Amendment Number 3 to
The Framework Agreement for Engineering

This Amendment Number 3 (this "Amendment") to the Agreement (as defined below) is entered into as of August 31st, 2021 by and between **AVANGRID Service Company** ("Customer") and [redacted] ("Supplier" or "Contractor"). Capitalized terms used and not otherwise defined herein shall have the meaning ascribed to them in the Agreement.

RECITALS:

WHEREAS, Customer and Supplier are parties to The Master Services Procurement Agreement dated as of June 8, 2018 as modified by Amendment 1 dated August 8, 2018 and Amendment 2 dated October 9, 2020 (collectively, the "Agreement"); and

WHEREAS, the parties desire to enter into this Amendment to reflect changes to the Agreement for the Framework Contract for Detailed Engineering Service (hereinafter the "Detailed Engineering FA") as are set forth herein.

NOW THEREFORE, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties agree as follows:

A) **Schedule B" Services"** to the Agreement is hereby amended to also include the "Services" as set forth on the attached Schedule B-2to this Amendment to govern solely for the purposes of the **Detailed Engineering FA.**

B) **Schedule C "Terms and Conditions"** of the Agreement is hereby amended to add the following Definitions to govern solely for the purpose of the **Detailed Engineering FA SOW (Schedule B-2).**

- "**Contract Price**" shall mean, the total amount payable by the Company to the Supplier for the performance of the Services under this Agreement for each applicable Purchaser Order.

- "**Project**" shall mean the services specified in each Purchase Order.

C) **Schedule C "Terms and Conditions"** of the Agreement is hereby amended by replacing and restating Article 22 Force Majeure with the following:

> ARTICLE 22 – [**FORCE MAJEURE**] is hereby replaced by the following for the purpose of govern the Detailed Engineering FA
>
> For purposes of this Agreement, "Force Majeure Event" means, with respect to a Party, any event or circumstance, regardless of whether it was foreseeable, that was not caused by that Party or the negligence of that Party and that prevents a Party from complying with any of its obligations

under this Agreement, and that the Party claiming the occurrence of such event has furnished the other Party with prompt notice when it appears that such cause will result in non-performance or shall threaten to impair such Party's performance, except that a Force Majeure Event will not include a strike, workforce unavailability, or other labor unrest that affect only one Party, late delivery or breakage of equipment or materials (except to the extent due to a Force Majeure event otherwise excusable hereunder), lack of funds or change in economic circumstance, a failure of performance of any third party (except to the extent due to a Force Majeure event otherwise excusable hereunder), an increase in prices, a change in market demand, a, weather or climatic conditions within the range of severity as recorded by the *National Oceanic and Atmospheric Administration* over the past twenty-five (25) years in the vicinity of the Site or elsewhere, or actions of a Governmental Authority with respect to the Supplier's compliance, or failure to comply, with Applicable Laws, Permits, or Governmental Authority-imposed measures. Force Majeure may include the following events, (a) war, hostilities (whether war be declared or not), invasion, act of foreign enemies in each case within the country; (b) rebellion, terrorism, revolution, insurrection, military or usurped power, or civil war in each case within the country; (c) riot, commotion, disorder, strike or lockout in each case within the country, by persons other than the Supplier, the Supplier's Personnel, Subcontractors and other employees of the Supplier; (d) ionizing radiation or contamination by radio-activity, except as may be attributable to the Contractor's use of such radiation or radio-activity; or, (e) natural catastrophes, such as earthquake, volcanic activity, wildfire, hurricane or typhoon (but not any other weather, climate or meteorological conditions). Supplier shall have used its best efforts to remedy the delaying cause or condition and recommence performance, and has furnished the Customer with prompt written notice when it appears that such cause will result in non-performance or shall threaten to impair Customer's ability to operate. Customer shall have the right, at its option and without being under any liability to Supplier, to cancel by notice in writing to Supplier the portion or portions of the work so affected and to take such compensation action as may be necessary. Correspondingly, Customer shall be excused for failure of performance herein due to any cause beyond its control and without its fault or negligence. Upon occurrence of a Force Majeure Event, the nonperforming Party shall promptly notify the other Party of occurrence of that Force Majeure Event, its effect on performance, and how long that Party expects it to last. Thereafter the nonperforming Party shall update that information as reasonably necessary. During a Force Majeure Event, the nonperforming Party shall use reasonable efforts to limit damages to the other party and to resume its performance under this Agreement. If the Force Majeure Event extends for more than twenty (20) days and if the Supplier cannot reasonably reschedule or perform any affected element of this Agreement, the Customer shall be entitled to terminate this Agreement upon notice to the Supplier. Supplier shall

furnish timely reports every ten (10) Business Days during the continuation of each Force Majeure Event with respect thereto and whenever such Force Majeure Event has ceased. If a Force Majeure Event materially affects Supplier's schedule for performance hereunder, Supplier may request an equitable adjustment and the Parties agree to memorialize schedule changes in a change order. If the effects of a Force Majeure Event last longer than twelve (12) months, that shall entitle Customer to terminate the Agreement or Purchase Order, as the case may be.

Customer and Supplier expressly agree, notwithstanding any provision in this Agreement to the contrary, that: (i) a COVID-19 pandemic exists worldwide as of the execution date of this Agreement; (ii) the existence of such pandemic, and its effects, now, and for the duration of Supplier's performance under the Agreement including, without limitation, effects upon pricing, schedule, quantities or specifications, if any, shall not be cause for Supplier to rely upon, invoke, or avail itself to, any rights or remedies under this Agreement, at law, or in equity, for a claim, or an adjustment to the price, schedule, quantities, specifications, or other material terms of this Agreement, including the rights and remedies set forth in the Force Majeure provision of this Agreement, however, this clause does not pertain to COVID 19 variants or other unforeseeable events that are unknown as of the date of this Agreement that may emerge from the global COVID-19 pandemic; (iii) the material terms of this Agreement, particularly terms relating to price, schedule, quantities, availability and specifications, take into consideration, and fully account for, the existence of such pandemic and its effects, now, and for the foreseeable duration of Supplier's performance under the Agreement; and (iv) such COVID-19 pandemic shall not render Supplier unable to fulfill any of its obligations under the Agreement, and Supplier shall not have any claim, action or cause of action against Customer in connection with such pandemic, including any claim for frustration of purpose, change in circumstances, economic balance or impossibility. This provision shall survive the completion or earlier termination of this Agreement.

D) Schedule C "Terms and Conditions" of the Agreement is hereby amended to add the following provisions to govern solely for the purpose of the **Detailed Engineering FA.**

- ARTICLE 7 – [**CLAIMS/DISPUTE**] is hereby amended by adding the following for the purpose of govern the Detailed Engineering FA:

  C. Request for Negotiations

  If a dispute arises out of, or in connection with this Agreement, and the parties do not resolve some or all of the dispute through informal discussions, then:

Within fourteen (14) calendar days from the last discussion of the dispute or disputed issues which still remain unresolved, written notice containing a request to negotiate shall be given by either Party to the other(s).

Negotiations shall occur first between authorized representatives of the Supplier and representatives of the Customer who are in a supervisory role of the Project Management of the Agreement. If the representatives do not resolve some or all of the issues in the dispute within thirty (30) calendar days after the negotiations have been initiated, then without further delay, written notice shall be given by either Party to the other(s) in an attempt to resolve the issues in dispute through a second level of negotiations in a meeting between a Vice President of the Supplier and a Vice President of the Customer (each such person, a "Vice President").

All information exchanged during these negotiations shall be regarded as "without prejudice" communications for the purpose of settlement negotiations and shall be treated as confidential by the Parties and their representatives, unless otherwise required by law. However, evidence that is independently admissible or discoverable shall not be rendered inadmissible or non-discoverable by virtue of its use during the negotiations.

If the Parties do not resolve some or all of the issues in dispute through a second level of negotiations in the Vice President's meeting within thirty (30) calendar days after the negotiations have been initiated, then each Party, without further delay, shall have the right to submit the Dispute to court in accordance with Article 41 [Governing Law].

- ARTICLE 24 – [**PROGRESS AND COMPLETION]** is hereby replaced by the following for the solely purpose of govern the Detailed Engineering FA:

It is expressly understood by the Supplier that TIME IS OF THE ESSENCE in the performance of the Purchase Order. The Supplier shall begin the work on the date of commencement set forth in the Purchase Order. The Supplier shall carry the work forward expeditiously with adequate forces and shall complete it by the time work is to be completed as stated in the Purchase Order.

If the Supplier is delayed at any time in the progress of the work, written notice thereof, including an explanation of the cause and the anticipated duration of the delay, shall be given promptly to the Customer by the Supplier, but in no event later than five (5) days after such delay becomes apparent. Failure to give such notice promptly and within such time limit

shall be deemed sufficient reason for denial by Customer of an extension of time for performance and may be deemed a default.

Failure of Supplier's subcontractor or materials and equipment suppliers to meet schedules shall not be cause for an extension of time. Supplier acknowledges that it has sole responsibility for expediting the efforts of its subcontractors, suppliers, and others.

Without prejudice to other remedies that Customer may have under the Agreement or the law, if Supplier fails to meet the time schedule or other delivery date obligations set forth in the current, approved baseline Project schedule Guaranteed Delivery Date(s) for each Purchase Order, then Supplier shall pay to Customer as liquidated damages for such delay, and not as a penalty, the amounts set forth in the applicable Agreement, if any, for each day the delivery is late under the applicable Agreement (the "Liquidated Damages"). If the Agreement does not establish an amount, the amount of the Liquidated Damages shall be equal to half per cent (0.5%) of the Contract price for each day of delay.

Customer will continuously assess Supplier's performance, at the end of each milestone. If, at any individual milestone over the course of the Services, Customer determines that Supplier has failed to perform its Services consistent with the professional skill and care ordinarily provided by members of the same profession practicing in the same or similar locality under the same or similar circumstances, then Supplier will be determined to have not met the Guaranteed Delivery Date for that milestone. For example: If milestone 1 is due on September 1, and Supplier turns in the deliverables on September 1st but fails to meet the above standard in Customer's reasonable discretion, then the 0.5% liquidated damages amount will be assessed for that milestone (as a "one-day late" assessment). If, in the previous example, the Supplier turns in the deliverables on September 3rd but also failed to meet the above standard in Customer's reasonable discretion, then the 0.5% liquidated damages amount will be assessed for the two days of late delivery, plus the "one-day late" assessment for a total of 1.5% liquidated damages assessment.

Such Delay Damages shall never exceed ten per cent (10%) of the Contract Price.

Customer's determination of whether Supplier has performed its Services consistent with the professional skill and care ordinarily provided by members of the same profession practicing in the same or similar locality under the same or similar circumstances shall be based, in part, but not necessarily exclusively, on scope documents, specifications, standards, and applicable regulations included in the Agreement.

Assessment of Liquidated Damages by the Customer shall be subject to review by the appropriate level of Customer's management.

The Parties acknowledge and agree that because of the unique nature of the performance it is difficult or impossible to determine with precision the amount of damages that would or might be incurred by Customer as a result of Supplier's failure to meet the Guaranteed Delivery Dates under the applicable Agreement, Statement of Work, or applicable order. It is understood and agreed by the Parties that (i) Customer shall be disadvantaged by failure of Supplier to meet such obligations, (ii) it would be impracticable or extremely difficult to quantify the amount of Customer's damages resulting therefrom, and (iii) any Liquidated Damages payable under the applicable Agreement, Statement of Work, or applicable order are not a penalty, but instead represent a fair and reasonable estimate of damages for failure to meet Supplier's Guaranteed Delivery Dates.

In no event shall the payment of any Liquidated Damages excuse Supplier from performance of any of its other obligations under this Agreement or prejudice Customer's rights under the Agreement or Applicable Law.

- ARTICLE 27 – **[TERMINATION]** of the Agreement is hereby amended to add the following provisions to govern solely for the purpose of the Detailed Engineering FA.

Customer may for any reason, with or without cause, on written notice to Supplier terminate all or any part of the unperformed portion of this Agreement without liability to Customer except as stated in this Article. Termination of a scope of work or a Purchase Order under this Article 27 does not terminate this Agreement unless expressly stated in the notice of termination. In full discharge of any obligations to Supplier with respect to this Agreement and such termination, Customer shall pay Supplier, in accordance with the payment terms of the Agreement, only for Services satisfactorily performed prior to receipt by Supplier of notice of termination; provided, however, that such payment shall not result in a total payment to the Supplier exceeding the maximum amount payable to the Supplier pursuant to this Agreement. Termination shall not relieve Supplier of any obligation which may arise out of Services performed prior to termination. In no event shall Customer be liable to Supplier for lost profit or overhead in respect of Services not performed prior to termination, unabsorbed overhead or anticipated profits on uncompleted portions of this Agreement.

In the event Supplier is in default of any of its obligations under this Agreement, Customer shall have the right, on ten (10) days written notice

to Supplier, to terminate this Agreement for such default; provided, however, that Supplier shall have the right to cure by submitting a plan acceptable to the Customer to cure the default during the ten (10) day notice period in order to avoid termination and providing that such default is, in fact, cured within thirty (30) days after Supplier first received notice of the default from Customer or some other period of time acceptable to Customer. Without limiting the provisions of this Agreement, the following events shall also constitute a default by Supplier under this Agreement:

(i) In the event that Supplier is declared to be bankrupt or insolvent, Supplier makes an assignment for the benefit of creditors, Supplier shall file a voluntary petition in bankruptcy or insolvency or an involuntary petition is filed against Supplier, or a receiver shall be appointed for Supplier and such appointment or bankruptcy or insolvency proceedings, petition, declaration or assignment is not set aside within thirty (30) days.

(ii) There has been a material adverse change in the financial condition of Supplier that affects the ability of Supplier to perform.

(iii) Supplier assigns or attempts to assign its rights or obligations under this Agreement or any part thereof to any third party without the prior written consent of the Customer or Company(ies).

