Maintenance and Diagnostics:

- Detailed Test and Maintenance Reports
- Infrared Thermography
- Transformer Maintenance and Testing
- Power Quality Surveys
- Breaker Injection Testing
- Ground Fault Testing
- True RMS Voltage and Current Monitoring
- Megger Testing

*Detailed reports document the predictive maintenance tests and surveys. In addition to a detailed written report, we provide an easy to use software solution called EMX. EMX provides a searchable inventory of your electrical distribution components collected by our technicians.*

# SAMPLE.CLIENTS & PROJECTS



## Sample Projects List

- Radiology Tenant – Fit-Out, Multiple Projects  
Range 50-300K
- Inova Health Systems – Multiple Projects  
Range 2K-1.1M
- Fauquier Hospital – Health Rehabilitation and Nursing Center  
Range 245-255K
- Radiology Imaging Associates – Radiology Center  
Range 365-375K
- Sentara – Lorton Emergency Department  
Range 450-460K
- HCA – Stone Spring Emergency Department  
Range 650-660K
- TASC – Class A Midrise Office Building  
Range 1-2.5M
- Unnamed Defense Contractor – SCIF Data Center  
Range 1-2.5M
- Cornwall Medical Development, LLC – Western Loudoun MOB  
Range 2-2.1M
- WVU Hospitals East – WVU East City Hospital  
Range 2.3-2.4M
- Loudoun County Public Schools – Woodgrove High School  
Range 8.8-8.9M
- Loudoun County Public Schools – John Champe High School  
Range 10.5-10.6M
- Salamander Hospitality – Salamander Inn & Resort  
Range 11.2-11.3M



## Sample Client List

### Construction

- Brasfield & Gorrie
- EE Reed Construction LP
- HITT Contracting
- L2 Construction
- Scott-Long Construction
- Shockey Construction
- Turner Construction

### Service

- Airbus Americas, Inc
- CBRE
- Cushman & Wakefield
- INOVA Medical
- Jones Lang LaSalle
- Lockheed Martin
- Morgan Stanley

*"Their overall "Team Approach" along with their hard work, timely attention to issues, focus on quality & other positive qualities has proven again that Beckstrom Electric is one of the top electrical subcontractors associated with the HITT organization."*

Christopher S. Campbell - Senior Project Manager – HITT Contracting, Inc.



## GIVING BACK



Beckstrom Electric believes it has a responsibility to support and participate in the community it helped build. Through donations of skilled labor and financial contributions, Beckstrom supports the work of several non-profit organizations and youth sports programs. By building strong relationships with select groups, Beckstrom Electric is able to make a significant contribution to the local community.

In recent years Beckstrom has helped support the following organizations:



Habitat for Humanity



Freedom Center



Inova Health Foundation

INOVA Health Foundation



Loudoun County 4H



The Good Shepherd

*"Pleasure in the job puts perfection in the work." - Aristotle*

## OUR LEADERSHIP



### Mick Beckstrom – President

Mick Beckstrom's career in the electrical industry began by working summers at Herring Electric and Beckstrom Electric. In 1993, Mick graduated from West Virginia University and joined Beckstrom Electric full time. His knowledge in the electrical industry and work experience provided Beckstrom with tools to continue the company's growth from a small company with just a few employees into a company currently with over 180 employees.

In 2011, Mick became the president of Beckstrom Electric. His leadership has been the driving force in solidifying Beckstrom Electric as one of the premier electrical contractors in the Northern Virginia. In 2013, Mick Beckstrom and Rob Kizer became owners of Beckstrom Electric. Together they continue the legacy of Beckstrom Electric established by Ken Beckstrom.

In addition to Mick's leadership role at Beckstrom Electric, he has been president of American Subcontracting Association (ASA) of Metro Washington. ASA is the leading voice for subcontractors promoting fairness in construction. Mick is currently on the board of Loudoun Habitat for Humanity. Loudoun Habitat for Humanity works to provide affordable housing to those in need in Loudoun County.



### Rob Kizer – Vice President

Rob Kizer's electrical career was launched in 1988 at Herring Electric as an apprentice under Ken Beckstrom. In 1990, Rob found career opportunities at Beckstrom Electric, which was founded by Ken Beckstrom. The small staff in the company's earlier stages provided Rob the experience of working in many aspects of the Company to include Foreman, Service Technician, Manager of the Service Department, Project Manager and more. Each of Rob's roles in the company has assisted in the growth of Beckstrom Electric from three employees working out of Ken's house into a company with 180 employees. Rob is a LEED AP and carries all the Electrical Master licenses, which include Virginia, Maryland, West Virginia, and District of Columbia.

In 2011, Rob became the Vice President of Beckstrom Electric. His leadership has been one of the driving forces in solidifying Beckstrom Electric as one of the premier electrical contractors in the Northern Virginia area. In 2013, Mick Beckstrom and Rob Kizer became owners of Beckstrom Electric. Together they continue the legacy of Beckstrom Electric established by Ken Beckstrom.

## Business Affiliations



**National Fire Protection Association**  
The authority on fire, electrical, and building safety



THANK YOU

on behalf of



**BECKSTROM**  
ELECTRIC





## Pre-Outage Checklist

Pre-Outage Checklist			
Steps	Description	Yes	No
1	Request work order for scope of work.	<input type="radio"/>	<input type="radio"/>
2	Review scope of work including testing requirements, manpower (hours)	<input type="radio"/>	<input type="radio"/>
3	Gather a crew. (Can be done yourself or left up to the scheduling supervisor.)	<input type="radio"/>	<input type="radio"/>
4	Schedule a site visit <u>No Less than 3 days</u> prior to outage.	<input type="radio"/>	<input type="radio"/>
5	Meet with onsite engineer to review the following:	<input type="radio"/>	<input type="radio"/>
5a	Confirm Time of outage	<input type="radio"/>	<input type="radio"/>
5b	Determine parking for crew and equipment	<input type="radio"/>	<input type="radio"/>
5c	Visually inspect the equipment and locations covered in the work order	<input type="radio"/>	<input type="radio"/>
5d	Tag all breaker(s) that are currently in the OFF position on the equipment that will be PM	<input type="radio"/>	<input type="radio"/>
5e	Verify GFI types to ensure proper test kit. (If testing required)	<input type="radio"/>	<input type="radio"/>
5f	Verify On-site Emergency Power (Are there lights and receptacles during the outage in needed locations)	<input type="radio"/>	<input type="radio"/>
5g	Finalize outage schedule (Make sure your shutdown window is understood by all)	<input type="radio"/>	<input type="radio"/>
6	Check supplies in the emergency trailer.	<input type="radio"/>	<input type="radio"/>
6a	Are there Rags, Trash bags, cleaner (Bolt)	<input type="radio"/>	<input type="radio"/>
6b	Are the batteries charged for the Dewalt Vacuums?	<input type="radio"/>	<input type="radio"/>
6c	Are there enough extension cords?	<input type="radio"/>	<input type="radio"/>
6d	Do all the wobble lights work?	<input type="radio"/>	<input type="radio"/>
6e	Do the generators run and is there enough gas?	<input type="radio"/>	<input type="radio"/>
6f	Address any issues with the trailer prior to outage day.	<input type="radio"/>	<input type="radio"/>
6g	Designate who will be carrying the trailer (If there is no one with a hitch in the crew add on more person)	<input type="radio"/>	<input type="radio"/>
7	Gather all testing kits and forms needed (HC-2, GE, Siemens GFI Digital tester)	<input type="radio"/>	<input type="radio"/>
8	Call all members of the crew to verify arrival and shutdown time	<input type="radio"/>	<input type="radio"/>

