Facilities Study Report

For

Physical Interconnection of

PJM Generation Interconnection Request
Project ID AG2-582

"Flint Run 500 kV"

Introduction

This Facilities Study has been prepared in accordance with the PJM Open Access Transmission Tariff, as well as the Application and Studies Agreement between the Project Developer and PJM Interconnection, LLC (PJM or Transmission Provider (TP)). The Transmission Owner (TO) is Monongahela Power Company (MP), a FirstEnergy company.

This Facility Study was performed to satisfy the Phase 2 Facility Study requirement of the PJM Tariff. The Facility Study is intended to provide scope, cost and schedule estimates for the project as currently defined and approved for Phase 2 study. In the event project changes are made during DP2 that impact this report, updates will be provided as part of the Phase 3 report. Following execution of the project's final agreement, this report will not be updated to account for other changes made as part of the agreement's modification clause and instead the scope change process will be followed.

A. Transmission Owner Facilities Study Summary

1. PROJECT DESCRIPTION

The Project Developer (PD) has proposed a natural gas Generating Facility located in Doddridge County, West Virginia with a designated PJM Project ID of AG2-582. The installed facilities will have a total Maximum Facility Output (MFO) of 2100 MW with 2075 MW of this output being recognized by PJM as Capacity.

2. POINT OF INTERCONNECTION (POI)

The Generating Facility will interconnect with the MP transmission system as a direct connect to the existing Flint Run 500 kV Substation.

The proposed generation interconnection is shown on the single line diagram in Attachment #1.

3. POINT OF CHANGE IN OWNERSHIP

The Point of Change in Ownership will be located at the Project Developer owned first dead-end structure outside the existing Flint Run 500 kV Substation fence line.

4. SCOPE OF PROJECT DEVELOPER INTERCONNECTION FACILITIES

Project Developer will design, build, own, operate and maintain the Project Developer Interconnection Facilities on Project Developer's side of the Point of Change in Ownership (PCO). This includes, but is not limited to:

- Circuit breakers and associated equipment located between the high side of the GSU and the Point of Change in Ownership.
- Generator lead line from the Generating Facility to the Point of Change in Ownership.
- Relay and protective equipment, and Supervisory Control and Data Acquisition (SCADA) and telecommunications equipment to comply with the TO's Applicable Technical Requirements and Standards.

B. Transmission Owner Facilities Study Results

The following is a description of the planned Transmission Owner facilities for the physical interconnection of the proposed AG2-582 project to MP transmission system. These facilities shall be designed according to FirstEnergy Applicable Technical Requirements and Standards. Once built, MP will own, operate, and maintain these Facilities.

1. TRANSMISSION OWNER INTERCONNECTION FACILITIES (TOIF):

1.1 New Interconnection Line Terminal at Flint Run 500 kV Substation

Install one disconnect switch and one span of 500 kV conductor from the existing Flint Run 500kV substation to the Project Developer-owned dead-end structure at the Point of Change in Ownership (PCO) outside of Flint Run Substation.

- Installations
    - 0.1 miles of triple bundled 795 kcmil 26/7 ACSR shielded by (1) OPGW(1) and (1) 7#8 alumoweld
- Siting & Licensing
    - Letter of Notification (LON) will be required.
- Scope of Work Assumptions:
    - Location of PCO assumed
    - Location of generator substation assumed
    - Assume ground survey will be required for design and as-built.
    - Assume minimal social and ecological impacts.
    - Assume no local opposition to the project.
- Ancillary Scope of Work
    - Project Management
        - Provide project management, coordination, administration, scheduling, material management and project development if required.

1.2 AG2-582 Generator Substation

Energize and integrate generator Interconnection Facilities to the Transmission System.

- Relay and Controls Scope of Work
    - Integrate interconnection facilities protection and controls to the transmission system.
- Ancillary Scope of Work
    - Project Management
        - Provide project management, coordination, administration, scheduling, material management and project development.

    - Testing and Commissioning
        - Testing and commissioning services as required.

2. STAND ALONE NETWORK UPGRADES

- None.

3. NETWORK UPGRADES

3.1 Belmont Substation

- Relay and Controls Scope of Work
    - Revise Relay settings.
- Assumptions
    - Using existing relays
- Ancillary Scope of Work
    - Project Management
        - Provide project management, coordination, administration, scheduling, material management and project development.
    - Testing and Commissioning
        - Test and commission all new relay settings as required.