(iv) Supplier (i) fails or refuses to comply with any applicable laws or regulatory or permitting requirements, and (ii) either (A) within five days after obtaining knowledge of such non-compliance does not commence steps to comply or is not in compliance with such requirements within a reasonable period of time thereafter, or (C) Company(ies) or the Customer faces any civil or criminal action or penalty as a result of such non-compliance by Supplier.

(v) Any data breach as defined in the Data Security Rider, as applicable.

In the event of such termination, the preceding paragraph of this Article shall not apply and Customer shall have all rights and remedies provided by law or equity and under this Agreement. In addition, in such event, Customer may retain from any money otherwise due for Services rendered prior to termination an amount which Customer reasonably determines is adequate to cover all damage resulting from the Supplier's default. In the event that Supplier demonstrates that a cancellation for default is erroneous, the cancellation shall, at Customer's option, be withdrawn or be deemed to have been issued as a termination for convenience pursuant to the preceding paragraph and the rights and obligations of the parties hereto shall in such event be governed accordingly. The value of Services performed not in accordance with this Agreement shall be subject to audit, assessment and approval by Customer.

E) ARTICLE 16 – [SAFETY] is hereby amended by replacing the article with the following for the purposes of the Detailed Engineering FA and future amendments to this Agreement.

Customer may at any time suspend the work or any part thereof, immediately and verbally for reasons of safety. In the event of any work stoppage, Supplier shall properly protect such work as may be liable to sustain injury from any cause.

The Avangrid Networks Contractor Safety Guide for Suppliers is attached hereto and made a part hereof, as Schedule J and shall apply to all work performed under this Agreement.

F) Schedule D" Pricing Terms" to the Agreement is hereby amended to also include the "Pricing Terms" as set forth on the attached Schedule D-3 to this Amendment to govern solely for the purposes of the Detailed Engineering FA.

G) Schedule E "Especial Special Conditions" to the Agreement is hereby amended to also include the "Especial Special Conditions" as set forth on the attached Schedule E-1 to this Amendment to govern solely for the purposes of the Detailed Engineering FA.

H) Schedule F "Notices" to the Agreement is hereby amended to also include the "Notices" as set forth on the attached Schedule F-1 to this Amendment to govern solely for the purposes of the Detailed Engineering FA.

I) Schedule G "Insurance Requirements" to the Agreement is hereby amended to also include the "Insurance Requirements" as set forth on the attached Schedule G-1 to this Amendment to govern solely for the purposes of the Detailed Engineering FA.

J) Schedule H "Background Policy" to the Agreement is hereby amended to include the "Background Policy" as set forth on the attached Schedule H-1 to this Amendment to govern the Detailed Engineering FA and future Agreements with the Supplier.

K) Schedule I "Privacy and Data Security" to the Agreement is hereby amended to also include the "Data Security Rider" as set forth on the attached Schedule I-1 to this Amendment to govern solely for the purposes of the Detailed Engineering FA.

L) Schedule J "Avangrid Networks Contractor Safety Guide" to the Agreement is hereby included to this Amendment to govern the Detailed Engineering FA and future Agreements with the Supplier.

M) All references in the Agreement to defined terms shall be deemed to refer to such terms as such terms have or may have been amended, modified, or supplemented by this Amendment.

N) Except as expressly amended by this Amendment, the Agreement shall remain unchanged and in full force and effect and the parties hereby ratify and confirm the Agreement and each of its obligations.

O) Any conflict or inconsistency between the Agreement and this Amendment shall be resolved in favor of this Amendment.

P) This Amendment shall be governed by and construed in accordance with the laws of the State of New York without regard to its conflict of laws principles.

Q) This Amendment may be signed in any number of counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

[Signature page(s) follow.]

IN WITNESS WHEREOF, the parties hereto have each caused this Amendment to be executed as of the date first set forth above.

Avangrid Service Company

DocuSigned by:
By: Andrea Vanluling
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Name: Andrea Vanluling
Title: VP Controller - Networks

Avangrid Service Company

DocuSigned by:
By: Catherine Stempien
Name: Catherine Stempien
Title: President & CEO, Avangrid Networks

[redacted]

Schedule B-2 SERVICES

Solely for the purpose of the Detailed Engineering FA:

Conceptual and Detail Engineering Scope of Services
(Networks/Electric/Operations/Projects and Power)

The Scope of Work described in this report is intended to provide an outline of the requirements for the engineering services, but it is not intended to cover all aspects of the work.

Engineering Services required may differ among the various AVANGRID Operating companies.

As required by AVANGRID Networks (the Company), work shall be performed under the supervision of a Professional Engineer licensed in the state where the project is located. This would include any equipment and software access associated with completion of the engineering services work scope.

Types of Engineering Service included in this Request for Proposal (RFP) are:

A. ELECTRIC SYSTEM PLANNING ENGINEERING SERVICES

Electric System Planning Engineering Services include but are not limited to the following:

The Supplier is to provide services to develop the computer modeling, planning, estimating, design, and operation (all as applicable) of the power delivery system. Creates long and short-term plans for the transmission and distribution system to meet current and projected needs. Analyzes engineering alternatives to evaluate projects, including field conditions, design, resource requirements, and economic considerations.

B. ELECTRIC SYSTEM PROTECTION ENGINEERING SERVICES

The Supplier shall provide Engineering Services to the Company with respect to Electric Transmission & Distribution Systems.

Electric System Protection Engineering Services include but are not limited to the following:

1. The Supplier shall design transmission or distribution system protection to include, but not limited to: the development of operating and elementary diagrams; development and review of protection schemes and devices; development and issuing of temporary (mobile) transformer settings; conduct electric system modeling and short circuit analyses; determination of equipment interrupting ratings; relay coordination studies; distribution electrical design (including but not limited to one-lines, sequence of construction events, etc.); and, the specification and procurement of equipment and material.
    a. The Supplier will utilize, document, and provide to the Company fault studies developed and used in its analysis.
    b. The Supplier will incorporate, into its design, equipment approved by the Company. It is acceptable to propose to the Company new technologies for approval prior to the design.

c. The Supplier will incorporate the most current Company approved technology in its design.
d. The Supplier will provide training for all equipment determined to be new by the Company
e. Supplier may develop relay one lines, three lines, DC schematics, wiring diagrams, and control cable documentation based on direction given by the Company. This direction may include sample templates and work from previous projects.
f. Projects may involve Protection & Control (P&C) work at new “green field” locations or existing / legacy “brown field” stations.
g. For projects which are entirely “green-field” Supplier may be utilized to develop all P&C drawings per direction of the Company.
h. For projects located at legacy or “brown field” stations, Supplier may be utilized to develop P&C drawings as they relate to equipment being added. Company P&C may develop all drawings related to existing / in service equipment. Supplier will work collaboratively with the Company to ensure that the two portions of the design interface correctly.
i. All drawings developed by Supplier will meet the Company’s P&C CAD drawing standard.
j. Supplier may be requested to assist in developing necessary documentation to support the procurement of material by the Company.

2. The Supplier shall design, execute and document transmission and distribution system studies and tests.

    a. Perform and provide to the Company, positive, negative and zero sequence impedance calculations to complete and update the Company’s electric system models (including lines and reactive elements such as reactors and transformers).
    b. Design and maintain data repositories (including ASPEN Relay Database™) to store and record information like line impedance calculations and relay settings.
    c. Conduct complete system coordination studies used to develop all project related protective relay settings.
    d. Develop operational checks to verify schemes operate correctly in the field.
    e. Perform evaluation of instrument transformers (CT’s/VT’s) to insure adequacy of secondary quantities (burden ratings).
    f. New equipment evaluations.
    g. It is expected that Supplier will utilize the manufacturer’s setting software (e.g. SEL 5010™, SEL 5020™, SEL 5030™) for the settings of the relays.
    h. Operational checks and settings are to be completed, reviewed and approved by the Company prior to the installation and energization of any new equipment and systems.

3. The Supplier shall design relay/meter communication systems for system protection, system operation and data retrieval.

4. The design will be based on performance parameters provided by the Company and will be designed in accordance with applicable Company standards and applicable Federal and State codes.

5. The Supplier shall provide system operation and maintenance support to include support of the internal system protection staff and the maintenance of a relay setting database.

6. For IPP's and Distributed Generation, the Supplier will perform system impact studies on the Company's system; review plant protection, and control for compliance with all applicable codes, requirements and standards; and review initial and periodic test results of plant protection.

7. Emergency support for electric system protection engineering will be as directed by the Company. The Supplier is expected to respond within 2 hours:

    a. Verification of system operations
    b. Investigation of system mis-operations

8. Protection Services encompass all aspects of the electric system including but not limited to:

    a. Transmission Stations
        i. Power transformer protection
        ii. Transmission lines
        iii. Bus protection
        iv. Capacitor protection
        v. Breaker failure protection
        vi. Communication systems
        vii. Monitoring systems
        viii. SCADA RTUs
        ix. Reclosing
    b. Distribution Stations
        i. Power transformer protection
        ii. Distribution lines
        iii. Capacitor protection
        iv. Undervoltage throw-over scheme
        v. Underfrequency load shed scheme
        vi. Reclosing & line recloser settings for the following applications:
            1. Line sectionalizing
            2. Distribution automation
            3. Line fuse coordination; location, size, type
            4. Line transformer fusing
            5. Underground pad-mount switchgear and associated riser pole equipment fusing
            6. SCADA RTU
            7. SCADA Switch Settings
            8. Testing and Commissioning Devices – reclosers/SCADA switches
            9. FUSE Coordination Studies, recommendations
            10. Recloser settings – single phase
            11. Regulator settings – 1 phase and 3 phase
        vii. Any temporary or mobile substation protection as necessary

C. SUBSTATION DESIGN SERVICES

The Supplier shall provide Engineering Services to the Company with respect to Substation Design Construction and Commissioning. These engineering services shall support the design, construction, expansion and renovation of electrical substation facilities including the Company's inspection prior to energizing and the prompt delivery of as-built documentation at the conclusion of the project to obtain final payment.

Substation Design Services include but are not limited to the following:

1. Substation designs
    a. Civil/Structural Engineering - Includes substation site selection, site development, foundation engineering & design, structural engineering & design (substation structures and control house), noise study, noise abatement design and equipment oil containment, as necessary. Provide necessary design criteria and code for: coastal/non costal substations, serviceability design requirements, substation mitigation method and codes, soil testing and measure limit, (such as but not limited to vibration limit study for nearby structures/relays, drainage and sediment control, slope stability, pipe welding detail), mechanical equipment detail, case study for best design approach, and contour lines of existing and pre-existing level (including extension of 6 ft outside the substation boundary limit).
    b. Electrical Engineering – Includes conceptual design, detailed estimates, grounding (impedance to remote earth, ground potential rise, step and touch potential) study, ampacity study, direct stroke lightning protection study, insulation coordination study, stationary battery sizing study, noise assessment study, AC/DC low-voltage systems and station service supply study, equipment and materials specification (application and ratings) and procurement of stock coded equipment that complies with AVANGRID Standards; Non-stock materials require company approval.
    c. Substation Design - Includes the creation of substation construction drawing packages and the procurement of minor materials. (Drawings shall include one-line diagrams, plot plans, grading plans, foundation plans and details, grounding plans and details, conduit plans and details, equipment drawings and details, and general arrangement elevation and plan views. Minor materials shall include but are not limited to structures, buswork, foundation, conduit, and grounding material), the package shall include a bill of material drawing.
    d. System Protection & Control (SP&C) Design - Includes the creation of SP&C construction drawing packages and the procurement of materials. (Drawings in specified formats shall include elementary diagrams, relay one-line diagrams, connection diagrams, panel layout diagrams, communication diagrams, integration diagrams, fiber optic cable schedules, and circuit schedules. Materials shall include relays, communication and monitoring systems, panel meters, control house panels, cables and associated wiring materials).
    e. Project Management – (to include project task breakdowns, resource allocation, schedule, status report, quality control (QC), and cost tracking).

f. Construction Inspection, submittal review, RFI response, and support of design changes as per AVANGRID's design change procedures.
g. Power System Commissioning

2. Power System Commissioning and Documentation

    a. All documentation including test results and installed asset data is to be provided in specified electronic formats and submitted within one month of project energization. All testing is to be performed with equipment and software compatible with the Company's normal test systems. Test results data is to be compatible to SAP WBS and reconcile project completions.

3. The Supplier shall cost effectively handle substation projects of various sizes and complexity from distribution voltage levels to EHV voltage levels. Some examples include:

    a. New Substations and Switchyards
    b. Substation Equipment Replacements
    c. Substation Expansions
    d. Transmission Line Terminal Additions
    e. Distribution Circuit Additions
    f. Capacity Increases
    g. Protective Relay Additions and Upgrades
    h. Substation Maintenance Renovations
    i. SCADA, RTU and Distribution Recloser Automation designs

4. As needed, the Supplier will supply the Companies with Large EPC substation project services.

5. The design will be based on performance parameters provided by the Company and will be designed in accordance with applicable Company standards and applicable Federal and State codes.

D. SUBSTATION TESTING SERVICES

This Scope of Work is intended to provide an outline of test and inspection requirements and is not intended to cover all aspects of the work. The Supplier shall possess the necessary personnel, technical skills and maintenance practices to serve as an expert in the testing of power transformers, circuit breakers, instrument transformers, voltage regulators, and surge arresters rated 15kV class and above.

Substation Testing Services include but are not limited to the following:

1. AVANGRID Responsibilities

    a. Provide all test equipment
    b. De-energize, isolate, ground, and remove leads to bushings for equipment to be tested.
    c. Once the Supplier has cleared the unit for return to service, make bushing connections, remove grounds, and energize equipment.

2. Supplier Responsibilities

    a. Maintain a daily log of work completed, hours worked, and hours delayed due to weather or switching.

b. Test all equipment identified by AVANGRID or Direct AVANGRID staff in testing.
c. Immediately report any serious defects or test values that exceed acceptable levels to Maintenance Engineering.

