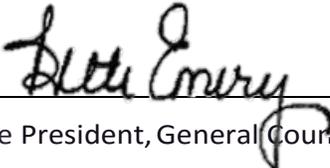


Mid-Atlantic MCN, LLC
Greenfield Project Proposal for
Project C
Submitted to:
PJM Interconnection, LLC
April 1, 2016
For 2016 RTEP Proposal Window 1

SIGNATURE PAGE

Approvals:

Noman Williams  _____ April 1, 2016
Senior Vice President, Chief Operating Officer Date

N. Beth Emery  _____
Senior Vice President, General Counsel & Secretary Date

Inquiries:

Questions and comments regarding this document should be referred to:

Noman Williams
Senior VP, Engineering & Operations, COO
Mid-Atlantic MCN, LLC
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A. EXECUTIVE SUMMARY

Mid-Atlantic MCN, LLC (Mid-Atlantic MCN) is pleased to submit for consideration in the 2016 Regional Transmission Expansion Plan Proposal Window 1 Project C. As requested by PJM Interconnection, LLC (PJM), Mid-Atlantic MCN has organized this proposal in conformance with PJM's Greenfield Project Proposal Template.

- **Name of proposing entity:**
 - Mid-Atlantic MCN, LLC
 - 2 N. LaSalle Street
 - Suite 420
 - Chicago, IL 60602

- **Proposal Window and associated violation/issue being addressed**
 - **Identify the type of regional/interregional analysis or process that identified the violation/issue:**
 - 2016 RTEP Proposal Window 1

- **Violations caused by proposal/nearby violations not addressed by your proposal**
 - This proposal addresses the generator deliverability flowgate overloads on the Chesterfield – Messer – Charles City 230 kV facilities except for generator deliverability flowgates 61 and 71.

- **Identify projects that span (e.g. ties between or taps) between two PJM Transmission Owner zones or between PJM and a neighboring Balancing Authority. This group includes transmission that spans two or more affiliated companies (e.g. Meted and Allegheny Power).**
 - This project does not span two PJM Transmission Owner zones or between PJM and a neighboring Balancing Authority.

- **Indication of intentions to construct/own/operate/maintain**
 - Mid-Atlantic MCN, LLC intends to construct, own, operate and maintain this Project.

- **Description of the proposed solution and corresponding violation(s) it resolves.**
 - Project C is a new East Highland Park 500/230kV substation connecting the Elmont to Chickahominy 500 kV line, and Lakeside to Charles City 230 kV line through a 350 MVA phase shifting transformer. Project C resolves violations on generator deliverability flowgates 60, 62, 66, 68, 70, 72, 76, 78, 248, and 249, overloads on the Chesterfield – Messer – Charles City 230 kV facilities.

- **Description of how the project should be considered; only as a whole or if portions of the project should be considered as well. (Separable portions/combinations should be submitted as separate proposals. If a proposal is submitted with multiple options, PJM will split it into multiple proposals. PJM reserves the right to select the best project, regardless of how it is packaged by proposing entities.)**
This Project C should be considered separately or alternatively combined with Project B as submitted as Project A.
- **High Level overview of cost and cost commitment.**
Mid-Atlantic MCN estimates the cost of Project C as \$26 million including costs for other entities and committed to cost containment by agreeing to cap the capital expenditures that it seeks rate recovery of to \$24.8 million in 2016 dollars and \$27.1 million in year of occurrence dollars.
- **Additional benefits of your proposal above solving the identified violation/constraints.**
This Project provides no additional benefits to those identified above.

B. COMPANY EVALUATION INFORMATION

- **Name and address of the entity including a primary and secondary point of contact.**

Mid-Atlantic MCN, LLC
2 N. LaSalle Street, Suite 420
Chicago, IL 60602

The primary point of contact is:

Noman Williams
Senior VP, Engineering & Operations, COO
Mid-Atlantic MCN, LLC
2 N. LaSalle Street, Suite 420, Chicago, IL 60602
Phone: (785) 259-5110
Email: nwilliams@gridliance.com

The secondary point of contact is:

N. Beth Emery
Senior VP, General Counsel and Secretary
Mid-Atlantic MCN, LLC
2 N. LaSalle Street, Suite 420, Chicago, IL 60602

Phone: (210) 380-6599
Email: bemery@gridliance.com

- **Pre-qualification submittal identification number**

Mid-Atlantic MCN, LLC's Pre-qualification submittal identification number is 15-02.

- **Optional: Additional company information, not already included in the pre-qualification, relevant to the specific proposal project that demonstrates one or more of the following:**

- **Technical and engineering qualifications of the entity or its affiliate, partner, or parent company.**

In addition to the technical and engineering qualifications of Mid-Atlantic MCN's senior leadership team submitted in the pre-qualification process. Mid-Atlantic MCN has added additional internal resources with decades of technical experience developing, designing, constructing, operating and maintaining transmission and substation facilities:

Neal Chapman, Vice President Engineering

A. Transmission Project Development - LS Power Development, LLC and Affiliates

- a. Cross Texas – 236 miles of double circuit 345 kV transmission and new 345 kV switching station and 345 kV series compensation station.
- b. Artificial Island – New competitively bid 230 kV solution for PJM window addressing issues around Artificial Island nuclear plants.
- c. New York Energy Highway – Competitive solution in response to New York State's Energy Blueprint. Proposal consisted of 130 miles of 345 kV transmission in Upstate New York and the Hudson Valley.
- d. Delaney – Colorado River – Competitive proposal in response to CAISO RFP for construction of the Delaney – Colorado River 500 kV transmission project.
- e. Ft. McMurray West project – Competitive proposal in response to AESO RFP for construction of the Ft. McMurray West 500 kV transmission line.

B. Transmission Design – Ameren Services

- a. Multiple 110 kV to 345 kV re-build, re-conductor and greenfield transmission line projects.
- C. Transmission Maintenance – Ameren Services
 - a. Responsible for \$8 million annual budget for maintenance of 7000 miles of transmission facilities
 - b. Negotiate and manage internal and third party construction contracts and activities
 - c. Provide point of contact for easement encroachments and development with landowners, developers and state agencies
- D. Transmission and Distribution Design – City Utilities of Springfield, MO

Jim Useldinger, Vice President Operations

- A. Transmission Operations – Kansas City Power & Light Co.
 - a. Responsible for the reliable and safe operation of over 3300 miles of 345/161/69 kV transmission lines serving 820,000 customers in the Kansas City service area.
 - b. Subject matter expert for all transmission operations reliability compliance with respect to NERC Reliability Standards
 - c. Member of the SPP Operating Reliability Working Group (ORWG), member of the NERC Operating Committee (OC) and EMS Working Group (EMSWG)
- B. Transmission Planning – Kansas City Power & Light Co.
 - a. Responsible for the long-term transmission planning and operations planning functions of the KCP&L bulk transmission systems
 - b. Reliability analysis of bulk power transmission system, load serving system planning, and modeling

Rachel Hulett, Manager RTO Planning

- A. Transmission Planning – Southwest Power Pool
 - a. Planning studies for NERC Standards
 - b. SPP Transmission Expansion Plan studies
 - i. Integrated Transmission Planning
 - ii. SPP Priority Projects
 - iii. Balanced Portfolio
 - iv. Interregional Planning
 - v. Sub-Regional Planning
 - vi. SPP Tariff Attachment AQ
 - c. Transmission expansion project tracking

Eric Burkey, Manager RTO Planning

- A. Transmission Planning – Ameren Services
 - a. Ameren planning studies
 - i. NERC TPL Standards
 - ii. Economic
 - iii. Generation Interconnection
 - iv. Generation Deliverability
 - v. Load Addition
 - vi. Harmonic analysis
 - vii. Short circuit
 - b. Participation in MISO and SPP transmission studies
 - c. Participation in PJM Studies
 - i. Reliability Studies
 - ii. Market Efficiency Studies
 - d. Implementation of processes to support Order 1000
- B. Transmission Planning – Southwest Power Pool
 - a. Planning studies for NERC TPL Standards
 - b. Entergy SPP Cost Benefit Study
 - c. Entergy economic studies
 - d. Transmission Service studies