3.2 Harrison Substation

- Relay and Controls Scope of Work
    - Revise Relay settings.
- Assumptions
    - Using existing relays
- Ancillary Scope of Work
    - Project Management
        - Provide project management, coordination, administration, scheduling, material management and project development.
    - Testing and Commissioning
        - Test and commission all new relay settings as required.

3.3 Flint Run 500kV Substation

The existing substation, Flint Run 500kV, will be expanded/upgraded to interconnect the project with the MP transmission system.

- Below Grade:
    - Install cable trench, conduit, and control cables from new equipment to control house.
    - Install foundations for all equipment, fence posts, and structures
- Above Grade:
    - (1) 500kV deadend/takeoff structure
    - (1) 500 kV Circuit Breaker
    - (2) 3-phase Bus Disconnect Switches with Ground Switches
    - (1) MOAB line switch with ground switch
    - (1) 3-phase set 500kV CCVTs
    - (1) 500 kV surge arrester set
    - (1) lot of aluminum bus & bus supports
- Relay and Controls Scope of Work
    - Install (2) SEL-411L relays for line protection
    - Install (1) SEL-451 relay for breaker failure and dedicated lockout and controls (1 panel)
    - Install (1) lot of SEL-3555 or similar data concentrator RTACs for use as PMU data concentration
    - Modify existing 500kV bus/transformer differential scheme to incorporate the new breaker position including CT wiring, trips and additional auxiliary relays and other wiring modifications as needed
    - Review all existing relay settings at Flint Run
- Scope of work Assumptions
    - SEL RTAC will be installed onto existing HMI panel.
    - There is sufficient room in the control house for new relay panels.
    - The existing SCADA transport at Flint Run Substation is sufficient for additional SCADA telemetry.
- Ancillary Scope of Work
    - Project Management
        - Provide project management, coordination, administration, scheduling, material management and project development if required.
    - Environmental
        - Review drawings and verify if any permitting is required for below grade work
        - Assumptions
            - All work will occur within the existing substation and the only costs assumed are for an environmental review, internal support, project management and external consultation
    - Information Technology

        - SCADA work at Flint Run Substation to support relays, RTAC, and meters with drawing updates.
        - Install/Test approximately 0.17 miles of 48 fiber (single mode) from the Flint Run 500kV control house to the AG2-582 PCO
            - This build will be run utilizing the existing cable trench for the first 0.12 miles.
            - Underground ADSS will be utilized for the remaining 0.05 miles from the substation cable trench to the PCO just west of the Flint Run substation yard.
        - IT Scope of Work Assumptions
            - The existing SCADA transport at Flint Run Substation is sufficient for additional SCADA telemetry.
            - Project Developer is responsible for building fiber communications from generator site to PCO.
            - Two separate fiber cables are being run for this build, but no spatial diversity is required.
    - Testing and Commissioning
        - Testing and commissioning of all substation equipment.

4. OTHER SCOPE OF WORK

4.1 Revenue Metering

Provide revenue metering panel within existing Flint Run Control House. Integrate revenue metering to FE Flint Run 500 kV substation.

- Below Grade Scope of Work:
    - (1) Lot of excavation, conduit, backfill, grounding, and wiring, between free standing CT/VT combo and revenue metering.
    - (1) Lot of foundations for free-standing 500kV CT/VT Combo Unit.
- Above Grade Scope of Work:
    - (1) set of 3-phase Free Standing 500kV CT/VT Combo Unit.
- Relay & Control Scope of Work
    - (1) New Revenue Metering Panel with test switches.
- Scope of Work Assumptions:
    - It is assumed current and voltage signals will be pulled from new 3-phase free-standing CT/VT Combo Units.
    - Assumes enough room in Flint Run 500 kV Control house to support a new revenue metering panel.
    - Assumes enough room in Flint Run 500 kV substation to add in free standing CT/VT Combo Units.

- Assumes the same crew that is doing the expansion will be doing the metering and temp construction facilities are not needed.

- Ancillary Scope of Work
  - Project Management
    - Provide project management, coordination, administration, scheduling, material management and project development.
  - Environmental
    - Review drawings and provide support for environmental or permitting requirements for new foundations and excavation within Flint Run Substation.
  - Revenue Metering
    - Provide high end revenue meter and engineering support for revenue metering at MP Substation Flint Run.
  - Testing and Commissioning
    - Testing and commissioning services as required

5. MILESTONE SCHEDULE FOR COMPLETION OF MP WORK

Facilities outlined in this report are estimated to take 59 months to construct, from the time the Generation Interconnection Agreement is fully executed. This schedule may be impacted by the timeline for procurement and installation of long lead items, the ability to obtain outages to construct and test the proposed facilities.