Technician: \_\_\_\_\_ Date: \_\_\_\_\_

# Power Disconnect Form

Date: \_\_\_\_\_ Time: \_\_\_\_\_ Tech: (print) \_\_\_\_\_ (Sign) \_\_\_\_\_

Area Served: \_\_\_\_\_ Room's Impacted: \_\_\_\_\_  
Source Location \_\_\_\_\_  
PPE required \_\_\_\_\_

Customer equip Impacted: \_\_\_\_\_ Special entry requirements: \_\_\_\_\_

Contact personnel for access and notification:  
Name \_\_\_\_\_ Phone \_\_\_\_\_  
Name \_\_\_\_\_ Phone \_\_\_\_\_  
Name \_\_\_\_\_ Phone \_\_\_\_\_  
Name \_\_\_\_\_ Phone \_\_\_\_\_Test Methods Used: \_\_\_\_\_  
De-energized time requested: \_\_\_\_\_ days \_\_\_\_\_ hours

As built's available: \_\_\_\_\_ Maint personnel avail: \_\_\_\_\_ Name \_\_\_\_\_

As built's updated: \_\_\_\_\_ Voltage \_\_\_\_\_ Phase \_\_\_\_\_ Amps \_\_\_\_\_

Power Co. #: \_\_\_\_\_ Rotation or Phasing \_\_\_\_\_

Most recent maintenance date: \_\_\_\_\_ Visual Condition of equipment: \_\_\_\_\_

Possible Hazards: \_\_\_\_\_

The following signatures verify all efforts to reduce negative unplanned interruptions have been exerted to the fullest knowledge of all who have signed below.

Beckstrom Technician \_\_\_\_\_

Beckstrom Supervisor \_\_\_\_\_

General Contractor \_\_\_\_\_

Owners Representative \_\_\_\_\_

Other \_\_\_\_\_

Other \_\_\_\_\_

Power Off aprox at \_\_\_\_\_ Time power is required to be turned back on \_\_\_\_\_

Lock &amp; Tag out used \_\_\_\_\_ Conductor permanently removed \_\_\_\_\_

All terminations, boxes, devices, ect..ready for power (Technician sign) \_\_\_\_\_

Power restored at \_\_\_\_\_ GC witness \_\_\_\_\_

Owner witness \_\_\_\_\_

## lock out tag out (LOTO) procedure form

Panel \_\_\_\_\_ Circuit # (s) \_\_\_\_\_ Date \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_ Time out \_\_\_\_\_  
 \_\_\_\_\_ Time finished \_\_\_\_\_

B.E.C. supervisor \_\_\_\_\_ site supervisor notified \_\_\_\_\_

PPE required \_\_\_\_\_

B.E.C. employees involved with LOTO procedure

1 _____	6 _____
2 _____	7 _____
3 _____	8 _____
4 _____	9 _____

Others effected by LOTO procedure

1 _____	5 _____
2 _____	6 _____
3 _____	7 _____

Step-By-Step shutdown procedure

1 Notify all affected personnel \_\_\_\_\_

2 \_\_\_\_\_

3 \_\_\_\_\_

4 \_\_\_\_\_

5 \_\_\_\_\_

6 \_\_\_\_\_

Install locks and tags

Testing (parts or conductors)

Check tester is working properly

Check all potently energized parts

Check tester is working properly

Ground out all potentially energized parts

Perform work( is work complete )

Check continuity and proper connections

Notify all personnel LOTO is being removed

Clear work area

Remove locks and tags

Reenergize

Check proper operation ( amperage, voltage, phase rotation)

1	2	3	4	5	6

--	--	--	--	--	--

Signature BEC Supervisor \_\_\_\_\_ Date \_\_\_\_\_

is work complete      YES ☐      NO ☐

# Example

## *Electrical Infrared Testing Report*



*Customer's Name*

*1234 Your Place, Somewhere, USA*



**Job # :** 1234-EPM-2009

**Site :** 1234 Your Place

**Date :** November 6, 2014



37277 East Richardson Lane  
Purcellville, VA 20132  
Voice: 540-338-2344  
Fax: 540-338-8990  
www.beckstromelectric.com

## *Confirmation of Facilities Electrical Predictive Maintenance Inspection*

This confirmation is being presented by Beckstrom Electric, for presentation to current or potential insurance carrier or accrediting association, etc. for rating and evaluation purposes.

Customer Name: *Customer's Name*  
Facility Address: *1234 Your Place*

This shall confirm that a Comprehensive Predictive Maintenance Program is in place at the facility listed above. If there are any questions regarding the services provided, please do not hesitate to call Beckstrom Electric's Predictive Maintenance Service Division.

Service contract date: 11/6/2014

### **Services Provided**

Visual and mechanical inspection of all components included with this service.	<b>X</b>
Code compliance evaluation of all components included with this service.	<b>X</b>
Conducted infrared scanning and recorded all abnormal conditions.	<b>X</b>
Record all equipment variables (i.e. voltage, current and harmonics when applicable)	<b>X</b>
Compare nameplate capacity verses actual load conditions.	<b>X</b>

**Along with the services provided above, this customer receives priority 24-hour emergency response.**

### **Authorized Predictive Services Contractor**

**Beckstrom Electric**  
**37277 East Richardson Lane**  
**Purcellville, VA 20132**  
**Phone: 540-338-2344**  
**Fax: 540-338-8990**

**John Stringham/ Predictive Services Manager**

**Authorized Signature: *John Stringham***





37277 East Richardson Lane  
Purcellville, VA 20132  
Voice: 540-338-2344  
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www.beckstromelectric.com

Nov-14  
VIP  
Customer's Name  
1234 Your Place  
Somewhere, USA

Reference: IR Plus Variables performed at: 1234 Your Place

VIP

Thank you for your confidence you have placed in Beckstrom Electric by authorizing us to conduct Electrical Infrared Services on the vital electrical distribution systems in your building. This Service Program is your lowest-cost alternative for minimizing both the risk of electrical hazards and unscheduled power interruptions within your facility, as well as extending the life of your equipment.

