CONTRACT# ELE/240667

Ken Rutter
Chief Operating Officer

April 24, 2024

Doug Peebles
Director
Ocala Electric Utility
201 SE 3rd St
Ocala, FL 34471

RE: Arc-Flash Hazard Assessment

Dear Mr. Peebles:

This letter will confirm the agreement between the Florida Municipal Power Agency ("FMPA") and the Ocala Electric Utility ("OEU") regarding OEU's Arc-Flash Hazard Assessment project.

FMPA has made arrangements with Patterson & Dewar Engineers, Inc. ("Consultant") to assist OEU conducting an arc-flash hazard assessment of OEU's electric system that will be used to adjust existing safety policy and ensure that personal protective equipment (PPE) is selected such that the City's employees are being appropriately protected.

The Consultant will perform the following tasks:

T1. Collect System Data from the City
T2. Kickoff Meeting with the City and FMPA
T3. Prepare Distribution System Model
T4. Determine Incident Energy Levels
T5. Review the City's PPE
T6. Submit Preliminary Results for Review
T7. Finalize Study

Deliverables for this project are:

D1. An electronic copy of the report
D2. WindMil models used in the analysis

Additional details, assumptions and responsibilities are described in the attached scope.

This project has a total, not to exceed amount of Forty-Eight Thousand Five Hundred Dollars ($48,500.00), which includes estimated expenses for the project.

In April 2022, the FMPA Board of Directors adopted "Amended Guidelines for Development of Member Services" ("Guidelines"), which provide for allocation of FMPA staff time costs to an individual member in the event that significant staff time is expected to be provided to such individual member. In accordance with these guidelines, FMPA has estimated its staff time associated with the support required for the work, and the estimated level of support falls below the 80-hour mark established by the Guidelines. Therefore, FMPA does not propose any direct charges to OEU for staff labor or expenses associated with FMPA's support role.

FMPA staff will assist in coordinating with Consultant, however, OEU is responsible for directing and monitoring Consultant's work. FMPA will pay Consultant's invoice, with approval from OEU, and issue an invoice to OEU for Consultant's billed hours plus Consultant's expenses. OEU hereby agrees to pay the invoice from FMPA within 30 days of receipt.

To acknowledge your agreement with the terms of this letter, please sign below as indicated in the signature block and return a fully executed letter to me.

Sincerely,

DocuSigned by:
5B40F13185DA46A...

Ken Rutter
Chief Operating Officer

ACCEPTED AND AGREED:

Signed by:
Janice Mitchell
55198B43858A4E1...

Janice Mitchell
Chief Financial Officer
City of Ocala

8/29/2024
Date

Approved as to form and legality:

DocuSigned by:
William E. Sexton
B07DCFC4E66E429...

William E. Sexton, Esq.
City Attorney

April 23, 2024

Mr. Angel Rivera-López
Engineering Services Manager
Florida Municipal Power Agency - Member Services
angel.riveralopez@fmpa.com

Mr. Rivera:

Patterson & Dewar Engineers, Inc. (P&D) is pleased to provide this proposal to Florida Municipal Power Agency (FMPA) to perform an Arc Hazard Assessment (AHA) for Ocala Electric Utility (OEU).

Our business is straightforward – P&D is an employee-owned firm that specializes in designing and evaluating vital power delivery infrastructures, and we truly understand the challenges our utility clients face when financing and delivering services. This focus allows us to be selective about the projects we pursue, the clients we serve, and the employees we recruit to build value-driven relationships that last a lifetime. Our clients enjoy direct access to knowledgeable and experienced engineers and technical staff who treat your project as if it were their own.

This proposal presents the scope, timeline, and cost for P&D to complete an AHA. Once all necessary system data is provided to P&D by FMPA/OEU, we can complete the analysis within 3 months.

Based on the scope and assumptions contained within this proposal, the cost for this assessment will be a fixed fee of **$48,500.**

If you have any questions about this proposal or would like further information about P&D, feel free to contact us at any time. Thank you for this opportunity.

Sincerely,
Patterson and Dewar Engineers, Inc.