Randall Huisinga, Senior Substation Engineer

- A. Substation Design – Stanley Consultants
 - a. Iowa Fertilizer Plant 69 kV greenfield substation
 - b. Cross Texas – Two (2) new 345 kV nine position greenfield substations. 345 kV series capacitor installation, two circuits
 - c. University of Iowa – 15 kV switchgear replacement
 - d. ALCOA Warrick Aluminum Plant – 138 kV ring bus expansion, addition of two 138 kV circuit breakers, and addition of two 138/13.8/4.16 kV transformers
 - e. US Navy – 11 kV distribution system upgrade in Djibuti, Africa
 - f. Marshalltown, IA – Relocation of multiple transmission lines, 345 kV and 161 kV, to greenfield substations and 161 kV substation upgrade
 - g. NPPD – 115/69 kV and 115/34.5 kV substation expansions
 - h. Texas A&M University – 25 MVA, 138/12 kV transformer addition with switchgear and protective relay systems renovation
 - i. Great Lakes Naval Base – voltage regulator replacement
- B. Substation Design – ABB Inc.

- a. Multiple 115 kV to 345 kV upgrade and greenfield substation projects.

- o **Qualifications/partnerships for specific technical aspects of a proposal**

Mid-Atlantic MCN, with its internal personnel and through its agreements with third parties, including Public Power partners, legal and consulting firms, engineering companies, and construction companies, has access to the technical and engineering capabilities necessary to successfully sponsor projects in the PJM region.

At the core of Mid-Atlantic MCN’s qualifications is its executive management team, which has decades of experience managing the siting, permitting, engineering, procurement and construction of transmission projects. The management team consists of the following:

- President and CEO: Edward Rahill
- Senior Vice President, Engineering & Operations and COO: Noman Williams
- Senior Vice President Business Development: Carl Huslig
- Senior Vice President, General Counsel and Secretary: Beth Emery
- Vice President, Regulatory and Compliance: Trent Carlson
- Vice President, Operations: Jim Useldinger
- Vice President, Engineering: Neal Chapman
- Director, Transmission Planning: Jody Holland
- Manager, RTO Planning: Rachel Hulett
- Manager, RTO Planning: Eric Burkey

Successful competitive transmission development requires being able to manage a large number of major contractors, consultants, and suppliers. Mid-Atlantic MCN leverages its in-house experience and capabilities with major contractors, consultants and suppliers. Mid-Atlantic MCN combines individual contractor selection with alliance arrangements, based on the experience and qualifications of the contractors relative to the requirements of each individual project.

Mid-Atlantic MCN executives will manage a team of capable and competent internal resources and third party firms, with experience in transmission planning and engineering. Mid-Atlantic MCN has already entered into agreements with or engaged the following third parties:





Each of these entities brings proven experience, capabilities and competencies needed to provide technical and engineering services to Mid-Atlantic MCN as required by PJM in its designated entity pre-qualification process. Consequently, Mid-Atlantic MCN is well positioned to participate in PJM's competitive regional transmission expansion planning processes.

Mid-Atlantic MCN has identified the following team to lead this project.



- **Demonstrated experience of the entity or its affiliate, partner, or parent company to develop, construct, maintain, and operate transmission facilities. Including a**

list or other evidence of transmission facilities previously developed regarding construction, maintenance, or operation of transmission facilities both inside and outside of the PJM Region.

Ed Rahill, President and CEO

A. Transmission Project Development – ITC Holdings, LLC and Affiliates

- a. The acquisition, integration, and upgrade of the Michigan Electric Transmission Company (METC) and Alliant Energy transmission systems
- b. Development activities for the Green Power Express, a proposed \$12 Billion project to transport renewable power from the Upper Midwest to East
- c. The Michigan Thumb loop project
- d. The Iowa 34.5 kV rebuild
- e. “Hugo-Valiant,” a 19-mile, 345 kV project between Hugo and Valliant, Oklahoma, placed in service in the summer of 2012
- f. “KETA Project,” a 180-mile, 345 kV project between Spearville, Kansas, and Axtell, Nebraska, placed in service in December of 2012
- g. “Kansas V Plan,” an almost 200-mile double circuit 345 kV line, placed in service in 2014

Noman Williams, Senior Vice President and COO

A. Transmission Project Development – Sunflower Electric Power Corporation/Mid-Kansas Electric Company, LLC

- a. Holcomb Tie-Line #4 - 5.5 miles of new 115 kV transmission line and breaker position addition at the Holcomb 115 kV substation
 - i. Design Engineer
 1. Designed wood pole portion of line
 2. Managed and oversaw the design by consultant the steel pole portion of line.
 3. Design lead for substation addition
 4. Oversaw engineering design for protection and control systems
 - ii. Project Manager
 1. Developed and awarded contract for engaging engineering consultant for design and material specification
 2. Managed and developed material contracts and bidding process
 3. Developed and managed construction contract bidding and award

4. On-site construction manager
 5. Permitting
 - a. Acted as agent for right-of-way acquisition
 - b. Developed required RUS Borrower's Environmental Report which required coordination with several state and federal agencies
 - c. Developed required State of Kansas permits (EL, CC)
 - d. Developed storm water permits
 6. Managed final check-out and commissioning activities.
- b. Sagebrush Relocation – 8 mile 115 kV transmission line rebuild, reconductor and relocation
- i. Design Engineer
 1. Lead design engineer for project
 - ii. Project Manager
 1. Managed and developed material contracts and bidding process
 2. Managed construction activities of in-house construction
 3. Permitting
 - a. Acted as agent for right-of-way acquisition
 - b. Developed required RUS Borrower's Environmental Report which required coordination with several state and federal agencies
 - c. Developed required State of Kansas permits (EL, CC)
 - d. Developed storm water permits
 4. Managed final check-out and commissioning activities.
- c. Pioneer Tap 115 kV breaker additions
- i. Design Engineer
 1. Lead design engineer for substation physical work
 2. Oversaw substation electric design
 - ii. Project Manager
 1. Managed and developed material contracts and bidding process
 2. On-site construction manager
 3. Permitting
 - a. Developed required RUS Borrower's Environmental Report which required coordination with several state and federal agencies

- b. Developed storm water permits
 - 4. Managed final check-out and commissioning activities.
- d. Fletcher-Pioneer Project – 35 miles 115 kV transmission line with new Fletcher substation and modifications at Pioneer substation
 - i. Design Engineer
 - 1. Lead designed engineering for project
 - ii. Project Manager
 - 1. Developed routing alternative and hosted public meetings
 - 2. Developed and awarded contract for engaging engineering consultant for design and material specification
 - 3. Managed and developed material contracts and bidding process
 - 4. Developed and managed construction contract bidding and award
 - 5. On-site construction manager
 - 6. Permitting
 - a. Acted as agent for right-of-way acquisition
 - b. Developed required RUS Borrower’s Environmental Report which required coordination with several state and federal agencies
 - c. Developed required permits State of Kansas permits (EL, CC, crossing), county/local permits, railroad permits.
 - d. Developed storm water permits
 - 7. Managed final check-out and commissioning activities.
- e. Holcomb – Fletcher Project – 22 mile 115 kV transmission line rebuild and reconductor
 - i. Design Engineer
 - 1. Lead designed engineering for project
 - ii. Project Manager
 - 1. Developed routing alternative and host public meetings
 - 2. Developed and awarded contract for engaging engineering consultant for design and material specification
 - 3. Managed and developed material contracts and bidding process
 - 4. Developed and managed construction contract bidding and award

5. On-site construction manager
 6. Permitting
 - a. Acted as agent for right-of-way acquisition
 - b. Developed required RUS Borrower's Environmental Report which required coordination with several state and federal agencies
 - c. Developed required permits State of Kansas permits (EL, CC, road crossing), county/local permits, railroad permits.
 - d. Developed storm water permits
 7. Managed final check-out and commissioning activities.
- f. Hickok 115 kV Substation Project – Construction of a new 115/69/13.2 substation with 3 - 115 kV line terminals, 115/69 transformer, 115/13.2 transformer, 1 – 69 kV line terminal, 3.5 miles of new double circuit 115 kV transmission and 2.0 miles of new double circuit 115/69 transmission line.
- i. Design Engineer
 1. Lead design engineering for project
 - ii. Project Manager
 1. Developed routing alternative and host public meetings
 2. Developed and awarded contract for engaging engineering consultant for design and material specification
 3. Managed and developed material contracts and bidding process with engineering consultant
 4. Developed and managed construction contract bidding and award with consultant
 5. On-site construction manager
 6. Permitting
 - a. Acted as agent for right-of-way acquisition
 - b. Developed required RUS Borrower's Environmental Report which required coordination with several state and federal agencies
 - c. Developed required permits State of Kansas permits (EL, CC, road crossing), county/local permits, railroad permits.
 - d. Developed storm water permits
 7. Managed final check-out and commissioning activities.

