Facilities Study Report

For

Physical Interconnection of

PJM Generation Interconnection Request

Project IDs AE2-341 / AF1-030

Sandwich-Plano 138kV

July 2025

Introduction

This Facilities Study Report has been prepared in accordance with the PJM Open Access Transmission Tariff. The Transmission Owner (TO) is Commonwealth Edison.

A. Transmission Owner Facilities Study Summary

1. PROJECT DESCRIPTION

The Project Developer (PD) has proposed a Solar Generating Facility located in, Kendall County, Illinois with a designated PJM Project ID of AE2-341. The installed facilities will have a total Maximum Facility Output (MFO) of 150MW with 100.6MW of this output being recognized by PJM as Capacity.

The PD has also proposed a Solar uprate to a planned/existing Solar Generating Facility located in, Kendall County, IL with a designated PJM Project ID of AF1-030.

This project is an increase to the AE2-341 project, and will share the same Point of Change in Ownership.

The AF1-030 project is a 100MW uprate (66.9MW Capacity uprate) to the previous project.

2. POINT OF INTERCONNECTION (POI)

The Generating Facility will interconnect with the Commonwealth Edison transmission system via a newly constructed 138kV kV breaker-and-a-half substation, TSS 978 Miller Road, tapping the TSS 146 Sandwich - TSS 167 Plano 138kV line, L.14609, approximately 6.3 miles from TSS 146 Sandwich and 2.4 miles from TSS 167 Plano.

The construction of the new interconnection substation will result in the splitting of the existing TSS 146 Sandwich – TSS 167 Plano 138kV, L.14609 into two lines on the transmission system. The new L.97805 will connect TSS 978 Miller Road to TSS 167 Plano and L.14609 will connect TSS 978 Miller Road to TSS 146 Sandwich.

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

3. POINT OF CHANGE IN OWNERSHIP

The Point in Change of Ownership will be located at the first dead-end structure inside TSS 978 Miller Road 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:

4.1. The PD is responsible for construction of the additional 150MW Solar generation. The PD is also responsible for one (1) 138kV circuit breaker, one (1) generator step-up transformer (GSU), two (2) 138kV motor operated disconnect switches, and a 138kV generation lead line with associated structures terminating at TSS 978 Miller Road.

4.2. The PD is responsible for construction of the additional 100MW of solar under AF1-

030. The PD is also responsible for one (1) 138kV circuit breaker, one (1) generator step-up transformer (GSU), and (2) 138kV disconnects.

4.3. At AE2-341 Sandwich-Plano 138kV, in general, Project Developer relaying, etc. to follow section 6.1 (Design F) of latest version of ComEd interconnections guidelines (for Generators at Transmission Level) Rev2 Effective date 12/16/21 interconnection guidelines (for Generator at Transmission Level) Rev. 2 Effective 12/16/2021, with the following project specific notes (where applicable):

- New 138kV gas circuit breakers to auto trip and isolate for critical gas level
- New 138kV Tie Line terminal relay types to be the same as ComEd terminal relays. This includes relay firmware versions
- ComEd Protection and Control Engineering must review all Project Developer relay protection design drawings and relay settings.
- Project Developer equipment impedance and/or test data must be provided to ComEd Protection and Control Engineering to model in a short circuit program.
- Project Developer to include over/under frequency and voltage protection at solar farm collector bus. Suggested settings will be provided by ComEd. Under-frequency settings are to comply with MAIN Guide 1B.
- Dual bus protection for 34.5kV bus.
- Dual TRFM protection and site protection must be compliant with NERC & PJM requirements.
- Metering is required to be installed per ComEd & PJM standards.
- SCADA interface to ComEd will be required.
- Witness testing by ComEd or a Designated Authority will be required and must be pre-scheduled at least 90 days in advance.

4.4. Project Developer to provide transformer test reports for 138kV - 34.5kV step up transformers, for ComEd short circuit modeling. Test reports must include %Z impedance and load loss.

4.5. For any new equipment connected to the BES (Bulk Electric System rated at 100kV or above) the associated primary/System 1 and secondary/System 2 protective schemes to have a minimum redundant:

- Connected CTs (where available)
- PT secondary (where available)
- DC control circuits
- Auxiliary trip relays
- Circuit breaker trip coils (where available)
- Communication circuitry

4.6. The PD will be responsible to purchase real estate or obtain the necessary right-of-way easement to install the 138kV transmission line to TSS 978 Miller Road substation.

4.7. New Gas Circuit breaker control for loss of SF6 gas condition should be as follows (see Engineering practice EP-5206E and relay specifications):

- For an open SF6 circuit breaker, when SF6 gas drops to the critical level, the close circuit of breaker shall be opened, and motor operated disconnects on both sides of CB shall be opened
- For a closed SF6 gas circuit breaker, when SF6 gas drops to the critical level, the circuit breaker shall be opened, and motor operated disconnects on both sides of CB shall be opened and the close of the circuit breaker shall be opened.

4.8. All changes to topology, including generation, must be modeled during the Phase 1 study for PRC-027 compliance. A protection system coordination study is required for new BES buses or when there is a 15% (or greater) change in the fault current for an existing BES bus. Settings changes may be required per the outcome of this coordination study.