Anthony Hanson, PE
Business Unit Leader, Substations
615-527-7084
ahanson@pdengineers.com

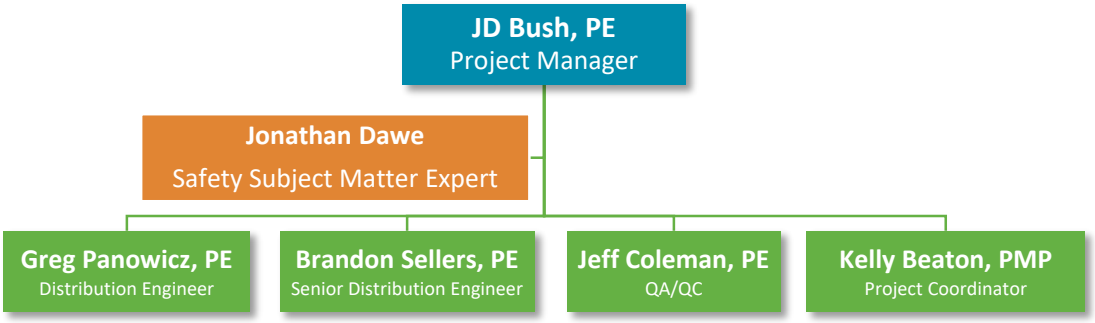
JD Bush, PE
Manager of Distribution and Planning
770-354-0568
jbush@pdengineers.com

Table of Contents

Firm Experience

Representative Project Team

Our team has an in-depth understanding of the challenges faced by electric utilities because we specialize in power distribution. Cross-functional teams focus their attention on clients who enjoy direct access to knowledgeable engineers and technical staff. Our employees have extensive experience with transmission, substation, and distribution engineering, site development, system planning and analysis, smart grid consulting, power studies, construction management, land and aerial surveying, testing and commissioning, and more. At P&D, we approach each project with the same objectives in mind: tailor a solution to the client's specific needs and exceed their expectations. We treat your project as if it were our own, providing hands-on management with a dedicated focus on quality control and continuous improvement. For this project, some of the primary individuals that we anticipate being involved are presented below:



JD Bush, PE

As project manager, JD will serve as the main contact between FMPA/OEU and the P&D team. JD will ensure that the project is on schedule and project milestones are being met. JD will serve as the lead engineer for the AHA and will attend all meetings with the client throughout the project along with internal meetings with the project team. JD is a distribution planning engineer with nine years in the electric utility industry. JD has worked on various planning studies for clients in Florida, South Carolina, Georgia, Alabama, Mississippi, Tennessee, Virginia, and Kentucky. He has served as project manager, lead engineer, and engineering support.

Jonathan Dawe, Ph.D.

Jonathan is an industrial safety, health, and environmental management professional with over 30 years of experience building and leading world-class industrial accident, injury, illness and property damage prevention processes, and OSHA/EPA/DOT compliance programs in manufacturing, construction, communications, electrical, and maritime environments. Jonathan will support the project by providing insight and direction on any regulatory compliance matters as well as providing recommendations on OEU's PPE selection as a result of the assessment.

Greg Panowicz, PE

As distribution engineer, Greg will participate in conducting engineering analysis and preparing report documentation. Greg has worked in the electric utility industry for over four years. He has experience in distribution planning performing LRPs, CWPs, sectionalizing studies, arc hazard studies, and other planning studies for clients in Alabama, Florida, Kentucky, South Carolina, and Tennessee.

Brandon Sellers, PE

As distribution engineer, Brandon will participate in conducting engineering analysis and preparing report documentation. Brandon has worked in the electric utility industry for over 10 years. He has experience in arc hazard assessments, distribution planning performing, long and short-range studies, contingency studies, power quality studies, VAR analysis, motor start studies, and other planning studies for utilities in Florida, Alabama, Mississippi, and Tennessee. He also has distribution line design experience.

Jeff Coleman, PE

Jeff will be responsible for providing a quality assurance check on all final documents before being submitted to OEU. Having a quality control check done by an engineer familiar with AHAs and distribution planning but having not been directly involved in the project allows P&D to ensure that we are delivering the best quality product to our client. Jeff is a principle engineer with 24 years of experience in the electric utility industry. Jeff has worked on studies for clients in South Carolina, Mississippi, and Virginia serving as the lead planning engineer, project manager, and quality control reviewer.

Kelly Beaton, PMP

As project support, Kelly will be responsible for editing and assisting in the development of all associated report documents for the AHA. Kelly has performed in this capacity on other similar projects with this same team.

