COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

Electronic Application Of Kentucky Power Company For A Certificate Of Public Convenience And Necessity To Perform Upgrade, Replacement, And Installation Work At Its Existing Substation Facilities In Perry And Leslie Counties, Kentucky	)))))	Case No. 2019-00154

APPLICATION

Kentucky Power Company ("Kentucky Power" or the "Company") moves the Public Service Commission of Kentucky (the "Commission") pursuant to KRS 278.020(2) and 807 KAR 5:001, Section 15 for a Certificate of Public Convenience and Necessity authorizing Kentucky Power to perform upgrade, replacement, and installation work in connection with facilities and equipment at Kentucky Power's existing Hazard 161/138/69 kV Substation ("Hazard Substation") and Wooton 161 kV Substation ("Wooton Substation") (the proposed work at the Hazard and Wooton substations collectively is designated as the "Project"). In support thereof Kentucky Power states:

Applicant

1. Kentucky Power is a corporation organized on July 21, 1919 under the laws of the Commonwealth of Kentucky. The Company currently is in good standing in Kentucky.[1]

[1] A certified copy of the Company's Articles of Incorporation and all amendments thereto was attached to the Joint Application in *In the Matter Of: The Joint Application Of Kentucky Power Company, American Electric Power Company, Inc. And Central And South West Corporation Regarding A Proposed Merger*, P.S.C. Case No. 99-149. The Company's June 25, 2019 Certificate of Existence is filed as **EXHIBIT 1** of this Application.

2. The post office address of Kentucky Power is 855 Central Avenue, Suite 200, Ashland, Kentucky 41101. The Company's electronic mail address is kentucky_regulatory_services@aep.com.

3. Kentucky Power is engaged in the generation, purchase, transmission, distribution and sale of electric power. Kentucky Power serves approximately 165,500 customers in the following 20 counties of eastern Kentucky: Boyd, Breathitt, Carter, Clay, Elliott, Floyd, Greenup, Johnson, Knott, Lawrence, Leslie, Letcher, Lewis, Magoffin, Martin, Morgan, Owsley, Perry, Pike, and Rowan. Kentucky Power also supplies electric power at wholesale to other utilities and municipalities in Kentucky for resale. Kentucky Power is a utility as that term is defined at KRS 278.010.

4. Kentucky Power is a wholly-owned subsidiary of American Electric Power Company, Inc. ("AEP"). AEP is a multi-state public utility holding company that includes utilities providing electric service to customers in parts of eleven states: Arkansas, Indiana, Kentucky, Louisiana, Michigan, Ohio, Oklahoma, Tennessee, Texas, Virginia, and West Virginia.

The Project

5. The Project consists of performing necessary upgrades and element replacement work, including the replacement of necessary communication and protection equipment, at the Hazard and Wooton Substations to: 1) bring the elements into conformity with current design and safety specifications; 2) replace failing and aging equipment; or 3) facilitate the implementation of the baseline projects that the Commission previously approved in Case No. 2017-00328.

6. The Commission granted a certificate of public convenience and necessity authorizing the construction of the Hazard – Wooton 161 kV transmission line and the replacement of the 161/138 kV single phase transformers at the Hazard Substation on March 16, 2018 in Case

No. 2017-00328. Both the Hazard – Wooton 161 kV transmission line and the 161/138 kV single phase transformers were approved by PJM Interconnection LLC ("PJM") as a Baseline project. On November 14, 2018, the Commission entered an order clarifying its March 16, 2018 order and its April 25, 2018 order granting partial rehearing, to the extent clarification was required, to grant Kentucky Power a certificate of public convenience and necessity to construct the reconfiguration of the Hazard – Jackson 69 kV line because the reconfiguration "is required to implement the Baseline project."[2]

7. The work that is the subject of this Application initially was presented to PJM stakeholders as part of the Company's proposed Supplemental Project on September 11, 2017, November 2, 2017, and December 18, 2017.

8. Some of the work at the Wooton Substation is required to implement the previously-approved Hazard Substation and Hazard-Wooton 161 kV transmission line Baseline elements. Some work at the Hazard Substation is required to implement the previously-approved new Hazard-Wooton 161 kV transmission line project.

9. Nine previously-identified Supplemental project components were resubmitted to PJM and reviewed with PJM stakeholders on April 23, 2019 to re-classify them as Baseline components. The project components were properly reclassified as Baseline because they are required to terminate the previously approved Hazard -Wooton 161 kV transmission line into both the Wooton and Hazard Substations. In conjunction with the nine elements reclassified as Baseline components, the remaining Wooton Substation and Hazard Substation elements that are the subject

[2] *In the Matter of: Electronic Application of Kentucky Power Company for a Certificate of Public Convenience and Necessity to Construct a 161 kV Transmission Line in Perry and Leslie Counties, Kentucky and Associated Facilities*, P.S.C. Case No. 2017-00328, Order (Nov. 14, 2018).

of this Application are required to permit Kentucky Power to continue to provide adequate, efficient, and reasonable service to its customers; to meet its obligation to make all reasonable efforts to prevent interruptions of service; and to meet its duty to reestablish service in the event of an outage with the shortest possible delay.

The Substations

A. The Hazard Substation.

10. The Hazard Substation is located at 1400 East Main Street, Hazard, Kentucky. The two-acre site within the fence of the Hazard Substation is physically constrained by existing development and the North Fork of the Kentucky River. The proposed improvements to the Hazard Substation will be contained within the existing substation footprint and no additional property will be acquired for the Hazard Substation in connection with the Project. The Hazard Substation originally was constructed in the early 1940s.

11. Six transmission circuits and three distribution circuits terminate at the Hazard Substation. The six transmission circuits that terminate at the Hazard Substation are:

(a) Hazard- Wooton 161 kV (part of the original baseline project);

(b) Hazard- Beckham 138kV;

(c) Hazard- Bonnyman 69kV #1;

(d) Hazard- Leslie 69kV;

(e) Hazard- Daisy 69kV; and

(f) Hazard- Bonnyman 69kV #2.

The three distribution circuits that terminate at the Hazard Substation are:

(a) Hazard- Blackgold 34.5 kV;

(b) Hazard- Hazard 12kV; and

(c) Hazard- Kenmont 34.5 kV.

The Hazard Substation distribution circuits directly serve approximately 1,800 customers and 30 MW of load.

The Hazard Substation's existing configuration also includes a spare distribution circuit termination point.

B. The Wooton Substation.

12. The Wooton Substation is located approximately one mile from the Perry County-Leslie County line on a half-acre parcel in northeastern Leslie County, Kentucky. The proposed improvements to the Wooton Substation will be contained within the existing footprint and no additional property will be acquired for the Wooton Substation in connection with the Project. The Wooton Substation originally was constructed in 2006.

13. Three transmission circuits terminate at the Wooton Substation:

(a) Hazard- Wooton 161 kV;

(b) Leslie-Wooton 161 kV; and

(c) Arnold/Delvinta (LG&E) - Wooton 161kV.

No distribution circuits terminate at the Wooton Substation.

Baseline And Supplemental Projects

14. PJM generally categorizes transmission projects based on the project's purpose as one of two types: Baseline or Supplemental. The designation of a project or project component as Baseline or Supplemental in turn determines the procedure by which PJM reviews a project. The designation of a project component as Baseline or Supplemental is not indicative of the level of, or absence of, need for the project (or elements of the project). Nor does the categorization of a transmission project or project element as Baseline or Supplemental distinguish between required and optional transmission projects and project elements. Instead, the designation simply reflects that the project satisfies different planning considerations. Both Baseline Projects (and project elements) and Supplemental Projects (and project elements) are required to provide adequate, efficient, and reasonable transmission service.

15. Baseline projects, regardless of whether their need is initially identified by PJM or by a transmission owner, are projects intended to eliminate base-case reliability criteria violations found in the PJM Regional Transmission Expansion Plan ("RTEP"), or otherwise needed under PJM's RTEP requirements. The applicable reliability and need criteria include North American Electric Reliability Corporation Transmission System Planned Performance standards, PJM Planning Manual criteria, Transmission Owner FERC 715 filings, market efficiency requirements, and operational performance requirements, among others.