- g. Hugoton Project – 45 mile, new 115 kV transmission line project (Pioneer-Hugoton-Walkemeyer) with new Hugoton 115/69 kV substation (2 – 115 kV line terminals, 2 – 69 kV line terminals, 115/69 kV transformer, 3 mile, new 69 kV transmission line, new City of Hugoton distribution substation, line terminal additions and modifications at Pioneer and Walkemeyer substations
 - i. Design Engineer
 - 1. Lead designed engineering for transmission line portion of project
 - 2. Managed engineering (internal and consultant) for substation design.
 - ii. Project Manager
 - 1. Developed routing alternative and hosted public meetings
 - 2. Developed and awarded contract for engaging engineering consultant for design and material specification
 - 3. Managed and developed material contracts and bidding process
 - 4. Developed and managed construction contract bidding and award
 - 5. Managed internal construction crews and on-site construction manager for project
 - 6. Permitting
 - a. Acted as agent for right-of-way acquisition
 - b. Provided oversight and supported development of required RUS Borrower’s Environmental Report which required coordination with several state and federal agencies
 - c. Developed required permits State of Kansas permits (EL, CC, road crossing), county/local permits, railroad permits.
 - d. Developed storm water permits
 - 7. Managed final check-out and commissioning activities.
- h. Johnson Corner 115/69 kV substation project, with 32 miles 115 kV line conversion and terminal addition at Syracuse substation
 - i. Design Engineer
 - 1. Managed the internal and consultant engineering
 - ii. Provide project oversight and managed the internal/external Project Managers for the substation and line design and construction activities:

1. For engaging engineering consultant for design and material specification
 2. Development of material contracts and bidding process
 3. Development of construction contract bidding and award
 4. Permitting
 - a. RUS Borrower's Environmental Report which required coordination with several state and federal agencies
 - b. Required permits State of Kansas permits, county/local permits, railroad permits as required
 - c. Storm water permits
 5. Managed final check-out and commissioning activities.
- i. Various 115 and 69 kV capacitor bank additions at Rhoades, Pioneer, Walkemeyer, Hickok, Johnston Corner, Harper, Pratt-River Road
- i. Design Engineer
 1. Managed the internal and consultant engineering
 2. Lead designed engineer for several projects
 - ii. Project Manager
 1. Developed and awarded contract for engaging engineering consultant for design and material specification
 2. Managed and developed material contracts and bidding process
 3. Developed and managed construction contract bidding and award
 4. On-site construction manager
 5. Permitting
 - a. Developed required RUS Borrower's Environmental Report which required coordination with several state and federal agencies
 - b. Developed required permits State of Kansas permits, county/local permits, railroad permits as required
 - c. Developed storm water permits
 6. Managed final check-out and commissioning activities.

Carl A. Huslig, Senior Vice President Business Development

A. Transmission Project Development – ITC Great Plains

- a. “Hugo-Valiant,” a 19-mile, 345 kV project between Hugo and Valliant, Oklahoma, placed in service in the summer of 2012
- b. “KETA Project,” a 180-mile, 345 kV project between Spearville, Kansas, and Axtell, Nebraska, placed in service in December of 2012
- c. “Kansas V Plan,” an almost 200-mile double circuit 345 kV line, placed in service in 2014

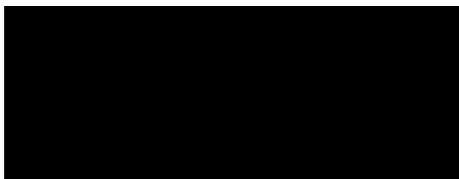
N. Beth Emery, General Counsel and Chief Compliance Officer

A. Transmission Project Development

- a. Supervised legal and regulatory team on development of CPS Energy’s 30-mile 345 kV Cagnon-to-Kendall line in Hill Country, Texas, overseeing
 - i. Siting process
 - ii. City Counsel determination of need
 - iii. Right-of-way acquisition
 - iv. Condemnation proceedings
 - v. Successful defense of multiple suits alleging violation of federal environmental rules

Mid-Atlantic MCN will also leverage its relationships with major contractors, consultants and suppliers for development, construction, operations and maintenance transmission experience. Mid-Atlantic MCN combines individual contractor selection with alliance arrangements, based on the experience and qualifications of the contractors relative to the work demands.

Mid-Atlantic MCN executives will manage a team of capable and competent internal resources and third party firms, with experience in development, construction, operations and maintenance of transmission. Mid-Atlantic MCN anticipates the following third parties being used for these services as they have already engaged them for other services:



Each of these entities brings proven experience, capabilities and competencies needed to provide transmission development, construction, operations and maintenance

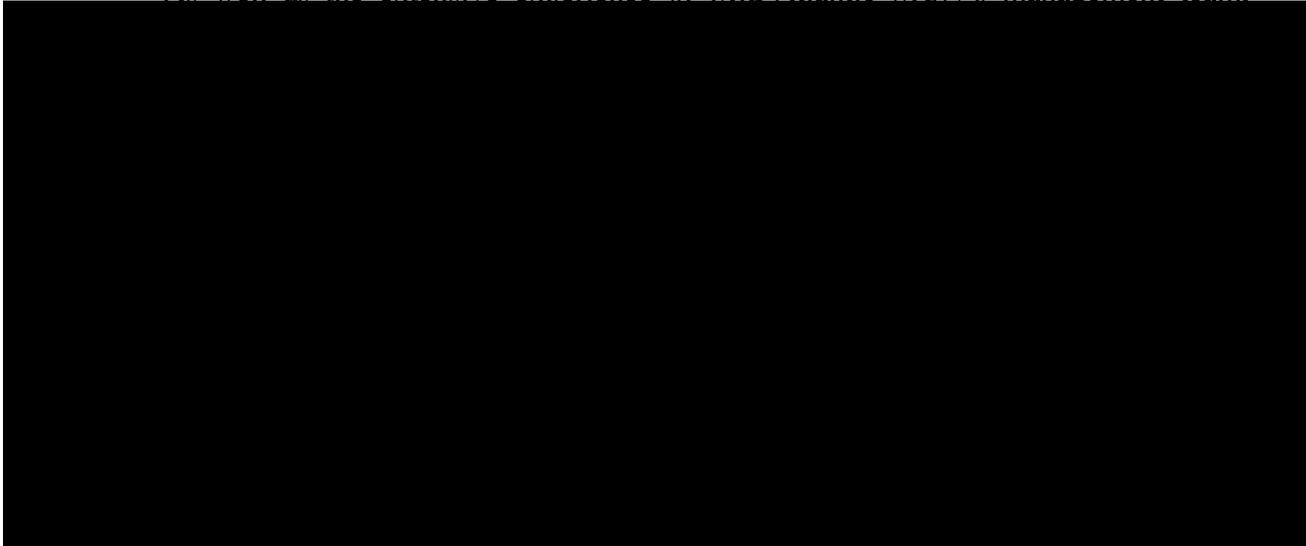
services to Mid-Atlantic MCN as required by PJM in its designated entity pre-qualification process.