Description	**Start Month**	**Finish Month**
Preliminary Engineering	1	2
Siting, Permitting & Real Estate	5	48
Detailed Engineering	3	48
Equipment Delivery	50	50
Construction	51	57
Testing and Commissioning	55	59

6. ASSUMPTIONS IN DEVELOPING SCOPE/COST/SCHEDULE

6.1 Scope Assumptions:

- Project Developer will coordinate design and alignment of proposed 500 kV generator lead line with the Transmission Owner for review of any clearance, right-of-way or right-of-way encroachment issues with TO owned facilities.

- Project Developer will coordinate design and construction of proposed 500 kV lead line. For these areas, the Project Developer shall provide TO with proposed drawings prior to construction and as-built drawings, confirmed by as-built survey data post-construction.
- Transmission Owner's preference would be to limit interference and avoid transmission line crossings with new 500 kV terminal positions. As a minimum, Project Developer facilities should not encroach within 100 feet of TO centerline at blowout conditions. If Project Developer's line design does not comply with this requirement TO would need to review this area as a special exception.
- Additional costs will be incurred by the Project Developer, if final alignment of the 500 kV generator lead line causes encroachments, changes, or modifications to any existing or relocated TO facilities.
- Project Developer is responsible for making all arrangements for electric distribution service (if required) for its generation station. No costs or schedule are included herein.
- All new generator only and new generator plus load facilities must be isolated from the MP Transmission System by a Power Transformer with a winding configuration meeting the requirements in FirstEnergy's "Requirements for Transmission Connected Facilities" document.
- Revenue metering equipment. The revenue metering will be installed on the Transmission Owner side of the Point of Change in Ownership will be installed, owned and maintained by Transmission Owner.

6.2 Cost Estimate Assumptions:

- The cost estimates provided in this report were developed as of February 19, 2026, based upon current market conditions. Hence, they are subject to significant changes in the event that project implementation is delayed. Notwithstanding the cost estimates from this report being used in the Generator Interconnection Agreement for the related project, MP reserves the right to re-evaluate and provide a more accurate cost estimate during the implementation phase of the project. In accordance with section 217 of the Open Access Transmission Tariff, the Project Developer will be responsible for 100 percent of the actual costs of the facilities required to accommodate its Interconnection Request.
- MP reserves the right to charge the Project Developer operation and maintenance expenses to maintain the Transmission Owner Interconnection Facilities, including metering facilities, owned by MP. These costs will be specified in the Generator Interconnection Agreement.

6.3 Schedule Assumptions:

- This schedule assumes that all issues covered by the "Environmental, Real Estate and Permitting Issues" section of this document are resolved. Construction cannot begin until after all applicable permits and/or easements have been obtained.
- MP's ability to support this schedule also depends on the feasibility of taking the required outages to support construction. Outages that are determined to negatively impact system reliability or cause congestion may be delayed or denied, at any time, even if they are submitted on time based on the Outage Submittal Rules in section 4.2.1 of PJM Manual 03. This includes, but is not limited to, outages requested between the months of June and September, as well as January and March, which typically get denied due to summer and winter peak conditions. Therefore, the construction schedule will be adjusted as needed to accommodate any outage restrictions that have been identified by MP or the Transmission Provider.

7. REVENUE METERING REQUIREMENTS

All revenue metering needed for this interconnection project must meet the metering requirements stated in Appendix 2, section 8 of the AG2-582 GIA, and in PJM Manuals M01 and M14D. The details of applicable revenue metering requirements are given in the 'Requirements for Transmission Connected Facilities' posted on PJM website.

The revenue metering will be installed on the Transmission Owner side of the Point of Change in Ownership will be installed, owned and maintained by Transmission Owner.

The revenue metering system (particularly the revenue metering current transformers) shall be designed to accurately meter the light loads that will occur when the facility is not generating power and only back-feeding station service from the Transmission Owner. This may require the use of high accuracy extended range current transformers.

Transmission Owner will obtain real-time, site-specific, generation data from PJM, via the required communication link from Project Developer to PJM. Transmission Owner will work with PJM and Project Developer to ensure the generation data provided to PJM meets Transmission Owner's requirements.

These requirements are in addition to any metering required by PJM.

8. LAND REQUIREMENTS FOR INTERCONNECTION SUBSTATION

- No additional land is required for the substation expansion.