16. Supplemental projects are transmission-owner identified projects that are intended to meet external and internal transmission needs. The external needs include customer-driven requirements (such as the EastPark Industrial Center project conditionally approved by the Commission in Case No. 2018-00072), as well as regulatory, environmental, compliance, and contractual requirements. Internal drivers for Supplemental Projects include safety, replacement

of aging infrastructure, upgrading outdated equipment, transmission performance enhancement, risk mitigation, and transmission grid resiliency requirements. Supplemental projects enable Kentucky Power to meet it statutory obligation under KRS 278.030(2), including its duty to provide safe and reliable service to its customers.

17. Supplemental Projects and project elements represent a portion of the same type and scope of replacement, upgrade, and system improvement work that Kentucky Power regularly undertook prior to joining PJM as part of the Company's efforts to meet its statutory duty to provide adequate, efficient, and reasonable service. Supplemental Projects and project elements also enable Kentucky Power to satisfy the assumption in the PJM's Baseline Project modeling that the Company's transmission system will perform as designed.

18. Individual transmission projects and project elements typically are classified by Kentucky Power as Baseline or Supplemental based on the predominant "drivers" for the project or project element. A Baseline Project or element may also address Supplemental requirements. Conversely, a Supplemental Project or project element may address Baseline requirements or may be required to implement Baseline project elements.

19. Under certain circumstances, and as is the case here, certain project elements can be classified as either Baseline or Supplemental, if the needs addressed concern both PJM's and the transmission owner's planning requirements. Because a project component can satisfy both baseline and supplemental drivers, its designation as Baseline or Supplemental in certain cases does not foreclose the equally proper designation of the project component as the other.

The Project Substation Elements

20. **EXHIBIT 2** identifies the Hazard and Wooton Substation elements that are the subject of this Application. **EXHIBIT 2** organizes the proposed Hazard Substation and Wooton Substation elements into groups. The elements within each of the groups operate in conjunction with or support the other elements in the group or an existing substation element. **EXHIBIT 3** is a "one-line drawing" illustrating the existing and proposed groups of equipment at the Hazard Substation and their relation to each other.

A. The Need For The Hazard Substation Project Elements.

21. The Hazard Substation project elements identified on **EXHIBIT 2** address one or more of the following requirements:

(i) They are required to implement the approved Baseline Project elements;

(ii) They are required to bring the existing station up to Kentucky Power and PJM current minimum design standards;

(iii) They are required to replace aging transmission substation infrastructure;

(iv) They are required to upgrade substation communications and protection equipment to current standards.

Please see **EXHIBIT 2** for further details supporting the function and need for each element.

1. Implementation Of Baseline Elements.

22. The following Hazard Substation project elements are required to implement or facilitate the Baseline project elements previously approved by the Commission in Case No. 2017-00328 and are now classified as Baseline elements by PJM:

(i) Replace and relocate 161kV Circuit Breaker (M) and associated line relaying pointing towards Wooton;[3] and

(ii) Installation of a low side 138 kV circuit breaker and upgrade relaying on the new 161/138 kV Transformer #3.[4]

23. The existing 161 kV Circuit Breaker (M) will be replaced and relocated to provide the required space to locate new transformer #3 that is being installed as part of the previously-approved Baseline project. The existing 161 kV Circuit Breaker (M) is 29 years old and has experienced fault operations in excess of the manufacturer's recommendations. Replacing the over 30-year old circuit breaker, and its associated relays, in connection with the move of the circuit breaker is prudent and appropriate given the maintenance and performance issues with the existing equipment.

24. The existing 1940's vintage single phase banks that make up Transformer #3 are being replaced by a three phase transformer as part of the Baseline project already approved by the Commission. A new 138 kV breaker with relay control on the low side of the transformer is necessary to permit the interruption of fault or load current on that side of the transformer to provide automatic, manual, and remote control of the breaker, and to provide proper sectionalizing to minimize the number of elements that must operate to clear a fault on the transformer. Under the existing configuration at Hazard Substation, the lack of the low side breaker on the transformer

[3] One-line identifier (1) on **EXHIBIT 2**.

[4] One-line identifier (2) on **EXHIBIT 2**.

requires an outage of every element tied to 138 kV bus #2 and 69 kV bus #2 in order to clear a fault on Transformer # 3.

2. Bring The Hazard Substation To Current Kentucky Power And PJM Minimum Design Standards.

25. Under the existing configuration, the failure of a single piece of equipment has the potential to cause the entire substation to suffer an outage, resulting in the potential loss of service to 1,800 customers directly served from the station, along with the fractionalizing of the six transmission circuits that terminate at the station. If the substation were constructed today, it would be configured as a closed ring bus providing multiple ties between buses for all conditions. It is necessary to sectionalize equipment in the substation to mitigate this risk.[5] The proposed design changes will provide increased reliability, operational flexibility, and efficiency in comparison to the existing configuration.

26. Kentucky Power also proposes to install a 69 kV circuit breaker connecting 69 kV Bus #1 and Bus #2 at the Hazard Substation to conform to minimum PJM and Kentucky Power design standards.[6] The installation of a 69 kV circuit breaker connecting 69 kV Bus #1 and Bus #2 at the Hazard Substation will allow for greater operational flexibility during maintenance activities and an abnormal system condition. The 69 kV bus-tie breaker will allow for either 138/69 kV transformer at Hazard station to source the four 69 kV transmission circuits in the event that the other 138/69 kV transformer is out of service due to maintenance or an abnormal system event.

[5] One-line identifier (19) on **EXHIBIT 2**.

[6] One-line identifier (12) on **EXHIBIT 2**.

27. Kentucky Power also proposes to install a 138 kV circuit breaker pointing towards Beckham Station. The new circuit breaker will provide separate dissimilar zones of protections as further described in Exhibit 2.

28. Known safety concerns in the substation must also be addressed to bring the substation into conformity with Kentucky Power safety standards. Although the station platforms were constructed in compliance with then applicable NESC requirements, many of the station platforms do not conform to current safety, clearance, or structural standards. For example, the existing decks do not allow for room in front of cabinets to step back in case of electrical flash or failures. All of the platforms in the yard will be replaced to current safety standards.

3. Asset Renewal And Replacement Of Aging Infrastructure.

29. The Hazard Substation was originally constructed in the early 1940's. Many of its components, including some of those components previously upgraded or replaced, are approaching or have exceeded their projected operating lives. Some components are no longer supported by their manufacturers, or are non-standard design and therefore are more difficult to maintain due to the lack or limited availability of spare parts. Other components are being replaced across the AEP transmission system because of operational issues. Additional components or their housings are suffering from corrosion, damage, and leaks that cannot be repaired. Multiple elements have suffered faults in excess of the manufacturers' recommendations and resulting damage and degradation.

30. The following Hazard Substation project elements address the asset renewal and aging infrastructure requirements of the Hazard Substation:

- Replace the breaker and relay control on the new transformer #3;
- Replace transformers #1& #2;
- Replace 69kV capacitor bank and switcher CC;
- Replace 138 kV capacitor bank and switcher BB;
- Replace 69 kV circuit breakers S, E, F;
- Replace 34.5 kV circuit breaker A; and
- Replace 12 kV circuit breakers C and D.

31. The need for the proposed replacement and upgrade of the elements listed in paragraph 30 is detailed in **EXHIBIT 2** at one-line identifiers (5) through (11), (15), (17), and (18).

32. A predicate to Kentucky Power's ability to provide adequate, efficient, and reasonable service as required by KRS 278.030(2) is the routine replacement and upgrade of aging and deteriorating substation elements. Delaying replacement of aging and deteriorating substation elements until the element fails can result in loss of service, environmental damage, and the creation of unsafe conditions.

4. Project Elements Required To Upgrade Or Improve Transmission System Communications.

33. The existing Hazard Substation predominately employs electromechanical and static relays to control the substation. The electromechanical relays that are currently utilized in the station are obsolete and in many cases are no longer supported by their manufacturer. Electromechanical relays have limited fault data collection and retention capabilities. In addition, electromechanical relays must be removed from service to test functionality. As a result, the

failure of an electromechanical relay is likely only to be discovered during a maintenance cycle or as a result of a fault condition that produces a substation mis-operation. Static relays involve concerns similar to those affecting electromechanical relays. Among other benefits, replacing the electromechanical relays and static relays with the current standard microprocessor-based relays and controls[7] will enable the substation to function more efficiently with less likelihood of mis-operations.