4.9. The PD is to provide two, physically diverse, Single Mode Fiber paths between TSS 978 Miller Road Interconnection Substation and Kendall County Solar.

4.10. PD will be responsible for Line L.97801 Single Mode Fiber from Project Developer's Substation to ComEd's Substation TSS 978 Miller Road. This will be used for Primary Relay scheme using Direct-on-Fiber connections per the Relay Notes. The minimum Fiber count is 48 Fibers and construction will be in adherence with ComEd Transmission Line standards. The PD will own and maintain this Fiber cable up to the fiber distribution panel in TSS 978 Miller Road.

4.11. PD will be responsible for Line L.97801 Single Mode Fiber from Project Developer's Substation ComEd's Substation TSS 978 Miller Road. This will be used for Secondary Relay scheme using Direct-on-Fiber connections per the Relay Notes. This Fiber must be built in a physically diverse path from the Fiber path used for the Primary Relay scheme. The minimum Fiber count is 48 Fibers. The PD will own and maintain this Fiber cable up to the fiber distribution panel in TSS 978 Miller Road.

4.12. The demarcation of ownership for these Fiber cables will be in the Fiber Distribution Panel (FDP) in the ComEd Substation TSS 978 Miller Road. The Project Developer will own and maintain both Fiber cables from ComEd's TSS 978 Miller Road FDP all the way to their generator substation.

4.13. The PD will be responsible to request and bear the cost of any outages required on existing transmission or distribution lines that may be required for the transport of any large equipment, i.e. turbines, rotors, turbine structures, etc.

4.14. PD to provide limiting Transmission Facility ratings for their portion of 138kV L97801, in accordance with NERC FAC-008, FERC Order 881 and PJM Operational requirements for normal and emergency ratings from -55F to 130F in 5F increments.

4.15. Option to Build

- If the PD selects the Option to Build, the PD shall construct TSS 978 Miller Road.
- The PD shall construct TSS 978 Miller Road and transfer ownership to ComEd prior to commercial operation of AE2-341. The PD shall transfer ownership of the real estate in fee to ComEd.
- Substation requirements are described below in section B.

B. Transmission Owner Facilities Study Results

The following is a description of the planned Transmission Owner facilities for the physical interconnection of the proposed AE2-341 / AF1-030 project to Commonwealth Edison transmission system. These facilities shall be designed according to Commonwealth Edison Applicable Technical Requirements and Standards. Once built, Commonwealth Edison will own, operate, and maintain these Facilities.

1. TRANSMISSION OWNER INTERCONNECTION FACILITIES:

The TO Interconnection Facilities will include, but not be limited to, the following.

- A 138kV dead-end structure and foundation within the fence of the Interconnection Substation, to terminate the Project Developer's generator lead line.
- One (1) new 138kV motor-operated disconnect switches, rated for 3000A, to be installed at each new breaker
- Three (3) line disconnect switches, rated for 2000A, to be installed at each line
- Three (3) metering CT/PTs
- Two (2), physically diverse, Single Mode Fiber paths between TSS 978 Miller Road Interconnection Substation and Kendall County Solar.
- Three (3) Surge Arrestors
- Foundations and structures

2. STAND ALONE NETWORK UPGRADES

The Stand Alone Network Upgrades will include, but not be limited to, the following.

For new interconnection substation:

TSS 978 Miller Road Interconnection Substation

A new breaker-and-a-half substation, TSS 978 Miller Road, will be constructed along the L.14609 138kV transmission line to interconnect the AE2-341 and AF1-030projects with the ComEd transmission system.

The greenfield new substation will include

- Three (3) new gas SF6 138kV circuit breakers BT 1-2, BT 2-3, and BT 1-3, with accommodation for future breakers BT 4-5, BT 5-6, and BT 1-6 rated for 3000A
- Breakers to be rated for 3000A
- One (1) new 138kV motor-operated disconnect switches, rated for 3000A, to be installed at each new breaker
- Nine (9) new 138kV 1200:1 CCVTs to be installed at Busses 1, 2, and 3
- One (1) new 138kV 1200:1 with Carrier Accessories and Tuner
- One (1) 2000A Wave Trap
- Three (3) outdoor breaker cabinets

- Six (6) Surge Arrestors

One (1) new 12kV-208/120V AC auxiliary transformer to be installed. This will be fed via a nearby 12kV distribution line to be determined during detailed design; new 12kV UG cable will be run to allow access to TSS 978 Miller Road. The distribution line connection will require construction of new 12kV overhead lines and poles from an existing distribution line to TSS 978 Miller Road. Connection details and length will be determined during detailed engineering and may exceed the assumptions in this study. If a lower cost option is found during engineering, the cost estimate would be reduced. It is assumed that no new ROW for the new distribution line will be required, but this will be determined during detailed engineering. One (1) propane 120/208V back-up generator to be installed as the emergency station service AC source.