9. APPLICABLE TECHNICAL REQUIREMENTS AND STANDARDS

- The Requirements for Transmission Connected Facilities, Revision 7, dated January 27, 2026, shall apply.
- The TPP-REF-003 Transmission Planning Criteria, Revision 10, dated December 19, 2023, shall apply.

10. ENVIRONMENTAL AND PERMITING

The following are possible environmental, real estate and permitting issues:

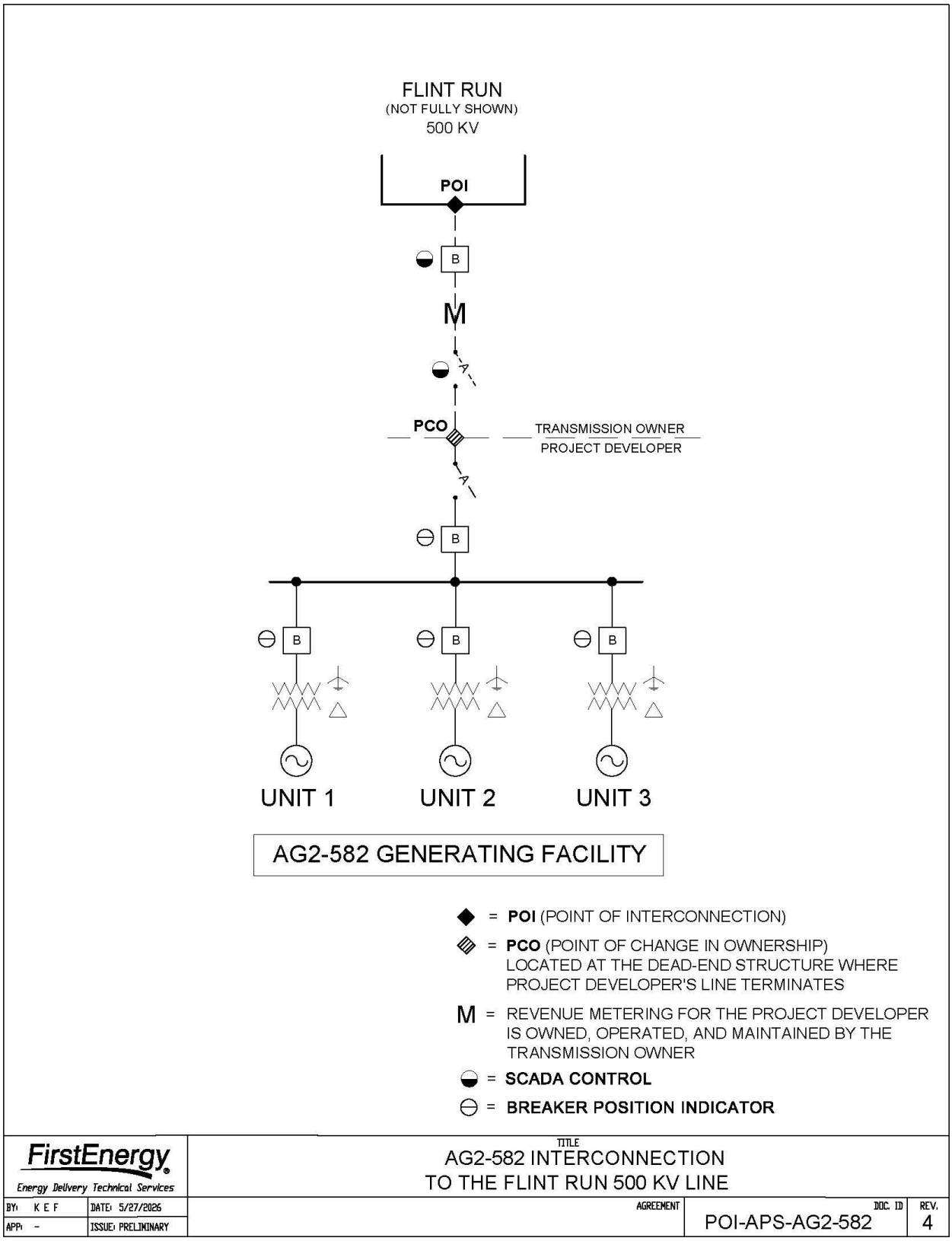
- Environmental permitting, Real Estate acquisition, and notifications to the state's Public Service Commission vary, some up to twelve (12) months after preliminary engineering is completed to secure the required approvals.
- Assumed Project Developer is to provide all access rights, easements, ROW and permits necessary to complete the Project to the satisfaction of Transmission Owner. Environmental permitting shall encompass all federal, state, and local requirements, consultations, and agency coordination. Confirmation of meeting all permitting requirements shall be provided to Transmission Owner, prior to start of construction. Following construction and energization, confirmation of permit closeout shall be provided to the satisfaction of Transmission Owner, prior to transfer of ownership. If any of these elements are not included in the final agreement between Transmission Owner and Project Developer, twelve (12)-to-eighteen (18) months should be added to the Project Schedule to secure necessary permits, and additional costs would apply.
- Project Developer will provide copies of all the relative environmental permits and other necessary approvals to Transmission Owner before Transmission Owner accepts the interconnection facilities.