3. Tests and Inspections

a. Transformers
   i. Insulation on Transformer Winding per ANSI/IEEE C57.12.90.10.10
   ii. Inspect physical condition.
   iii. Excitation
   iv. TTR
   v. Bushing Tests per IEEE Std. 62-1995 Section 6.2
   vi. SFRA – only on specific units identified by AVANGRID -as per RFP
   vii. Surge Arrester Power Factor
b. Load Tap Changers (LTC)
   i. Direct maintenance staff to replace common wear parts (contacts, etc.) with the expectation that the LTC will operate reliably for a minimum of 6 years from date of service.
   ii. Oversee LTC Inspection and assure recorded measurements per the manufacturer instruction book. Verify proper operation of vacuum bottle monitoring circuitry.
   iii. Oversee operational tests. Identify any controls that should be considered for replacement.
c. Circuit Breakers
   i. Power Factor and 100Amp ductor tests on all circuit breakers.
   ii. Inspect physical and mechanical condition. Ensure proper lubrication by maintenance staff.
   iii. Motion analyzer testing of the circuit breakers rated 34.5kV and above: Test data to be provided for a trip operation on both trip circuits, a close operation and a close –open (trip free) operation based on first contact closed to initiate the trip.
   iv. Verify a minimum of 4 closes prior to lockout on pneumatic/pneudraulic/hydraulic operated breakers with these sources fully charged and de-energized.
   v. Verification of SF6 gas pressure alarms and tripping of the breakers at trip pressure on both trip circuits.
   vi. Perform AC\DC hi pot- acceptance test on Vacuum Interrupters, if vacuum breaker. Hi pot voltage to be held to OEM specified acceptance level and AC/DC recommendation.
   vii. Direct maintenance staff to replace common wear parts (contacts, etc.) with the expectation that the circuit breaker will operate reliably for a minimum of 6 years from first date of service.
   viii. Oversee Breaker Inspection and assure recorded measurements per the manufacturer instruction book.
   ix. All/Any Circuit Breaker models are to be included in the scope of the contract. The list would include models from manufacturers such as GE, ABB, Westinghouse Siemens, Cutler Hammer, Joslyn, S&C, Alstom, Allis Chalmers, Mitsubishi, HVB, Brown Boveri, HICO, McGraw Edison, Federal Pacific to name most.

d. Instrument Transformers
    i. Specific Equipment Tests (Performed per ANSI/IEEE C57.13 and C57.13.1 or latest revision)
    ii. Inspect physical condition
    iii. Power Factor
    iv. VTs, CCVTs: Voltage ratio reads using Doble M4100 test set and records all secondary voltages.
e. Thermal and SF6 Gas Imaging
    i. Certified Level 1 Inspection for thermal condition of substation equipment utilizing FLIR P640.
    ii. SF6 Gas leak inspections utilizing FLIR GasFindIR SF6 camera.

E. TRANSMISSION DESIGN SERVICES

The Supplier shall provide Engineering Services with respect to Transmission Design.

Transmission Design Services include but are not limited to the following:

1. The Supplier will provide all related engineering services for the design of overhead and underground transmission lines from 11.5 kV to 345 kV:
    a. Routing analysis.
    b. LiDAR based surveying for overhead transmission line plan & profile production using latest version of the PLS-CADD. A LIDAR survey based on AVANGRID standards in terms of accuracy along with full feature code will be needed as well as oblique and ortho imagery. A full feature classification with PLS-CADD model will be a part of this requirement.
    c. Construction staking.
    d. Electrical engineering.
    e. Structural engineering.
    f. Geotechnical engineering and foundation design.
    g. Structure layout using PLS-CADD, (Pole/Tower), CAISSON software.
    h. Development of complete material list.
    i. Project management.
    j. Environmental, permitting & compliance technical support.
    k. Construction inspection & assessment, submittal review, RFI response, and support of design changes as per AVANGRID's design change procedures.
    l. Engineering field support.
    m. Input data for the SAP WMS and SmartMap Systems and reconcile project completions.
    n. Develop construction cost estimates.
    o. Produce material, construction and EPC specifications.
    p. Create accurate, quality SAP work orders, including identifying assets to be installed, transferred and/or retired.

2. The Supplier shall cost effectively handle transmission projects of various sizes, geographically dispersed regions and complexity, including but not limited to the following:

a. New 11.5 kV to 345 kV Overhead transmission lines utilizing wood and steel structures. Some structures are from AVANGRID standards, others are not covered by the standards.
b. New 11.5 kV to 345 kV underground transmission lines, utilizing XLPE, EPR or pipe type cables' technologies.
c. New 34.5 to 345kV lines with distribution underbuilds.
d. Transmission line relocations for highways, developers, other utilities, etc., that may involve Horizontal directional drilling (HDD) or Jack and Bore (J&B) constructions for UG cables systems.
e. Transmission line resiliency projects
f. Line rating analysis of existing and new transmission lines.
g. Reconductoring projects which may include review/modeling/inspection of existing overhead and underground transmission infrastructure and review of conceptual engineering design (as applicable).

3. The deliverables shall include all documentation necessary to permit, engineer and construct the Project facility(s) including, but not limited to:

a. Engineering studies and calculations.
b. Surveys.
c. Specifications for engineered equipment.
d. Work scopes for engineering services.
e. Work scopes for construction services.
f. Bill of Materials.
g. Review drawings for Owner use.
h. Construction drawings stamped by a licensed professional engineer.
i. Monthly progress reports for engineering.
j. Monthly schedules for engineering.
k. Monthly cash flows for engineering.
l. Monthly invoices for Owner review.

4. The design shall be based on performance parameters provided by the Company and shall be designed in accordance with applicable Company standards, the National Electric Safety Code, other National and International standards and applicable regulatory codes.

F. ELECTRIC AND/OR CIVIL DISTRIBUTION FACILITY DESIGN SERVICES

The Supplier is to provide Engineering Services to the Company with respect to Electric and/or Civil Distribution Facility design. Engineering services are to support the planning, design, construction, expansion and renovation of electrical overhead and underground distribution facilities.

All design work will be based on performance parameters provided by the Company and will be designed in accordance with the National Electric Safety Code, applicable Company standards and applicable Federal and State codes.

Electric and/or Civil Distribution Facility Design Services shall include, but are not limited to the following:

1. All related engineering services for the design of overhead and underground electric and/or civil distribution facilities:

a. Determine the Company's needs/facility requirements and prepare feasibility study to include conceptual design, scope of work and preliminary cost estimate.
b. Develop and investigate alternatives/options; cost, advantage, disadvantage, risk.
c. Develop proposal documents.
d. Develop final design, material list, bill of quantities, cost estimate and schedule.
e. Prepare equipment and materials specifications approved by the Company.
f. Prepare Auto CAD drawings – to be used to bid/award construction.
g. Perform field surveys and stakeouts.
h. Act as the Company's agent by:
    i. Acquiring all necessary permits and State/County/Municipality approvals.
    ii. Coordinate the design and work process between the customer, Company, contractors, trades, other utilities, municipality and others involved in the process.
    iii. Input data into the SAP WMS and SmartMap systems, GIS, others and reconcile project completions.
    iv. Create accurate, quality SAP work orders, including identifying assets to be installed, transferred and/or retired.
    v. Training of their workforce due to retention, changes in their workforce.

2. Projects include:

a. Major Company projects for new and upgraded facilities:
    i. Line extensions for a single customer.
    ii. Multiple buildings in industrial and/or commercial parks.
b. New Subdivisions and subdivision extensions with the number of lots from 4 to 50 and above.
c. Complete decommissioning and removal of low voltage 4KV or higher voltage distribution substations.
d. Elimination of step-down bank transformers.
e. Design and rebuilding of cage (mat and fence) transformer locations.
f. Feeder overload relief design.
g. Transformer vault design; building and below grade.
h. Interconnection of Distributed Energy Resource (DER) on the distribution system.
i. Underground network cable replacement design.
j. Simple Service:
    i. Simple electric service from existing secondary voltage facilities.
    ii. Small line extensions requiring primary, secondary and a transformer.
k. Replacements/Expansions:
    i. Interference with road work or new structure from another agency.
    ii. Internal operating company initiatives.
l. Structural civil engineering services.
m. Civil construction design plans involving underground structures; splice chambers, conduits, systems and vaults – confined space certification required. Typical work is:
    i. Repair or expansion of existing

ii. Replacement of existing
iii. Installation on new facilities

n. Directional borings.
o. Jack and bore construction.
p. Design of alternate supports in place of wood pole.
q. Engineered traffic planning designs:
   i. Work with State or Local control to obtain approval.
   ii. Major upgrades to the distribution system, complex designs.
   iii. Automation.
   iv. Process and submit complex Highway permits to the proper highway authority.

3. Supplier shall provide all related distribution engineering support services including but not limited to:

   a. Development and maintenance of all related material and equipment specifications and design construction standards;
   b. Vendor and material selection, evaluation, and obtain Company approval.
   c. Failure analyses;
   d. Studies to resolve stray voltage, RI/TVI, ferroresonance (nonlinear resonance) problems, etc.
   e. Training of field forces on new equipment, procedures, etc.
   f. Asset management programs such as a wood pole management program, etc.
   g. Code and policy interpretation;
   h. Street lighting;
   i. Development and maintenance of CMS assemblies;
   j. Power flow simulations;
   k. Soil classifications;
   l. Keyhole and open cut test pit witnessing;
   m. Pole loading calculations;
   n. Cable pulling calculations;
   o. Submission of FAA Form 7460-1 and FAA Form 7460-2;
   p. Training of their workforce due to retention, changes in their workforce.

All design work will be based on performance parameters provided by the Company and will be designed in accordance with applicable Company standards, engineering guidelines, practices and operating procedures as well as all applicable Federal, State and local Municipal codes.

G. SPECIFICATIONS AND STANDARDS DEVELOPMENT SERVICES

The Supplier shall provide Engineering Services to the Company with respect to Specification and Standards Development. This shall include any equipment or software access associated with completion of work scope. The scope includes equipment; material and construction specifications and standards; engineering design standards for gas and electric transmission and distribution; electrical substation and system protection; gas regulator and compressor stations; and power generation facilities.

Specifications and Standards Development Services include but are not limited to the following:

1. As directed by the Company, the Supplier shall provide administrative support and develop and or modify electric and gas equipment, materials, engineering design and construction and maintenance specifications and standards. The Supplier is expected to act as a liaison between the various Operating Companies so where appropriate the work product shall reflect Company or industry-wide best practices.

2. The standards and specifications work includes the following:

    a. Electric Engineering Design and Construction Standards,
    b. Electric and Engineering Maintenance Standards,
    c. Electric Material and Equipment Specifications,
    d. Corrosion Manuals,
    e. Operating and Maintenance Plans.

H. SURVEY AND GPS SUPPORT SERVICES

The Supplier shall provide Surveying and GPS Support Services. When required by the Company, work is to be performed under the supervision of a Professional Land Surveyor licensed in the state where the project is located.

Survey and GPS Support Services include but are not limited to the following:

1. The Supplier shall plan, conduct and document preliminary studies in conjunction with surveying projects:

    a. Provide alternatives to completing specific projects.
    b. Complete preliminary surveying and layouts.
    c. Conduct field measurements and/or field survey to produce base plans for engineering design.

2. The Supplier shall plan, conduct and document the final surveying maps:

    a. Develop final surveying, maps and layouts.
    b. Utilize computer services as required in surveying and mapping activities.

3. The surveying requirements for the Company include the following:

    a. Property or Boundary Surveys - Surveying and mapping necessary to determine boundary lines represented by deeds of record. ALTA/ACSM standards, as further defined by the Company, shall be followed for boundary survey work, to include address, property owner, business name, etc.
    b. Topographic and Planimetric Surveying - Surveying and mapping necessary to show surface relief, planimetric features, structures, above ground and below ground utilities, all overhead/underground structures, catch basins, splice chambers, manholes, vaults, etc., shall be shown in proper dimensions. Incorporate as-built records obtained from various Utilities, to represent all overhead, at grade and underground structures within the project boundary.
    c. Engineering/Construction Surveys - Surveying and mapping necessary for engineering/construction layout or stakeout, as-built, preliminary design, etc., includes such items as roadway curbs, traffic markings, traffic loops, splice chamber/manhole/hand

hole/vault covers, catch basins, gate valves, hydrants, known pipes (type, size and inverts), any overhead equipment/structures, etc.

d. Control Surveys - Surveying and mapping necessary to provide horizontal and vertical control necessary to establish control networks, site survey controls, baselines, benchmarks, elevation references, photogrammetric control, etc.,
e. Precise deformation and/or subsidence monitoring surveys - Surveying, mapping and reporting of geophysical or structural movement over time relative to permanent fixed monumentation in support of specific licensing requirements,
f. Transmission Line Surveys – Including but not limited to centerline profiles, conductor sags, wire attachments, structure and anchor layout and staking. An experienced transmission line survey crew shall be available in close proximity to Binghamton NY, Rochester NY, Orange, CT and Augusta ME to work closely with AVANGRID engineers as needed.
g. Gas Transmission Line Surveys – Including but not limited to underground line locating, centerline profile layouts and staking and right of way limit identification. An experienced and Operator Qualified survey crew shall be available in close proximity to Binghamton NY, Rochester NY, Orange, CT, Hartford, CT and Pittsfield, MA to work closely with AVANGRID engineers as needed.
h. Bathymetric Surveys - Including mapping of underwater structures, impoundment and stream/river channel bottom and profiles mapping, and sediment measurement, profiles and mapping.

4. Deliverables shall be specified by the Company and may include survey notes, reference drawings, final drawings, reports including narrative descriptions of the work, computations, boundary plats, certifications, etc.