B. The Need For The Wooton Substation Project Elements.

34. The Wooton Substation elements for which approval is sought address either Supplemental elements required to implement the approved Baseline project or upgrade existing substation communications. The need for the proposed replacement and upgrade of the Wooton Substation elements is provided in Exhibit 2 at table identifiers A, B, and C.

35. The Wooton Substation elements required to implement the Baseline project elements previously approved by the Commission in Case No. 2017-00328 include the installation of surge arrestors on the 161 kV box bay and Hazard Line position and associated communication equipment. These elements were also reclassified as Baseline elements.

36. Two coupling capacitor voltage transformers (CCVTs) will be installed on Phase 2 and Phase 3 of the existing 161 kV bus at the Wooton Substation. Unlike the existing single phase CCVT arrangement, the CCVTs will provide three phase voltage sensing that meets industry-accepted protection and control standards.

[7] One-line identifiers (4), (13), (14), (16) and (19) on **EXHIBIT 2**.

Alternatives Considered

37. Kentucky Power considered whether the work associated with the Supplemental project elements identified above could be delayed and constructed at a time subsequent to the construction of the new Hazard – Wooton 161 kV line. Kentucky Power rejected delaying the upgrade and replacement of the Supplemental elements that are the subject of this Application because of: (a) the advanced state of deterioration of the components; (b) the increased costs and potential delays associated with a separate later scheduled outage; (c) the increased risk of loss of service in the event of equipment failure; and (d) the essential nature of the project elements reclassified as Baseline elements in implementing the previously-approved Hazard-Wooton 161 kV transmission line rebuild and other Baseline elements.

38. Kentucky Power also examined rebuilding the Hazard Substation at a different location. That alternative was determined not to be cost-effective. Existing development in the vicinity of the substation, coupled with the mountainous terrain and the substation's proximity to the North Fork of the Kentucky River, would have required that the new substation be located a significant distance from the existing substation. This in turn would have required the re-routing of the six transmission circuits and three distribution circuits that terminate at the existing Hazard Substation. Rebuilding the Hazard Substation at a different location is expected to be significantly more costly than the total proposed Hazard Substation work (including the replacement of Transformer #3 previously approved by the Commission).

39. Kentucky Power also evaluated rebuilding the 69 kV portion of the substation as a ring bus. This option was rejected as infeasible because of space-related constructability issues. It also would require unacceptable extended outages at the Hazard Substation. The equipment replacements proposed at Hazard Substation are the most cost-effective means of providing reliable electric service.

40. No cost effective alternative was identified to the proposed Wooton Substation work in light of the limited scope of work at the substation.

Plans, Specifications, And Maps

41. The map showing the location of the Hazard Substation as well as the location to scale of like facilities owned by others in the vicinity required by 807 KAR 5:001, Section 15(2)(d)(1) is attached as **EXHIBIT 4**. Plans, specifications, and drawings of the proposed equipment and facilities at the Hazard Substation are attached as **EXHIBIT 5.**

42. The map showing the location of the Wooton Substation as well as the location to scale of like facilities owned by others in the vicinity required by 807 KAR 5:001, Section 15(2)(d)(1) is attached as **EXHIBIT 6**. Plans, specifications, and drawings of the proposed equipment and facilities at the Wooton Substation are attached as **EXHIBIT 7**.

Financial Aspects Of The Project

43. The total estimated cost of the Project is $25.3 million. That sum comprises: (a) approximately $25.0 million for improvements at the Hazard Substation (not including the previously-approved improvements); and (b) approximately $0.3 million for improvements to the Wooton Substation.

44. Kentucky Power projects the annual operating cost for the Project will be approximately $12,000 for general maintenance and inspection. The projected annual additional ad valorem taxes resulting from the Project are expected to total approximately $37,950.

Property Acquisition

45. The proposed Hazard and Wooton substation improvements are contained within the existing substations' footprints and on Kentucky Power property. No additional right-of-way or property acquisition related to the Project is anticipated.

Notices

46. Kentucky Power filed its Notice of Election of Use of Electronic Filing Procedures on May 22, 2019. No other notices are required.

Franchises And Permits

47. Kentucky Power is not required to obtain a franchise from any public authority in connection with the proposed Project work. 807 KAR 5:001, Section 15(2)(b).

48. Kentucky Power will obtain all required environmental compliance permits and complete the required studies prior to beginning Project construction.

The Proposed Construction Is Required By The Public Convenience And Necessity

A. The Public Convenience And Necessity Requires The Planned Maintenance, Replacement, And Upgrade Of The Substation Components As Proposed By Kentucky Power.

49. Electrical substations like the Hazard Substation and the Wooton Substation are fundamental to Kentucky Power's ability to provide reliable, adequate, efficient, and reasonable service. The substations serve as the interface between Kentucky Power's distribution and transmission systems and also provide interconnection to other transmission owners within the Commonwealth. The Hazard substation contains equipment to step down voltage from the

transmission level to sub-transmission and distribution voltages. Both substations also contain equipment to protect or isolate the Company's facilities in the event of a fault or failure. Other equipment found in the two substations is used to monitor current flow, temperature, pressure, and current differentials, to report equipment status, to record events, and to provide for the automatic, manual, or remote (via Supervisory Control And Data Acquisition) operation of equipment. The two substations also contain equipment to provide voltage control and to maintain reliability (including spares).

50. The Hazard Substation and the Wooton Substation are complex facilities containing hundreds of components and elements. The components are subject to degradation and deterioration as a result of corrosion, dielectric loss, shrinkage or hardening of insulators, moisture retention, vibration, temperature, radiation, humidity, and operational degradation as a result of internal heating from electrical or mechanical loading, physical stresses from mechanical or electrical surges, and the abrasive wearing of parts. As the substation elements and their component parts deteriorate they become more susceptible to failure, loss of performance, less efficient, and require greater and more frequent maintenance. In addition, many manufacturers cease supporting their equipment with the passage of time making replacement parts more difficult and expensive to obtain.

51. Legacy equipment and components may become obsolescent because they are no longer compatible with other new replacement or substitute equipment. Further, existing installations may require additional expenditures to bring them in to conformity with evolving environmental and other regulatory requirements. Conversely, new technology may allow the replacement or substitute equipment and components to operate more efficiently thereby lowering

operating cost. The substitute or replacement equipment may also require less and more infrequent maintenance.

52. Kentucky Power routinely maintains the equipment and structures at all of its substations through rebuilds, cleaning, calibration, and adjustments to mitigate and repair the time-related and operational deterioration of substation components. This preventative maintenance may also involve the replacement and upgrade of substation equipment and components to prevent equipment failure, to improve the operational efficiency of the equipment, and to avoid the problems associated with obsolescence. The replacement and upgrade of deteriorated equipment prior to failure allows the Company to avoid the additional costs, including the avoidance of damage to other equipment and personal injury, resulting from failures.

53. The replacements, upgrades, and additions described above are part of the Company's efforts to "construct and maintain its plant and facilities in accordance with good accepted engineering practices."[8] The work described above also is required to permit Kentucky Power to "make all reasonable efforts to prevent interruptions of service,"[9] and to enable the Company "to reestablish service with the shortest possible delay."[10]

54. Replacement and upgrade work such as set out above oftentimes requires the mobilization of material, equipment, and specialized contractor personnel. The work also requires the performance of preparatory work, including the construction of access roads and other temporary facilities, the lease of specialized equipment such as trucks, cranes, and lifts, and the deployment of portable substation components such as transformers, breakers, switches, voltage

[8] 807 KAR 5:041, Section 3.

[9] 807 KAR 5:041, Section 5(1).

[10] *Id.*

regulators, and other control and protection equipment. The safe and efficient performance of substation replacement and upgrade work may also require customer outages.