About JD

Serving electric utility clients throughout the southeast, JD specializes in power distribution systems and infrastructure, distribution planning, and system protection.

Education

Bachelor of Science in Electrical Engineering
Georgia Institute of Technology

Licenses & Certifications

Licensed Professional Engineer
AL, GA, MS, TN, KY

Areas of Expertise

- Electrical engineering
- Utility system studies
  - Arc hazard assessments
  - Long-range system studies
  - Construction work plans
  - Coordination studies
  - Power supply studies
  - Load forecasts
- RUS requirements & guidelines
- Milsoft's WindMil® & LightTable® applications

Representative Project Experience

Construction Work Plan

Horry Electric Cooperative (South Carolina)

P&D developed a four-year work plan following the RUS guidelines and requirements to serve as the engineering justification for an RUS loan application. Recommendations developed to meet future system needs and to work towards long term goals identified in the long-range system study completed by P&D in 2022 included:

- Voltage conversion
- Line upgrades
- Substation recommendations
- Historical cost analysis and projections

The work plan also included a thorough sectionalizing review, identifying areas where ratings were being exceeded and making recommendations to solve any issues found.

Electric Vehicle Impact Study

Cumberland Electric Membership Cooperative (Tennessee)

P&D performed an impact study on the potential impacts that could be caused by increased Electric Vehicle (EV) adoption. In doing so, P&D studied and developed a loading model based upon consumer trends in charging electric vehicles. P&D further studied EV adoption in the state of TN and at a county level for the CEMC system. Based on this, an area of the CEMC system was identified to perform a series of analysis on to evaluate several potential outcomes. First, P&D studied a high density feeder, simulating random EV adoption among members. Various scenarios were evaluated, and varying adoption rates were simulated to identify potential shortcomings of the CEMC system. Additional case studies were performed on higher adoption rates on a single neighborhood or street, as well as multiple EV's served by a single distribution transformer. P&D also developed a list of recommendations for adjustment to operational and system planning philosophy in order to better prepare the cooperative for further EV adoption.

Long-Range system Study and Construction Work Plan

Cumberland Electric Membership Corporation (Tennessee)

P&D executed this 20-year study to examine existing load and growth patterns, as well as projected size, configuration, and characteristics of the system required to serve the anticipated load. Two alternative plans were identified and modeled for comparison. Based upon the utility's progress and long-term plans regarding voltage conversion, all plans included the full conversion of the system to 25 kV as well as distribution line upgrades, substation construction, and retirement of aged facilities. The recommended plan was then adopted, and a four-year work plan was developed in conjunction with the study that included:

- Voltage conversion
- Capacitor recommendations
- Substation recommendations
- Historical cost analysis and projections

Jonathan Dawe, Ph.D.
Safety Director

About Jonathan

Jonathan is an industrial safety, health, and environmental management professional with over 30 years of experience building and leading world-class industrial accident, injury, illness and property damage prevention processes, and OSHA/EPA/DOT compliance programs in manufacturing, construction, communications, electrical, and maritime environments.

Education

Doctor of Philosophy in Human Resource Development
Georgia State University

Master of Science in Human Resource Development
Georgia State University

Bachelor of Science in Psychology
Georgia State University

Licenses & Certifications

- Advanced Safety Certificate, National Safety Council
- American Red Cross First Aid/CPR/AED Instructor
- Hazardous Materials Management
- HAZMAT Specialist
- HAZMAT Technician

Professional Associations

- American Industrial Hygiene Association
- American Red Cross
- American Society of Safety Professionals
- National Safety Council

Areas of Expertise

- OSHA, EPA, and DOT Regulatory Compliance
- Worksite Analysis, Inspections, and Audits
- Hazard Identification, Prevention, and Control
- Safety, Health, and Environmental Training
- Property and Casualty Risk Management and Insurance
- Industrial Security and Loss Control

Representative Project Experience

OSHA/EPA/DOT Compliance
Designing, developing, and directing safety, health, and environmental regulatory compliance programs in union and non-union manufacturing, construction, substation, data center, fleet transportation, maritime, and corporate office environments across the United States, Canada, and Puerto Rico.