- Project Developer is responsible for all property acquisition (including easements/rights-of-way (ROW)) for transmission, distribution and communication facilities needed for the generator interconnection.
- All property rights must be surveyed and metes and bounds descriptions prepared for incorporation into Transmission Owner's document forms, for transfer of title.
- All work occurs within an existing transmission line right-of-way or on Project Developer's property with access to all existing structures possible via that property and the right-of- way following established access routes that do not cross wetlands or streams.
- Project Developer will develop, and secure regulatory approval for, all necessary Erosion and Sediment Control (E&SC) plans and National Pollutant Discharge Elimination System (NPDES) permits.
- Project Developer will obtain all necessary permits.
- Project Developer will conduct all necessary wetlands and waterways studies and permits.
- Project Developer will conduct all necessary historical and archaeological studies.
- If the Project Developer plans to cross the transmission line right of way with facilities or access roads, please refer to the Transmission Rights-of-Way Restrictions information located at:

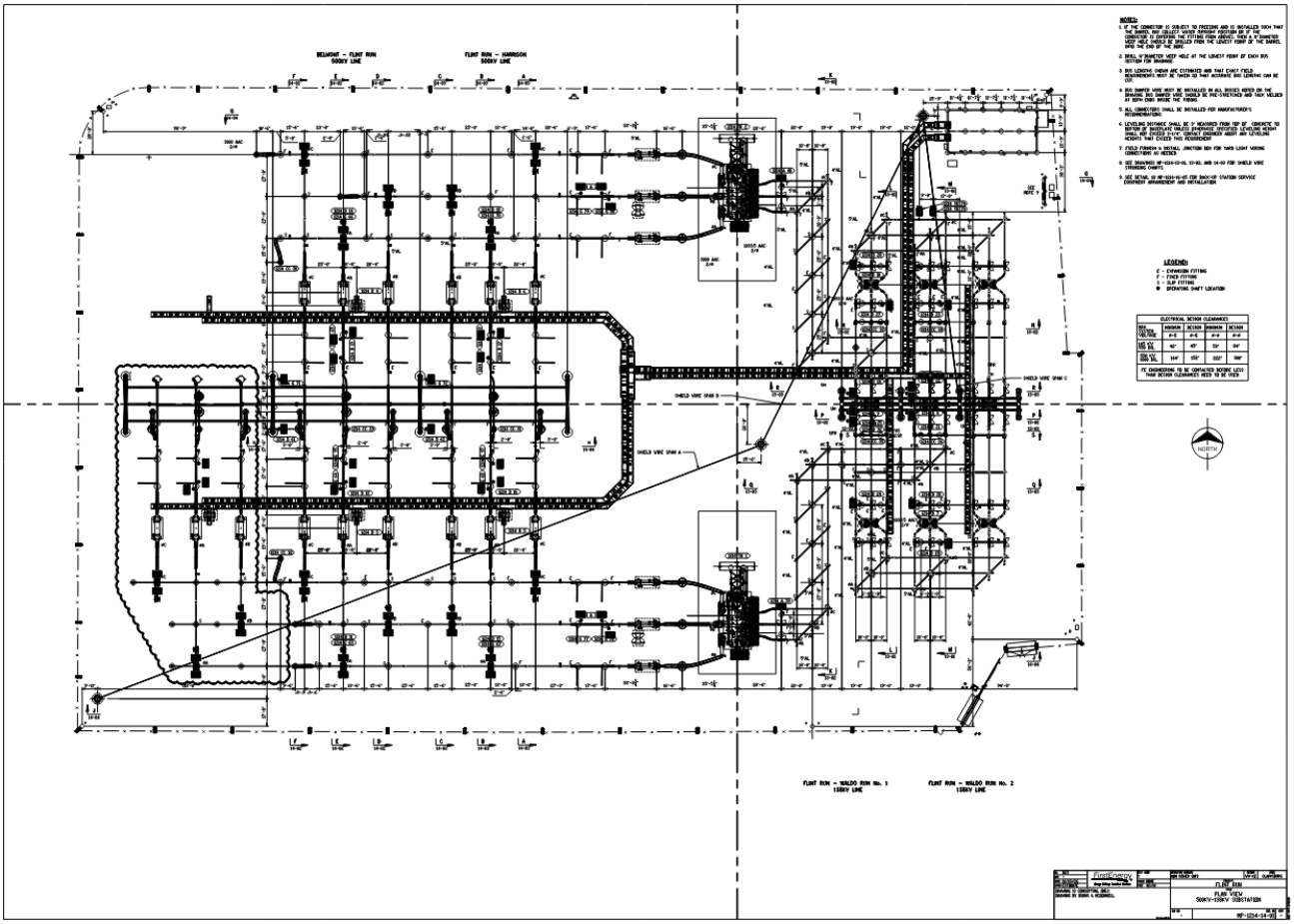
  https://www.firstenergycorp.com/help/safety/real-estate-power-lines/transmission-right-of-way.html#ROWform