○ **Previous record of the entity or its affiliate, partner, or parent company to adhere to standardized construction, maintenance and operating practices.**

The management team of Mid-Atlantic MCN has been involved with numerous projects that demonstrate its abilities to adhere to standardized construction, maintenance and operating practices including the following:

- i. Key support of the successful Artificial Island bid in PJM
- ii. Selection as one of the “new entrant” CREZ transmission providers in Texas
- iii. Successful development of the Hugo-Valiant 345 kV, KETA 345 kV, and Kansas V Plan projects
- iv. Development activities for the Green Power Express, a proposed \$12 billion project to transport renewable power from the Upper Midwest to East
- v. Michigan Thumb loop project
- vi. Demonstrated capabilities to be approved sponsors of project submittals in AESO, CAISO, ERCOT, FRCC, MISO, NYISO, and SPP

As well as the extensive experience of Mid-Atlantic MCN’s management team.



- **Capability of the entity or its affiliate, partner, or parent company to adhere to standardized construction, maintenance and operating practices.**

As described in detail in the responses above, the management team of Mid-Atlantic MCN includes years of proven experience in the construction, maintenance, and operations of transmission facilities throughout the US. Further, coupling the experience of the Mid-Atlantic MCN management team with qualified and experienced third party contractors, consultants and suppliers, the combined team will be matched with some of the best and most complete experience in the industry.

Mid-Atlantic MCN intends to utilize the experience of a specialized service provider truly capable of delivering a comprehensive and integrated set of transmission construction, maintenance and operations services, including key asset management and program management capabilities available on a 24/7 basis.

The Mid-Atlantic MCN project team will develop solutions grounded in technical best practices and practical experience resulting in the following benefits.

- Enhanced planning and decision making
- Optimized capital budgets
- Improved asset reliability
- Minimized life cycle costs
- Reduced TCO (total cost of ownership)

Mid-Atlantic MCN's team will design and construct its awarded transmission facilities in accordance with all applicable standards and criteria (including Local, State, Federal, Transmission Owner and PJM).

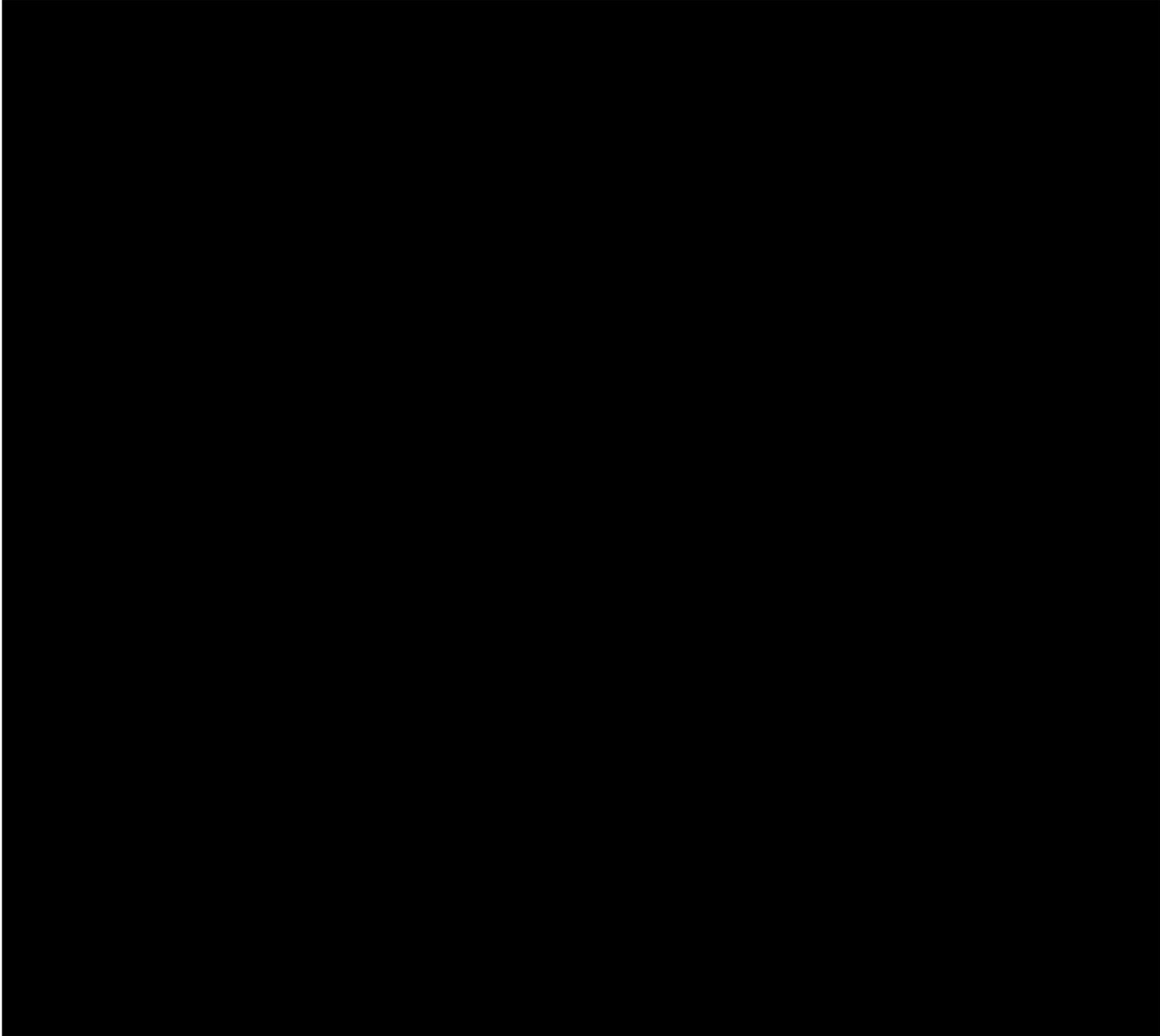
Mid-Atlantic MCN's detail-oriented management approach, dedication to safety excellence and commitment to total quality management provides an effective and efficient way to manage the program process. Experienced, certified project managers with proven track records for managing complex programs and projects are a critical part of our success in delivering a quality project on time and within budget.