This report communicates our findings while conducting an analysis of your electrical distribution systems in conjunction with performing our Infrared Services tasks.

The following applicable tasks were performed on all components, wiring, and connections within your electrical distribution system that was scheduled for this visit.

1. Visual and mechanical inspection of all components included with this service.
2. Code compliance evaluation of all components included with this service.
3. Conducted infrared scanning and recorded all abnormal conditions.

This scope of work is recommended on an annual basis per the National Electrical Manufacturers Association (NEMA) PB 1.1-2002 Page 16 Section 10.3

Each time we perform Predictive/Preventive Maintenance Tasks in your facility we will provide you with a similar report.

Thank you for the privilege of serving you!

Sincerely,

A handwritten signature in black ink, appearing to read 'John A. Strong', is written over a horizontal line.

### *Executive Summary for: 1234 Your Place*

On November 6, 2014 Beckstrom Electric performed an Electrical Predictive Maintenance Service at 1234 Your Place

The following Executive Summary will detail our findings for this visit. Please note that if you have any questions or concerns, you may call at any time and we will gladly assist you.

The following services were performed during our visit.

1. A total of 22 pieces of electrical equipment were inspected.
2. All covers were removed to allow a thorough inspection.
3. All nameplate data was recorded (manufacturer, model, rating, wire size, breaker types, breaker spaces, etc.)
4. A code compliance analysis was performed on each piece of equipment. Any violations were recorded and photographed.
5. An Infrared Inspection was performed on all equipment.
6. All covers were replaced
7. A computerized database program and a hard copy report book were created to record readings and problems.
8. A Confirmation of Services form was completed. This may be sent to an insurance company, owner, investors, etc....
9. A quotation for repairs will be provided upon your request. Some repairs may require further investigation.
10. On all applicable equipment operating variables were recorded (Phase to Phase Voltage, Phase to Neutral Voltage, Current)

During our analysis of this facility, 5 thermal problems were discovered, 2 safety or safety violations were recorded. The following page will give the severity of the thermal problems.



Thermographic Electrical Inspections are the most cost effective means of preventing unscheduled many times, costly power outages. The following graph shows the criteria as set forth by the NFPA used to determine the severity of a thermal problem.

Problem Level	Temperature Differential	Description
<b>Warning</b>	7.2°F-14.4°F 4°C-8°C	First Stage. Monitor and repair during next maintenance.
<b>Severe</b>	14.4°F-27°F 8°C-15°C	Second Stage. Should be repaired before next maintenance.
<b>Critical</b>	>27°F >15°C	Acute Stage. Should be repaired immediately.

Source: NFPA-70B Standard

The Infrared Problems that were discovered were placed in the following categories as detailed in the report. Further details on each problem may be viewed in the report book or the computer database.

1. Critical -	<b>4</b>	Problems
2. Severe -	<b>1</b>	Problems
3. Warning-	<b>0</b>	Problems
4. Normal -	<b>0</b>	Problems

In addition to the above infrared problems, there were 4 code or safety violations that are viewed in more detail in the report book or the computer database.

We at Beckstrom Electric would like to thank you for the opportunity to provide you with our comprehensive Predictive Services Programs available. Our programs are designed to provide you with the cutting edge solution to all your electrical distribution needs and are specifically tailored for you. Any questions that you may have regarding this report can be answered at any time by the phone number listed below.

Sincerely,  
*John Stringham*  
 John Stringham

# Biography of the Thermographic Inspection

Thermographic Electrical Inspections are the most cost effective means of preventing un-scheduled and many times, costly power outages. The following graph shows the criteria as set forth by the NFPA used to determine the severity of a thermal problem.

Problem Level	Temperature Differential	Description
<b>Alert</b>	7.2°F-14.4°F 4°C-8°C	First Stage. Monitor and repair during next scheduled maintenance.
<b>Severe</b>	14.4°F-27°F 8°C-15°C	Second Stage. Should be repaired before scheduled maintenance.
<b>Critical</b>	>27°F >15°C	Acute Stage. Should be repaired immediately!

Source: NFPA-70B Standard

All objects emit thermal radiation. The process of interpreting this thermal radiation has been made possible with the use of the Infrared Thermographic Cameras. The data that is retrieved by these cameras can be interpreted by licensed Thermographers, an

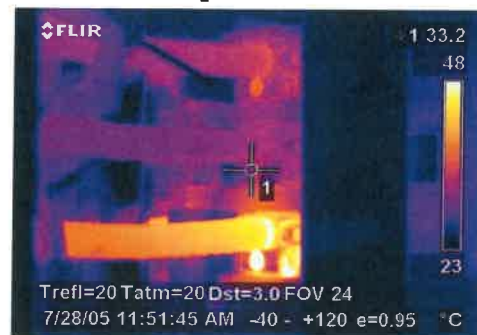
Beckstrom Electric only uses Level 1 and Level 2 licensed Thermographers to assure the inspections will be done safely and with the most accurate data retrieval possible. The Data we retrieve will be reviewed on site by the Thermographer. The same data wi

After a problem has been corrected, follow up measurements should be taken to verify that the repair has resolved the cause of the thermal anomaly.

Sample



Sample





# Infrared Problem Report

## Job # 1234-EPM-2009



### Problem Details -- 0005

Work Order ..... 1234-EPM-2009  
Customer ..... Sample Customer  
Site Name ..... 1234 Your Place  
Location ..... 1st floor electric room  
Equipment Tag ..... 0005  
Equipment Type .... Distribution Panel  
Manufacturer ..... General Electric  
Category ..... Panels

Status:  
**Client Notified**  
  
Description:  
Panel H2  
  
Comments:



#### Description:

Loose Termination.

#### Comments:

The termination on the A phase of the three-pole breaker is producing excessive heat. This could be due to arcing between the conductor and the termination point. The breaker is not labelled.

Infrared Spot Temperatures	
Reference Spot	25.3 C
Problem Spot	58.7 C
Temperature Differential	33.4 C

Measurement	Phase A	Phase B	Phase C
Problem Area	x		
Rating	400 Amps	400 Amps	400 Amps
Current Draw	22.12 Amps	23.48 Amps	21.89 Amps
Voltage Drop	.538 Volts	.028 Volts	.009 Volts
THDC %			

#### Severity Level

**CRITICAL**

#### Consequences:

This will cause premature failure of conductors and equipment. As equipment fails, fire and safety hazards will exist

#### Recommendations:

De-energize the component, inspect, clean and tighten all related terminations and take new voltage drop readings under normal operating conditions.