C. APPENDICES

ATTACHMENT #1: SINGLE LINE DIAGRAM FOR THE PHYSICAL INTERCONNECTION



ATTACHMENT #2: SUBSTATION GENERAL ARRANGEMENT



ATTACHMENT #3: MATERIAL LIST AND EQUIPMENT RATINGS

Material/Equipment	Quantity
Fiber – ADSS (ft)	3946.6
Cable Trench (lf)	180
Foundation – Concrete (cy)	126.76
Stone (cy)	128.39
Panel (ea)	3
Relay - Individual (ea)	4
Remote Terminal Unit (RTU) (ea)	1
Cable Termination (ea)	1102
Soil Boring (ea)	4
Conduit (lf)	651
Insulator Bell (ea)	272
Switch (ea)	6
Structure – A/H Frame (ea)	1
Structure – Steel Stand (ea)	19
Circuit Breaker (ea)	1
Surge Arrestor (ea)	3
Capacitor Coupled Voltage Transformer (CCVT) (ea)	3
Control Cable (ft)	6670
Conductor (ft)	5677.2
Grounding (ft)	578
Hard Bus (ft)	480
Current Transformer (CT) (ea)	3
Potential Transformer (PT) (ea)	3
Shield Wire (OHGW) (lf)	580.8
Shield Wire (OPGW) (lf)	580.8

ATTACHMENT #4: PROTECTION SCOPE

Project Developer Protection Requirements

- The generation delivery points must comply with the technical requirements detailed in the FirstEnergy "Requirements for Transmission Connected Facilities" document.

- The Generator Step-Up (GSU) transformer(s) connecting to the FE system shall have a grounded-wye winding configuration on the high side and a delta configuration on the low side. This establishes an effective ground on the transmission system and mitigates overvoltage conditions during ground faults. A delta connected winding on the low side provides isolation of zero-sequence currents such that the FE system will not be exposed to ground faults on the generator system.

- A fully rated circuit breaker is required at the point of interconnection (POI).

- Two (2) SEL-411L's for primary and backup current differential protection are required for the transmission line connecting the FE interconnection substation to the POI. These relays will use direct fiber that is routed to the FE interconnection substation by diverse paths for primary and backup. Part number and firmware shall be sent to FE for approval to confirm communications compatibility. It is assumed the 87L channel shall also be used to communicate anti-islanding DTT to Generating Facility. It is assumed the 87L channel shall also be used for breaker failure DTT communications.

- Redundant protection schemes are required to protect the Project Developer owned equipment at POI voltage. Each zone of protection covering the POI voltage portion of the Project Developer's system, the GSU Transformer(s), and the POI voltage interconnection breaker, shall be protected by two independent relay schemes meeting the following redundancy requirements. Primary and backup relaying shall use independent CTs, and independent PTs or independent windings from the same PTs. Primary and backup relaying shall not have any common wiring, isolating switches, or auxiliary tripping relays. Redundancy of a protection system can be achieved by ensuring that there is no single point of failure between two locally independent primary and backup protection schemes for a given element. Relays from the same manufacturer are acceptable for both the primary and backup schemes.