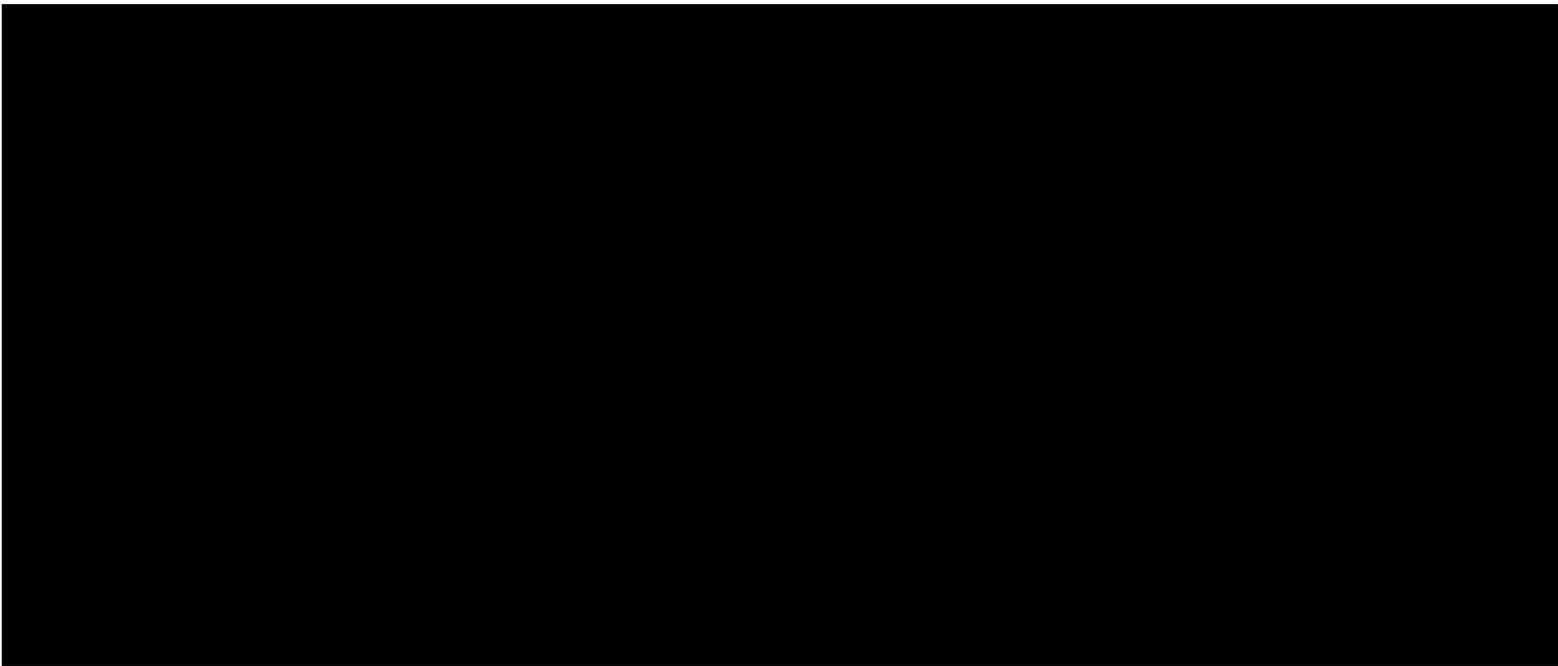
The key differentiator of successful projects lies in effective communication and clear understanding of the goals of the project. Each member of the team brings their expertise, experience and the resources necessary to bring the project to a successful completion. The team jointly develops a set of guidelines and procedures that outline the duties and responsibilities for each team member in the planning, construction, and close-out phases of the project.

The foundation for a successful project starts with early program planning. Early involvement at the preplanning phase of the program will enable Mid-Atlantic MCN to provide value with pre-construction planning, subcontracting services, cost control, scheduling coordination, quality assurance and safety.

Mid-Atlantic MCN's project management program will be a combination of the best practices and standards collected from both the experience and expertise from within its organization and those of its third party contractors, consultants, and suppliers. Our approach is different from other approaches in that it focuses on implementation and results rather than on technology.

In addition to Mid-Atlantic MCN's capabilities, our strategic partner [REDACTED] [REDACTED] has additional capabilities as outlined below.





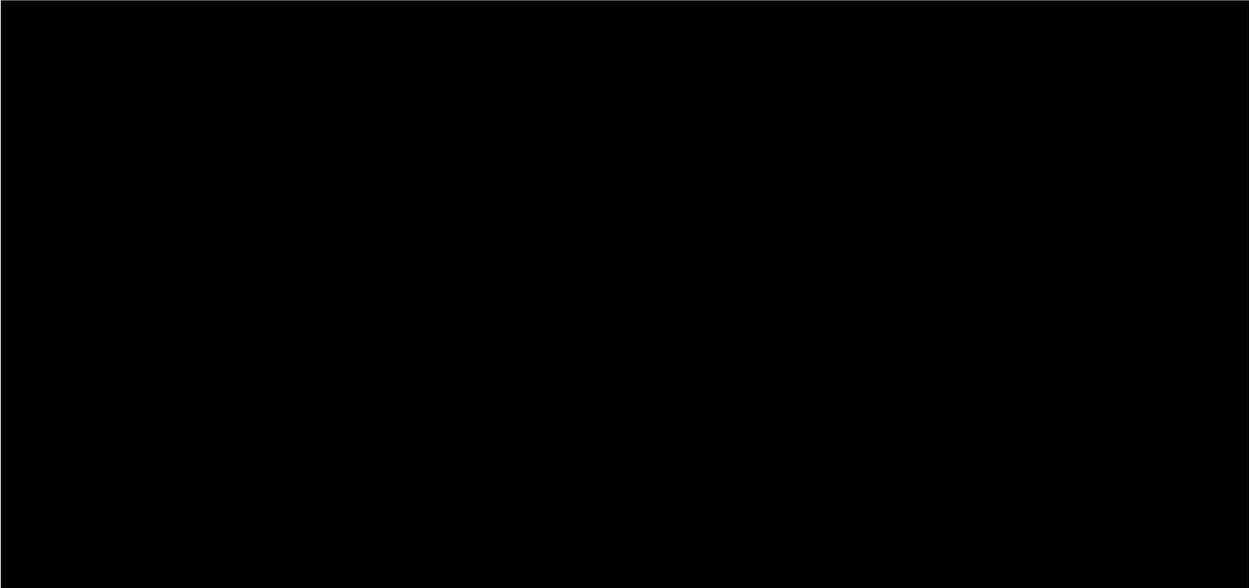
- **Financial statements of the entity or its affiliate, partner, or parent company. Please provide the most recent fiscal quarter, as well as the most recent three fiscal years, or the period of existence of the entity, if shorter, or such other evidence demonstrating an entity’s current and expected financial capability acceptable to the Office of the Interconnection.**

Mid-Atlantic MCN is a start-up in a family of start-up transmission development companies. None of the affiliates have utility assets to date, although closings on assets in SPP are expected within the next month. Thus, its financial statements are not helpful in showing its financial strength. Instead, the following information, which was provided for sister company Midcontinent MCN LLC in its successful application for qualification to bid for projects in MISO, is provided for this application.

The ultimate corporate parent of Mid-Atlantic MCN is GridLiance Holdco, LP. The parent’s general partner is GridLiance GP, LLC (GridLiance GP), which is wholly-owned and controlled by Blackstone Power & Natural Resources Holdco L.P. (Blackstone Power). Both Blackstone Power and GridLiance GP are owned and controlled by affiliates of the Blackstone Group (collectively, Blackstone). As described more fully below, Mid-Atlantic MCN’s capital procurement plan

[REDACTED]

[REDACTED]



The same is true for the acquisition of insurance and development of risk mitigation strategies. [REDACTED]

[REDACTED]

[REDACTED] For that reason, there is little chance that any project pursued by Mid-Atlantic MCN would at any time be in risk of not having proper insurance and risk mitigation strategies in place.

Blackstone is one of the world’s leading investment and advisory firms with an extensive track record of successful private equity investments. Blackstone currently has over \$280 billion in assets under management and is currently investing from its sixth general private equity fund, Blackstone Capital Partners VI, which has a fund size of \$16.2 billion. GridLiance is a portfolio company of Blackstone Capital Partners VI and its affiliated funds, and Blackstone (through Blackstone Power) has to date committed to fund at least [REDACTED] to the ultimate parent of the Mid-Atlantic MCN. Thus, assuming appropriate opportunities can be found, Mid-Atlantic MCN will have ample potential access to capital provided by Blackstone to compete for and complete transmission investments in the PJM control area and to adequately maintain and rebuild such facilities when necessary.

As the two years of audited financials of the Blackstone affiliates and evidence of current credit ratings (which are updated from what was provided to MISO), provided as Appendix C of Mid-Atlantic MCN’s QTD application, demonstrate, Mid-Atlantic MCN’s substantial and more than adequate financial backing for any project its board approves it to fund, makes it well qualified from a financial perspective.

This conclusion is also supported by looking at Blackstone’s track record in other domestic transmission and generation investments. For example, Transmission Developers Inc., a Blackstone portfolio company, is currently investing in the Champlain Hudson Power Express, a high-voltage direct current submarine power cable project linking the Montreal area to New York City. Construction for this project is estimated to be completed in 2017, and construction costs are estimated at \$2.2 billion for the section of the project located in the State of New York. In addition, Blackstone holds 100% of the interests in Lonestar Generation LLC, an entity that owns and operates four generating facilities in the Electric Reliability Council of Texas control area with a total capacity of 1,605 MW.