# Infrared Problem Report

## Job # 1234-EPM-2009



### Problem Details -- 0007

Work Order ..... 1234-EPM-2009  
Customer ..... Sample Customer  
Site Name ..... 1234 Your Place  
Location ..... 1st floor electric room  
Equipment Tag ..... 0007  
Equipment Type .... Branch Circuit Breaker Panel  
Manufacturer ..... Cutler Hammer  
Category ..... Panels

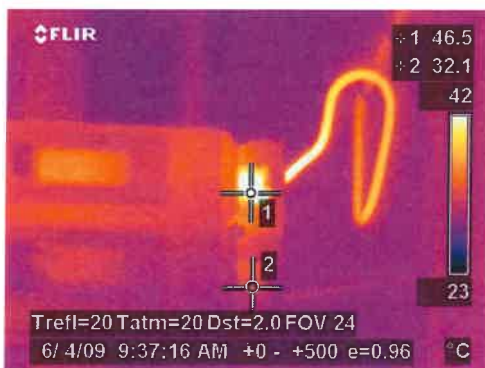
Status:

Client Notified

Description:

Panel L1

Comments:



Description:

Excessive Loading

Comments:

Circuit #2 is producing excessive heat due to the excessive loading

Infrared Spot Temperatures	
Reference Spot	32.1 C
Problem Spot	46.5 C
Temperature Differential	14.4 C

Severity Level

SEVERE

Measurement	Phase A	Phase B	Phase C
Problem Area	#8		
Rating	20 Amps		
Current Draw	21.25 Amps		
Voltage Drop	.125 Volts		
THDC %			

Consequences:

This will cause premature failure of conductors and equipment. As equipment fails, fire and safety hazards will exist.

Recommendations:

Additional Investigation will be required during normal operational hours to determine the cause and make recommendations for necessary repairs.





# Infrared Problem Report

## Job # 1234-EPM-2009



### Problem Details -- 0009

Work Order ..... 1234-EPM-2009  
Customer ..... Sample Customer  
Site Name ..... 1234 Your Place  
Location ..... 2nd floor electric room  
Equipment Tag ..... 0009  
Equipment Type .... Branch Circuit Breaker Panel  
Manufacturer ..... Siemens  
Category ..... Panels

Status:  
Client Notified

Description:  
Panel L2

Comments:



#### Description:

Loose Termination.

#### Comments:

The main neutral conductor for the panel has excessive heat and is melted. There is arching and crackling coming from the lug.

Infrared Spot Temperatures	
Reference Spot	41.0 C
Problem Spot	72.3 C
Temperature Differential	31.3 C

#### Severity Level

**CRITICAL**

Measurement	Phase A	Phase B	Phase C
Problem Area	NEUTRAL		
Rating	150 Amps		
Current Draw	1507 Amps		
Voltage Drop	5.24 Volts		
THDC %			

#### Consequences:

This will cause premature failure of conductors and equipment. As equipment fails, fire and safety hazards will exist

#### Recommendations:

De-energize the component, cut the wire back and splice a new piece. Once repaired take new voltage drop readings



## Infrared Problem Report

### Job # 1234-EPM-2009



#### Problem Details -- 1123

Work Order ..... 1234-EPM-2009  
Customer ..... Sample Customer  
Site Name ..... 1234 Your Place  
Location ..... 3rd floor electric room  
Equipment Tag ..... 1123  
Equipment Type .... Distribution Panel  
Manufacturer ..... Square-D  
Category ..... Panels

Status:  
Client Notified

Description:  
HV-3

Comments:



Description:  
Loose Termination.

Comments:  
High Hazard of fire

Infrared Spot Temperatures	
Reference Spot	48.6 C
Problem Spot	87.6 C
Temperature Differential	39.0 C

Severity Level

**CRITICAL**

Measurement	Phase A	Phase B	Phase C
Problem Area			
Rating	1200 Amps	1200 Amps	1200 Amps
Current Draw	c/o	c/o	c/o
Voltage Drop	c/o	c/o	c/o
THDC %			

#### Consequences:

This will cause premature failure of conductors and equipment. As equipment fails, fire and safety hazards will exist

#### Recommendations:

De-energize the component, inspect, clean and tighten all related terminations and take new voltage drop readings under normal operating conditions.





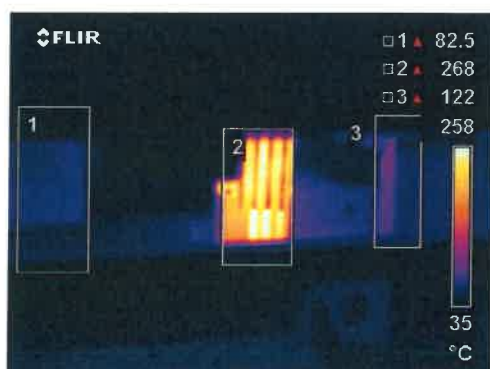
# Infrared Problem Report

## Job # 1234-EPM-2009



### Problem Details -- 0001

Work Order ..... 1234-EPM-2009  
Customer ..... Sample Customer  
Site Name ..... 1234 Your Place  
Location ..... Main Electric Room  
Equipment Tag ..... 0001  
Equipment Type .... Switchgear - 600V and below  
Manufacturer ..... Siemens  
Category ..... Switchgear

**Status:****Client Notified****Description:***Main Gear***Comments:****Description:***Loose Termination.***Comments:***Not able to safely obtain reading do to the heat that is being produced.*

Infrared Spot Temperatures	
Reference Spot	122.0 C
Problem Spot	268.0 C
Temperature Differential	146.0 C

**Severity Level****CRITICAL**

Measurement	Phase A	Phase B	Phase C
Problem Area	X		
Rating	3000 Amps	3000 Amps	3000 Amps
Current Draw	1265 Amps	1457 Amps	1295 Amps
Voltage Drop			
THDC %			

**Consequences:***This will cause premature failure of conductors and equipment. As equipment fails, fire and safety hazards will exist***Recommendations:***De-energize the component, inspect, clean and tighten all related terminations and take new voltage drop readings under normal operating conditions.*



# Standard Problem Report

## Job # 1234-EPM-2009



### Problem Details -- 0008

Work Order ..... 1234-EPM-2009  
Customer ..... Sample Customer  
Site Name ..... 1234 Your Place  
Location ..... 1st floor electric room  
Equipment Tag ..... 0008  
Equipment Type .... Disconnect/Safety Switch  
Manufacturer ..... Siemens  
Category ..... Disconnect

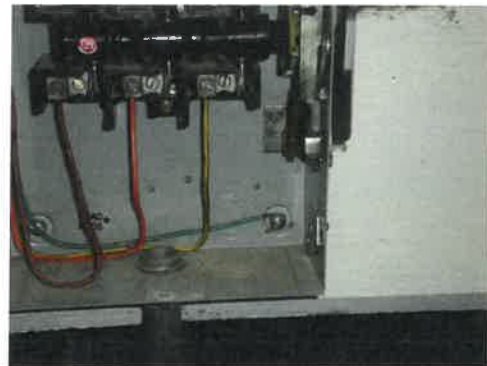
#### Status:

**Client Notified**

#### Description:

A/C #1

#### Comments:



#### Description:

*Improper bonding of Grounded and Grounding systems  
NEC(02) 250.30(A)(1)*

*(1) Bonding Jumper. "This connection shall be made at any point on the separately derived system from the source to the first system disconnecting means or overcurrent device, or it shall be made at the source of a separately derived system that has no disconnecting means or overcurrent devices."*

#### Consequences:

*This may result in power quality problems through out the facility including, shortening the life span of, ballasts, lamps, and sensitive electronic equipment.*

#### Recommendations:

*Properly bond the conductor per the N.E.C.*

#### Comments:

*The grounding conductor is wrapped around the screw holding the disconnect to the concrete wall. Need to install proper single ground lug.*



# Standard Problem Report

## Job # 1234-EPM-2009



### Problem Details -- 0010

**Work Order** ..... 1234-EPM-2009  
**Customer** ..... Sample Customer  
**Site Name** ..... 1234 Your Place  
**Location** ..... 2nd floor electric room  
**Equipment Tag** ..... 0010  
**Equipment Type** .... Branch Circuit Breaker Panel  
**Manufacturer** ..... Cutler Hammer  
**Category** ..... Panels

**Status:**

**Client Notified**

**Description:**

*Panel L2A*

**Comments:****Description:**

*Device not UL approved for multiple conductors.  
NEC(02) 110.3(B) - Installation and Use. Listed or labeled  
equipment shall be installed and used in accordance with  
any instructions included in the listing or labeling.*

**Comments:**

*Circuit #21 and #23 a two pole 40 amp Cutler Hammer  
type CH has multiple conductors landed under load side  
terminals. Labeled Heat/ A/C on the panel schedule.*

**Consequences:**

*As each conductor heats and cools at different rate it may cause the termination to become loose and develop a thermal problem.*

**Recommendations:**

*Relocate conductors as needed to allow the device to meet its UL approved purpose.*



## Standard Problem Report Job # 1234-EPM-2009



### Problem Details -- 1126

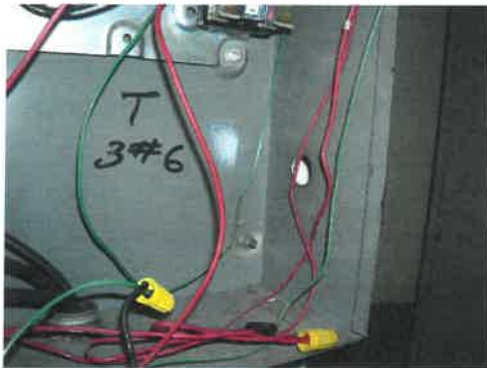
Work Order ..... 1234-EPM-2009  
Customer ..... Sample Customer  
Site Name ..... 1234 Your Place  
Location ..... 3rd floor electric room  
Equipment Tag ..... 1126  
Equipment Type .... Disconnect/Safety Switch  
Manufacturer ..... Square-D  
Category ..... Disconnect

**Status:**

**Problem Resolved**

**Description:**

Transformer LV-3

**Comments:****Description:***Unused openings*

*NEC 110.12 (A) Unused Openings. Unused cable or raceway openings shall be effectively closed to afford protection substantially equivalent to the wall of the equipment.*

**Consequences:**

*Unused openings will allow dirt and foreign objects to easily accumulate inside the equipment. This debris can cause premature failure and potential electrical arc flash hazards.*

**Recommendations:**

*Seal any unused openings.*

**Comments:**

*Installed a 1/2 KO seal*



**Standard Problem Report**  
**Job # 1234-EPM-2009**



**Problem Details -- 0015**

**Work Order** ..... 1234-EPM-2009  
**Customer** ..... Sample Customer  
**Site Name** ..... 1234 Your Place  
**Location** ..... Penthouse  
**Equipment Tag** ..... 0015  
**Equipment Type** .... Branch Circuit Breaker Panel  
**Manufacturer** ..... Square-D  
**Category** ..... Panels

**Status:**

**Client Notified**

**Description:**

*Panel P1*

**Comments:**



**Description:**

*Improperly sized conductor or over current device*

**Comments:**

*Circuit #37, a single pole 30 amp breaker, has a #12 AWG on it. #12 AWG is rated for 20 amps max. Circuit is labeled "Stairwell lights" on the panel schedule and is drawing .91 amps at this time.*

**Consequences:**

*In the event of a fault the over current device is not sized to protect the conductors. This may cause the conductor to over heat and break down prematurely.*

**Recommendations:**

*Replace the conductors with the proper sized conductor per the code for the over current device or replace the over current device with the proper size to protect the conductors.*



# Equipment Measurements

## Job # 1234-EPM-2009



### Nameplate Details -- 0005

Work Order ..... 1234-EPM-2009  
Customer ..... Sample Customer  
Site Name ..... 1234 Your Place  
Location ..... 1st floor electric room  
Equipment Tag ..... 0005  
Equipment Type .... Distribution Panel  
Manufacturer ..... General Electric  
Category ..... Panels

**Description:**

Panel H2

**Comments:**

Attribute	Value
Voltage Rating	480/277 Volts
Bus Rating	250 Amps
Main Breaker Type or MLO	ML
Main Conductor Size	3/0 gauge

Attribute	Value
Distribution Breaker Type	QOB
Breaker Poles/Spaces	30
Breaker Poles/Spaces Used	30
Breaker Poles/Spaces Spare	0

### Measurements

Measurement	Value
RMS Voltage Phase A-B	492.3 Volts
RMS Voltage Phase B-C	492.2 Volts
RMS Voltage Phase C-A	491.0 Volts
RMS Voltage Phase A-Neutral	282.7 Volts
RMS Voltage Phase B-Neutral	284.8 Volts

Measurement	Value
RMS Voltage Phase C-Neutral	285.2 Volts
RMS Current Phase A	22.1 Amps
RMS Current Phase B	23.5 Amps
RMS Current Phase C	21.9 Amps
RMS Current Neutral	3.4 Amps





**Equipment Measurements**  
**Job # 1234-EPM-2009**



**Nameplate Details -- 0006**

Work Order ..... 1234-EPM-2009  
Customer ..... Sample Customer  
Site Name ..... 1234 Your Place  
Location ..... 1st floor electric room  
Equipment Tag ..... 0006  
Equipment Type .... Transformer - Dry  
Manufacturer ..... Zenith  
Category ..... Transformers

**Description:**

Panel L1

**Comments:**

Attribute	Value
KVA Rating	45.0 kVA
Primary Voltage	600 Volts
Secondary Voltage	208 Volts
Winding Impedance	3 %
Temperature Rise	150 Degrees C

Attribute	Value
K-Rating	12
Primary Conductor Size	8 gauge
Secondary Conductor Size	2 gauge
Secondary Neutral Conductor Size	2 gauge
Electrostatic Shield (Yes/No)	n