New control building to be installed to accommodate new relaying and relaying for future breaker-and-a-half bus expansion. Control enclosure shall meet latest ComEd standards. If NERC Low Impact, install BSC/IT UCOMM router and firewall. If Medium Impact, use serial communication. The new control building will contain:

- One (1) 125VDC battery systems
- DC distribution panels
- Relay panels
- Marshalling cabinets
- Auxiliary AC power panels
- Building HVAC system
- Fire/security system
- SCADA
- Metering equipment.
- Additionally, auxiliary data communications will be installed to communicate with PD remote end for SCADA and metering purposes.
- SCADA network will be based on 61850 design at ESS E535 Microsoft
- One SCADA cabinet:
- Three SEL-3555 RTACs for RTU, SysLog/SEL protocol concentrator, and Synchrophaser data concentrator.
- Two SEL-3555 as redundant HMI, with each tied to its own mouse, keyboard, and monitor on the operator desk.
- One SEL-2730M Ethernet switch as SCADA Master Switch.
- One Omicron RBX1 Station Scout
- One SEL-3350 RTAC for Project Developer data. Install one pair of serial fiber connections for each Project Developer RTU data exchange.
- Two Station Bus network cabinets (A and B):
- One master SEL-2741 switch
- One SEL-2440 DPAC

- One SEL-2488 GPS Clock
- One SEL-3350 Blueframe Flow Controller
- One Ruggedcom RST2228 Ethernet Switch
- One Ruggedcom RSG910C Switch with two 1000BASE-SX SFPs
- Connect metering group-provided revenue meter to station IP architecture.
- Confirm latest device model numbers and GDD with the assigned SCADA engineer.

Relay Installs at TSS 978 Miller Road.

- For all new outdoor 138kV GCBs (3 total):
    - Install a breaker control cabinet in the yard located adjacent to the breaker. Cabinet to contain SEL- 451-5 relay for Sys1 50BF/79/25 and SEL-401 for Sys2 50BF with a Mirror Bit connection between relays. Use 3,000:5 CT ratio C800 class CTs.
    - Hardwire critical gas trips to breaker MODs.
    - Hardwire Bus pots to SEL-451 for synch closing.
    - Auto-reclosing will be enabled on all Overhead lines, if applicable.
    - GCB Will have pre-installed SEL-2411 relay for CB Monitoring.
- For each 138kV line (3 total: L14609, L97805, L97801 (GIC LINE)):
    - Install dual SEL-411L-1 relays for Sys1 & Sys2
    - For L14609: 411Ls to be used as 11-1/11-2 devices for DCB/Step distance scheme on Power Line Carrier.
    - For L97805 & L97801: 411Ls to be used as 87L line differential scheme on direct single mode fiber. DTT will be internal to the relay, see comm table. GOOSE tripping and non-SBM design to be utilized.
    - For L97805: On system 1 relay, install a MB-direct fiber connection on serial Port3 with SM transceiver to TDC527 Plano West for DTT trips.
    - For L97805: On system 2 relay, install a MB-MUX connection on serial Port3 with MM transceiver to TDC527 Plano West for DTT trips.
- Install a control cabinet in the yard located adjacent to the line MODs. Cabinet to contain SEL-2411 relay for Remote Trip, Close, “89a”, “89af”, “89b”, & “89bf’ statuses to be sent to SCADA. Include local FDP in the cabinet with redundant fibers.

- Install a control cabinet in the yard located adjacent to the line MODs. Cabinet to contain SEL-2411 relay for remote trip, close, “89a”, “89af”, “89b” & “89bf” statuses to be sent to SCADA. Include local FDP in the cabinet with redundant fibers.
- In addition, install load rejection logic such that the transfer trip is initiated on both primary and secondary relaying to Project Developer site if 138kV L97801 breaker at TSS978 is opened (Refer to GDD 4003 for load rejection design).

Yard cable trench to be installed from control building to breakers and line terminal structures. Cable Trough to have a drainage system installed below the trough per ComEd standards. A lift station may be needed.

New substation to require installation of new fence and (2) sliding vehicular gates that are positioned no less than one half of the yard diagonal apart, as well as site development and grading. Preliminary security classification for the proposed substation indicates that fencing will be 7' with 1' barbed wire; fencing must adhere to all ComEd specifications and requirements. Security requirements including fencing may change. New station grounding, lightning protection, and lighting to be evaluated by studies, designed, and installed.

The developer ground grid shall not be tied to the TSS 978 Miller Road ground grid. New property will need to be purchased.

The access road to the main public road should be a minimum of 28 feet and have an asphalt or concrete approach. The radius transition to the main road to be in accordance with the requirements of the government having jurisdiction of the public road.

- Minimum width of road is 20'-0"
- Minimum turning radius (horizontal curve) of road to be 40'-0" to the center of the road.
- Maximum slope of road is to be 4.5%

Stormwater detention and any other required stormwater management features to be constructed outside of the substation fence. These must satisfy all local, county, state, and federal requirements for stormwater management.

Security system will need to be installed to meet ComEd standards.

If any utilities are routed under the substation these will need to be re-routed outside of the substation.

Fiber cable circuits

Project Developer to provide two, physically diverse, Single Mode Fiber paths between TSS 978 Miller Road Interconnection Substation and Kendall County Solar.