55. When feasible Kentucky Power coordinates maintenance, replacement, and upgrade projects at a single substation to eliminate avoidable mobilization costs and to limit additional costs that would be incurred in performing the work as a sequence of separate construction periods. Coordinating the work as proposed by the Company is both necessary (no prudent and reasonable transmission system operator would as a matter of practice await equipment failure prior to upgrading or replacing deteriorated or obsolescent equipment) and furthers the public convenience by avoiding the additional costs associated with repair upgrade and replacement work. Staging the work as proposed also furthers the public convenience by limiting the number of customer outages.

B. Further Reasons The Public Convenience And Necessity Require The Project.

56. The Project is required to strengthen the existing Hazard area electrical transmission network; the Hazard area electrical transmission network has reached its capacity for reliable operation during certain electrical "contingencies." The Project also will improve reliability to the Hazard area by:

- Providing the equipment and capabilities required to permit Kentucky Power to implement the previously approved Baseline elements.
- Addressing aging infrastructure at the Hazard Substation and Wooton Substation.
- Enhancing operational performance and improve reliability of service for approximately 300 MW of load in the Hazard area.
- Provide the necessary flexibility to allow for routine maintenance of transmission and sub-transmission facilities.

- Address and mitigate safety and environmental issues.

57. The Project will not conflict with existing certificates or service of other utilities operating in the same area and under the jurisdiction of the Commission, or that are in the general area of or contiguous to Kentucky Power's certified territory. Kentucky Power possesses the exclusive right to provide retail electric service in its certified territory. KRS 278.016; KRS 278.018(4).

58. The Project will not result in a wasteful duplication of plant, equipment, property, or facilities. The elements will replace, upgrade, or repair existing substation components that have reached the end of their useful life.

Exhibits And Testimony

59. The exhibits and testimony listed in the Appendix to this Application are attached to and made a part of this Application.

Communications

60. The Applicant respectfully requests that communications in this matter be addressed to the e-mail addresses identified on Kentucky Power's May 22, 2019 Notice of Election of Use of Electronic Filing Procedures.

Filing Requirements

61. Kentucky Power's compliance with the requirements of 807 KAR 5:001, Section 14 and 807 KAR 5:001, Section 15 is detailed in **EXHIBIT 8** to the Application.

WHEREFORE, Kentucky Power Company respectfully requests that the Commission issue an Order:

(a) Granting Kentucky Power to the extent required a Certificate of Public Convenience and Necessity for the Project; and

(b) Granting Kentucky Power such other relief as may be appropriate.

Respectfully submitted,

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COUNSEL FOR KENTUCKY POWER COMPANY

APPENDIX

TESTIMONY

DIRECT TESTIMONY OF RANIE K. WOHNHAS ..... Regulatory Information

DIRECT TESTIMONY OF MICHAEL G. LASSLO ..... Reliability And Mobilization

DIRECT TESTIMONY OF KAMRAN ALI .... Project Purpose, Need, and PJM Review

LIST OF EXHIBITS

EXHIBIT 1: THE COMPANY'S CERTIFICATE OF EXISTENCE

EXHIBIT 2: HAZARD AND WOOTON SUBSTATION PROJECT ELEMENT LIST

EXHIBIT 3: HAZARD SUBSTATION ONE-LINE DRAWING

EXHIBIT 4: MAP SHOWING THE LOCATION OF THE HAZARD SUBSTATION

EXHIBIT 5: PLANS, SPECIFICATIONS, AND DRAWINGS OF THE PROPOSED EQUIPMENT AND FACILITIES AT THE HAZARD SUBSTATION

EXHIBIT 6: MAP SHOWING THE LOCATION OF THE WOOTON SUBSTATION

EXHIBIT 7: PLANS, SPECIFICATIONS, AND DRAWINGS OF THE PROPOSED EQUIPMENT AND FACILITIES AT THE WOOTON SUBSTATION

EXHIBIT 8: KENTUCKY POWER'S COMPLIANCE WITH THE REQUIREMENTS OF 807 KAR 5:001, SECTION 14 AND 807 KAR 5:001, SECTION 15

EXHIBIT 1: KENTUCKY POWER CERTIFICATE OF EXISTENCE

Commonwealth of Kentucky
Alison Lundergan Grimes, Secretary of State

Alison Lundergan Grimes
Secretary of State
P. O. Box 718
Frankfort, KY 40602-0718
(502) 564-3490
http://www.sos.ky.gov

Certificate of Existence

Authentication number: 217362
Visit https://app.sos.ky.gov/ftshow/certvalidate.aspx to authenticate this certificate.

I, Alison Lundergan Grimes, Secretary of State of the Commonwealth of Kentucky, do hereby certify that according to the records in the Office of the Secretary of State,

KENTUCKY POWER COMPANY

is a corporation duly incorporated and existing under KRS Chapter 14A and KRS Chapter 271B, whose date of incorporation is July 21, 1919 and whose period of duration is perpetual.

I further certify that all fees and penalties owed to the Secretary of State have been paid; that Articles of Dissolution have not been filed; and that the most recent annual report required by KRS 14A.6-010 has been delivered to the Secretary of State.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my Official Seal at Frankfort, Kentucky, this 25th day of June, 2019, in the 228th year of the Commonwealth.

Alison Lundergan Grimes
Secretary of State
Commonwealth of Kentucky
217362/0028317

EXHIBIT 2: HAZARD AND WOOTON SUBSTATION PROJECT ELEMENTS

HAZARD SUBSTATION ELEMENTS

Previous Identifier from Exhibit 10	One Line Identifier	**Description**	**Purpose**	**Driver for Asset Replacement/Installation**
a b	(1)	**Replacement of the 161 kV circuit breaker (M) pointing towards Wooton Station.** - Replacement of devices for line protection and circuit breaker control associated with the 161kV Wooton line position	To permit the interruption of fault current or load current on the 161kV line towards Wooton Station and 161/138 kV transformer #3 at Hazard station. Microprocessor relays and controls to monitor currents, report equipment status, record events, provide automatic, manual and remote (via SCADA) operation of the breaker as programmed.	This breaker must be moved to accommodate the approved Baseline project elements (B2761) already approved by the KY PSC. Circuit breaker M was manufactured in 1988 and has experienced 21 fault operations (which exceeds the manufacturer's recommendation of 10). Replacing this breaker at this point is appropriate rather than re-installing the existing breaker, which is over 30 years old, at the new location. The microprocessor relays and controls will ensure that the protected equipment can communicate and operate effectively once installed. The electromechanical relays that are currently used in the station are obsolete.
d e	(2)	**Installation of a 138 kV circuit breaker with relay control on the low side of the 161 kV/138 kV transformer #3** - Replacement of devices for transmission transformer protection associated with Transformer #3	To permit the interruption of fault or load current on the 138kV side of the new #3 161/138kV transformer. To provide automatic, manual, and remote (via SCADA) control of the breaker. To provide proper sectionalizing to minimize the number of elements that must operate to clear a fault on the transformer. Microprocessor relays and controls to monitor currents entering and leaving the Transformer #3, trip the 161kV high side breaker and the 138kV low side breaker to isolate the transformer when the current differential reaches a programmed set point. Equipment also will report equipment status (temperature, pressure, currents), record events and provide automatic operation of the breakers as programmed for other parameters such as an internal sudden pressure increase.	The existing 1940's vintage single phase banks that make up Transformer #3 are being replaced by a three phase transformer as part of the Baseline project already approved by the KY PSC. The circuit breaker on the low side of the transformer and the microprocessors (Identified (e)) will allow the transformer to be protected and isolated, if necessary, to prevent damage during a fault operation. The low side breaker also separates the zones of protection and minimizes the number of elements that must operate for a fault on the transformer. Under the existing configuration at Hazard, lack of the low side breaker on the transformer results in the operation of every element tied to 138 kV bus #2 and 69 kV bus #2 in order to clear a fault on Transformer # 3. This includes operation of Transformers #4 and #5 resulting in the loss of customers served from the two transformers. The microprocessor relays and controls also will ensure that the protected equipment can communicate and operate effectively once installed. The electromechanical relays that are currently used in the station are obsolete.
f	(3)	**Installation of a new three phase 161 kV/138kV spare transformer**	To facilitate timely restoration of service in the event of a failure of the #3 161/138kV transformer.	The 161/138 kV transformer at Hazard station is the only transformer of this voltage class on the AEP Eastern footprint. A spare transformer must be maintained on site as a replacement in the event of a failure of the existing transformer. Without a spare, the lead times required to replace this type of transformer could be up to a year.
aa	(4)	**Replacement of devices for line protection and circuit breaker control associated with the 69kV Bonnyman #2 (R) line position**	Microprocessor relays and controls to monitor currents, report equipment status, record events, provide automatic, manual and remote (via SCADA) operation of the breaker as programmed.	The microprocessor relays and controls will ensure that the protected equipment can communicate and operate effectively once installed. The electromechanical relays that are currently used in the station are obsolete.