**Measurements**

Measurement	Value
Pri RMS Voltage Phase A-B	492.3 Volts
Pri RMS Voltage Phase B-C	492.2 Volts
Pri RMS Voltage Phase C-A	491.0 Volts
Sec RMS Voltage Phase A-B	208.7 Volts
Sec RMS Voltage Phase B-C	207.5 Volts
Sec RMS Voltage Phase C-A	207.9 Volts
Sec RMS Voltage Phase A-N	122.1 Volts
Sec RMS Voltage Phase B-N	121.4 Volts
Sec RMS Voltage Phase C-N	121.8 Volts

Measurement	Value
Pri RMS Current Phase A	28.2 Amps
Pri RMS Current Phase B	18.4 Amps
Pri RMS Current Phase C	354.0 Amps
Sec RMS Current Phase A	48.5 Amps
Sec RMS Current Phase B	32.8 Amps
Sec RMS Current Phase C	75.1 Amps
Sec RMS Current Neutral	15.8 Amps
Sec RMS Current GND	1.5 Amps



## Equipment Measurements Job # 1234-EPM-2009



### Nameplate Details -- 0007

Work Order ..... 1234-EPM-2009  
Customer ..... Sample Customer  
Site Name ..... 1234 Your Place  
Location ..... 1st floor electric room  
Equipment Tag ..... 0007  
Equipment Type .... Branch Circuit Breaker Panel  
Manufacturer ..... Cutler Hammer  
Category ..... Panels

**Description:**

Panel L1

**Comments:**

Attribute	Value
Voltage Rating	480/277Y Volts
Bus Rating	125 Amps
Main Breaker Type or MLO	MLO
Main Conductor Size	2 gauge
Neutral Conductor Size	2 gauge

Attribute	Value
Branch Breaker Type	NQOB
Breaker Poles/Spaces - Total	42
Breaker Poles/Spaces - Used	35
Breaker Poles/Spaces - Spare	7

### Measurements

Measurement	Value
RMS Voltage Phase A-B	492.3 Volts
RMS Voltage Phase B-C	492.2 Volts
RMS Voltage Phase C-A	491.0 Volts
RMS Voltage Phase A-Neutral	282.7 Volts
RMS Voltage Phase B-Neutral	284.8 Volts
RMS Voltage Phase C-Neutral	285.2 Volts

Measurement	Value
RMS Current Phase A	28.2 Amps
RMS Current Phase B	15.8 Amps
RMS Current Phase C	4.6 Amps
RMS Current Neutral	21.4 Amps
RMS Current GND	0.5 Amps





# Equipment Measurements

## Job # 1234-EPM-2009



### Nameplate Details -- 0008

Work Order ..... 1234-EPM-2009  
Customer ..... Sample Customer  
Site Name ..... 1234 Your Place  
Location ..... 1st floor electric room  
Equipment Tag ..... 0008  
Equipment Type .... Disconnect/Safety Switch  
Manufacturer ..... Siemens  
Category ..... Disconnect

#### Description:

A/C #1

#### Comments:

Attribute	Value
Voltage	250 Volts
Current	30 Amps

Attribute	Value
Conductor Size	10 gauge

### Measurements

Measurement	Value
RMS Voltage Phase A-B	208.7 Volts
RMS Voltage Phase B-C	207.5 Volts
RMS Voltage Phase C-A	207.9 Volts

Measurement	Value
RMS Current Phase A	18.2 Amps
RMS Current Phase B	18.9 Amps
RMS Current Phase C	18.5 Amps



# Equipment Measurements Job # 1234-EPM-2009



## Nameplate Details -- 0009

Work Order ..... 1234-EPM-2009  
Customer ..... Sample Customer  
Site Name ..... 1234 Your Place  
Location ..... 2nd floor electric room  
Equipment Tag ..... 0009  
Equipment Type .... Branch Circuit Breaker Panel  
Manufacturer ..... Siemens  
Category ..... Panels

### Description:

Panel L2

### Comments:

Attribute	Value
Voltage Rating	120/208 Volts
Bus Rating	225 Amps
Main Breaker Type or MLO	MLO
Main Conductor Size	1/0 gauge
Neutral Conductor Size	1/0 gauge

Attribute	Value
Branch Breaker Type	BA
Breaker Poles/Spaces - Total	42
Breaker Poles/Spaces - Used	40
Breaker Poles/Spaces - Spare	2

## Measurements

Measurement	Value
RMS Voltage Phase A-B	208.7 Volts
RMS Voltage Phase B-C	207.5 Volts
RMS Voltage Phase C-A	207.9 Volts
RMS Voltage Phase A-Neutral	122.1 Volts
RMS Voltage Phase B-Neutral	121.4 Volts
RMS Voltage Phase C-Neutral	121.8 Volts

Measurement	Value
RMS Voltage Neutral-GND	1.1 Volts
RMS Current Phase A	48.5 Amps
RMS Current Phase B	32.8 Amps
RMS Current Phase C	75.1 Amps
RMS Current Neutral	15.8 Amps
RMS Current GND	1.5 Amps



# Equipment Measurements Job # 1234-EPM-2009



## Nameplate Details -- 0010

Work Order ..... 1234-EPM-2009  
Customer ..... Sample Customer  
Site Name ..... 1234 Your Place  
Location ..... 2nd floor electric room  
Equipment Tag ..... 0010  
Equipment Type .... Branch Circuit Breaker Panel  
Manufacturer ..... Cutler Hammer  
Category ..... Panels

### Description:

Panel L2A

### Comments:

Attribute	Value
Voltage Rating	120/208 Volts
Bus Rating	100 Amps
Main Breaker Type or MLO	ML
Main Conductor Size	4AL gauge
Neutral Conductor Size	4AL gauge

Attribute	Value
Branch Breaker Type	CH
Breaker Poles/Spaces - Total	42
Breaker Poles/Spaces - Used	42
Breaker Poles/Spaces - Spare	0

## Measurements

Measurement	Value
RMS Voltage Phase A-B	205.9 Volts
RMS Voltage Phase B-C	205.0 Volts
RMS Voltage Phase C-A	206.1 Volts
RMS Voltage Phase A-Neutral	118.2 Volts
RMS Voltage Phase B-Neutral	117.9 Volts

Measurement	Value
RMS Voltage Phase C-Neutral	118.2 Volts
RMS Current Phase A	4.6 Amps
RMS Current Phase B	1.5 Amps
RMS Current Phase C	0.4 Amps
RMS Current Neutral	2.5 Amps



**Equipment Measurements**  
**Job # 1234-EPM-2009**



**Nameplate Details -- 0011**

**Work Order** ..... 1234-EPM-2009  
**Customer** ..... Sample Customer  
**Site Name** ..... 1234 Your Place  
**Location** ..... 2nd floor electric room  
**Equipment Tag** ..... 0011  
**Equipment Type** .... Combination Motor Starter  
**Manufacturer** ..... Cutler Hammer  
**Category** ..... Motors