OSHA Voluntary Protection Program (VPP)
Implementing OSHA cooperative programs, including the Safety & Health Achievement Recognition Program (SHARP) and the Voluntary Protection Program (VPP) facility certification programs. Achieving OSHA, SHARP, and VPP STAR certification for industrial worksites across the United States.

Safety Project Management
Customizing safety project management activities and services to meet client needs while ensuring work is performed safely, timely, and within budget.

Safety, Health, & Environmental Training
Coaching and training executives, managers, supervisors, engineers, maintenance staff, technicians, and line workers in safety, health, and environmental topics and skills through classroom instruction, web-based learning platforms, seminars, and on-the-job training programs.

Safety, Health, & Environmental Audits & Inspections
Managing on-site safety, health, and environmental regulatory compliance inspections, audits, and evaluations to test the effectiveness of control systems and identifying areas of improvement while lowering incidence rates through hazard identification and abatement. Conducting mock OSHA inspections and developing inspection response plans. Performing safety and health due diligence assessments before facility builds, purchases, leases, decommissioning and closures as well as EHS evaluations for mergers & acquisitions.

Safety & Health Policy Development
Designing and writing safety and health policies, procedures, and programs, including:

- Accident Investigation
- First Aid/CPR/AED
- Ergonomics
- Hearing Conservation
- Lockout/Tagout
- Personal Protective Equipment (PPE)
- Emergency Preparedness & Evacuation
- Fire Prevention
- Hazard Communication (HAZCOM)
- Bloodborne Pathogens
- Hot Work
- Confined Space
- Contractor Safety
- Powered Industrial Trucks
- New Employee Safety Orientation
- Safety Toolbox Talks
- Safety Inspections
- Job Safety Analyses
- Safety Committees
- Safety Rules
- Electrical Safety Programs
- Security Protocols

About Greg

Greg specializes in the planning and design of power distribution systems for municipalities and electric cooperatives.

Education

Bachelor of Science in Mechanical Engineering
Auburn University

Licenses & Certifications

Licensed Professional Engineer
FL, GA

Areas of Expertise

- Electrical engineering
- Distribution planning
- Utility system studies
  - Arc hazard assessments
  - Construction work plans
  - Long range system planning
  - Coordination studies
  - Power supply studies
  - Load forecasts
- Distribution system design
- Proficiency with Milsoft's WindMil® & LightTable® applications
- RUS requirements & guidelines
- Underground cable ampacity and pulling tension calculations

Representative Project Experience

Long-Range Plan and Construction Work Plan
Gibson Electric Membership Corporation (Tennessee)
To determine the most economical plan for accommodating growth, P&D executed this 20-year study to examine existing load and growth patterns, as well as projected size, configuration, and characteristics of the system required to serve the anticipated load. Alternative plans were developed for comparison, which included voltage conversion, new substation construction, and distribution system upgrades for consideration. The most cost-effective plan was then adopted and a four-year work plan was developed in conjunction with the study that included model analysis on balanced system.

- Voltage conversion
- Substation recommendations
- Historical cost analysis

Construction Work Plan
Blue Ridge Electric Cooperative (South Carolina)
Blue Ridge Electric Cooperative (BREC) serves approximately 66,000 consumers with 7,100 miles of distribution line and 36 substations in north-western South Carolina. The four-year construction work plan included:

- Model analysis on unbalanced system
- Cost-effective alternative approaches to potential projects
- Distribution upgrades
- New distribution substations
- Existing substation modifications
- Environmental review

Long-Range Plan and Construction Work Plan
Mountain Electric Cooperative (Tennessee)
Mountain Electric Cooperative (MEC) serves approximately 36,000 consumers throughout northeast Tennessee and western North Carolina. Greg served as lead engineer on the project completing:

- Distribution upgrades
- Cost-effective alternative approaches to potential project
- Capacitor and regulator placement analysis
- Substation recommendations
- Evaluation of the 69kV system

Long-Range System Study
Lenoir City Utilities Board (Tennessee)
Lenoir City Utilities Board (LCUB) serves approximately 70,000 consumers in eastern Tennessee. The long-range system study included:

- Allocation by substation on a balanced system
- Distribution upgrades
- Load balance analysis
- Determining priority of upgrades over 20-year period
- Evaluation of the 69kV system
- Substation addition and modification recommendations

About Brandon

Brandon has over 10 years of experience in distribution planning. He specializes in long- and short-range load studies, VAR analysis, self healing network planning, contingency planning, storm hardening priorities, regulator placement and settings, capacitor placement and settings, and feeder modernization studies for utilities in Florida. He also has substantial storm restoration experience as well as line design experience.