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Previous Identifier from Exhibit 10	One Line Identifier	**Description**	**Purpose**	**Driver for Asset Replacement/Installation**
J k	(5)	**Replacement of 138 kV capacitor bank and switcher BB** - Replacement of devices for capacitor bank and switcher BB protection and control	To provide voltage support and reactive power to the 138kV Bus #2. Microprocessor relays and controls to monitor currents and voltage, provide trip/close signals to the switcher and report equipment status locally and remotely via SCADA.	The existing circuit switcher is a MARK V unit. Mark V units have experienced a high amount of failures and mis-operations on the AEP system. AEP operating companies are currently replacing all MARK V circuit switchers to remedy these reliability concerns The microprocessor relays and controls will ensure that the protected equipment can communicate and operate effectively once installed. The electromechanical relays that are currently used in the station are obsolete.
N N/A O p	(6)	**Replacement of existing 138kV/69kV Transformer #1** - Replacement of the motor operated air break (MOAB) switch and installation of a circuit switcher on the high-side of Transformer #1 - Installation of a 69kV breaker with relay control on the low-side of 138kV/69kV Transformer #1 - Replacement of devices for transmission transformer protection associated with Transformer #1	To stepdown the 138kV transmission voltage to the 69kV sub-transmission voltage level. To isolate the 138/69kV Transformer #1 from the 138kV Bus #1 for: an internal transformer fault or overload, a fault on 138kV Bus #1, manual isolation of Transformer #1 for maintenance and testing. To permit the interruption of fault or load current on the 69kV side of the 138/69 Transformer #1. To provide automatic, manual and remote (via SCADA) control of the breaker. Microprocessor relays and controls to: monitor currents entering and leaving the Transformer #1, trip the 138kV high side breaker and the 69kV low side breaker to isolate the transformer when the current differential reaches a programmed set point. To report equipment status (temperature, pressure, currents), record events and provide automatic operation of the breakers as programmed for other parameters such as an internal sudden pressure increase.	Transformer #1 was manufactured in 1973 and is showing dielectric breakdown (i.e. insulation breakdown), accessory damage of bushings and windings, and short circuit breakdown due to the amount of through faults. It is also showing signs of corrosion on the radiators and has oil leaks. Given the condition of the existing transformer, it is appropriate to replace it now. The current MOAB/ Ground switch configuration on the high side of transformer #1 creates a fault in the station to signal the remote end breakers to open; this is a known safety hazard in legacy station designs. Under the existing configuration at Hazard, lack of a high side switcher and low side breaker on the transformer results in the operation of every element tied to 138 kV bus #1 and 69 kV bus #1 in order to clear a fault on Transformer # 1. It also exposes the transformer to potentially damaging currents for faults tied to 138 kV bus #1 and 69 kV bus #1. The microprocessor relays and controls will ensure that the protected equipment can communicate and operate effectively once installed. The electromechanical relays that are currently used in the station are obsolete.

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Previous Identifier from Exhibit 10	One Line Identifier	**Description**	**Purpose**	**Driver for Asset Replacement/Installation**
T S U v	(7)	**Replacement of existing 138kV/69kV Transformer #2** - Replacement of the motor operated air break switch and installation of a circuit switcher on the high-side of Transformer #2 - Installation of a 69kV breaker with relay control on the low-side of 138kV/69kV Transformer #2 - Replacement of devices for transmission transformer protection associated with Transformer #2	To stepdown the 138kV transmission voltage to the 69kV sub-transmission voltage level. To isolate the 138/69kV Transformer #2 from the 138kV Bus #2 for: an internal transformer fault or overload, a fault on 138kV Bus #2, manual isolation of Transformer #2 for maintenance and testing. To permit the interruption of fault or load current on the 69kV side of the 138/69 Transformer #2. To provide automatic, manual and remote (via SCADA) control of the breaker. Microprocessor relays and controls to: monitor currents entering and leaving the Transformer #2, trip the 138kV high side breaker and the 69kV low side breaker to isolate the transformer when the current differential reaches a programmed set point. To report equipment status (temperature, pressure, currents), record events and provide automatic operation of the breakers as programmed for other parameters such as an internal sudden pressure increase.	Transformer #2 was manufactured in 1974 and is showing dielectric breakdown (i.e. insulation breakdown), accessory damage of bushings and windings, and short circuit breakdown due to the amount of through faults. Replacement of this transformer is appropriate given the current condition. Under the existing configuration at Hazard, lack of a high side switcher and low side breaker on the transformer results in the operation of every element tied to 138 kV bus #2 and 69 kV bus #2 in order to clear a fault on Transformer # 2. This includes operation of Transformers #4 and #5 resulting in the loss of customers served from the two transformers. The microprocessor relays and controls will ensure that the protected equipment can communicate and operate effectively once installed. The electromechanical relays that are currently used in the station are obsolete.
W X	(8)	**Replacement of 69kV capacitor bank and switcher CC** - Replacement of devices for capacitor bank and switcher CC protection and control	To provide voltage support and reactive power to the 69kV Bus #2. Microprocessor relays and controls to: monitor currents and voltage, provide trip/close signals to the switcher and report equipment status locally and remotely via SCADA.	Capacitor switcher CC has oil leaks on all three phases and cannot be repaired. Capacitor Bank CC was a non-standard design and its components, including fuses and cans, have begun to fail. The proposed equipment will remedy these issues. The microprocessor relays and controls will ensure that the protected equipment can communicate and operate effectively once installed. The electromechanical relays that are currently used in the station are obsolete.

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Previous Identifier from Exhibit 10	One Line Identifier	**Description**	**Purpose**	**Driver for Asset Replacement/Installation**
bb cc	(9)	**Replacement of the 69kV circuit breaker (S) pointing towards Daisy Station** - - - - Replacement of devices for line protection and circuit breaker control associated with the 69kV Daisy line position	To permit the interruption of fault current or load current on the 69kV line towards Daisy Station and the 69kV Bus #1. Microprocessor relays and controls to: monitor currents, report equipment status, record events, provide automatic, manual and remote (via SCADA) operation of the breaker as programmed.	Circuit breaker S was manufactured in 1960 and has experienced 82 faults (well above the manufacturer's recommended 10). This is an oil breaker which is difficult to maintain and carries the potential of oil related spills during maintenance or failures. Other drivers include potential PCB content and damage to bushings. The microprocessor relays and controls will ensure that the protected equipment can communicate and operate effectively once installed. The electromechanical relays that are currently used in the station are obsolete.
dd ee	(10)	**Replacement of the 69kV circuit breaker (E) pointing towards Leslie Station** - Replacement of devices for line protection and circuit breaker (E) control associated with the 69kV Leslie line position	To permit the interruption of fault current or load current on the 69kV line towards Leslie Station. To provide protection on the 69 kV bus #1 Microprocessor relays and controls to: monitor currents, report equipment status, record events, provide automatic, manual and remote (via SCADA) operation of the breaker as programmed.	Circuit breaker E was manufactured in 1974 and has experienced 184 faults (well above the manufacturer's recommended 10). This is an oil breaker which is difficult to maintain and carries the increased potential of oil related spills during maintenance or failures. Other drivers include potential PCB content and damage to bushings. The microprocessor relays and controls will ensure that the protected equipment can communicate and operate effectively once installed. The electromechanical relays that are currently used in the station are obsolete.
ff gg	(11)	**Replacement of the 69kV circuit breaker (F) pointing towards Bonnyman Station via the number one circuit** - Replacement of devices for line protection and circuit breaker control associated with the 69kV Bonnyman #1 line position	To permit the interruption of fault current or load current on the 69kV line towards Bonnyman Station and the 69kV Bus #1. Microprocessor relays and controls to: monitor currents, report equipment status, record events, provide automatic, manual and remote (via SCADA) operation of the breaker as programmed.	Circuit Breaker (F) was manufactured in 1985 and has experienced 193 fault operations (well above the manufacturer's recommended 10). This circuit breaker is an oil filled breaker that is difficult to maintain and carries the increased potential of oil spills during routine maintenance and failures. Other drivers include potential PCB content and damage to bushings. The microprocessor relays and controls will ensure that the protected equipment can communicate and operate effectively once installed. The electromechanical relays that are currently used in the station are obsolete.
hh	(12)	**Installation of a 69kV circuit breaker connecting 69 kV bus #1 and bus #2**	To provide a means to serve the 69kV Bus #1 from the 69kV Bus #2 in the event of the loss of the 138/69kV Transformer #1 and to serve the 69kV Bus #2 from the 69kV Bus #1 in the event of the loss of the 138/kV Transformer #2.	Isolating the 69kV system will allow the 69kV system to stay in-service despite an outage on the 138kV system and will provide greater operational flexibility. It also allows the retirement of capacitor bank AA which is beginning to show issues associated with deterioration and its VBM type capacitor switcher.