- **Commitment by the entity to execute the Consolidated Transmission Owners Agreement, if the entity becomes a Designated Entity.**

Mid-Atlantic MCN is committed to execute the Consolidated Transmission Owners Agreement when PJM selects Mid-Atlantic MCN as the Designated Entity to construct the Project.

- **Evidence demonstrating the ability of the entity to address and timely remedy failure of facilities.**

Mid-Atlantic MCN will always be prepared to address and timely remedy the failure of facilities. Whether we are talking about an emergency, equipment failure, or a major weather event, nothing is more important than getting power restored quickly, efficiently and safely. From ice storms to hurricanes to wildfires, Mid-Atlantic MCN will be prepared to remedy the failure quickly with an effective emergency response team composed of internal staff and third party contractors, consultants and suppliers.

Mid-Atlantic MCN’s control center and emergency response establishment will be staffed 24x7, 365 days a year and ready to respond to system emergencies at all times. Mid-Atlantic MCN’s contractors, consultants and suppliers will likely be the same folks that perform the regular operations and maintenance, so they will already be familiar with the transmission facilities. Mid-Atlantic MCN has already entered into agreements with or engaged the following third parties to support the remedy of any failed facilities:

[REDACTED]

As outlined below [REDACTED] brings proven experience, capabilities and competencies to

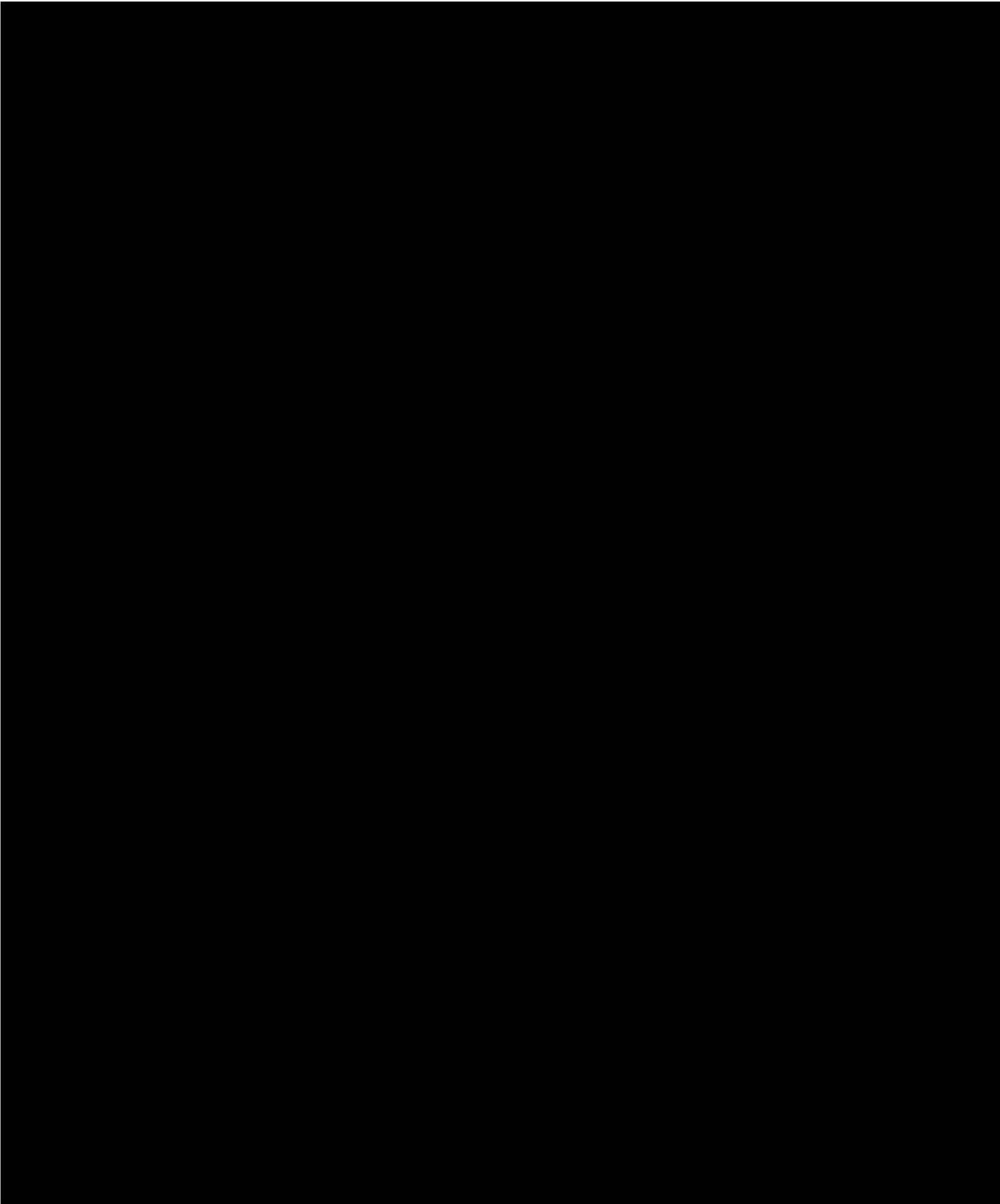
address and timely remedy the failure of any facilities as required by PJM in its designated entity pre-qualification process.

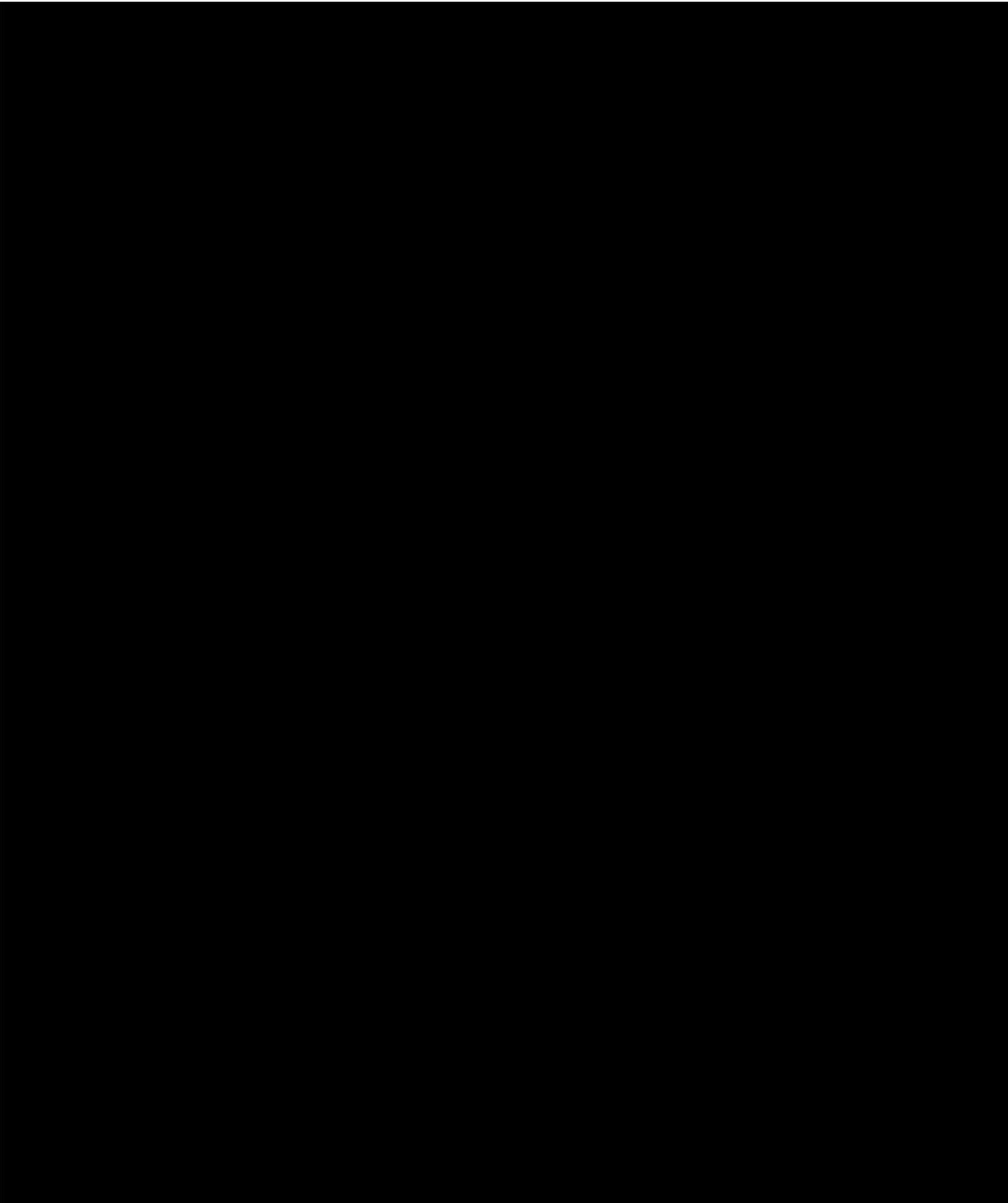
Mid-Atlantic MCN will work with its third party contractors, consultants and suppliers to size, procure and maintain a spare material and equipment specifically for failure response. The spare material and equipment will be sized based on plant in service and can be scaled as needed for coverage of the system.