Education

Bachelor of Science in Electrical Engineering
University of West Florida

Master of Business Administration
University of West Florida

Licenses & Certifications

Licensed Professional Engineer
FL

Areas of Expertise

- Distribution Planning
- Self-Healing Network Planning
- Contingency Studies
- Arc Hazard Assessments
- Long Term Work Plans
- Wire Ampacity Consulting
- Underground Cable Ampacity Studies
- Load Balance Studies
- Regulator Settings and Placement
- Capacitor Bank Settings and Placement
- VAR Studies

Representative Project Experience

Construction Work Plan
Baldwin EMC (Baldwin County, AL)
P&D developed a four-year work plan following RUS guidelines and requirements to serve as the engineering justification for an RUS loan application. Recommendations developed to meet future system needs and to work towards long term goals identified in the long-range system study included:

- Line upgrades
- Substation recommendations
- Historical cost analysis and projections
- Contingency analysis

Feeder Modernization
Gulf Power (Pensacola, FL)
After Gulf Power's planning philosophy changed in 2018, they needed an updated plan to get their current system up to date. Brandon designed and implemented a Model Feeder Criteria formula in order to create a Feeder Modernization plan that would properly address Gulf Power's heavily loaded substations, distribution feeders, and lack of contingencies. This enabled Gulf Power to properly prioritize distribution upgrades, getting feeders to an optimum operating state while also allocating a yearly budget to these projects and working with Special Projects to get these upgrades designed and ready to build. Recommended solutions included:

- Main line upgrades
- New substations
- New feeders
- Proper switch placement for contingency
- Tie line upgrades for contingency
- Regulator upgrades and placement
- Express settings for feeder injection

Navarre Feeder Modernization
Gulf Power (Navarre, FL)
Developed a 3-year plan to modernize the backbone of the Navarre area. This plan included 23 new reclosers and a new feeder. Once completed, it provided a network style self-healing network with over 40 switching points, n-1 contingency plans for all 10 feeders, and capacity analysis for every scenario.

Construction Work Plan
Gulf Power (Pensacola, FL)
Developed a 5-year work plan for Gulf Power's territory that included 285 different feeders. The report provided a detailed look into upcoming problems, including the risk associated with the growth rate of the downtown area. The work plan addressed all issues and provided timely solutions to ensure the proper infrastructure was in place to handle the area growth.

About Jeff

Jeff is a principal engineer with over 20 years in the electric utility industry, specifically with the South Carolina electric cooperatives. As the manager of engineering on a E&O leadership team, Jeff has had direct responsibilities with various aspects of power system analysis, operations and maintenance, and IT/OT systems on the distribution network. Jeff specializes in power distribution systems and infrastructure, distribution planning, and power quality.

Education

Master of Science in Electrical Engineering
University of Alabama

Bachelor of Science in Electrical Engineering
University of Alabama

Registrations/Certifications

Licensed Professional Engineer
SC

Professional Associations

Institute of Electrical and Electronics Engineers (IEEE)

National Society of Professional Engineers (NSPE)

Areas of Expertise

- Electrical engineering
- Utility system studies
  - Arc hazard assessments
  - Long range system studies
  - Construction work plans
  - Power supply studies
  - Renewables
  - Reliability & sectionalizing studies
- RUS requirements & guidelines
- Milsoft's WindMil® & LightTable® applications
- Project management
- Power quality
- Operational technology

As a Principle Engineer with expertise in power quality, Jeff supports the distribution planning team of P&D in many areas of system planning, such as:

- Long Range Engineering Plans
- Construction Work Plans & Amendments
- Sectionalizing Studies
- Distributed Energy Resources (DER) Impact Studies
- Arc Hazard Assessments (AHA)
- Environmental Reports
- Distribution Automation
- RUS Regulations & Standards

Jeff has the responsibility of Business Development in the South Carolina and surrounding states' Electric Cooperative and Municipal utility market. This is to grow the business and educate clientele on P&D services, provide and ensure adequate QA/QC for these services, and lead the effort in these services. Jeff serves as support personnel for these client projects from start to finish and delivers best-in-class solutions and technical expertise.