5. GPS surveying shall be used as directed by the Company as a means of providing surveying support and/or as an alternative to conventional surveying when practical and economical to do so. The Supplier shall provide GPS services in accordance with generally accepted industry practices, manufacturer's recommendations and Company work scope/work authorization. Standards of the Federal Geographic Data Committee (FGDC) shall be utilized. This shall include staff and equipment resources.

    a. The following illustrate GPS project requirements:
        i. Geodetic GPS control networks, control network densification & feature locations,
        ii. GPS topographic mapping augmented with laser rangefinder vectors for mapping and/or GIS database updates,
        iii. RTK GPS site or area control networks and site surveys.
    b. Deliverables for GPS work shall include field notes, raw data files, computations, closure checks, narrative descriptions of the work, table of results, data files for reference stations used and, project location maps.

6. As directed, the Supplier shall provide aerial photography services in support of the Company’s surveying and mapping activities. When required by the Company, work shall be performed under the supervision of a Certified Photogrammetrist of the American Society of Photogrammetry and Remote Sensing. The photo project area, scale, type and flights shall be outlined by the Company. Aerial data is required for preliminary site studies, line routing

and planimetric (vector) base mapping, etc. The aerial projects shall be done in accordance with the Company's standards. The following highlight aerial photography requirements:

a. Accepted aerial photographic/photogrammetric procedures (flying conditions, control network design, orthometric techniques, etc.) shall be followed to ensure results commensurate with the specified quality and accuracy of each project,

b. Specified geographic control (ground or airborne) shall be used for coordinate-driven mapping output. A projected mapping system, normally NAD83 and NGVD88, shall be used.
c. The scope, as stipulated by the project, may include the whole or any part(s) of the photogrammetric process, as follows:
    i. Aerial Photography - Contact prints, digital image scans, flight maps, etc.
    ii. Geographic Control - Pre-paneling aerial targets, GPS control networks, etc.
    iii. Photogrammetric Data - Flight/camera reports, geographic control reports, steromodeling solutions, aerotriangulation reports, etc.
    iv. Orthometric Products - Orthophotos, planimetrics, topographic mapping, etc.
    v. Light Imaging Detection and Ranging (LIDAR): LIDAR data with feature coded data in ASCII and PLS-CADD format.

7. The Supplier shall maintain all information and data in an acceptable manner to facilitate quality control functions.

I. GAS DISTRIBUTION/TRANSMISSION ENGINEERING SERVICES

The Supplier is to provide Engineering Services to the Company with respect to Gas Distribution and Transmission Facility design. These engineering services support the design, construction, and relocation of gas distribution and transmission facilities.

For all work scoped below the Supplier is expected to meet with Company staff to review plans and progress when deemed necessary by the Company. These meetings will be held at the designated Company office or location. The Supplier will manage and track scheduling of the work as necessary to meet timelines specified by the Company for each project on an individual basis.

Gas Distribution/Transmission Engineering Services include but are not limited to the following:

1. Survey services

    a. Survey services may include project specific survey for any of the types of work included in items 3 through 8 below. Survey will be needed to develop some base maps, establish public rights-of-way and/or property lines, or confirm existing features and location and/or depth of existing facilities. Survey may be required for some project layout during and after construction.
    b. Survey and map preparation services may also be necessary to obtain temporary and permanent easements. This work may include preparation of plot maps as necessary to obtain such easement.

2. Permit applications
    a. Permit application work may include preparation of permits for public entities such as, but not limited to: United States Corps of Engineers, New York State Department of Transportation, New York State Canal Corporation, New York State Thruway Authority, New York State Department of Environmental Conservation, Connecticut Department of Transportation, Connecticut Department of Energy and Environmental Protection, railroads and other county, city and local municipalities including towns and villages.
    b. Permit applications will include required plans and drawings such as, but not limited to: site and project plans, wetland delineation mapping, maintenance and protection of traffic plans, and erosion control and storm water protection plans.

3. QMS
    a. Supplier shall follow current Quality Management Process and procedures.

4. EMS
    a. Supplier shall follow current Environmental Management System process and procedures.

5. Leak prone main replacements program
    a. This work includes steel gas main replacements. These projects are Operating Company driven and scoped. Projects vary in size and complexity. The Supplier will provide all related engineering services for the design of main replacements including:
        i. Base map preparation (to be created at 1:1 scale)
        ii. Layout and design of gas main replacements
        iii. Gas main tie-in details
        iv. Summary sheets
        v. Material lists
        vi. Service work list including:
            1. summary list of impacted services and associated work,
            2. service orders, and
            3. customer contact lists
        vii. SAP Work Management System (WMS) input including:
            1. work orders (WOs),
            2. compatible units (CUs),
            3. materials, and
            4. planned costs
        viii. As-built drawings to be completed within 30 days of receipt. (provide final electronic file)
        ix. Gas tie-in procedures for gas up of new mains, abandonment of existing mains, conversions and upgrades. This work includes both written text and sketches.
        x. Preparation of permits.
        xi. Loading all required documents into ProjectWise.
        xii. Complete environmental questionnaire & aspects and impacts template.

xiii. Estimate for construction including PIDs and quantities with specific details regarding restoration calculations. Entering estimate into construction estimating database.
xiv. Prepare and obtain all permits necessary to perform the work including, but not limited to: NYSDOT and CTDOT permits including Maintenance and Protection of Traffic Plans (MPOT), and Railroad Crossing Permits.
xv. Complete environmental questionnaire & aspects and impacts template.
xvi. Printing, includes:
1. 30 copies of project proposals (including summary sheet and material lists).
2. Five copies of as-built.
3. 15 copies of procedure.
4. One copy of existing gas service orders.
5. One copy of new blank service orders.
6. Copies of as-builts used for design.
7. Three copies of existing electric and full-size gas maps.

b. The work includes plotting gas leaks and compilation of operational records and leak survey data into a database to support, identify and prioritize leak prone main segments for replacement projects.
c. Work includes:
i. Creating Project PM Notifications in SAP with input from Gas System Planning, Design and Technical Services, and requesting folders for ProjectWise
ii. Uploading documents to ProjectWise.

6. Gas main replacements associated with municipal highway projects

a. This work includes gas main replacements associated with municipal highway projects. These projects are municipality driven. The projects vary in size and complexity. Scope of work depends on utility conflicts with work proposed by the municipality, municipal requirements, and existing utility configuration. The scope of work for each project will be developed through Supplier's review of municipal plans and meeting with the Company to determine and agree upon final project scope of work. Scope of work may include but not be limited to: gas main relocation, replacement, and/or abandonment; regulator station relocation, modification, replacement, and/or abandonment; relocation of gas facilities on bridges, pressure conversions or upgrades, and associated service work. The Supplier will provide all related engineering services for the design of these main replacements including:
i. Base map preparation (to be created at 1:1 scale).
ii. Layout and design of gas main replacements.
iii. Gas main tie-in details.
iv. Summary sheets.
v. Material lists.
vi. Service work list including summary list of impacted services and associated work, service orders, and customer contact lists.
vii. SAP WMS input including work orders (WOs), compatible units (CUs), materials, and planned costs.
viii. As-built drawings to be completed within 30 days of receipt. (provide final electronic file).

ix. Gas tie-in procedures for gas up of new mains, cut dead of existing mains, conversions and upgrades. This work includes both written text and sketches.
x. Preparation of permits.
xi. Coordination with the municipality including attendance at municipality led utility/agency coordination meetings.
xii. Loading all required documents into ProjectWise.
xiii. Complete environmental questionnaire & aspects and impacts template.
xiv. Estimate for construction including PIDs and quantities with specific details regarding restoration calculations as well as entering estimate into construction estimating database.
xv. Prepare and obtain all permits necessary to perform the work including, but not limited to: State DOT permits including Maintenance and Protection of Traffic Plans (MPOT), and Railroad Crossing Permits.
xvi. Printing, includes:
    1. 30 copies of project proposals (including summary sheet and material lists).
    2. Five copies of as-built.
    3. 15 copies of procedure.
    4. One copy of existing gas service orders.
    5. One copy of new blank service orders.
    6. Copies of as-builts used for design.
    7. Three copies of existing electric and full size gas maps.

7. Gas main extensions associated with underground residential development (URD) and individual new customers

    a. This work includes gas main extensions to new customers and URDs. This work includes coordination with the Operating Company's electric planner/engineer, other utilities, developers, municipalities, and agencies as required. The Supplier will provide all related engineering services for the design of these main extensions including:
        i. Base map preparation (to be created at 1:1 scale).
        ii. Layout and design of gas main replacements.
        iii. Gas main tie-in details.
        iv. Summary sheets.
        v. Material lists.
        vi. Service work list including summary list of impacted services and associated work, service orders, and customer contact lists.
        vii. SAP WMS input including work orders (WOs), compatible units (CUs), materials, and planned costs.
        viii. As-built drawings to be completed within 30 days of receipt (provide final electronic file to the appropriate Operating Company).
        ix. Gas tie-in procedures for gas up of new mains. This work includes both written text and sketches.
        x. Preparation of permits.
        xi. Coordination with the developer/builder, associated municipality and agencies, including attendance at meetings.
        xii. Loading all required documents into ProjectWise.

xiii. Complete environmental questionnaire & aspects and impacts template.
xiv. Estimate for construction including PIDs and quantities with specific details regarding restoration calculations. Entering estimate into construction estimating database.
xv. Prepare and obtain all permits necessary to perform the work including, but not limited to: NYSDOT and CTDOT permits including Maintenance and Protection of Traffic Plans (MPOT), and Railroad Crossing Permits.
xvi. Printing, includes:
1. 30 copies of project proposals (including summary sheet and material lists).
2. Five copies of as-built.
3. 15 copies of procedure.
4. One copy of existing gas service orders.
5. One copy of new blank service orders.
6. Copies of as-builts used for design.
7. Three copies of existing electric and full-size gas maps.

8. New and replacement gas services

a. This work includes service to residential, commercial, and industrial Operating Company's customers. Work includes new services, replacements, and relocations. The Supplier will provide all related engineering services for the design of these services including:
i. Meetings with customer/developer/builder
ii. Layout and gas service sketch preparation
iii. Material lists
iv. SAP WMS input including work orders (WOs), compatible units (CUs), materials, and planned costs
v. Preparation of permits
b. Work may also include management and tracking of the Leak Prone Service Replacement Program. The Supplier will provide all related engineering and management services for this program including:
i. Service work list including: summary list of impacted services and associated work, service orders, and customer contact lists
ii. SAP input including work orders (WOs), compatible units (CUs), materials, and planned costs
iii. Preparation of permits
iv. Coordination with Operating Company Gas Field Operations and construction contractors to track construction progress
v. Tracking of project progress during construction

9. Regulator stations

a. This work includes design of new or replacement regulator stations and modifications to existing stations. Work may include survey and property acquisition. The Supplier will provide all related engineering services for the design of regulator stations including:
i. Survey and easement maps when necessary.
ii. Base map and site plan preparation (to be created at 1:1 scale).

iii. Layout and design of regulator station equipment and associated gas mains in accordance with the Construction Standards template.
iv. Gas main tie-in details.
v. Summary sheets.
vi. Equipment and materials specifications.
vii. Material lists.
viii. Service work list (if impacted) including: summary list of impacted services and associated work, service orders, and customer contact lists.
ix. SAP WMS input including work orders (WOs), compatible units (CUs), materials, and planned costs.
x. As-built drawings to be completed within 30 days of receipt. (provide final electronic file).
xi. Gas procedures for gas up of new regulator station and cut dead of existing regulator station. This work includes both written text and sketches.
xii. Preparation of permits.
xiii. Loading all required documents into ProjectWise.
xiv. Complete environmental questionnaire & aspects and impacts template.
xv. Estimate for construction including PIDs and quantities with specific details regarding restoration calculations. Entering estimate into construction estimating database.
xvi. Prepare and obtain all permits necessary to perform the work including, but not limited to: State DOT permits including Maintenance and Protection of Traffic Plans (MPOT), and Railroad Crossing Permits.
xvii. Printing, includes:
    1. 30 copies of project proposals (including summary sheet and material lists).
    2. Five copies of as-built.
    3. 15 copies of procedure.
    4. One copy of existing gas service orders.
    5. One copy of new blank service orders.
    6. Copies of as-builts used for design.
    7. Three copies of existing electric and full-size gas maps.

10. Integrity Management Program

a. This work includes mapping, identification and survey of structures and locations along the gas transmission right of way to support Integrity Management Program requirements such as class location, high consequence areas (HCAs), identified sites, etc. including:
    i. Survey maps when necessary.
    ii. Base map and site plan preparation (to be created at 1:1 scale).
    iii. Layout and identification of structures, areas and Company identified attribute data relative to identified gas mains.

11. Bridge projects

a. This work includes design of new or replacement gas mains attached to bridge structures or drilled under river and road crossings.
    i. Base map preparation (to be created at 1:1 scale).

ii. Perform design calculations.
iii. Layout and design of gas main replacements/relocates.
iv. Gas main tie-in details.
v. Summary sheets.
vi. Material lists.
vii. Service work list including: summary list of impacted services and associated work, service orders, and customer contact lists.
viii. SAP Work Management System (WMS) input including work orders (WOs), compatible units (CUs), materials, and planned costs.
ix. As-built drawings to be completed within 30 days of receipt. (provide final electronic file)
x. Gas procedures for gas up of new mains, abandonment of existing mains, conversions and upgrades. This work includes both written text and sketches.
xi. Preparation of permits.
xii. Loading all required documents into ProjectWise.
xiii. Complete environmental questionnaire & aspects and impacts template.
xiv. Estimate for construction including PIDs and quantities with specific details regarding restoration calculations. Entering estimate into construction estimating database.
xv. Prepare and obtain all permits necessary to perform the work including, but not limited to: NYSDOT and CTDOT permits including Maintenance and Protection of Traffic Plans (MPOT), and Railroad Crossing Permits.
xvi. Printing, includes:
    1. 30 copies of project proposals (including summary sheet and material lists).
    2. Five copies of as-built.
    3. 15 copies of procedure.
    4. One copy of existing gas service orders.
    5. One copy of new blank service orders.
    6. Copies of as-builts used for design.
    7. Three copies of existing electric and full-size gas maps.