System 1 Relays will use the "System 1" Fiber cable for a Current Differential Relay Scheme, which will also provide Direct Transfer Trip (DTT). This Fiber cable will be owned and maintained by the Project Developer and should have minimum of 48 Fibers. The demarcation for the Fibers in this cable will be in a Fiber Distribution Panel (FDP) inside of the TSS 978 Substation. ComEd will own and maintain the FDP.

System 2 Relays will use the "System 2" Fiber cable for a Current Differential Relay Scheme, which will also provide Direct Transfer Trip (DTT). This Fiber cable will be owned and maintained by the Project Developer and should have a minimum of 48 Fibers. The demarcation for the Fibers in this cable will be in a Fiber Distribution Panel (FDP) inside of the TSS 978 Substation. ComEd will own and maintain the FDP

The demarcation of ownership for these Fiber cables will be in the Fiber Distribution Panel (FDP) in the ComEd Substation TSS 978 Miller Road. The Project Developer will own and maintain both Fiber cables from ComEd's TSS 978 Miller Road Substation all of the way to their Kendall County Solar substation.

3. NETWORK UPGRADES

The Network Upgrades will include, but not be limited to, the following.

Transmission Line Tie-in for new interconnection substation:

Cut existing L14609 138kV transmission line between existing structures 116 and 117 to loop into the new TSS 978 Miller Road Substation and break into new L97805.

- ComEd will be performing the design, procurement, and construction of the

new structures required to cut over to the new TSS 978 Miller Road Substation.

- Install four (4) new vertical double circuit 138kV/34kV deadend structures 115, 116D, 117D and 117 on drilled shaft foundations.
    - 115 with be approximately 70' and will be similar to EM10373 but modified with 15' vertical phase spacing rather than 17'.
    - 116D and 117D will be approximately 90' tall LS1816 structures.
    - 117 will be an approximately 85' tall EM10373 structure.
- Install two (2) new vertical single circuit deadend structures 1001 and 2001.
    - Vertical deadend structures are required to roll the phases correctly into the new substation.
    - 1001 and 2001 will be approximately 105' and 115' respectively. They will be similar to EM10377 structures, but modified to have a max design weight span of 1,500 ft rather than 1,000 ft.
- Approximately 0.53 new circuit miles of conductor and shield wire will be installed.
    - New conductor and shield wire for the 138kV lines for TSS 987 will be 1113 kcmil (45/7) Bluejay ACSR and 7#6 Alumoweld, respectively.
    - New conductor and shield wire for the 34kV L10643 line will be 477 kcmil (19-STR) Cosmos AAC and 7#6 Alumoweld, respectively.
    - Existing conductor and shield wire on 138kV L14609 is 1113 kcmil (45/7) Bluejay ACSR and 7#8 Alumoweld, respectively, and will be transferred to new cut-in structures 115 and 117.
    - Existing conductor and shield wire on 34kV L10643 is 477 kcmil (19-STR) Cosmos AAC and will be transferred to the new cut in structures 115 and 117.
- Existing structure 116 will be removed. Existing structures 114 and 118 will remain.

Upgrades to neighboring facilities:

TSS 167 Plano

- For L97805: Replace existing SEL-421/311C line relays with dual SEL-411L-1 relays for Sys1 & Sys2 87L line differential using direct fiber/MUX. DTT will be internal to the relay, see comm table. LJ tripping and non-SBM design to be utilized.
    - On system 1 relay, install a MB-direct fiber connection on serial Port3 with SM transceiver to TDC527 Plano West for DTT trips.
    - On system 2 relay, install a MB-MUX connection on serial Port3 with MM transceiver to TDC527 Plano West for DTT trips.
    - Remove wave-traps and other Carrier Communication equipment as required.
- Install new Fiber MUX equipment as required.
- Replace SEL-3530 RTAC with SEL-3350 RTAC.
- Replace SEL-2407 GPS Clock with SEL-2448.
- Connect new relays to existing dual switch architecture.

TSS 146 Sandwich

- Replace 138kV L.14609 line relays with SEL-421 and SEL-311C for Primary and

Secondary relaying per GDD1936. Review and update L.11301 relay settings as necessary.

- Carrier Transceiver upgrade.

TDC 527 Plano West

- For L97805: Install dual SEL-2411 for DTT via MB from TSS978
  - On system 1 relay, install a MB-direct fiber connection on serial Port4C with SM transceiver to TSS978 MILLER ROAD for DTT trips. Use serial Port3 for clock signal if needed.
  - On system 2 relay, install a MB-MUX connection on serial Port2 to TSS978 MILLER ROAD for DTT trips. Use serial Port3 for clock signal if needed.
- For L97805: Install dual SEL-2411 for DTT via MB from TSS167 Plano
  - On system 1 relay, install a MB-direct fiber connection on serial Port4C with SM transceiver to TSS167 Plano DTT trips. Use serial Port2 for clock signal if needed.
  - On system 2 relay, install a MB-MUX connection on serial Port2 to TSS167 Plano for DTT trips. Use serial Port3 for clock signal if needed.
- Remove wave-traps and other Carrier Communication equipment as required.
- Install new Fiber MUX equipment as required.
- Install SEL-3350 RTAC dedicated to new transmission relays.
- Install RST-2228 dual aux switch architecture.