**Description:**

*Motor #3*

**Comments:**

Attribute	Value
Voltage	480 Volts
Current	60 Amps
Conductor Size	6 kcmil
Horsepower	5 Hp

Attribute	Value
Contactor Size	2
Fuse Type	frn45
On/Off Mechanism (Manual/Auto)	auto



# Equipment Measurements Job # 1234-EPM-2009



## Nameplate Details -- 1123

Work Order ..... 1234-EPM-2009  
Customer ..... Sample Customer  
Site Name ..... 1234 Your Place  
Location ..... 3rd floor electric room  
Equipment Tag ..... 1123  
Equipment Type .... Distribution Panel  
Manufacturer ..... Square-D  
Category ..... Panels

### Description:

HV-3

### Comments:

Attribute	Value
Voltage Rating	480/277 Volts
Bus Rating	1200 Amps
Main Breaker Type or MLO	TKN3F1200
Main Conductor Size	4x350 gauge

Attribute	Value
Breaker Poles/Spaces	42
Breaker Poles/Spaces Used	12
Breaker Poles/Spaces Spare	30
AIC Rating	10000 Amps

## Measurements

Measurement	Value
RMS Voltage Phase A-B	492.3 Volts
RMS Voltage Phase B-C	492.2 Volts
RMS Voltage Phase C-A	491.0 Volts
RMS Voltage Phase A-Neutral	282.7 Volts
RMS Voltage Phase B-Neutral	284.8 Volts
RMS Voltage Phase C-Neutral	285.2 Volts

Measurement	Value
RMS Current Phase A	428.2 Amps
RMS Current Phase B	415.8 Amps
RMS Current Phase C	404.6 Amps
RMS Current Neutral	21.4 Amps
RMS Current GND	0.5 Amps





37277 East Richardson Lane  
Purcellville, VA 20132  
Voice: 540-338-2344  
Fax: 540-338-8990  
[www.beckstromelectric.com](http://www.beckstromelectric.com)

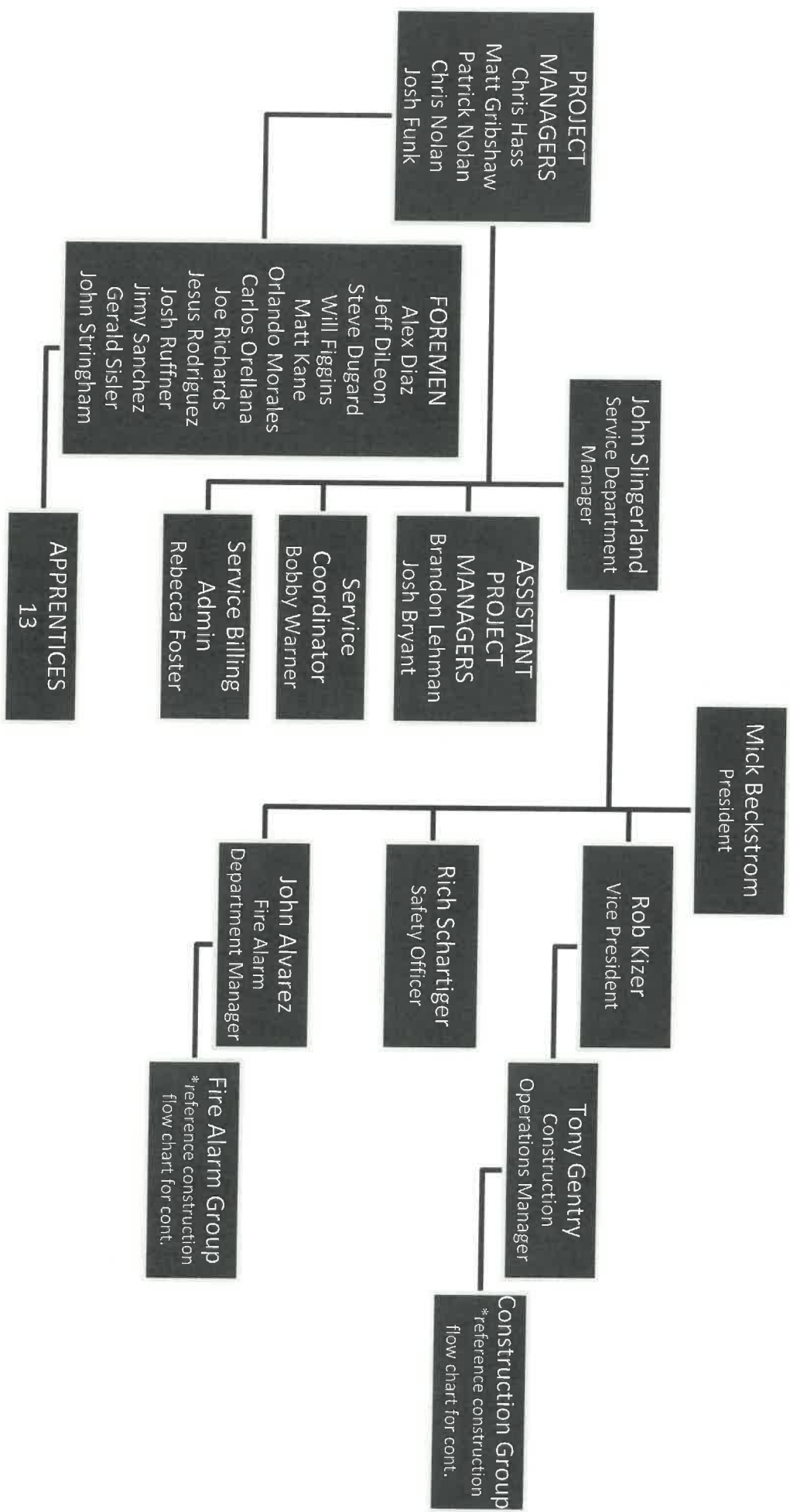
## *Beckstrom Electric's promise and pledge*

As your Predictive Maintenance Provider, we will provide you with the most comprehensive solutions for all your power needs.