12. Exposed pipe

a. This work includes design of replacement / relocation of exposed gas mains. It may also include design for new drainage structures to provide required cover over mains.
    i. Base map preparation (to be created at 1:1 scale).
    ii. Layout and design of gas main replacements/relocates.
    iii. Gas main tie-in details.
    iv. Summary sheets.
    v. Material lists.
    vi. Service work list including: summary list of impacted services and associated work, service orders, and customer contact lists.
    vii. SAP Work Management System (WMS) input including work orders (WOs), compatible units (CUs), materials, and planned costs.
    viii. As-built drawings to be completed within 30 days of receipt (provide final electronic file).

ix. Gas procedures for gas up of new mains, abandonment of existing mains, conversions and upgrades. This work includes both written text and sketches.
x. Preparation of permits.
xi. Loading all required documents into ProjectWise.
xii. Complete environmental questionnaire & aspects and impacts template.
xiii. Estimate for construction including PIDs and quantities with specific details regarding restoration calculations. Entering estimate into construction estimating database.
xiv. Prepare and obtain all permits necessary to perform the work including, but not limited to: State DOT permits including Maintenance and Protection of Traffic Plans (MPOT), and Railroad Crossing Permits.
xv. Complete environmental questionnaire & aspects and impacts template.
xvi. Printing, includes:
1. 30 copies of project proposals (including summary sheet and material lists).
2. Five copies of as-built.
3. 15 copies of procedure.
4. One copy of existing gas service orders.
5. One copy of new blank service orders.
6. Copies of as-builts used for design.
7. Three copies of existing electric and full-size gas maps.

13. Critical Valve Verification

a. This work includes: verification of customer counts per valve section in GIS, confirming any changes to critical valve status with Division Engineering and Operations, and preparation of upload document for Master Data to update equipment records in SAP.

J. POWER GENERATION ENGINEERING SERVICES

The Supplier is to provide Engineering Service to the Company with respect to Power Generation Services. When required by the Company, services shall be performed under the supervision of a Professional Engineer licensed in the state where the project is located, and as required obtain FERC or State approval as the project/study engineer/inspector. These services include studies of existing, new and proposed plant and system studies, data analysis, design services and inspection and testing.

Power Generation Engineering Services include but are not limited to the following:

1. The Supplier will provide all staff and equipment resources to plan, complete and document plant and system studies for the Company. The results of these studies and other technical support services will be included in future capital and O&M expenditure decisions.

a. The following studies or technical support tasks shall be completed with existing data or may require data collection:
i. Conceptual system design
ii. Extended reliability
iii. Regulatory compliance
iv. Engineering design review of existing facilities

v. Financial & Economic analyses
vi. System performance and failure analysis
vii. Geotechnical evaluations

b. The Supplier shall produce and present detailed written reports to include documentation, supporting data, regulatory obligations and requirements, and financial analysis for large scale generation studies:
   i. New plant
   ii. Re-powering
   iii. Facility expansions
   iv. Site development
   v. Major sub-system upgrades
   vi. Ancillary systems
   vii. Water retaining structures such as dams, penstocks, gates, training/core walls, cofferdams, etc.
   viii. Plant/equipment/system retirement

2. The Supplier shall provide all related engineering services for detailed design to construct and implement capital and O&M projects. Designs shall be developed using existing data, design drawings and documentation or information collected by the Supplier (requires on-site work).

   a. The Supplier shall produce and present detailed designs. Designs shall require development/preparation of some or all of the following: detailed design drawings and documents compliant with all Local, State and Federal codes along with standardization of equipment, instrumentation, processes, etc. specific to the Company (where applicable), financial analyses, bid specifications (general construction and equipment), cost estimates, project schedules, project specific work plans, project specific health and safety plans including safety data sheets, construction equipment, test specifications (commissioning, factory acceptance testing documentation), installation standards and requirements, procedures to safely isolate and hold equipment / systems for maintenance / servicing in accordance with all applicable company standards and Local, State and Federal requirements, system / equipment operation and maintenance / parts manuals, bill of materials (BOM) and system performance test specifications.
      i. Detailed design drawings would include but is not limited to site plans, structural steel, concrete, mechanical, electrical, instrumentation, control (specifically Allen-Bradley and MSE Tetragenics), relay protection, etc. designs, floor plans, equipment layout drawings that reduce operational and maintenance expense, P&ID, flow schematics with supporting analyses, electrical one-line schematics, elementary, point-to-point wiring diagrams, functional/logic schedules, conduit schedules and circuit schedules.
      ii. The design will be based on performance parameters provided by the Company and will be designed in accordance with applicable company standards and applicable Local, State and Federal codes.
      iii. All designs that require modification to project features will require updates to the hydro project Exhibit F drawings. All

drawings must be submitted to FERC in accordance with 18CFR drawing requirements.

b. Some projects will require cross-functional engineering teams and other projects will be limited to narrowly focused engineer disciplines. Design teams may be comprised of traditional engineer disciplines (electrical, instrumentation/control, mechanical, civil, structural, chemical and environmental), designers/drafters, project and construction managers and specialists (thermal/hydraulic analysis, electrical system protection, dam and spill gate designs, etc.).

c. The design will be based on performance parameters provided by the Company and will be designed in accordance with applicable company standards and applicable Local, State and Federal codes.

d. Designs include construction of new generating units/facilities and major and minor modifications to existing plant systems:
   i. New plant
   ii. Re-powering
   iii. Facility expansions
   iv. Site development
   v. Major sub-system upgrades
   vi. Ancillary support systems
   vii. Water retaining structures such as dams, penstocks, gates, training / core walls, cofferdams, etc.
   viii. Plant / equipment / system retirement
   ix. Environmental attributes, as required by regulating agencies (e.g. fish passageways)

3. The Supplier shall plan, execute, evaluate, document, perform studies and submit reports to Local, State and Federal agencies on behalf of the operating companies (if directed to do so). The Supplier shall have known and proven experience in performing the following activities noted below at power generating facilities. The Supplier should also have current staff with experience and be well versed in with Federal and State regulatory laws, regulations and guidance in which the project(s) and/or work is performed.

   a. Activities include but are not limited to:
      i. FERC Part 12D Inspections – Supplier to have proven experience in assessing water retaining structures, providing recommendations to the Company and resume' approved by FERC to conduct inspections.
      ii. NYSDEC Part 673 Inspections – Supplier to have proven experience in assessing water retaining structures and providing recommendations to the Company.
      iii. Monthly and/or annual dam inspections according to company dam safety program, state and FERC requirements.
      iv. Underwater inspection (dive, ROV, etc.) of water retaining such as tunnels, penstocks, draft tubes, dams, intake buildings, sluice gates, flood gates, power canals and building structures.
      v. Inspection of water retaining structures in a dewatered state (ROV, UAS, etc.) such as tunnels, penstocks, scroll cases, draft tubes, sector gates, hydraulic crest gates, dam / spillway toe, etc.

vi. Non-destructive examinations of equipment, systems, etc. such as dye-penetrant, radiography, ultrasonic, sonar, magnetic particle, etc.
vii. Earthen embankments, retaining structures, training walls, etc.
viii. Survey of structures such as earthen embankments, crest of dams, penstocks, water control gates, etc.
ix. Coordination of and/or providing required on-site rescue team services, including in, above and below water, support equipment, retrieval systems, etc. in accordance with applicable company standard, Local, State and Federal codes.
x. Development of site and project specific health and safety plans in accordance with applicable company standards along with all Local, State and Federal codes.

b. Tests include:
i. Major component inspections: (turbine; generator, including stator and rotor (i.e., meggering, pole drop); transformers; dams/spill gates; water retaining structures; trash racks; forebays; tunnels/penstocks and surge tanks).
ii. Efficiency testing (heat rate, hydro utilization/index testing).
iii. Dependable Maximum Net Capacity testing (DMNC).
iv. Vibration analysis with corrective action to address issue.
v. Thermography.
vi. System relay trip testing.
vii. Powerplant auxiliary commissioning, testing, troubleshooting, start-up, etc.
viii. Power generating equipment commissioning, testing, troubleshooting, start-up, etc.
ix. Emissions testing according to local, state and/or federal requirements.

c. Studies / Modeling / Analyses:
i. Fish Passage, Protection and Effectiveness.
ii. Flashboard Pin Failure.
iii. Bathymetric Survey.
iv. Water / hydraulic flow analyses.
v. Potential Failure Modes.
vi. Inflow Design Flood.
vii. Inundation / Flood Modeling.
viii. Post-earthquake / Seismic Stability Analyses.
ix. Spillway Discharge Rating Curve.
x. Tailwater Curve Calculations.
xi. Time Sensitive Emergency Action Plans.

d. Permitting
i. New York State 401 Water Quality.
ii. Army Corp of Engineers (e.g., cofferdams).
iii. Dredging.
iv. Local, State and Federal.
v. Adirondack Park Association (APA).
vi. New York State Historical Preservation Organization (SHPO).

e. Regulatory Plan Preparations, Reporting & Regulatory Support

i. Annual Dam Safety Surveillance and Monitoring Plans & Reports.
ii. Emergency Action Plans.
iii. Turbidity Monitoring and Reporting.
iv. Dam Safety Programs & Plans.
v. Security Plans.
vi. Recreation and Public Safety Plan Development.
vii. Run-of-River & Flow Monitoring Reporting.
viii. License Amendments.
ix. Exhibit Drawings.

4. The Contractor shall provide standard response as well as support on an emergency basis where the initial response to a request is provided in less than 24 hours.

    a. The Contractor will input data into the CMS/MMS/WMS systems and reconcile project completions.

K. ENVIRONMENTAL AND LICENSING/PERMITTING

The Supplier shall identify all environmental and land use approvals required to perform the Work, shall prepare and submit all needed license/permit applications, and shall provide all necessary permitting support. All work shall be done according to ESOP-IUSA.019. All usage in ESOP-IUSA.019 of “Engineering Firm” shall mean “Supplier” for this Specification. As necessary the Work shall include, but may not be limited to, the following:

a. Survey of Protected & Significant Natural & Cultural Resources,
b. Evaluation of required environmental/land use approvals,
c. Erosion and Sediment Control Plan,
d. Spill Prevention, Control and Countermeasure Plan (SPCC),
e. Stormwater Pollution Prevention Plan (SWPPP),
f. Stormwater Management Plan,
g. Stormwater Management System Operations Manual,
h. Application Preparation, Follow-up Submittals, and Permitting Support,
i. Post-Permitting Support.

1. The Supplier shall review project scope and location, and identify, survey in the field, evaluate the regulated status of, and document as appropriate, all wetlands, water bodies, significant wildlife habitat, rare, threatened, and endangered species and their habitat, and any other protected natural resources, as well as all cultural (historic, prehistoric and architectural) resources potentially affected by the project.

2. The Supplier shall review project work scope, protected and significant natural resources survey results, all relevant Federal, state, regional, and local laws, regulations, and ordinances, consult and, as necessary, meet with appropriate regulatory agencies/bodies, and evaluate, identify and document all required environmental/land use approvals. Documentation shall include required approvals, application forms, public notice requirements, public hearing/meeting requirements, review times, meeting schedules, application fees, and any other relevant processing information.

3. The Supplier shall identify requirements for compensation of unavoidable impacts to protected natural resources, including developing and evaluating compensation options (i.e., land preservation, land improvements, and in-lieu fees) and estimating costs for each option.

4. The Supplier shall provide a comprehensive list of all required approvals to the Company as soon as required approvals are identified. The list shall conform to the Permit/License Tracking Form (EFORM-IUSA.010). The Contractor shall update the form and submit to the Company in ProjectWise each month throughout the duration of the Project Work.

5. An SPCC Plan meeting the requirements of all necessary environmental and land use approvals shall be developed for the Project by the Contractor per the requirements of ESOP-IUSA.019.

6. An erosion and sedimentation control plan meeting the requirements of all necessary environmental and land use approvals shall be developed for the Project by the Supplier per the requirements of ESOP-IUSA.019.

7. A Stormwater Management Plan shall be developed for the Project by the Supplier per the requirements of ESOP-IUSA.019.

8. A Stormwater Management System Operations Manual shall be developed by the Supplier for all Projects for which a Stormwater Management Plan is required per the requirements of ESOP-IUSA.019.

9. The Supplier shall review any Federal Aviation Administration (FAA) requirements based on the Project scope. Such review may require approval from the FAA for the Project, which shall be obtained by the Supplier. Adjustments to the Project design to be compliant with FAA requirements shall be implemented by the Supplier.

10. The construction of line facilities for the Project may require permits from the following entities where the lines cross over certain facilities:

    a. Railroads,
    b. Highways,
        i. State Transportation Departments,
        ii. Toll Road Authorities.
    c. Navigable Waterways,
    d. US Army Corps of Engineers,
    e. Canal Authorities.

11. The Supplier shall obtain these permits for the Project and develop any drawings or designs necessary for this Work.

12. The Supplier shall develop any traffic control plans in advance of construction for review and approval by the regulatory bodies issuing permits for the line crossings.

13. For Projects requiring access to environmentally sensitive areas, the Supplier shall prepare an Access Plan. This Access Plan shall show on maps with aerial photos the location of the Company's land ownership, and existing facilities, the Project's proposed facilities, environmentally sensitive areas,

and suggested locations and routes for the Construction Supplier to access the Project Work.

14. The Supplier shall complete draft applications for all required environmental and land use permits/approvals. Draft applications shall be submitted to the Company for review and comment, no less than two (2) weeks before the target submittal date. Copies of all final applications shall be submitted to the Company at the time these are submitted to regulatory bodies.

15. Follow-up submittals (e.g., additional or updated information, responses to information requests, etc.) shall be prepared and submitted to the appropriate regulatory body as requested and as needed by the Supplier. Copies of all follow-up submittals shall be submitted to the Company at the time these are submitted to regulatory bodies.