- A protection scheme containing generator Intertie functions is required and must be able to provide tripping for the following functions: overfrequency, underfrequency, phase and zero-sequence overvoltage, phase undervoltage, directional overcurrent, and directional power. The current source and voltage source are to be at the Transmission POI voltage. The current source for the intertie relaying is preferred to be from CTs on the POI voltage interconnection breaker. The voltage source for the intertie relaying is preferred to be located between the high side of the GSU Transformer and the POI voltage interconnection breaker. If the PTs are located on the line-side of the breaker, PT primary-side fusing is required for isolation of a failed PT to prevent interruption of the FirstEnergy line.

- C800 CTs must be used on the POI voltage portion of the Project Developer's system, and the CTs should not saturate for the maximum expected through-fault current at the tap ratio in use.

- The relaying system and circuit breaker control circuits must have a reliable source of power independent from the AC system or immune to AC system disturbance or loss, to assure proper operation of the protection system.

- If there are multiple existing utility feeds, they shall not be paralleled. Either a mechanical or electrical interlock shall be in place to prevent paralleling of service points.

- The Project Developer's protection system shall be designed and constructed in accordance with all mandatory Protection and Control (PRC) standards established by the North American Electric Reliability Corporation (NERC). The Project Developer shall coordinate with FirstEnergy and the Regional Reliability Coordinator to determine all applicable PRC requirements and ensure the facility's design and operation achieve full compliance.

FE Protection Requirements

To coordinate with proposed generating station, the relay settings at the following stations will need adjusted (note that in some cases due to limitations of the existing relays, relays may need to be replaced):

The interconnection of the new generator to the Bulk Electric System (BES) transmission network will initiate a review of existing protection schemes and may introduce new requirements to ensure compliance with the Protection and Control (PRC) standards established by the North American Electric Reliability Corporation (NERC). Additional protection system upgrades at the interconnecting station, and potentially at other affected stations, will be determined by FirstEnergy and the Regional Reliability Coordinator during subsequent stages of the project, prior to detailed design.

- At Flint Run Substation
    - Review/revise relay settings for all existing relays at Flint Run station
    - Existing 500V bus/transformer differential scheme modifications to incorporate the new breaker position including CT wiring, trips, additional auxiliary relays and other wiring modifications as needed.
    - For the new 500kV line to Generating Facility station:
        - One (1) set of three (3) CCVTs for the Project Developer line
        - Two (2) SEL-411L relays for primary and backup line protection over dedicated fiber to the Project Developer station
        - Additional lockout and auxiliaries as needed to support the protection
    - For the new 500kV breaker at Flint Run station:
        - One (1) 500kV circuit breaker with three (3) sets of CTs per bushing
        - One (1) SEL-451 relay for breaker failure, and control as needed
        - Additional lockout and auxiliaries as needed to support the protection
    - For general relaying support:
        - One (1) lot of SEL-3555 or similar data concentrator RTACs for use as PMU data concentration
        - Existing Digital Fault Recorder wiring modifications to incorporate the new line.

- At Belmont Substation
    - Review/revise relay settings as needed.

- At Harrison Substation
    - Review/revise relay settings as needed.

Short Circuit Data

The short circuit levels at the Flint Run substation 500kV bus are the following:

Short Circuit values at 500 kV

Three phase faults = 22.456 kA

Single line to ground fault = 18.103 kA

Transmission System Impedances at 500 kV, 100 MVA base

Positive sequence Z1 = (0.00024 + j0.00514) (per unit)

Zero sequence Z0 = (0.00199 + j0.00870) (per unit)

The fault currents provided are bolted, symmetrical values for present, normal transmission system conditions. Future increases in fault currents are possible and it is the Project Developer's responsibility to upgrade their equipment and/or protective equipment coordination when necessary.

ATTACHMENT #5: PRELIMINARY GEOTECHNICAL SUMMARY

Observation & Concern Table:

Category	Source	Risk	Comment
Surficial Soil Survey	USDA Soil Survey/Geotech Report	Moderate	Fine grained soil
Geologic Formation/Group	WV/USGS Geologic Survey/Geotech Report	Moderate	Shallow bedrock
Karst	USGS/ TAMI 2	Low	Bedrock mapped with minor limestone, TAMI indicates karst features
Landslide Susceptibility	GIS/Google Earth/FEMA Risk Map/FE Files	High	High risk of landslides, many prior occurrences.
Coal Mining And Oil and Gas Wells	WV Geologic Survey/TAMI 2	Low	No coal mining. Gas wells are present in the area
Environmental Hazard	US Wetland Maps/FEMA	Low	Low risk of flooding
Past Development	TAMI/GIS MAP/Historic Aerials	Low	Undeveloped except for substation