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Previous Identifier from Exhibit 10	One Line Identifier	**Description**	**Purpose**	**Driver for Asset Replacement/Installation**
	(13)	**Protection of Existing Transformer #4**		Protection of the transformer on both the high side and low side will be upgraded to address concerns with dissimilar zones or protection. Under the existing configuration at Hazard a fault on transformer #4 would result in the operation of every element associated with 138 kV bus #1 and 69 kV bus #2.
ii		- Replacement of the motor operated air break switch and installation of a circuit switcher on the high-side of Transformer #4	To isolate the 138/34kV Transformer #4 from the 138kV Bus #2 for: an internal transformer fault or overload, a fault on 138kV Bus #2, manual isolation of Transformer #2 for maintenance and testing.	
jj		- Installation of a 34.5kV breaker with relay control on the low-side of 138kV/34.5kV Transformer #4	To permit the interruption of fault or load current on the 34kV side of the 138/34 Transformer #4. To provide automatic, manual and remote (via SCADA) control of the breaker.	The microprocessor relays and controls will ensure that the protected equipment can communicate and operate effectively once installed. The electromechanical relays that are currently used in the station are obsolete.
kk		- Replacement of devices for transmission transformer protection associated with Transformer #4	Microprocessor relays and controls to: monitor currents entering and leaving the Transformer #4, trip the 138kV high side switcher and the 34kV low side breaker to isolate the transformer when the current differential reaches a programmed set point. To report equipment status (temperature, pressure, currents), record events and provide automatic operation of the breakers as programmed for other parameters such as an internal sudden pressure increase.	
ll	(14)	**Replacement of devices for line protection and circuit breaker control associated with the 34.5kV Blackgold line position**	Microprocessor relays and controls to: monitor currents, report equipment status, record events, provide automatic, manual and remote (via SCADA) operation of the breaker as programmed.	The microprocessor relays and controls will ensure that the protected equipment can communicate and operate effectively once installed. The electromechanical relays that are currently used in the station are obsolete.
mm	(15)	**Replacement of the 34.5kV circuit breaker (A) pointing towards Kenmont Station**	To permit the interruption of fault current or load current on the Hazard – Kenmont 34kV Circuit.	The Existing circuit breaker (A) is 30 years old and has had 221 fault operations (well above the manufacturers recommended 10). The existing breaker is a vacuum oil breaker, which presents potential environmental and maintenance concerns similar to the 69 kV breakers above.
nn		- Replacement of devices for line protection and circuit breaker control associated with the 34.5kV Kenmont line position	Microprocessor relays and controls to: monitor currents, report equipment status, record events, provide automatic, manual and remote (via SCADA) operation of the breaker as programmed.	The microprocessor relays and controls will ensure that the protected equipment can communicate and operate effectively once installed. The electromechanical relays that are currently used in the station are obsolete.

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Previous Identifier from Exhibit 10	One Line Identifier	**Description**	**Purpose**	**Driver for Asset Replacement/Installation**
oo	(16)	**Replacement of devices for distribution transformer protection associated with Transformer #5;**	Microprocessor relays and controls to: monitor currents, report equipment status, record events, provide automatic, manual and remote (via SCADA) operation of the breaker as programmed.	The microprocessor relays and controls will ensure that the protected equipment can communicate and operate effectively once installed. The electromechanical relays that are currently used in the station are obsolete.
pp qq	(17)	**Replacement of the 12kV circuit breaker (c) servicing Hazard** - Replacement of devices for feeder protection and circuit breaker control associated with the 12kV Hazard feeder position	To permit the interruption of fault current or load current on the Hazard – Hazard 12kV Circuit. Microprocessor relays and controls to: monitor currents, report equipment status, record events, provide automatic, manual and remote (via SCADA) operation of the breaker as programmed.	The existing circuit breaker C is 50 years old and has had 354 fault operations. This circuit breaker is an oil filled breaker that is difficult to maintain and carries the increased potential of oil spills during routine maintenance and failures. The microprocessor relays and controls will ensure that the protected equipment can communicate and operate effectively once installed. The electromechanical relays that are currently used in the station are obsolete.
rr ss	(18)	**Replacement of the 12kV (D) circuit breaker spare** - Replacement of devices for feeder protection and circuit breaker control associated with the 12kV spare feeder position	Provides a backup breaker for the Hazard 12kV distribution in the event of a failure of the Hazard – Hazard 12kV breaker. Microprocessor relays and controls to: monitor currents, report equipment status, record events, provide automatic, manual and remote (via SCADA) operation of the breaker as programmed.	The existing circuit breaker D is a 50-year old oil type breaker. This circuit breaker and presents potential environmental and maintenance challenges similar to the 69 kV breakers above. The microprocessor relays and controls will ensure that the protected equipment can communicate and operate effectively once installed. The electromechanical relays that are currently used in the station are obsolete.

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Previous Identifier from Exhibit 10	One Line Identifier	**Description**	**Purpose**	**Driver for Asset Replacement/Installation**
y,q	(19)	**Protection and sectionalizing of the substation:** - Installation of coupling capacitor voltage transformers on 69kV Bus #1 and #2	To provide the voltage level on the 69kV Bus #2 to: the control relays for the capacitor bank CC and remotely via SCADA.	Work is required to meet industry accepted protection and control standards that ensure the safe and reliable operation of equipment at Hazard station.
z,r		- Installation of devices for 69kV Bus #1 and #2 protection	Microprocessor relays and controls to: monitor currents entering and leaving the 69kV Bus #2 and trip the 69kV breakers and circuit switchers to isolate the 69kV Bus #2 when the current differential reaches a programmed set point	
g		- Replacement of coupling capacitor voltage transformers on 138kV Bus #2	To provide the voltage level on the 138kV Bus #2 to: the control relays for the capacitor bank BB and remotely via SCADA.	
h		- Replacement of devices for 138kV Bus #2 protection	Microprocessor relays and controls to: monitor currents entering and leaving the 138kV Bus #2 and trip the 138kV breakers and circuit switchers to isolate the 138kV Bus #2 when the current differential reaches a programmed set point.	The microprocessor relays and controls will ensure that the protected equipment can communicate and operate effectively once installed. The electromechanical relays that are currently used in the station are obsolete.
N/A	(20)	**Installation of a 138 kV circuit breaker pointing towards Beckham Station.**	To permit the interruption of fault current or load current on the 161kV line towards Beckham Station and 138 kV bus #1 at Hazard station.	A 138 kV circuit breaker will installed at Hazard station on the line exit towards Beckham station to separate dissimilar zones of protection. Under the existing configuration at Hazard, lack of 138 kV circuit breaker on the line towards Beckham results in the operation of every element tied to 138 kV bus #1 and 69 kV bus #1 in order to clear a fault on the ~16.4 mile circuit between Hazard and Beckham. The existing configuration will also result in the loss of customers served from Vicco station in order to clear a fault on 138 kV bus #1 at Hazard station.
N/A		Replacement of devices for line protection and circuit breaker control associated with the 138kV Beckham line position	Microprocessor relays and controls to monitor currents, report equipment status, record events, provide automatic, manual and remote (via SCADA) operation of the breaker as programmed.	The microprocessor relays and controls will ensure that the protected equipment can communicate and operate effectively once installed. The electromechanical relays that are currently used in the station are obsolete.