16. The Supplier shall request draft licenses from the Maine, New York, Massachusetts and Connecticut environmental regulatory authorities for all projects (excluding Permits by Rule) prior to issuance of the final license per the requirements of ESOP-IUSA.019.

17. If the Supplier and/or the Company determine it would be beneficial to obtain a draft license from any other regulatory agency or body before a final license is issued, the draft license shall be requested and obtained from the appropriate regulatory agency or body prior to issuance of final license by the Supplier per the requirements of ESOP-IUSA.019.

18. The Supplier shall provide all necessary post-permitting support, including but not limited to:
    a. For each permit received, a summary of all significant conditions of approval to the Company using the Permit/License Tracking form (EFORM-IUSA.010).
    b. Preparation and submittal of Notice of Intent to Comply, Work Start Notification, and Compliance Certification, with copies submitted to the Company,
    c. At the request of the Company, preparation and submittal of any other deliverables required as a condition of any approval for the project, with copies submitted to the Company.

Gas Engineering and Drafting Services Scope of Work

I. GAS DISTRIBUTION/TRANSMISSION ENGINEERING SERVICES

The Supplier is to provide Engineering Services to the Operating Companies with respect to Gas Distribution and Transmission Facility design. These engineering services support the design, construction, and relocation of gas distribution and transmission facilities.

For all work scoped below the Supplier is expected to meet with Operating Company staff to review plans and progress when deemed necessary by the Operating Company. These meetings will be held at the Operating Company's office. The Supplier will manage and track scheduling of the work as necessary to meet timelines specified by the Operating Company for each project on an individual basis.

Gas Distribution/Transmission Engineering Services include but are not limited to the following:

14. Survey services
    c. Survey services may include project specific survey for any of the types of work included in items 3 through 8 below. Survey may be needed to develop some base maps, establish public rights-of-way and/or property lines, or confirm existing features and location and/or depth of existing facilities. Survey may be required for some project layout during and after construction.
    d. Survey and map preparation services may also be necessary to obtain temporary and permanent easements. This work may include preparation of plot maps as necessary to obtain such easement.

15. Permit applications
    c. Permit application work may include preparation of permits for public entities such as, but not limited to: United States Corps of Engineers, New York State Department of Transportation, New York State Canal Corporation, New York State Thruway Authority, New York State Department of Environmental Conservation, Connecticut Department of Transportation, Connecticut Department of Energy and Environmental Protection, railroads and other county, city and local municipalities including towns and villages.
    d. Permit applications will include required plans and drawings such as, but not limited to: site and project plans, wetland delineation mapping, maintenance and protection of traffic plans, and erosion control and storm water protection plans.

16. QMS
    b. Supplier shall follow current Quality Management Process and procedures.

17. EMS
    b. Supplier shall follow current Environmental Management System process and procedures.

II. SPECIFIC PROJECT REQUIREMENTS

a. *Bid Item 1.1.1 – Base Map Preparation (drafting only) – Creation of Base Map for design in accordance with operating company standards*

b. *Bid Item 1.1.2 – Design (drafting only) – Creation of Design based on company redline markups*

c. *Bid Item 1.1.3 – As-built (drafting only) – Creation of As-built design according to field note markup*

General requirements for project submissions (bid items 1.2.1-1.2-8):

xvii. Base map preparation (to be created at 1:1 scale)
xviii. Layout and design of gas main replacements
xix. Gas main tie-in details
xx. Summary sheets
xxi. Material lists
xxii. Service work list including: summary list of impacted services and associated work, service orders, and customer contact lists
xxiii. SAP Work Management System (WMS) input including work orders (WOs), compatible units (CUs), materials, and planned costs. See reference document for example of number of work orders that may be required per job
xxiv. As-built drawings to be completed within 30 days of receipt. (provide final electronic file). Includes any time needed to verify information with company inspector/employees, if necessary.
xxv. Gas tie-in procedures for gas up of new mains, abandonment of existing mains, conversions and upgrades. This work includes both written text and sketches to be uploaded into the web database maintained by the company.
xxvi. Identify and prepare necessary.
xxvii. Loading all required documents into ProjectWise, see reference document for example of ProjectWise requirements.
xxviii. Complete environmental questionnaire & aspects and impacts template, see reference document for example of these documents.
xxix. Estimate for construction including PIDs and quantities with specific details regarding restoration calculations. Entering estimate into construction estimating database, see reference document for example.
xxx. Printing, includes:
    8. 30 copies of project proposals including summary sheet (see reference document for example) and material lists.
    9. Eight copies of as built.
    10. 15 copies of procedure sketch and text.
    11. One copy of existing gas service orders.
    12. One copy of new blank service orders.
    13. Copies of as-builts used for design.
    14. Three copies of existing electric and full size, color gas maps.

d. Bid Item 1.2.1 – Design/Engineer System Improvement – This work includes gas main replacement and new main installation that are <=8" in diameter. These projects are Operating Company driven and scoped. The projects vary in size and complexity. The Supplier will provide all related engineering services for the design of these main replacements including all general requirements.

e. Bid Item 1.2.2 – Design/Engineer Leak Prone Main Replacement – This work includes gas main replacements of mains determined to be leak prone that are <=8" in diameter. These projects are Operating Company driven and scoped. The projects vary in size and complexity. The Supplier will provide all related engineering services for the design of these main replacements including all general requirements.

f. Bid Item 1.2.3 – Design/Engineer Highway Replacement Project – This work includes gas main replacements associated with municipal highway projects that are <=8" in diameter. These projects are municipality driven. The projects vary in size and complexity. Scope of work depends on utility conflicts with work proposed by the municipality, municipal requirements, and existing utility configuration. The scope of work for each project will be developed through Supplier's review of municipal plans and meeting with the Operating Company to determine and agree upon final project scope of work. Scope of work may include gas main relocation, replacement, and/or abandonment; regulator station relocation, modification, replacement, and/or abandonment; relocation of gas facilities on bridges, pressure conversions or upgrades, and associated service work. The Supplier will provide all related engineering services for the design of these main replacements including all general requirements and the following:

xvii. Coordination with the municipality including attendance at municipality led utility/agency coordination meetings.

g. Bid Item 1.2.4 – Design/Engineer New Customer Main Extension – This work includes gas main extensions to new customers and URDs that are <=8" in diameter. This work includes coordination with the Operating Company's electric planner/engineer, other utilities, developers, municipalities, and

agencies as required. The Supplier will provide all related engineering services for the design of these main extensions including all general requirements and the following:

xvii. Coordination with the developer/builder, customer, associated municipality and agencies, including attendance at meetings.

h. *Bid Item 1.2.5 – Design/Engineer New Regulator station – This work includes design of a gas regulator station where one has not existed previously. These projects are Operating Company driven and scoped. The projects vary in size and complexity. The Supplier will provide all related engineering services for the design of these regulator stations including all general requirements and the following:*

i. Layout and design of gas mains at the inlet and outlet of the regulator stations
ii. Layout and design of all regulator piping including but not limited to tubing, control lines and electric connections
iii. Provide eight copies of 11x17 regulator drawings, see reference documents for example

i. *Bid Item 1.2.6 – Design/Engineer Regulator station replacement – This work includes the design of a gas regulator station where one has previously existed. This item will include the design of the abandonment of the existing regulator station as necessary. These projects are Operating Company driven and scoped. The projects vary in size and complexity. The Supplier will provide all related engineering services for the design of these regulator stations including:*

i. Layout and design of gas mains at the inlet and outlet of the regulator stations
ii. Layout and design of all regulator piping including but not limited to tubing, control lines and electric connections
iii. Provide eight copies of 11x17 regulator drawings, see reference documents for example

j. *Bid Item 1.2.7 – Design/Engineer Regulator Retirement – This work includes the design of the abandonment of the existing regulator station where the regulator station is being abandoned in conjunction with other gas main work. These projects are Operating Company driven and scoped. The projects vary in size and complexity. This item will be paid in addition to items 1.2.1-1.2.4 when applicable. The Supplier will provide all related*

engineering services for the design of these abandonments including all general requirements and the following:

i. Provide eight copies of 11x17 regulator drawings, see reference documents for example

k. Bid Item 1.2.8 – Design/Engineer Conversion/Upgrade – This work includes designing a conversion/upgrade/uprate of a pressure system. These projects are operating company driven and scoped.

l. Bid Item 1.2.9 – Prepare Regulator Schematic Drawing – This work includes creating a regulator schematic drawing in AutoCAD if one does not exist and it is requested by the company. This item will be paid in addition to items 1.2.1 – 1.2.8, when applicable.

m. Bid Item 1.2.10 – Design/Engineer Tie Ins – Per scope from Gas System Planning design tie in or new gas mains to existing gas mains along the project route. To be paid per each tie in.

n. Bid Item 1.2.11 – Preparation of As-Built Drawings – Creation of as-built drawings associated with items 1.2.1 – 1.2-8 As-built drawings required to be completed within 30 days of receipt (electronic file sent to operating company).

o. Bid Item 1.2.12 – State Permit – Obtain State Permit associated with items 1.2.1-1.2.8. Item includes drafting, response to comments by the DOT and revisions to job plans as necessary. Plans must include highway mile markers, measurements of right-of way width, lane widths and other items required by the DOT.

p. Bid Items 1.2.13 – 1.2.16 – Permits – Items include completing application and obtaining permits as required by the municipality and/or Railroad owner. Includes drafting.

q. *Bid Item 1.2.17 – Obtain Easement – This will include contacting the customer and assessing their willingness to provide an easement to the company. Once verbal agreement is met supplier to create easement sketch and send to the right-of-way department for processing. Field visit may also be required and shall be accounted for in the price.*

r. Bid Item 1.2.18 – Prepare Easement Sketch – Provide easement sketch in operating company's' preferred drafting tool. To be utilized in addition to item 17 or when the operating company requests a sketch only.

s. *Bid Item 1.2.19 – Prepare SWPPP with MS4 Approval – Prepare Storm Water Pollution Prevention Plan and obtain MS4 approval. Includes responding to comments from the operating company and MS4 agency and changes to plan based on comments received.*

t. *Bid Item 1.2.20 – Prepare SWPPP without MS4 Approval – Prepare Storm Water Pollution Prevention Plan and obtain DEC approval. Includes responding to comments from the operating company and reviewing agency and changes to plan based on comments received.*

u. *Bid Item 1.2.21 – Prepare HDD Design – Preparation of a Horizontal Directional Drill design only when a Bore Aide (or similar program) analysis is required by the permitting agency or requested by the operating company. Standard HDD design according to operating company standards to be included in design price.*

v. *Bid Item 1.2.22 – Prepare Traffic Protection Plan (Includes drafting) – Preparation of a traffic protection plan as required by the permitting agency (State or local municipality) or requested by the operating company. All traffic plans shall be designed according to, at minimum, the MUTCD latest designs and/or State and Local Municipality designs.*

w. *Bid Item 1.2.23 – Prepare ADA Sidewalk Ramp Design (Includes drafting) – Design ADA compliant sidewalk ramp with appropriate slope. Item includes survey, submission to the permitting agency and making changes based on comments from the permitting agency or operating company.*

x. *Bid Item 1.2.24 – Travel to and from home office to division or job site beyond 75 miles one way – Includes all labor time and vehicle charges*

III. ADDITIONAL UNITS TO BE PART OF THIS BID

a. Any work not covered by the bid items will paid using hourly rates included in this bid and will be approved by the company before work is started.

PAYMENT

a. Payments will be made based on actual quantity of work completed. Supplier must submit list of completed work (work order #'s, notification #'s & locations) with invoice.

RFP Submittal Requirements:

a. Submitting firms must include a narrative approach to the work and staff organization chart, including names and titles. The RFP must include the Supplier's PID unit prices as attached.

Schedule D-3 PRICING TERMS

Solely for the purpose of the Detailed Engineering FA:

1. Detail Engineering (Electrical/Gas/Power): Prices are per Round 3 submission file "Engineering MSA – Bid Form PayIDsV.1.5 20210214.xlsx" and "Engineering MSA – Bid Form Rates V.1.2 20210214.xlsx" dated February 14, 2021 from IBuy tender WS504036991. Prices shall remain firm for orders placed during the term of this Agreement.

2. Payment Terms are Net 60 days from date of invoice.

Schedule E-1 SPECIAL CONDITIONS

Solely for the purpose of the Detailed Engineering FA:

Liquidated Damages List of Activities:

Activity ID	Description	Guaranteed Delivery Date
UH1-ENG.CE-65	Concept Design - FINISH Conceptual Design	As defined in the PO
UH1-ENG.IG-50	In-Ground Design-FINISH	As defined in the PO
UH1-ENG.AG-55	Above Ground Design-FINISH Above Ground Design	As defined in the PO
UH1-ENG.SPC1-50	SP&C1 FINISH Design	As defined in the PO
UH1-ENG.SPC2-55	SP&C2 FINISH Design	As defined in the PO
UH1-ENG.SPC3-45	SP&C3 FINISH Design	As defined in the PO
UH1-ENG.SPC4-45	SP&C4 FINISH Design	As defined in the PO
UH1-ENG.SPC5-45	SP&C5 FINISH Design	As defined in the PO
UH1-ENG.SPC6-45	SP&C6 FINISH Design	As defined in the PO
UH1-ENG.SPC7-45	SP&C7 FINISH Design	As defined in the PO
UH1-ENG.AB-0	Prepare & Issue As- Builts/Close-Out Detail	As defined in the PO
UH1-ENG.AB-15	Update Drawings & Files with As-Built Information	As defined in the PO

For the purpose of this Agreement, the Guaranteed Delivery Dates is the delivery date of the approved baseline schedule of the Project schedule for each Purchase Order.

The baseline schedule shall be appropriately updated by the Customer to reflect any impact of a delay caused by either Party. The baseline schedule shall be available to the Parties.

The Purchase Order issued by Owner, will define the list of activities and Guaranteed Delivery Dates from the ones outline in the above list for the Project. Before the Purchase Order is issued the Parties will agree on the baseline date Project schedule and Guaranteed Delivery Dates.