Site Background/ Geologic Hazards Potential:

This review was conducted to determine potential geologic hazards and risks at the existing generator developer (Flint Run 500kV Substation) location (AG2-582). The existing substation is located in New Milton, Doddridge County, West Virginia. This includes a proposed expansion to the existing Flint Run substation. The proposed expansion would consist of the installation of one new breaker with SCADA control inside of the existing substation fence. The Flint Run Substation was constructed from 2021 to 2022. FE reviewed the available Geotechnical Exploration Report by GAI Consultants (dated August 28, 2019), and other related documents available as part of this review. The substation expansion was reviewed for surficial soils survey, geologic formation/group, karst, landslide susceptibility, coal mining and oil and gas wells resource mapping, environmental hazards, and prior development. The review was performed to identify any geologic risks that could affect the project's budget, constructability, and/or schedule.

Surficial Soil Survey

The United States Department of Agriculture Web Soil Survey indicates that the site is currently mapped as the Gilpin-Peabody silt loams (GsF or GsE). The Gilpin-Peabody silt loam series are generally silty soils that are underlain by relatively shallow bedrock, listed between 30 to 40 inches below the ground surface. The soils are well drained and currently classified as Hydrologic Soil Group (HSG) C indicating a relatively slow infiltration rate. Groundwater is listed as greater than 80-inches at the site. Groundwater was observed in the original explorations but was highly variable indicating possible perched conditions.

Geologic Formation/Group

The site is located in the Appalachian Low Plateau Physiographic Province, which is characterized by hills and valleys that contain relatively flat-lying sedimentary rocks containing and minable coal. The Geologic Map of West Virginia maps the site to be underlain by Pennsylvanian and Permian aged rocks of the Washington and Greene Formations of the Dunkard Group. The Dunkard Group consists of primarily sandstone, and siltstone, with claystone, shale, limestone, and coal.

The geotechnical borings performed by GAI were also reviewed and indicate that the site was originally underlain by clays and silts ranging from approximately 2.5 feet to 10 feet (typically 5 feet) followed by layers of sandstone, siltstone, claystone, or shale bedrock. The borings extended to a maximum depth of 101 feet and did not encounter any observable coal, and/or limestone. Copies of the boring logs can be seen in the attached geotechnical report. Grading was also performed at the site to achieve a level substation which required significant cuts and fills, and the construction of a retaining wall along the northeast corner of the station.

Karst

The site is underlain by the Dunkard Group which is mapped to contain minor limestone. No limestone rock was observed in any of the borings performed for the prior geotechnical report. The Transmission Asset Mapping Interface (TAMI 2) was reviewed, and no karst is present at the site.

Landslide Susceptibility

FE reviewed construction reports for both the substation and the access road. The site has experienced multiple landslides, requiring repairs to stabilize slopes around the substation. While the planned work is inside the substation and presents low direct risk, the overall site remains at high risk for landslides.

Resource mapping

The West Virginia Geologic and Economic Survey was reviewed for any coal mining (past or present) that has occurred in the site vicinity. No coal mining has occurred at the site or the site vicinity.

Several natural gas wells are located in the surrounding area of the site, however do not appear to be in conflict with any work that may occur within the substation.

Environmental Hazards:

Based on FEMA and U.S. Fish and Wildlife Service maps there are no wetlands or features that would cause an increased risk of flooding. An environmental study should still be conducted to confirm this prior to construction.

Past Development:

The past development assessment of the site was based on aerial photography dating back to 1957. The substation was constructed between 2020 and 2022, but prior to this, the site has been wooded except for a dirt access path/driveway that cut through the substation area.

1. This site is part of the Dunkard formation. Former borings did not encounter limestone or coal
2. Low potential for karst
3. High risk for landslides
4. Low environmental impact risk
5. No mining activity in the area. Gas wells are present but not in conflict with site.

Preliminary Geotechnical Opinion

This opinion is based on the assumption this is a generator developer, option to build project (expansion of the existing station). The geotechnical conditions of this site seem to conclude that it is relatively moderate risk location for the improvements to the existing substation, due to the history of landslides that have occurred surrounding the site. Additional due diligence will be required to determine if the new equipment would be at risk of landslides. The above estimate was based on available online resources and an available geotechnical report performed for the original station. The use of the geotechnical report should only be used as reference and should not be used for the design of any new equipment.