Representative Project Experience

Construction Work Plan

Blue Ridge Electric Cooperative (South Carolina)

Blue Ridge Electric Cooperative (BREC) serves approximately 66,000 consumers with 7,100 miles of distribution line and 36 substations in northwestern South Carolina. Jeff served as Project Manager for the completion of the four-year construction work plan, which included:

- Model analysis on unbalanced system
- Cost-effective alternative approaches to potential projects
- Distribution upgrades
- New distribution substations
- Existing substation modifications
- Environmental review

Distributed Generation (DG) Impact Studies

Served as lead engineer and project manager for the following projects:

- Shenandoah Valley Electric Cooperative – Virginia
- City of Maryville – Tennessee
- Pennyrile Rural Electric Cooperative Corporation – Kentucky
- City of Athens – Alabama
- 4-County Electric Cooperative (G&T) – South Carolina
  - Edisto Electric Cooperative
  - Palmetto Electric Cooperative
  - Tri-County Electric Cooperative
  - Marlboro Pee Dee Electric Cooperative

Sectionalizing Study

Taylor County Rural Electric Cooperative Corporation (Kentucky)

Served as Project Manager for P&D to prepare a distribution sectionalizing study, including the coordination and response of substation feeder protection equipment as well as distribution devices. P&D recommended:

- Replacement, removal, or relocation of existing devices
- Settings for new electronically controlled devices
- Installation of new devices in critical locations
- Ratings and overload issue mitigation

About Kelly

Kelly is a project manager with more than 17 years of experience supporting a diverse group of electrical and civil engineers, designers, and senior consultants on projects for cooperative, municipal, and investor-owned utility clients.

Education

Business Coursework
Amarillo College

Business Coursework
University of Phoenix

Licenses & Certifications

Project Management Institute
Project Management Professional (PMP)

Areas of Expertise

- Project integration & planning
- Scope management
- Cost management
- Schedule management
  (Primavera P6)
  (Microsoft Project)
- Resource management
- Risk management
- Project coordination
- Change order management
- Document control

Representative Project Experience

Kelly is a highly-trained administrator who serves on teams across multiple departments at P&D. She supports our Distribution Planning team by drafting and editing comprehensive reports and populating and automating extensive spreadsheets for Construction Work Plans (CWP), Long-Range System Studies (LRSS), and Load Forecasts, and works on Spill Prevention, Control, and Countermeasure (SPCC) Plans for our Civil team.

She also serves as project manager for a key P&D client, Xcel Energy, wherein she provides end-to-end project management, coordination, and leadership for all Texas and New Mexico Storm Water Pollution Protection Plan (SWPPP) projects. Kelly's responsibilities include estimating, project-level cost tracking and reconciliation, forecasting, scheduling, change management, resource management, and submittal processing. She conducts on-site visits and continually demonstrates her ability to lead and influence others with strong presentation and facilitation skills, excellent communication skills, and a thorough understanding of core business processes.

The following is a list of recent projects for which Kelly has served as the project manager/coordinator:

- T25 Demon Tap – Xcel Energy (SWPPP)
- Z74 HB Rebuild – Xcel Energy (SWPPP)
- Z63 Line Rebuild – Xcel Energy (SWPPP)
- J25 Line Capacity – Xcel Energy (SWPPP)
- V16 Line Rebuild – Xcel Energy (SWPPP)
- T60 Reconductor Line & Rebuild – Xcel Energy (SWPPP)
- V02 Highland Park Tap Rebuild – Xcel Energy (SWPPP)
- Z83 Kizer to Cox Line Rebuild– Xcel Energy (SWPPP)
- K97 Potter-Channing 230kV Re-term – Xcel Energy (T-Line)
- T06 Pringle-Spearman 115kV Re-term – Xcel Energy (T-Line)
- T07 Pringle-Riverview 115kV Re-term – Xcel Energy (T-Line)
- 2023 CWP – Wiregrass Electric Cooperative, Inc.
- 2023 FL17 CWP – West Florida Electric Cooperative Association
- Transmission System AHA – LG&E and KU Energy LLC
- 2023 AHA – Talquin Electric Cooperative, Inc.
- 2024 LRP & CWP – South Alabama Electric Cooperative

Project Overview

P&D understands FMPA would like a proposal for the completion of an Arc Hazard Assessment (AHA) for OEU's electric system that will be used to adjust existing safety policy and ensure that PPE is selected such that employees are being appropriately protected in accordance with OSHA requirements.