Schedule F-1 NOTICES

Solely for the purpose of the Detailed Engineering FA:

Along with all other correspondence requirements included in this Agreement, any notice, request, approval or other document required or permitted to be given under this Agreement shall be in writing and shall be deemed to have been sufficiently given when delivered in person or deposited in the U.S. Mail, postage prepaid, addressed as specified herein or to such other address or addresses as may be specified from time to time in a written notice given by such Party, or when email notice has been given with an acknowledgement given by the appropriate Party representative. The Parties shall acknowledge in writing the receipt of any such notice delivered in person.

All communications to **Customer** shall be directed to:

Avangrid Service Company
Contract Administration
89 East Avenue
Rochester, NY 14649
Phone: 585-724-8028
Fax: 585-771-2820

With Copy To :
Avangrid Service Company
Process and Technology
180 South Clinton Avenue
Rochester, NY, 14604
Attention: Ryan Heller
Phone: 607-644-2559
Email: rheller@nyseg.com

Schedule G-3 INSURANCE REQUIEREMENTS

Solely for the purpose of the Detailed Engineering FA:

Before commencing Services, the Supplier shall procure and maintain at its own expense for a period of two years beyond completion of the Services, the insurance types, limits, terms, and conditions listed in Section 1 below. The amounts as specified are minimums only and in no way limit the indemnification obligations of the Supplier. The actual amounts above the minimums shall be determined by the Supplier. In addition, for any Services that are authorized to be subcontracted, the Supplier shall require each subcontractor to procure and maintain all insurance as outlined below.

IF YOU DO NOT HAVE A CURRENT CERTIFICATE ON FILE WITH CUSTOMER prior to commencement of Services, Certificates of Insurance evidencing Supplier's and/or subcontractor's possession of insurance as outlined in Section 1 shall be filed with Customer and the Companies for its review.

Certificates of Insurance should be mailed to the Procurement Department at the following address:

Avangrid Service Company
Contract Administration
89 East Avenue
Rochester, NY 14649
Phone: 585-724-8028
Fax: 585-771-2820

With Copy To :
Avangrid Service Company
Process and Technology
180 South Clinton Avenue
Rochester, NY, 14604
Attention: Ryan Heller
Phone: 607-644-2559
Email: rheller@nyseg.com

A. General Insurance Requirements

Each insurance policy shall:

1) be placed with an insurance company licensed to write insurance in the State where the Services are to be performed and shall have an A.M. Best Rating of not less than "A- VII" and a policyholder surplus of at least $25,000,000.
2) have defense costs within the limits of liability;
3) add Customer and its Affiliates as additional insureds except of any required professional liability coverage, which shall name Customer and its Affiliates as indemnified parties;
4) not preclude Customer or its Affiliates from making claims against the policy for the wrongful acts, omissions or other tortious conduct of the Supplier/Consultant/Labor Supplier;
5) provide Customer with 30-day notice of cancellation, except for non-payment of premium and then it shall be 10 days;
6) Supplier shall notify Customer of any reduction in the aggregate policy limits;
7) contain a breach of warranty clause;
8) be primary and non-contributory with respect to Customer and its Affiliates;
9) contain a waiver of subrogation in favor of Customer and its Affiliates;
10) contain a separation of insureds clause;

11) contain a terrorism provision; and
12) contain a choice of law provision which states that the policy shall be governed by the State in which the Services are being performed.

B. Required Coverages

1) Workers' Compensation and Employers' Liability Insurance:

Coverage A: Statutory
Coverage B: Limits apply per issued annual policy
Bodily Injury by Accident - $500,000 each Accident
Bodily Injury by Disease - $500,000 each Employee
Bodily Injury by Disease - $500,000 Policy Limit
Policy Information Page Requirements:
Item 1 – First Named Insured and Other Named Insureds
Item 3.A. – State(s) of Operations
Item 3.C. – All Other States Except Monopolistic States
Endorsements;
Voluntary Compensation – WC 00 03 11 A
Alternate Employer – WC 00 03 01 A
FELA – If any basis
Maritime – If any basis
USL&H – If any basis

2) Automobile Liability

Combined Single Limit - $5,000,000 (limits in excess of $1M can be satisfied by umbrella/excess coverage
Uninsured/Underinsured – Minimum allowed by State law
Hired/Non-owned liability - $5,000,000

Symbol – 1

Endorsements:
Employees as Insureds
Fellow Employee Coverage
MCS 90
CA 9948

3) General Liability: ISO Form CG 00 01 or its functional equivalent
Per Occurrence - $1,000,000
General Aggregate - $2,000,000
Products Completed - $2,000,000
Personal and Advertising Injury - $1,000,000

Endorsements:
Contractual Liability Amendment
Explosion, Collapse, Underground Coverage
Independent Contractors Coverage
Broad Form Property Damage

No Punitive or Exemplary Damages Exclusion
No Subsidence Exclusion

4) Umbrella/Excess Liability: Written on a Follow Form Basis and Worldwide
Coverage Per Occurrence - $5,000,000
General Aggregate - $5,000,000
Products/Completed Operations - $5,000,000
Personal & Advertising Injury - $5,000,0000

Underlying Policies: Commercial General Liability, Auto Liability, Employer's Liability

5) Contractor's Pollution Liability
Per Occurrence - $5,000,000
Policy Aggregate - $5,000,000

Coverage:
Environmental Impairment Liability
Bodily Injury, sickness, disease, mental anguish or shock sustained by any person, including death and mental anguish
Property Damage including physical injury or destruction of tangible property including resulting loss of use, clean-up costs, and loss of use of tangible property that has not been physically injured or destroyed
Disposal site coverage
Underground storage tanks
Loss, remediation, clean-up costs and related legal expenses
Sudden and non-sudden pollution conditions
No exclusion for loss occurring over water including but not limited to a navigable waterway

Endorsements:
Extended Completed Operations – 10 years

6) Professional Liability:
Per Claim - $5,000,000
Policy Aggregate - $5,000,000
Mitigation of Loss/Rectification - $5,000,000

Coverage:
Extended Reporting Period – 120 months
Retroactive Date – Date of first design
No Exclusion for environmental impairment liability
No Exclusion for punitive damages to the extent insurable

Schedule H-1 BACKGROUND CHECK

Domestic Background Checks

Contract Language

Direction: The following provision must be added to all contracts with Contractors subject to this Background Check Policy:

Contractor, at its expense, shall conduct a background check for each employee, agent, representative, contractor, or independent contractor (collectively, "Representatives"), as well as for the Representatives of its subcontractors, who will provide work or services to the Company or who will have access to Company computer systems, either through on-site or remote access (collectively, "Contractor Representatives"). Contractor Representatives, for the purpose of this requirement, include such temporary staff as office support, custodial service, and third party vendors used by Contractor to provide, or assist in the provision of, work or services to the Company hereunder. Contractor's obligations with respect to required background checks shall include those obligations specified for Contractor in the Avangrid Networks, Inc. –Contractor Background Check Rule, as such Rule may be revised and\or supplemented from time to time, which Policy is incorporated herein and made part of this Agreement by reference (the "Rule"). Background checks are to be conducted using the Contractor's background check vendor consistent with the process developed with the Company under this Agreement. The minimum Background Check process shall include, but not be limited to, the following checks:

a. Social Security Number Verification
b. Motor Vehicle Report
c. Prohibited Parties Database Search\Debarment Lists
d. County Criminal History Search in each county where a Contractor or Contractor Representative has resided during the seven (7) years preceding the search.
e. National Sex Offender Registry.

The Background Check must be completed prior to initial access by Contractor Representative(s) and must, at minimum, meet the criteria specified in Attachment A of this Rule and be repeated every two (2) years for Contractor(s) and Contractor Representative(s) under continuing engagements. Any Contractor Representative who separates employment or other commercial relationship with the Contractor must undergo another Background Check prior to renewed access to the Company. The Company Department charged with managing the relationship with the Contractor hereunder (the "Company Liaison") shall have the right to require more frequent Background Checks of Contractor Representatives or to require checks from other or additional sources than those listed above and shall have the right to require that the Contractor furnish Background Check results to them. The Company reserves the right to audit Contractor's Background Check process using either a third-party auditor or representatives from the Company's Audit Department or the Company Liaison. All Contractor Representatives are responsible to self-disclose any misdemeanor or felony conviction(s) that occur during the course of their assignment hereunder within three (3) business days of the conviction. The conviction must be reported to the Contractor and the Company Liaison. If reported first to the Contractor, the Contractor shall notify the Company Liaison and the Company Director of Security within three (3) days of learning of the conviction. If, at any time during the term of this Agreement, it is discovered that any Contractor Representative has a criminal record that includes a felony or misdemeanor conviction, the Contractor is required to inform the Company Liaison who will assess the circumstances surrounding the conviction, time frame, nature, gravity, and relevancy of the conviction to the job duties to determine whether the Contractor Representative will be placed on, or continue in, the assignment with the Company, and consistent with, and to the extent permitted by, applicable state law. The Company may withhold its consent in its sole and absolute discretion. The failure of the Contractor to comply with the terms of this provision shall constitute good cause for termination of this Agreement by the Company, in whole or in part.

Avangrid Networks – Contractor Background Check Rule

Contractor Certification Form

The undersigned authorized agent of _____ ("Contractor") hereby **certifies** that the employees, contractors, agents, and subcontractors of Contractor listed below and on any attachment meet the requirements set forth in Attachment B of the Avangrid Networks Contractor Background Check Rule (the "Rule"). Such persons constitute all of Contractor's Representatives (as such term is defined in the Rule) during the period since Contractor's last certification of compliance with the Rule.

Contractor shall notify Avangrid Networks of all Contractor Representative personnel changes, including without limitation all additions to and all voluntary and involuntary terminations of its Contractor Representatives. Any additions and terminations shall be communicated to Avangrid Networks immediately.

Contractor Representative Name	Employer	Date of Last Background Check

[__] See attached for additional Contractor Representatives.

Further, I certify that (i) Contractor is and has been in full compliance with the Rule since Contractor's last certification of compliance with the Rule, and that (ii) all Contractor Representatives remain in compliance with and have met the requirements of the Rule since their last background check.

_____ _____

Signature Date

_____

Printed Name and Position

Schedule I-1 DATA SECURITY RIDER

Solely for the purpose of the Detailed Engineering FA:

AVANGRID Privacy and Data Security Rider

This Privacy and Data Security Rider (the "Rider") is entered by [redacted] ("VENDOR") and **Avangrid Service Company** For the purposes of this Rider **Avangrid Service Company** and any of its affiliates procuring or receiving services, works, equipment or materials under the Agreement shall be hereinafter referred to as the "CUSTOMER".

(a) Among other, the purpose of this Rider is to enable the VENDOR to Process on behalf of the CUSTOMER the Personal Data and Company Data necessary to comply with the purpose of the "Agreement" (as defined below), define the conditions under which the VENDOR will Process the Personal Data and Company Data to which it has access during the execution of the Agreement, and establish the obligations and responsibilities of the VENDOR derived from such Processing.

(b) The following definitions are relevant to this Rider:

(i) "Personal Data" means any information about an individual, including an employee, customer, or potential customer of CUSTOMER or its affiliates, including, without limitation: (A) any information that can be used to distinguish or trace an individual's identity, such as name, social security number, date and place of birth, mother's maiden name, biometric records, personal electronic mail address, internet identification name, network password or internet password; (B) "Sensitive Personal Data" as defined below; or (C) any other information that is linked or linkable to an individual, such as medical, educational, financial, and employment information, as well as cookie information and usage and traffic data or profiles, that is combined with any of the foregoing.

(ii) "Sensitive Personal Data" is that subset of Personal Data, including social security number, passport number, driver's license number, or similar identifier, or credit or debit card number, whose unauthorized disclosure or use could reasonably entail enhanced potential risk for the individual.

(iii) "Company Data" means any and all information concerning CUSTOMER and its affiliates and their respective business in any form, or to which the CUSTOMER or its affiliates have access, that requires reinforced protection measures, including but not limited to private or secret information, Personal Data, Cardholder Data, commercially sensitive information, Critical Infrastructure Information, strategic business information, credentials, encryption data, system and application access logs, or any other information that may be subject to regulation.

(iv) "Critical Infrastructure Information" means engineering, vulnerability, or detailed design information about proposed or existing critical infrastructure (physical or virtual) that (A) relates details about the production, generation, transmission, or distribution of energy; (B) could be useful to a person planning an attack on critical infrastructure; (C) is exempt from mandatory disclosure under the Freedom of Information Act; and (D) gives strategic information beyond the location of the critical infrastructure.

(v) "Processing" (including its cognate, "process") means any operation, action, error, omission, negligent act, or set of operations, actions, errors, omissions, or negligent acts that is

AVANGRID Privacy and Data Security Rider

performed upon Personal Data or Company Data, whether or not by automatic means, including, without limitation, collection, recording, organization, storage, access, adaptation, alteration, retrieval, consultation, retention, use, disclosure, dissemination, exfiltration, taking, removing, copying, making available, alignment, combination, blocking, deletion, erasure, or destruction.

(vi) "Data Security Breach" means: (A) the loss or misuse (by any means) of Personal Data or Company Data; (B) the inadvertent, unauthorized and/or unlawful Processing, corruption, modification, transfer, sale or rental of Personal Data or Company Data; or (C) any other act, omission or circumstance that compromises the security, confidentiality, or integrity of Personal Data or Company Data, including but not limited to incidents where Personal Data or Company Data has been damaged, lost, corrupted, destroyed, or accessed, acquired, modified, used, or disclosed by any unauthorized person, by any person in an unauthorized manner, or for an unauthorized purpose.