Fiber installation

Install two Single Mode Fiber paths that are physically diverse from each other. One path will connect TSS 978 Miller Road to TDC527 Plano West (approx. 6.5 miles). The other path will connect TSS 978 Miller Road back to the nearest ComEd Fiber which connects to Sta 1 LaSalle (approx. 5.5 miles). These Fiber paths will provide the Relay connections required in Note 20 for the Direct Fiber Primary, and the ICON Plano Ring Secondary, for 138kV L97805 to TSS 978 Miller Road, TSS 167 Plano, and TDC 527 Plano West. These Fibers will also be utilized for SCADA, telemetry, remote access, and other Substation communications. For each Fiber path, if Fiber can be installed in OPGW, the minimum Fiber count is 48 Fibers and construction will be in adherence with ComEd Transmission Line standards. If Fiber cannot be installed in the Transmission path, the Fiber count and construction for these Fiber paths will be determined by ComEd Standards ESP 5.8.1 and 5.8.2. ComEd will own and maintain these Fiber cables.

4. OTHER SCOPE OF WORK

ComEd to provide oversight to the Project Developer at the Project Developer's cost or the engineering and construction of the interconnect substation if Option to Build is elected.

Metering will be required to be installed at the interconnection substation. Metering to be provided for revenue and AMI purposes.

5. MILESTONE SCHEDULE FOR COMPLETION OF COMED WORK

Facilities outlined in this report are estimated to take 60 of months to construct, from the time the Generation Interconnection Agreement is fully executed. This schedule is 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
Detailed Design	1	21
Permitting	21	50
Construction	50	60

6. ASSUMPTIONS IN DEVELOPING SCOPE/COST/SCHEDULE

6.1 This report is based on the System Impact Study Report for PJM Generation Interconnection New Service Request Project AE2-341 / AF1-030 Sandwich-Plano 138kV. The steady-state voltage study for stability analysis will be performed by PJM during the Facility Phase. The PJM study could identify upgrades to the ComEd system that would become part of this project's scope of work. It is assumed that all associated network upgrades, as listed in the above System Impact study, are complete prior to this New Service Request Project Position being placed in service.

6.2 The schedule is based on GIA contract being executed by all parties and the deposit received.

6.3 ComEd cost estimates assume that work will be performed during normal weekdays and with no overtime.

6.4 Transmission line outages for the tap construction have not been identified, but generally are available in spring (March to May) and fall (September to November). These outages are controlled by PJM.

6.5 The PD will be responsible to request and bearing the cost for relocation of existing transmission or distribution lines (including structures) that may be required for transmission line crossings, the transport of any large equipment, such as cranes, etc. The backfeed date identified in earlier sections is not yet approved. Formal submittal of this request to ComEd's TSO for ultimate review by PJM can be made 7 months prior to the back feed request date.

6.6 All upgrades to facilities included in this document will be required to meet the latest ComEd standards.

6.7 Upgrades are subject to change based on detailed design development

6.8 Costs are based on 2024 rates and do not reflect a potential increase in Labor or Material costs.

6.9 Project Developer to upload as-built drawings to ComEd drawing system (Meridian).

6.10 Single fiber routing has not been included in this study.

6.11 ComEd cost estimate is valid for six (6) months after Facilities Study release by PJM.

6.12 This study assumes that any additional right-of-way and/or easement work required will be at the expense of the Project Developer.

6.13 This Phase 2 System Impact Report is time-dependent. If the project is not into construction within one year of the issuance, the FS will be void and the project re-studied, requiring the completion of a new FS.

6.14 Both (1) all real property conveyed in fee to ComEd must be remediated to and (2) all real property to which real property rights are transferred to ComEd (as determined in ComEd's discretion) must be remediated to IEPA's Tiered Approach to Corrective Action.

6.15 This Phase 2 System Impact Report assumes that generator output and plant auxiliary power consumption can both be metered with revenue accuracy as described. The final revenue metering configuration and equipment will be confirmed, and may be revised, during detailed engineering following execution of the Generator Interconnection Agreement (GIA).

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 AE2-341 / AF1-030 GIA, and in PJM Manuals M01 and M14D. The details of applicable revenue metering requirements are given in the 'ComEd Interconnection Guidelines" posted on PJM website.

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

- REVENUE METERING FOR PJM AND COMED
    - The revenue meter measures the wholesale energy output (Hourly compensated net MWH and Hourly compensated net MVARH) of the Generating Facility.
    - The metering equipment, including revenue meter and CT/PT shall be installed, at Project Developer's expense, at the interconnection substation on ComEd side of the Point of Change in Ownership.
    - ComEd shall own, operate, maintain, inspect, and test all the metering equipment as set forth in 'Testing of Metering Equipment' section of the PJM Tariff, at the Project Developer's expense.
- REAL-TIME METERING FOR PJM
    - The Project Developer shall install, own, operate, maintain, inspect, and test real-time metering equipment to measure and transmit directly to PJM the real time MW, MVAR, voltage and status of electrical equipment such as circuit breakers and Motor Operated Disconnect switches, in conformance with the requirements listed in PJM Manuals M-01 and M-14D, at the Project Developer's expense.
- RETAIL METERING FOR COMED
    - The AMI Meter measures the energy consumption by the Project Developer at transmission level and hence shall be designed to measure low MW flow.