When a failure does occur, Mid-Atlantic MCN's contracted response teams and assessors will be deployed to provide complete power restoration.

- i. Self-sufficient teams of expert first responders
- ii. Boots on the ground within 24 hours or less
- iii. From single crews to multiple organized teams
- iv. A fleet of off-road vehicles that can access the toughest, most remote areas
- v. Comprehensive disaster repairs and post-storm cleanup

The first step in a crisis situation is response planning. Mid-Atlantic MCN's third party contractor assessors are located throughout the PJM footprint and available for activation 24 hours a day, 7 days a week, 365 days a year. Once the assessors establish a recovery plan they manage the deployment of first-response crews, vehicles and equipment to tackle whatever problems there are, wherever they are. Mid-Atlantic MCN is well positioned to address and timely remedy a failure of a facility, whether as a result of a mechanical failure or major weather event.







- **Description of the experience of the entity in acquiring rights of way.**

Mid-Atlantic MCN’s management team has first-hand experience in performing right of way (ROW) acquisition in various regions in the US. Additionally, Mid-Atlantic MCN has strong relationships with third party contractors that have specific, relevant and local experience in the PJM region providing all aspects of ROW acquisition (including title research, cost appraisals, property valuations, ownership negotiations and securing easements). Mid-Atlantic MCN executives will manage internal resources and third party firms used in acquiring ROW associated with new transmission projects in the PJM footprint. Mid-Atlantic MCN anticipates the following third parties being options for these services as they have already engaged them for ROW services outside of PJM:



Each of these entities brings proven experience, capabilities and competencies to perform sensitive ROW negotiations as required by PJM in its designated entity pre-qualification process.

Additionally, the Mid-Atlantic MCN management team will work with third party contractors and legal firms to effectively manage the increasingly complex rules and regulations governing transmission project development and construction, securing all necessary permits to proceed with a project. Mid-Atlantic MCN’s team of internal and external resources have extensive experience in working with federal, state and local jurisdictions, as well as a thorough knowledge of the procedures, allowing us to successfully manage the permitting process. Mid-Atlantic MCN assures PJM that any transmission project awarded through a competitive process will be compliant with all jurisdictional requirements prior to construction.

C. PROPOSED PROJECT CONSTRUCTABILITY INFORMATION

- **Scope of Project**

Project C is a new East Highland Park 500/230 kV substation connecting the Elmont to Chickahominy 500 kV line, and Lakeside to Charles City 230 kV line through a 350 MVA phase shifting transformer.

- **Is this project being proposed as a solution to Cross-Border issues? (Stakeholder is responsible for initiating and satisfying all Regional and Interregional requirements.)**
 - **Is evaluation for Interregional Cost Allocation desired?**

Mid-Atlantic MCN is not desiring evaluation for Interregional Cost Allocation.
 - **Has the proposal been evaluated in a coordinated interregional analysis under PJM Tariff or Agreement provisions? Please specify the analysis and applicable Tariff or Agreement provisions.**

The Project has not been evaluated in a coordinated interregional analysis under PJM or Agreement provisions.
 - **List the specific Regional and Interregional violations and issues from the Regional and/or Interregional analyses that identified the violations and issues addressed by the proposal.**

This Project was developed to address generator deliverability flowgates 60, 62, 66, 68, 70, 72, 76, 78, 248, and 249.

- **Detailed breakdown of all proposal elements**
 - **General description**

Project C is a new East Highland Park 500/230 kV substation connecting the Elmont to Chickahominy 500 kV line, and Lakeside to Charles City 230 kV line through a 350 MVA phase shifting transformer.
 - **Geographic description**

The proposed East Highland Park substation is located in East Highland Park, Henrico County, VA. The geographic area surrounding the new East Highland Park substation is [REDACTED]. Impacts will be minimized by locating the new substation adjacent to [REDACTED] on high ground as to minimize [REDACTED]. Two eagle nests have been identified in the study area as shown in Appendix 5.

- **Route description including existing/new ROW, if new ROW is required details on obtaining land**
 - Assessment of environmental impacts related to all facilities (i.e. environmental impact study requirements, environmental permitting, sediment, and erosion control issues)
 - Right of way and land acquisition plan and approach for both public and private lands
 - Permitting plan and approach
 - Discussion of potential public opposition

The East Highland Park substation will require approximately five acres of land of which approximately three acres would be expected to be developed.

No acquisition of public lands is expected. Private land would be acquired in accordance with Virginia Law and Mid-Atlantic MCN's Land Rights Acquisition Plan by Mid-Atlantic MCN and its third party contractors.

- **Physical characteristic**

The East Highland Park substation will be a four position 500 kV ring bus connected to a four position 230 kV ring bus through a 350 MVA 500/230 kV phase shifting transformer. Both ring busses will initially utilize three positions for connecting to the existing lines and transformer with one position reserved for a future connection.

- **Maps and supporting diagrams**

See Appendix 3.

- **Specific location of interconnection with incumbent TO facilities and assumptions that were made for this proposal.**

The East Highland Park substation will be located [REDACTED]

- **Generation/Transmission outages required for construction, proposed coordination with Generation/Transmission owner.**

An outage of the Elmont to Chickahominy 500 kV line will be required to tap the line and make the termination into the new East Highland Park substation. This outage is expected to last two weeks. Following the termination of the Elmont to Chickahominy

taps, an outage of the Lakeside to Charles City 230 kV line would be required to tap the line and terminate the lines into East Highland Park substation. This outage is also expected to last two weeks.

- **Total cost of project and total cost for each major component (e.g. new transmission line, modification work at substation A, and modification at Substation B). If the cost for certain work is assumed to be provided by others and is not included in the total cost, indicate that scope as not included and to be estimated by other(s). This should include a breakdown of costs including but not limited to: Labor, Materials, Risk and Contingency, environmental mitigation costs.**

See Appendix 8.

- **Identification of construction responsibility of each component (e.g. Entity proposes to construct the new line from Substation A to B and upgrade work to interconnect new line at Substations A and B is assumed to be constructed by the substation owners.)**

Mid-Atlantic MCN proposes to construct the entirety of the East Highland Park substation with the owners of the Elmont to Chickahominy 500 kV, and Lakeside to Charles City 230 kV lines to split the lines and provide tapping structures and new conductor to connect to Mid-Atlantic MCN's new substation dead-end structures.