WOOTON SUBSTATION ELEMENTS

Table Identifier	**Description**	**Purpose**	**Driver for Asset Replacement/Installation**
(A)	Installation of station class surge arresters attached to the upper beam of the existing 161kV box bay structure on the 161kV Hazard Line position	To provide overvoltage protection caused by lightning or switching surges for the 161kV bus insulation.	Installation of station class surge arrestors on line entrances is an industry accepted practice to protect equipment from potential overvoltage events
(B)	Installation of two coupling capacitor voltage transformers on Phase 2 and Phase 3 of the 161kV bus	To provide voltage sensing on Phase 2 and Phase 3. Presently, the 161kV bus only has voltage sensing on Phase 1.	Three phase CCVTs provide the ability to apply industry accepted protection and control standards that a single phase CCVT arrangement is unable to.
(C)	Installation of telecommunication fiber equipment	To provide remote monitoring and operation (via SCADA) of equipment at Wooton Station.	Required to utilize new fiber path provided by previously approved OPGW telecommunications cable on the approved Hazard – Wooton 161 kV line.

EXHIBIT 3: HAZARD SUBSTATION ONE-LINE DRAWING

System Electrical Diagram (Proposed)

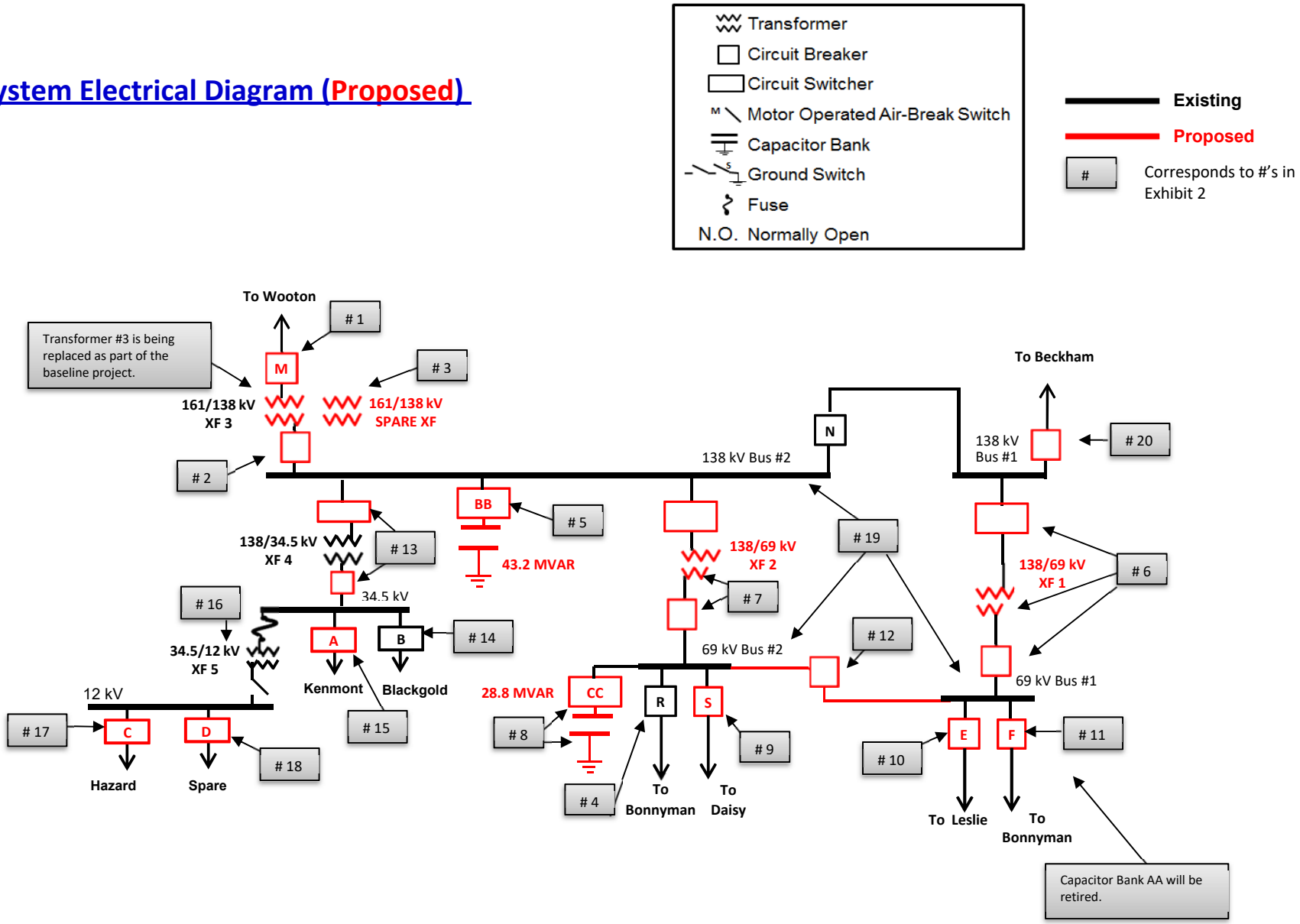
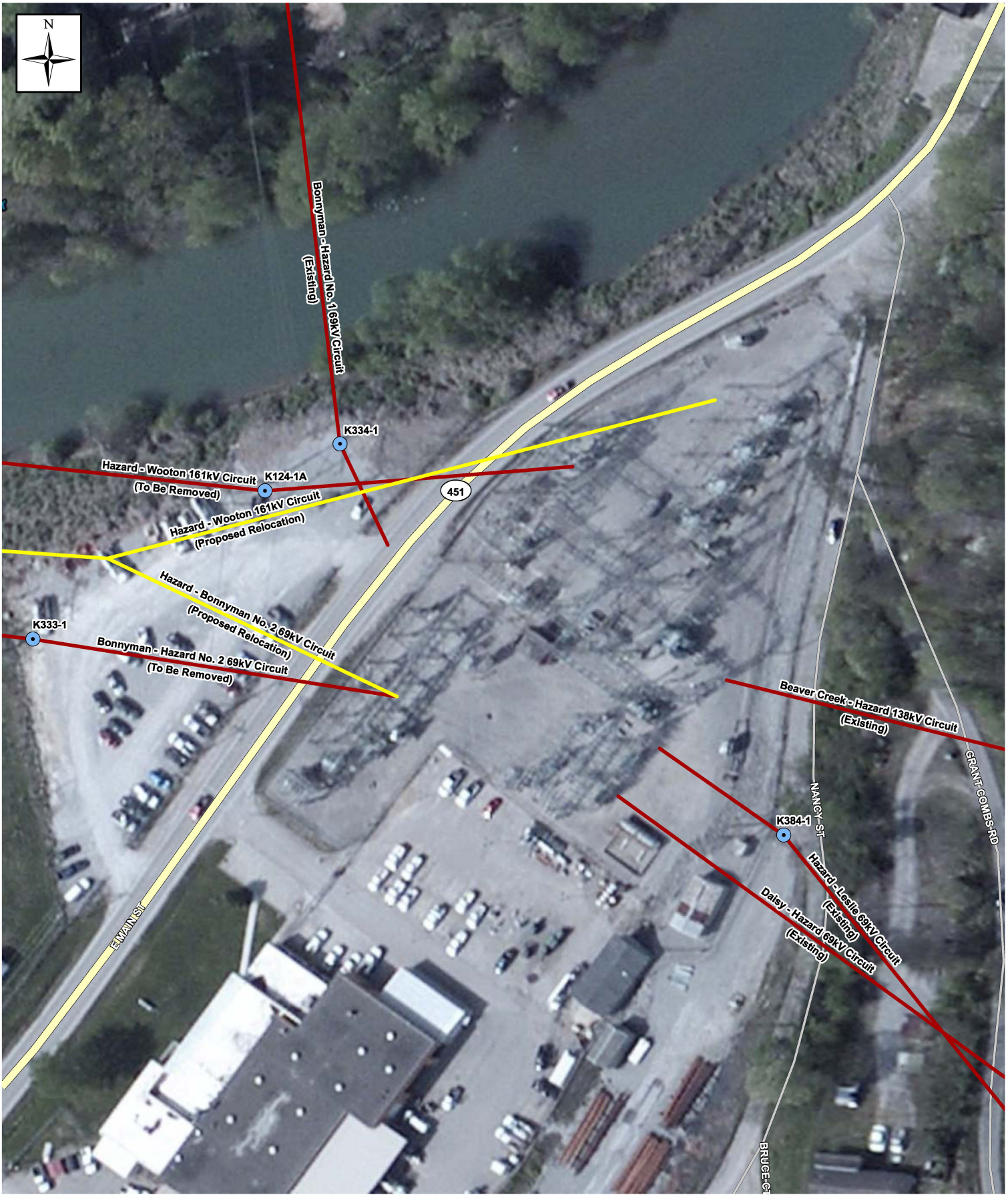