- The metering equipment including AMI Meter and CT/PT shall be installed at the interconnection substation on ComEd side of the POI, at the Project Developer's expense.
- ComEd shall own, operate, maintain, inspect, and test all the metering equipment as set forth in the 'ComEd Interconnection Guidelines'.

- BATTERY TERMINAL AMI METERING FOR COMED
  - FERC Order 841 designates inflow to charge battery storage facility as wholesale power. To separately measure the power inflow to charge the battery and bill it at wholesale rate, the Project Developer needs to install the following equipment.
    - Advanced Metering Infrastructure (AMI) equipment including AMI Meter and Current Transformer/Potential Transformer (CT/PT) at the output terminal of the battery storage facility to measure power flow from transmission system to charge the battery storage facility.
    - Fiber cable to provide communication link to transmit AMI meter data to the ComEd SCADA system.

8. LAND REQUIREMENTS FOR INTERCONNECTION SUBSTATION

1) For a 138kV substation bisecting one transmission line, the site shall be at least 500' x 400' excluding the stormwater detention facility. The site should be expandable to 500' x 800' without any restriction.

2) The site should be accessible from at least two sides to bring in future transmission lines. This means that there should be no river, another transmission line, hills, forest, or wetland on at least two sides of the site.

3) There should be no legal agreements or other impediment to interconnect additional generator lead lines to this site from other generators in the future.

4) The site should not encroach into ComEd transmission or distribution corridors.

5) If the PD owns the land surrounding the substation site, the PD must provide open easement to ComEd to bring in future transmission lines into the substation.

6) The PD is responsible to build an access road meeting ComEd requirements to the substation site from the nearest public road.

7) The PD is responsible to acquire land to install tie-lines integrating the substation with the ComEd transmission system.

8) The PD is responsible to acquire land for the stormwater detention facility meeting all applicable ComEd Environmental requirements and all applicable municipal, county, and state requirements for stormwater management.

Upon completion of the construction and installation of the interconnection substation, the tie-line, access road, stormwater detention facility and related improvements and facilities, and the satisfactory completion of testing of the interconnection substation acceptable to ComEd, the PD shall transfer all the Property Rights and Permits to

ComEd, at no cost or expense to ComEd, pursuant to documentation that is acceptable to ComEd, including (without limitation) the Property Transfer Documents in fee simple.

All real property conveyed in fee to ComEd must be remediated to and all real property to which real property rights are transferred to ComEd (as determined in ComEd's discretion) must be remediated to IEPA's Tiered Approach to Corrective Action Objectives (TACO) Tier 1 residential remediation standards.

9. ENVIRONMENTAL AND PERMITING

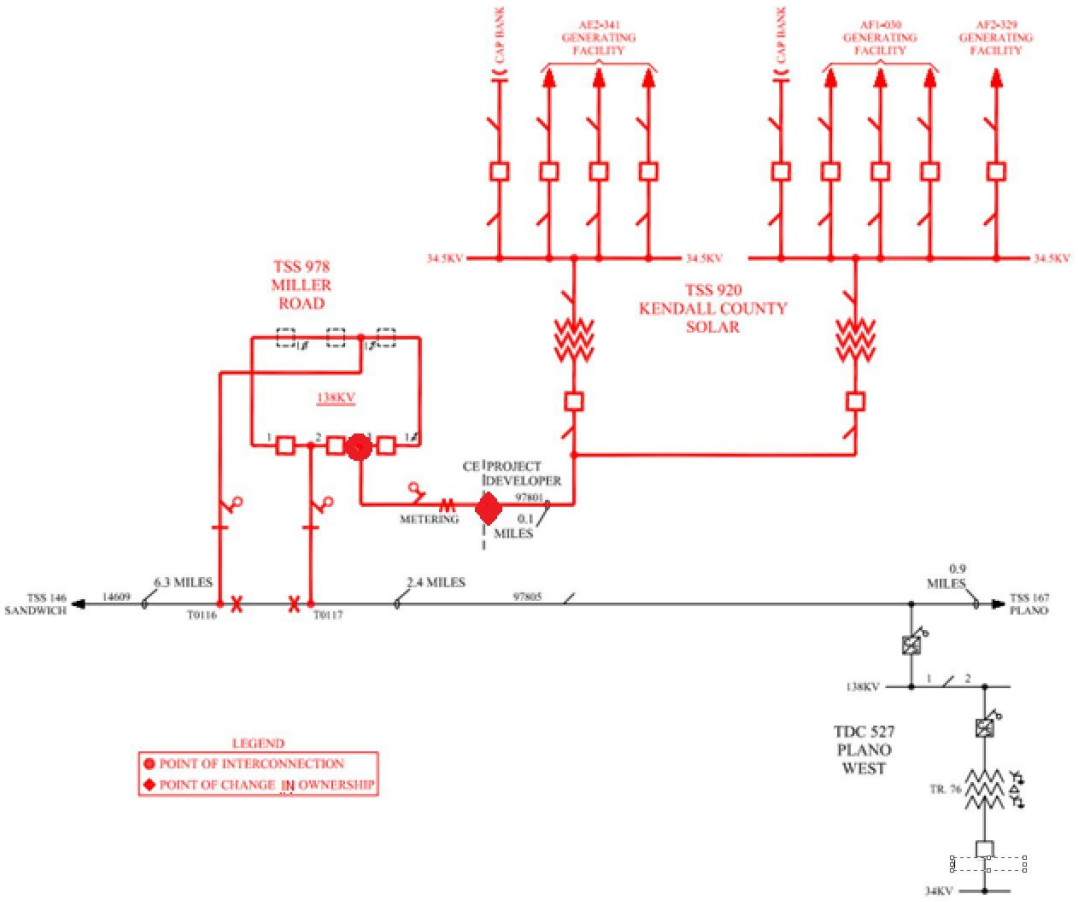
- Environmental approvals required for the construction of 138kV TSS 978 Miller Road to be acquired at PD cost.
- The PD will be responsible for any remediation costs if greenfield and expansion locations are found to have environmental contaminations.
- PD will purchase the real estate to accommodate the new 138kV TSS 978 Miller Road substation and transfer ownership to ComEd. A total of 200,000 square feet of real estate will need to be purchased (500' x 800') for the yard, plus additional real estate for stormwater management features outside of the yard. See Attachments #2.
- PD will be responsible for cost incurred if Army Corps of Engineers, county, and/or municipal permits are needed including storm water permitting.
- It is assumed that all necessary permits will be obtained in a timely manner so as to allow engineering and construction to proceed according to the Milestone Schedule.
- It is assumed that conveyance of property and rights will be obtained to support the PJM Transmission Outage Schedule.
- It is assumed that the required Environmental Study will yield no impediments to the development of the site.
- Both (1) all real property conveyed in fee to ComEd must be remediated to and (2) all real property to which real property rights are transferred to ComEd (as determined in ComEd's discretion) must be remediated to IEPA's Tiered Approach to Corrective Action Objectives (TACO) Tier 1 residential remediation standards