In our proposed analysis P&D will address all OEU-owned 69 kV lines, substations (of any voltage), and distribution lines. Additionally, analysis will be performed on 480 V distribution transformers. OEU intends to rely on the 2023 National Electric Safety Code (NESC) for assessment of all other low voltage facilities. It is our understanding that OEU-owned 230 kV lines are not worked on while energized and so will not be a part of any analysis. Analysis will be performed that will account for gloving (hands on), switching, and general proximity to an arc flash. General recommendations for mitigation of arc hazards will be included. This does not include the development of specific recommendations, such as protective relay setting changes. Results will be presented in the form of quantified incident energy levels. After the assessment has been performed, OEU has requested that the correct minimum PPE system be identified for each major working condition engaged in by OEU. The following summarizes the scope of the proposed assessment:

- Prepare WindMil engineering model for analysis
- Review substations, distribution lines, and secondary-level equipment as they pertain to arc hazards
- Review OEU owned 69 kV sub-transmission lines as they pertain to arc hazards
- Determine worst case incident energy levels for key locations
- Identify minimum required PPE for each working condition
- Written analysis report

Scope of Services

Task 1 – Collect System Data from OEU

OEU will provide P&D the following:

- [Already provided] WindMil model of distribution system, populated with:
  - Source Impedances
  - Functional working model/connectivity
  - Equipment defined and ready for analysis
- [Already provided] LightTable database as is
- [Already provided] Spreadsheet of current feeder protection settings
- Spreadsheet of OEU hot-line-tag settings
- ETAP model of 69 kV system
- 69 kV protection settings in spreadsheet form
- Substation Impedance info from OEU or power supplier (for use in calculating high side substation fault currents)
- Substation transformer information (nameplate)
- Substation bus protection settings information (LightTable database, Excel spreadsheet, or PDFs)
- Substation single line drawings
- Copy of any prior Arc Hazard Assessment
- OEU's current safety manual including all OEU PPE information and use information
- Details on customers on system with generation capability
  - Location
  - Generation capacity
  - Generator Step Up (GSU) transformer specs
  - Fault contribution
- List of distribution transformers utilized with size, minimum impedance, and associated fuses
- Procedures for hot-line work, switching, grounding, etc.

Task 2 – Kickoff Meeting with OEU

- Consult with the client on validity and acceptance of assumptions
- Confirm the timeline of the project and any other data needed for the project

Task 3 – Prepare Distribution System Model

- Step through OEU LightTable database and update as necessary and link to WindMil model
- Prepare simple substation models for analysis of substation incident energy
- Ensure customers with substantial generating capacity (estimated 1-2 customers) are properly modeled

Task 4– Determine Incident Energy Levels

- WindMil will be used to determine clearing times for the following areas
  - All substations (for low side)
  - Primary distribution line. This analysis will be done by running the following scenarios:
    - Analyzing a maximum fault located immediately outside of the substation
    - Analyzing a higher impedance (or further downline) fault to simulate maximum clearing time or limited to 2 seconds clearing (whichever is lower)
  - Analyze 480 V distribution transformers under two scenarios for each size utilized by OEU:
    - Infinite bus configuration
    - Higher impedance fault with maximum clearing time or limited to 2 seconds clearing (whichever is lower)
- The 69 kV system will be analyzed using data extracted from the ETAP model along with clearing times derived from a review of distance relay settings.
- Calculations will be done utilizing IEEE 1584-2018 and ARCPRO where appropriate and applicable per OSHA documentation
- All IEEE 1584-2018 calculations will be completed using WindMil
- Determine worst case incident energy levels for key locations
- Tabulate data for personnel use

Task 5 – Review OEU PPE

- Review OEU PPE policy and procedures and compare against the results of the assessment and OSHA requirements
- Provide recommendations on minimum baseline FR calorie ratings for standard OEU PPE
- Provide recommendations for OEU safety procedures for supplemental PPE based upon the results of the assessment and OSHA requirements

Task 6 – Submit Preliminary Results for Review

- Draft documentation will be sent to OEU for review
- Meet with OEU personnel to review and discuss results

Task 7 – Finalize Study

- Report will be adjusted based on OEU comments
- Once approved, P&D will certify the analysis
- Final deliverables will be sent to OEU

Project Deliverables

Following completion of the analysis, the following will be provided to OEU for review.