EXHIBIT 4: HAZARD SUBSTATION MAP



SUBSTATION LOCATION MAP

EXHIBIT 5: HAZARD SUBSTATION IMPROVEMENT PLAN DRAWING

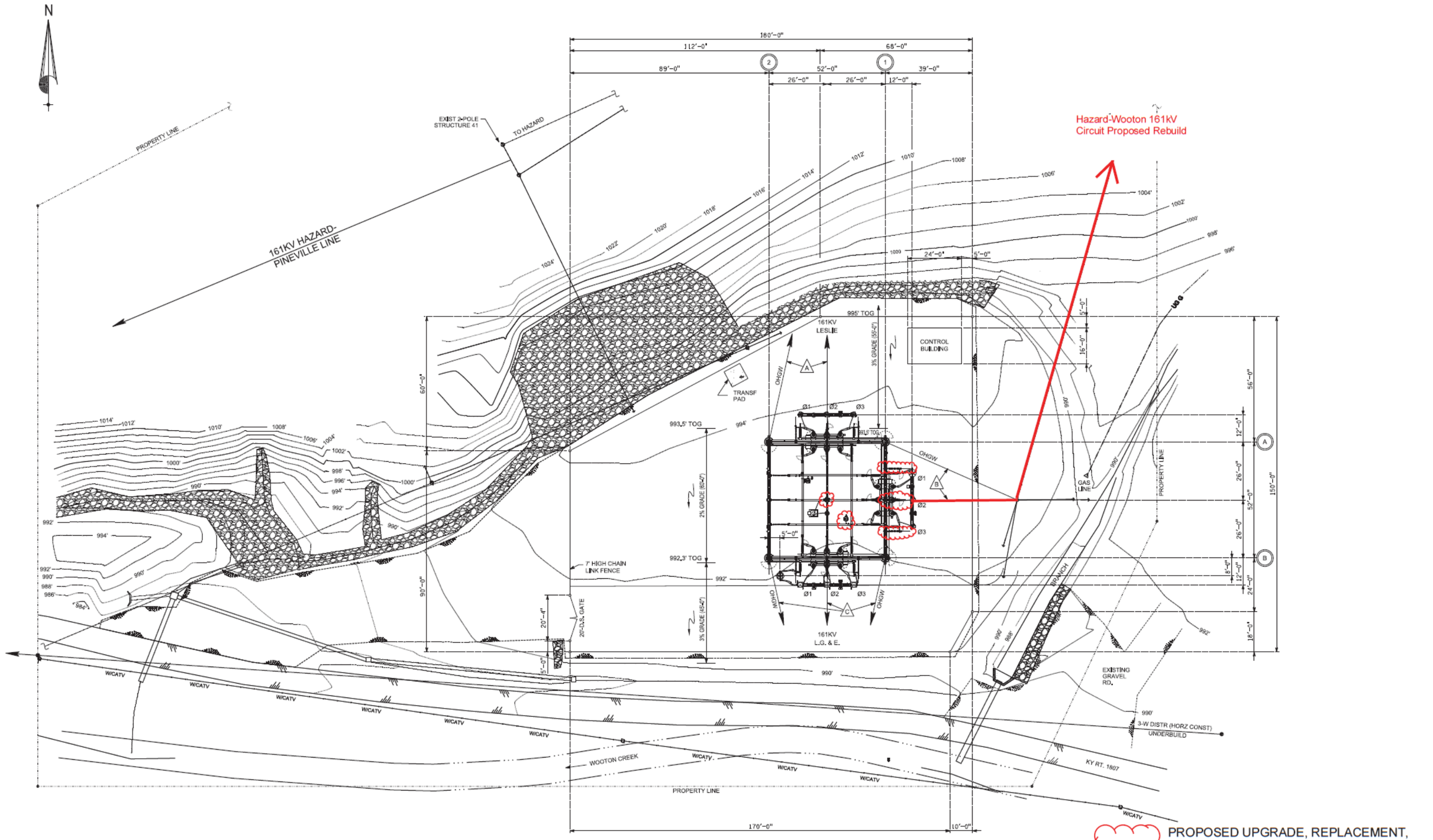
PROPOSED SUBSTATION LAYOUT

PROPOSED UPGRADE, REPLACEMENT, AND INSTALLATION OF FACILITIES AND EQUIPMENT

EXHIBIT 6: WOOTON SUBSTATION MAP

SUBSTATION LOCATION MAP

EXHIBIT 7: WOOTON SUBSTATION IMPROVEMENT PLAN DRAWING



PROPOSED SUBSTATION LAYOUT

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EXHIBIT 8: FILING REQUIREMENTS

Filing Requirements

Citation	Requirement	Location
807 KAR 5:001, Section 14(1)	Applicant And Project Information.	Application ¶ 1-9. Generally, *Passim*.
807 KAR 5:001, Section 14(2)	Corporate Information.	Application ¶ 1-4; Application **EXHIBIT 1**.
807 KAR 5:001, Section 14(3)	Limited Liability Company Information.	Not Applicable.
807 KAR 5:001, Section 14(4)	Limited Partnership Information.	Not Applicable.
807 KAR 5:001, Section 15(1)	Information Required For Certificates Of Public Convenience And Necessity To Bid On Franchises.	Not Applicable.
807 KAR 5:001, Section 15(2)	Requirements of 807 KAR 5:001, Section 14.	See Above.
807 KAR 5:001, Section 15(2)(a)	Facts Demonstrating The Proposed Construction Is Required By The Public Convenience And Necessity.	Testimony of Kamran Ali; Testimony of Michael G. Lasslo; Application ¶¶ 19-58; and Application **EXHIBIT 2**.
807 KAR 5:001, Section 15(2)(b)	Franchises And Permits.	Application ¶¶ 47-48.
807 KAR 5:001, Section 15(2)(c)	Location.	Application ¶¶ 10, 12; Application **EXHIBITS 4 and 6**.
807 KAR 5:001, Section 15(2)(c)	Description Of Construction.	Testimony of Kamran Ali; Testimony of Michael G. Lasslo; Application ¶¶ 22-24, 26-28, 30-31, 33, 34-36; and Application **EXHIBITS 2-7**.

Citation	Requirement	Location
807 KAR 5:001, Section 15(2)(c)	Competitors.	Application ¶¶ 57-58
807 KAR 5:001, Section 15(2)(d)(1)	Map To Suitable Scale Showing Route And Neighboring Facilities.	Application **EXHIBITS 4 and 6**.
807 KAR 5:001, Section 15(2)(d)(2)	Plans And Specifications.	Application **EXHIBITS 3-7**.
807 KAR 5:001, Section 15(2)(e)	Manner Of Financing.	Testimony of Ranie K. Wohnhas.
807 KAR 5:001, Section 15(2)(f)	Annual Operating Expenses.	Application ¶44.
807 KAR 5:001, Section 15(3)	Financial Aspects of Project.	Testimony of Ranie K. Wohnhas.
807 KAR 5:001, Section 15(4)	Renewal Applications.	Not Applicable.