C. APPENDICES

1) Attachment #1: One Line
2) Attachment #2: General Arrangement for the Substation Equipment
3) Attachment #3: One Line Diagram
4) Attachment #4: Transmission Line Tie-In Plan
5) Attachment #5: Geographical Map Showing the Property Location

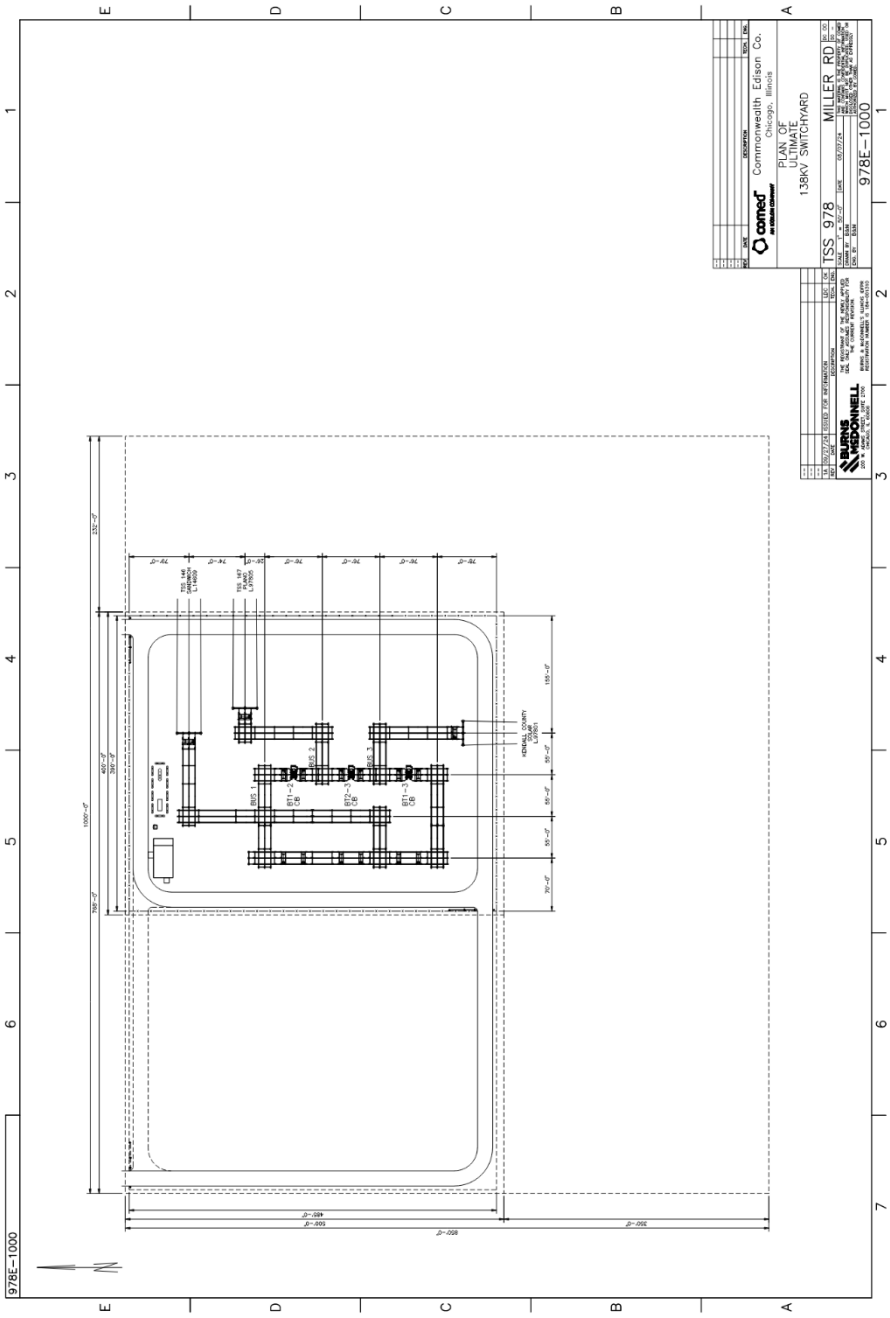
Attachment #1:

One Line



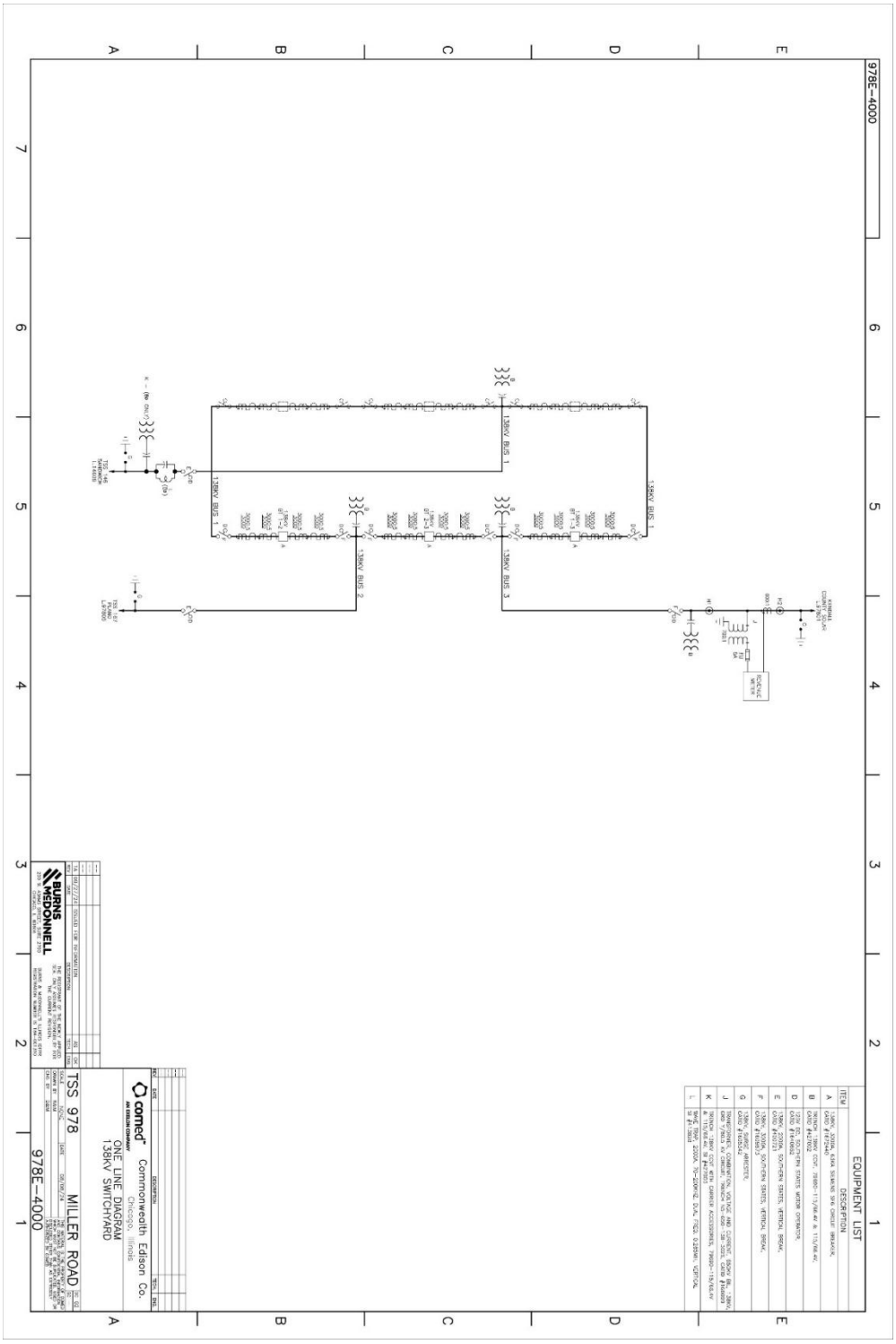
Attachment #2:

General Arrangement for the Substation Equipment



Attachment #3:

One Line Diagram



Attachment #4:

Transmission Line Tie-In Plan

(Attached PDF)

Attachment #5:

Geographical Map Showing the Property Location