D. ANALYTICAL ASSESSMENT

- **Detailed analysis report on proposed solutions, including:**
 - **Breaker one-line diagrams to illustrate system topology and substation configuration**
See Appendix 2.
 - **Spreadsheets (e.g. Output of analysis showing solution to identified issue)**
See Appendix 1.
- **Equipment parameters and assumptions**
 - **All parameters (Ratings, impedances, mileage, etc.)**
See Appendix 4.
 - **For reactive devices, settings and outputs**
Not applicable
 - **For synchronous machines, MW and MVAR output assumptions**

Not applicable

- **All necessary PSS/E idex files or appropriate data to model upgrade**
See Appendix 4.
- **Any other supporting documentation required by PJM to perform verification review, that isn't explicitly stated in this document**
See Appendix 1.
- **Proposal Template spreadsheet (in excel format) including which flowgates your project is addressing, general scope, detailed solution components, total cost**
See Appendix 7.
- **Additional benefits of your proposal**
Mid-Atlantic MCN has not identified any additional benefits of this Project.

E. COST

- **All cost estimates shall include the following**
 - **Total cost in current year dollars**
 - **Total cost in In-Service year dollars**
 - **Yearly cash flow including escalation, taxes and financing costs**
 - **Detailed explanation of real and inflation components of escalation rates used**
See Appendix 8 for cost estimates of this Project. Mid-Atlantic MCN assumed a [REDACTED] inflation rate for escalation.
- **Detailed breakdown of cost of each element (Transmission and Substation)**
 - **Cost of materials and equipment**
 - **Cost of engineering and design**
 - **Cost of construction and commissioning**
 - **Cost of permitting/routing/siting**
 - **Cost of ROW/Land Acquisition**
 - **Cost of construction management**
 - **Company overheads or other miscellaneous costs**
 - **Cost of contingency**
 - **Assumptions of costs to be performed by incumbent TO**
 - **Planned return on equity (ROE), including any incentive adders the proposing entity intends seek**
Mid-Atlantic MCN has not yet filed a formula based rate (FBR) for the PJM RTO region. GridLiance has only filed and approved a FBR ROE in the SPP RTO region with a base ROE of 10.08% and a .50% RTO incentive adder for a total ROE of 10.58%. GridLiance anticipates receiving authorization to recover a similar ROE and incentive adder for the PJM and MISO regions.

- **Estimated monthly AFUDC for the project, even if the Proposing Entity intends to pursue a current cash return on CWIP during the construction period**
The estimated monthly AFUDC for the Project is [REDACTED]
- **Detailed breakdown of annual operation and maintenance (O&M) costs**
See Appendix 8 for detailed breakdown of costs of this Project and annual operations and maintenance estimates.
- **Clearly defined cost commitment**
 - **No “conditional upon other proposal” cost commitment**
 - **If proposing a cost commitment, you must provide a detailed scope of work that is subject to the cost commitment. Cost commitment can only be provided for work which the proposing entity may be designated**
 - **If proposing a cap on capital expenditures, provide the proposed cap on capital expenditures in present year dollars and year of occurrence dollars**
 - **If the Proposing Entity is proposing a cap on ROE, describe any conditions under which this ROE cap would not apply**
 - **Terms and conditions of the cost commitment, including any conditions under which the cost cap would not apply**
 - **Estimated Annual Transmission Revenue Requirement with Assumptions is suggested but not required. If provided, include the complete buildup of the annual revenue requirement including, at least: depreciation, cost of debt, return on equity, federal and state income tax, property tax, and other costs**
 - **Changing the scope of the cost commitment is considered a change to the proposal and will not be allowed**

Mid-Atlantic MCN’s cost containment commitment is to cap the capital cost for which it will seek rate recovery of to \$24.8 million in 2016 dollars and \$27.1 million in year of occurrence dollars.

This cap applies to the construction of the new East Highland Park substation and the Chesterfield to Tyler 230 kV transmission line. This cap does not include the portions of the project that are proposed to be constructed by others including:

- The installation of tapping structures in the Elmont to Chickahominy 500 kV and Lakeside to Charles City 230 kV transmission lines. Conductor and accessories required to connect the Elmont to Chickahominy 500 kV and Lakeside to Charles City 230 kV transmission lines to the new dead end structures the Mid-Atlantic MCN will provide in the East Highland Park substation.

Mid-Atlantic MCN considers this a binding cost commitment that should be applied to the evaluation of this Project subject to the following conditions:

- The project will be awarded to Mid-Atlantic MCN as proposed within twelve months of submission.
- Commodity prices (steel, aluminum, and copper), will not outpace typical inflation by more than two percent. Indexes will be negotiated.
- Typical inflation will not exceed four percent.
- No change in state, federal, or local law that will adversely affect Mid-Atlantic MCN's ability to obtain permits to construct or operate the Project, as submitted.
- Materials to construct the project will be readily available within historical timeframes.
- Labor markets will be functioning within typical norms (i.e. no strikes that would prevent Mid-Atlantic MCN from supplying construction resources).
- No adverse weather events will occur during the construction of the facilities that would require Mid-Atlantic MCN to re-construct the facilities
- Legal costs for defending Mid-Atlantic MCN's rightful selection to construct the project are not included.

F. SCHEDULE

- **Detailed conceptual schedule for proposed project**

See Appendix 6.

- **Environmental/routing/permitting**

See Appendix 6.

G. OPERATIONS/MAINTENANCE

- **Overview of plans for operations and maintenance**

- **Previous experience**

As described above, the management team of Mid-Atlantic MCN includes years of proven experience in the maintenance and operations of transmission facilities throughout the US including startup of new transmission owning utilities. Further, coupling the experience of the Mid-Atlantic MCN management team with qualified and experienced third party contractors, consultants and suppliers, the combined team will be some of the best and most experienced in the industry.

Mid-Atlantic MCN intends to utilize the experience of [REDACTED], a specialized service provider truly capable of delivering a comprehensive and integrated set of transmission construction, maintenance and operations services, including key asset management and program management capabilities available on a 24/7 basis.

The Mid-Atlantic MCN project team will develop solutions grounded in technical best

practices and practical experience resulting in the following benefits.

- Enhanced planning and decision making
- Optimized capital budgets
- Improved asset reliability
- Minimized life cycle costs
- Reduced TCO (total cost of ownership)

Mid-Atlantic MCN's detail-oriented management approach, dedication to safety excellence and commitment to total quality management provides an effective and efficient way to manage the program process. Experienced, certified project managers with proven track records for managing complex programs and projects are a critical part of our success in delivering a quality project on time and within budget.

The key differentiator of successful projects lies in effective communication and clear understanding of the goals of the project. Each member of the team brings their expertise, experience and the resources necessary to bring the project to a successful completion. The team jointly develops a set of guidelines and procedures that outline the duties and responsibilities for each team member in the planning, construction, and close-out phases of the project.

The foundation for a successful project starts with early program planning. Early involvement at the preplanning phase of the program will enable Mid-Atlantic MCN to provide value with pre-construction planning, subcontracting services, cost control, scheduling coordination, quality assurance and safety.

Mid-Atlantic MCN's project management program will be a combination of the best practices and standards collected from both the experience and expertise from within its organization and those of its third party contractors, consultants, and suppliers. Our approach is different from other approaches in that it focuses on implementation and results rather than on technology.

○ **Intentions for control center**

GridLiance is in the process of acquiring and/or constructing a control center to operate its assets. It is expected that such facilities will be operational well in advance of the 2020 target in-service date for this Project. Until such time as the new facilities are in operation Mid-Atlantic MCN intends to leverage existing relationships with development partners to provide control center services for its facilities.

○ **Maintenance contracts**

Mid-Atlantic MCN currently does not have assets in the eastern region of the PJM and therefore does not yet have maintenance resources identified for the projects in this proposal. However, Mid-Atlantic MCN has a long standing relationship with [REDACTED] and plans to leverage that relationship to provide the maintenance resources required for day to day, long-term and emergency restoration maintenance activities. Once awarded this project Mid-Atlantic MCN will begin the process of negotiating maintenance contracts with regional and national third party contractors. Mid-Atlantic MCN will have agreements in place well in advance of the 2020 target in-service date for this Project.