### ***"We Pledge"***

- ☐ ***We will always be open and fair with you in all our dealings.***
- ☐ ***All our technicians will be highly trained to perform at the highest Standard.***
- ☐ ***All our recommendations will be provided with the intentions of assuring Your electrical distribution system will be safe and reliable.***
- ☐ ***We will only use the most cutting edge technology and procedures.***
- ☐ ***We will be available to assist you with your Facilities Data Management Program at any time upon your request.***
- ☐ ***You will receive priority 24 hour emergency response.***
- ☐ ***We will keep in contact with you periodically to assist you with all your Electrical needs.***

# Beckstrom Electric Service Department Organizational Flow Chart



# DPOR License Lookup License Number 2710052455

## License Details

<b>Name</b>	KANE, MATTHEW PAUL
<b>License Number</b>	2710052455
<b>License Description</b>	Tradesman
<b>Rank</b>	Tradesman
<b>Address</b>	POTOMAC FALLS, VA 20165
<b>Specialties<sup>1</sup></b>	Journeyman Electrician (JELE) Master Electrician (MELE)
<b>Initial Certification Date</b>	2009-12-01
<b>Expiration Date</b>	2020-10-31

- 1 Refer to the Classification Definitions (<http://lis.virginia.gov/cgi-bin/legp604.exe?000+reg+18VAC50-22-20>) and Specialty Definitions (<http://lis.virginia.gov/cgi-bin/legp604.exe?000+reg+18VAC50-22-30>) for detailed definitions of these classifications and specialties.

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# DPOR License Lookup License Number 2710057148

## License Details

<b>Name</b>	WARNER, ROBERT MICHAEL
<b>License Number</b>	2710057148
<b>License Description</b>	Tradesman
<b>Rank</b>	Tradesman
<b>Address</b>	ASHBURN, VA 20147
<b>Specialties<sup>1</sup></b>	Journeyman Electrician (JELE)
<b>Initial Certification Date</b>	2012-02-27
<b>Expiration Date</b>	2020-02-29

- 1 Refer to the Classification Definitions (<http://lis.virginia.gov/cgi-bin/legp604.exe?000+reg+18VAC50-22-20>) and Specialty Definitions (<http://lis.virginia.gov/cgi-bin/legp604.exe?000+reg+18VAC50-22-30>) for detailed definitions of these classifications and specialties.

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# DPOR License Lookup License Number 2710051507

## License Details

<b>Name</b>	MENDEZ, MARIO G
<b>License Number</b>	2710051507
<b>License Description</b>	Tradesman
<b>Rank</b>	Tradesman
<b>Address</b>	STERLING, VA 20164
<b>Specialties<sup>1</sup></b>	Journeyman Electrician (JELE) Master Electrician (MELE)
<b>Initial Certification Date</b>	2010-10-28
<b>Expiration Date</b>	2020-01-31

- 1 Refer to the Classification Definitions (<http://lis.virginia.gov/cgi-bin/legp604.exe?000+reg+18VAC50-22-20>) and Specialty Definitions (<http://lis.virginia.gov/cgi-bin/legp604.exe?000+reg+18VAC50-22-30>) for detailed definitions of these classifications and specialties.

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# DPOR License Lookup License Number 2710047498

## License Details

<b>Name</b>	ALVAREZ, JOHN LAZARO
<b>License Number</b>	2710047498
<b>License Description</b>	Tradesman
<b>Rank</b>	Tradesman
<b>Address</b>	STERLING, VA 20166
<b>Specialties<sup>1</sup></b>	Journeyman Electrician (JELE) Master Electrician (MELE)
<b>Initial Certification Date</b>	2008-06-12
<b>Expiration Date</b>	2020-12-31

- 1 Refer to the Classification Definitions (<http://lis.virginia.gov/cgi-bin/legp604.exe?000+reg+18VAC50-22-20>) and Specialty Definitions (<http://lis.virginia.gov/cgi-bin/legp604.exe?000+reg+18VAC50-22-30>) for detailed definitions of these classifications and specialties.

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Firm Name Fairfax County Public Schools

Contact Dave Campbell

Title CFM E-mail Dlcampbell@fcps.edu

Mailing Address 8115 Gatehouse RD. Ste 3500 Falls Church ,VA 22042

Phone 571-423-2213 Fax \_\_\_\_\_

Type of Services Provided: Service work, School Renovation, New Construction

2. Firm Name INOVA

Contact Jim Mallen

Title Director of Engineering E-mail James.mallen@inova.org

Mailing Address 44045 Riverside Parkway, Leesburg VA 20176

Phone 703-858-6453 Fax \_\_\_\_\_

Type of Services Provided: Hospital Service, Renovations, New Construction

3. Firm Name Lockheed Martin

Contact William Albeck

Title Facility Engineer E-mail William.H.Albeck.jr@lmco.com

Mailing Address 13560 Dulles Technology Drive #225C Herndon VA 20171

Phone 703-466-2239 Fax \_\_\_\_\_

Type of Services Provided: Service work, Tenant Renovation, Lighting Retro

4. Firm Name Fairfax Radiology

Contact Diane Ginter

Title Operations E-mail Diane.ginter@frcpc.org

Mailing Address 2722 Merrilee Drive 230, Fairfax VA 22031

Phone 703-698-4444 Fax \_\_\_\_\_

Type of Services Provided: Service work, EM Calls, Tenant Renovations

# DPOR License Lookup License Number 2710026564

## License Details

<b>Name</b>	KIZER, ROBERT DAVIS
<b>License Number</b>	2710026564
<b>License Description</b>	Tradesman
<b>Rank</b>	Tradesman
<b>Address</b>	PURCELLVILLE, VA 20132
<b>Specialties<sup>1</sup></b>	Journeyman Electrician (JELE) Master Electrician (MELE)
<b>Initial Certification Date</b>	1995-11-21
<b>Expiration Date</b>	2019-07-31

- 1 Refer to the Classification Definitions (<http://lis.virginia.gov/cgi-bin/legp604.exe?000+reg+18VAC50-22-20>) and Specialty Definitions (<http://lis.virginia.gov/cgi-bin/legp604.exe?000+reg+18VAC50-22-30>) for detailed definitions of these classifications and specialties.

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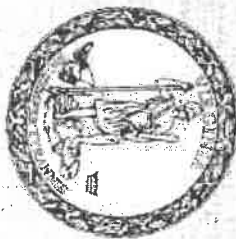
EXPIRES ON  
06-30-2020

# COMMONWEALTH of VIRGINIA

Department of Professional and Occupational Regulation  
9960 Mayland Drive, Suite 400, Richmond, VA 23233

Telephone: (804) 367-8500

NUMBER  
2705011774



BECKSTROM ELECTRIC CO  
37277 E RICHARDSON LANE  
PURCELLVILLE, VA 20132

BOARD FOR CONTRACTORS  
CLASS A CONTRACTOR  
\*CLASSIFICATIONS\* ELE

DPOR

Status can be verified at <http://www.dpor.virginia.gov>

*James W. DeLoach*  
James W. DeLoach, Director

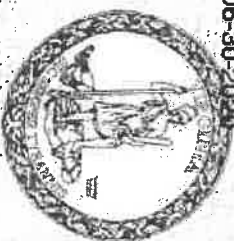
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Department of Professional and Occupational Regulation

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NUMBER: 2705011774 EXPIRES: 06-30-2020

BECKSTROM ELECTRIC CO  
37277 E RICHARDSON LANE  
PURCELLVILLE, VA 20132



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THANK YOU

on behalf of



**BECKSTROM**  
ELECTRIC