- An electronic copy of the report
- WindMil models used in analysis

Project Schedule

Once all necessary system data as outlined in Task 1 above is provided, the analysis can be completed within approximately 3 months.

Quality Control

P&D is dedicated to putting unparalleled effort into a project to serve our clients as an extension of their team. In order to do this, P&D approaches each project with an unyielding commitment to excellence and integrity. As a part of this, for each project, the assumptions, results, analysis, and reports will be thoroughly reviewed by a subject matter expert within P&D who was not involved in the development of the analysis. This individual will provide the project team with feedback to ensure that we provide the client with a superior product.

Client References

Below is a list of clients that P&D has worked with recently on similar projects.

Horry Electric Cooperative

Contact: *Kevin Jordan, Supervisory Engineer*
843-369-6346 | kevin.jordan@horryelectric.com
Recent Projects: 2022 Construction Work Plan, Arc Hazard Assessment

Cullman Electric Cooperative, AL

Contact: *Justin Lee, Sr. Manager of Engineering & Technical Services*
(256) 737-3291 | JustinL@cullmanec.com
Recent Projects: Arc Hazard Assessment, One Ownership Studies

Fee for Services

The price below is a fixed fee for the scope of services listed herein. P&D's services will be provided based on the scope of services outlined herein and the anticipated level of effort. This fee includes reimbursable expenses. Additional services can be quoted separately upon request. Written authorization is required for work to proceed.

Project	Fee
Adjusting LightTable database	$3,500
Assessment of OEU system	$37,000
Preparation of PPE recommendations and review of safety procedures	$8,000
TOTAL	**$48,500**

Scope Assumptions

The price included in this proposal is based upon the following assumptions, in addition to those listed previously:

- Incident energy values will be calculated utilizing IEEE 1584-2018 for arcs 15 kV and below and ArcPro for arcs above 15 kV.
- Scenarios that'll be studied for primary voltage distribution line analysis:
  - If Hot-Line Tag settings or non-reclose are applicable in an area, only that scenario will be analyzed.
  - If device doesn't have Hot-Line Tag or non-reclose, worst case situation will be evaluated based on normal settings.
- Protection settings will be provided to P&D in an Excel spreadsheet.
- P&D will not be responsible for extracting settings from settings files or relays.
- P&D will not be collecting any field data.
- Analysis will not be conducted using IEEE 1584-2018 on any low voltage facilities outside of 480 V transformers.
- Analysis will not be conducted on 230 kV facilities.
- All meetings will be held via phone conference or Microsoft Teams (or similar product).
- It is not within the scope of this proposal to rework the analysis due to errors or inaccuracies in the data provided by OEU. If it is determined that portions of the analysis will have to be redone due to errors in OEU's model, settings sheets, or any other provided data, P&D and FMPA will then negotiate a change order to correct the analysis.

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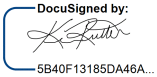
Ken Rutter ken.rutter@fmpa.com Security Level: Email, Account Authentication (None)	DocuSigned by:  5B40F13185DA46A...	Sent: 7/29/2024 2:23:31 PM Viewed: 8/5/2024 9:34:55 AM Signed: 8/6/2024 7:46:31 AM
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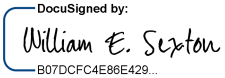
William E. Sexton wsexton@ocalafl.org City Attorney City of Ocala Security Level: Email, Account Authentication (None)	DocuSigned by:  B07DCFC4E86E429...	Sent: 7/29/2024 2:23:32 PM Resent: 8/6/2024 7:46:32 AM Viewed: 8/23/2024 11:49:59 AM Signed: 8/29/2024 10:27:57 AM
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Intermediary Delivery Events	Status	Timestamp

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Envelope Summary Events	Status	Timestamps
Envelope Sent	Hashed/Encrypted	7/29/2024 2:23:33 PM
Envelope Updated	Security Checked	7/29/2024 2:32:52 PM
Envelope Updated	Security Checked	7/29/2024 2:32:52 PM
Certified Delivered	Security Checked	8/29/2024 4:20:03 PM
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