(vii) "Technical and Organizational Measures" means security measures, consistent with the type of Personal Data or Company Data being Processed and the services being provided by VENDOR, to protect Personal Data or Company Data, which measures shall implement industry accepted protections which may include physical, electronic and procedural safeguards to protect the Personal Data or Company Data supplied to VENDOR against any Data Security Breach, and any security requirements, obligations, specifications or event reporting procedures set forth in this Rider or in any Schedule to this Rider. As part of such security measures, VENDOR shall provide a reasonably secure environment for all Personal Data and Company Data and any hardware and software (including servers, network, and data components) to be provided or used by VENDOR as part of its performance under the Agreement.

(viii) "Losses" shall mean all losses, liabilities, damages, and claims and all related or resulting costs and expenses (including, without limitation, reasonable attorneys' fees and disbursements and costs of investigation, litigation, settlement, judgment, interest and penalties).

(ix) "Agreement" shall mean the Master Services Procurement Agreement, Master Materials Agreement or other agreement between CUSTOMER and VENDOR with respect to which this Rider is being entered.

(c) Personal Data and Company Data shall at all times remain the sole property of CUSTOMER, and nothing in this Rider or the Agreement will be interpreted or construed as granting VENDOR any license or other right under any patent, copyright, trademark, trade secret, or other proprietary right to Personal Data or Company Data. VENDOR shall not create or maintain data which are derivative of Personal Data or Company Data except for the purpose of performing its obligations under the Agreement and this Rider and as authorized by CUSTOMER.

(d) Regarding the Processing of Personal Data and Company Data, the parties agree that:

(i) VENDOR shall Process Personal Data and Company Data only on the instruction of CUSTOMER and in accordance with the Agreement, this Rider and privacy and security laws applicable to VENDOR's services or VENDOR's possession or Processing of Personal Data and Company Data.

AVANGRID Privacy and Data Security Rider

CUSTOMER hereby instructs VENDOR, and VENDOR hereby agrees, to Process Personal Data and Company Data only as necessary to perform VENDOR's obligations under the Agreement and as further described below and for no other purpose. For the avoidance of doubt, (i) VENDOR shall not Process Personal Data or Company Data for any commercial purpose other than providing the services specified in the Agreement nor for any purpose outside the scope of the Agreement; and (ii) selling, renting, releasing, disclosing, disseminating, making available, transferring, or otherwise communicating orally, in writing, or by electronic or other means, Personal Data or Company Data for valuable consideration is prohibited.

(ii) With regards to Personal or Company, the parties agree that:

- The Processing activities that will be carried out by VENDOR are: copies, deletes, reads, received, stores and updates.

- The categories of Personal or Company Data that will be Processed by VENDOR are: Public, Internal Use and Confidential in nature.

- The categories of Personal Data subjects whose information will be processed by VENDOR are: engineering specifications, drawings, technical documentation and electrical equipment data sheets.

- The instructions for the Processing of Personal or Company Data are: VENDOR may process data with the least privilege necessary for the implementation and execution of activities on AVANGRID's premises and remotely within the US.

(iii) VENDOR shall immediately inform the CUSTOMER if in VENDOR's opinion a Processing instruction given by CUSTOMER may infringe the privacy and security laws applicable to VENDOR's services or VENDOR's possession or Processing of Personal Data or Company Data.

(iv) In the event that the activities to be carried out by VENDOR under the Agreement do not require access to Personal Data, VENDOR, its employees and representatives shall be prohibited from accessing and Processing Personal Data. If they gain access to Personal Data, VENDOR shall immediately inform CUSTOMER. Notwithstanding the foregoing, any Processing of Personal Data by VENDOR shall be subject to the terms and conditions set forth in this Rider.

(e) As a condition to starting work, VENDOR's employees and other persons authorized, pursuant to the terms of this Rider, to Process Personal Data or Company Data shall acknowledge in writing their agreement to (i) comply with the terms of CUSTOMER's Acceptable Use Requirements set forth in Schedule C hereto, as such Acceptable Use Requirements may be modified or supplemented from time-to-time upon notice from the CUSTOMER, (ii) maintain the confidentiality of Personal Data and Company Data, and (iii) comply with any applicable Technical and Organizational Measures. In addition, VENDOR's employees and other authorized persons that access CUSTOMER's premises shall abide by CUSTOMER's physical security policies, rules and procedures.

AVANGRID Privacy and Data Security Rider

(f) At all times during which VENDOR is Processing Personal Data or Company Data, VENDOR shall:

(i) Comply with all applicable privacy and security laws to which it is subject, or that are applicable to VENDOR's services or VENDOR's possession or Processing of Personal Data and\or Company Data, and not, by act or omission, place CUSTOMER or its affiliates in violation of any privacy or security law known by VENDOR to be applicable to them;

(ii) With regards to the Processing of Personal Data, maintain a record of Personal Data Processing activities carried out on behalf of CUSTOMER, which shall include at least:

(A) The name and contact details of the VENDOR, any subcontractor, where applicable and as previously authorized by CUSTOMER, the CUSTOMER on whose behalf the VENDOR is Processing Personal Data, their respective representatives and, where applicable, the data protection officer;

(B) The categories of Processing activities carried out on behalf of CUSTOMER;

(C) Where applicable, international transfers of Personal Data to a third country or international organization, identifying the third country or international organization, and identification of appropriate safeguards;

(D) A general description of the appropriate Technical and Organizational Measures that VENDOR is implementing relating to:

- The ability to ensure the continued confidentiality, integrity, availability and resilience of Personal Data Processing systems and services;
- The ability to quickly restore availability and access to Personal Data in the event of a physical or technical incident; and
- A process of regular verification, evaluation and assessment of the effectiveness of Technical and Organizational Measures to ensure the security of the Personal Data Processing;
- Pseudonymization and encryption of Personal Data;

(iii) Have in place appropriate and reasonable Technical and Organizational Measures to protect the security of Personal Data and Company Data and prevent a Data Security Breach, including, without limitation, a Data Security Breach resulting from or arising out of VENDOR's internal use, Processing or other transmission of Personal Data and Company Data, whether between or among VENDOR's subsidiaries and affiliates or any other person or entity acting on behalf of VENDOR. VENDOR shall implement Technical and Organizational Measures to ensure a level of security

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appropriate to the risk, taking into account the state-of-the-art, the costs of implementation, and the nature, scope, context and purposes of Processing, as well as, in connection with Personal Data, the risks of varying likelihood and severity for the rights and freedoms of data subjects. Without limiting the generality of the foregoing, the VENDOR will implement measures to:

(A) Ensure the continued confidentiality, integrity, availability and resilience of Processing systems and services;

(B) Quickly restore availability and access to Personal Data and Company Dara in the event of a physical or technical incident;

(C) Verify and evaluate, on a regular basis, the effectiveness of the Technical and Organizational Measures implemented;

(D) Pseudonymize and encrypt Personal Data, where applicable; and

(E) Safely secure or encrypt all Sensitive Personal Data, Critical Infrastructure Information and other information that relates to the operation or functionality of plants, factories, networks, or grids of the CUSTOMER or its affiliates or to which they have access, during storage or transmission;

(iv) Except as may be necessary in connection with providing services to CUSTOMER (and provided that immediately upon the need for such Personal Data and Company Data ceasing, such Personal Data or Company Data is immediately destroyed or erased), not use or maintain any Personal Data or Company Data on a laptop, hard drive, USB key, flash drive, removable memory card, smartphone, or other portable device or unit; and ensure that any such portable device or unit is encrypted.

(v) Notify CUSTOMER no later than one (1) day from the date of obtaining actual knowledge of any Data Security Breach, or from the date the VENDOR reasonable believes that a Data Security Breach has taken place, whatever is earlier, and at VENDOR's cost and expense, assist and cooperate with CUSTOMER concerning any disclosures to affected parties and other remedial measures as requested by CUSTOMER or required under applicable law. If the Data Security Breach involves Personal Data, the following information shall be provided as a minimum:

(A) Description of the nature of the Data Security Breach, including, where possible, the categories and approximate number of data subjects affected, and the categories and approximate number of Personal Data records affected;

(B) Contact details of the data protection officer of the VENDOR, where applicable, or other contact person for further information;

(C) Description of the possible consequences of the Data Security Breach or

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violations; and

(D) Description of the measures taken or proposed to remedy the Data Security Breach, including, where appropriate, the measures taken to mitigate possible negative effects;

(vi) Assist and cooperate with CUSTOMER to enable CUSTOMER to comply with its obligations under any applicable privacy or security law, including but not limited to maintaining Personal Data and Company Data secured, responding to Data Security Breaches, and, where applicable, ensuring the rights of data subjects and carrying out Personal Data impact assessments;

(vii) Inform the CUSTOMER, if, where applicable, data subjects exercise their rights of access, rectification, erasure or objection, restriction of processing, data portability and not to be the subject to automated decisions by the VENDOR. The communication must be made immediately and in no case later than one (1) business day following the receipt of the request by VENDOR. VENDOR shall assist CUSTOMER, taking into account the nature of the Personal Data Processing, through appropriate Technical and Organizational Measures, and with any information that may be relevant to the resolution of the request;

(viii) Not use independent contractors or provide Personal Data or Company Data to independent contractors or other personnel that are not full-time employees of VENDOR without CUSTOMER's prior written approval;

(ix) Not disclose Personal Data or Company Data to any third party (including, without limitation, VENDOR's subsidiaries and affiliates and any person or entity acting on behalf of VENDOR) unless with respect to each such disclosure: (A) the disclosure is necessary in order to carry out VENDOR's obligations under the Agreement and this Rider; (B) VENDOR executes a written agreement with such third party whereby such third party expressly assumes the same obligations set forth in this Rider; (C) VENDOR has received CUSTOMER's prior written consent; (D) the Processing is carried out in accordance with the instructions of CUSTOMER, and (D) VENDOR shall remain responsible for any breach of the obligations set forth in this Rider to the same extent as if VENDOR caused such breach;

(x) Not permit any officer, director, employee, agent, other representative, subsidiary, affiliate, independent contractor, or any other person or entity acting on behalf of VENDOR to Process Personal Data or Company Data unless such Processing is in compliance with this Rider and is necessary to carry out VENDOR's obligations under the Agreement and this Rider. Personal Data and Company Data shall only be accessed by persons who need access to carry out VENDOR's obligations under the Agreement and this Rider and in accordance with the instructions of CUSTOMER; VENDOR shall provide appropriate privacy and security training to its employees and those persons authorized to Process Personal Data or Company Data.

(xi) Establish policies and procedures to provide all reasonable and prompt assistance to CUSTOMER in responding to all requests, complaints, or other communications received from any

AVANGRID Privacy and Data Security Rider

individual who is or may be the subject of any Personal Data Processed by VENDOR to the extent such request, complaint or other communication relates to VENDOR's Processing of such Personal Data;

(xii) Establish policies and procedures to provide all reasonable and prompt assistance to CUSTOMER in responding to any and all requests, complaints, or other communications received from any individual, government, government agency, regulatory authority, or other entity that is or may have an interest in the Personal Data or Company Data, exfiltration of Personal Data or Company Data, disclosure of Personal Data or Company Data, or misuse of Personal Data or Company Data to the extent such request, complaint or other communication relates to VENDOR's Processing of such Personal Data or Company Data;

(xiii) Not transfer any Personal Data or Company Data across a country border, unless directed to do so in writing by CUSTOMER, and VENDOR agrees that CUSTOMER is solely responsible for determining that any transfer of Personal Data or Company Data across a country border complies with the applicable laws and this Rider;

(g) At the time of the execution of this Rider, and at any time, upon CUSTOMER's request, VENDOR shall provide evidence that it has established and maintains Technical and Organizational Measures governing the Processing of Personal Data and Company Data appropriate to the Processing and to the nature of the Personal Data and Company Data.

(h) To the extent VENDOR maintains Personal Data and Company Data at its location, CUSTOMER shall have the right to conduct onsite inspections and/or audits (with no advance notice to VENDOR) of VENDOR's information security protocols, and VENDOR agrees to cooperate with CUSTOMER regarding such inspections or audits; provided, any such inspections or audits shall be conducted during normal business hours and in a manner so as to minimize any disruptions to VENDOR's operations. VENDOR will promptly correct any deficiencies in the Technical and Organizational Measures identified by CUSTOMER to VENDOR;

(i) VENDOR shall keep and make accessible to CUSTOMER, at any time, upon CUSTOMER's request, documentation that evidences compliance with the terms of this Rider. CUSTOMER may conduct audits and inspections, either directly or through a third party, and VENDOR agrees to cooperate with CUSTOMER regarding such audits;

(j) VENDOR shall cease Processing Personal Data and Company Data and return, delete, or destroy, or cause or arrange for the return, deletion, or destruction of, all Personal Data and Company Data subject to the Agreement and this Rider, including all originals and copies of such Personal Data and Company Data in any medium and any materials derived from or incorporating such Personal Data and Company Data, upon the expiration or earlier termination of the Agreement, or when there is no longer any legitimate business need (as determined by CUSTOMER) to retain such Personal Data and Company Data, or otherwise on the instruction of CUSTOMER, but in no event later than ten (10) days from the date of such expiration, earlier termination, expiration of the legitimate business need, or instruction. If applicable law prevents or precludes the return or destruction of any Personal Data or Company Data, VENDOR shall notify CUSTOMER of such reason for not returning or destroying such

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Personal Data and Company Data and shall not Process such Personal Data and Company Data thereafter without CUSTOMER's express prior written consent. VENDOR's obligations under this Rider to protect the security of Personal Data and Company Data shall survive termination of the Agreement.

(k) To the extent that VENDOR is afforded regular access in any way to "Cardholder Data" as defined below and for so long as it has such access, the following requirements shall apply with respect to the Cardholder Data; provided, that the parties do anticipate that VENDOR will have access to any Cardholder Data:

(i) VENDOR represents that it is presently in compliance and will remain in compliance with the Payment Card Industry Data Security Standard ("PCI Standard"), and all updates to PCI Standard, developed and published jointly by American Express, Discover, MasterCard and Visa ("Payment Card Brands") for protecting individual credit and debit card account numbers ("Cardholder Data").

(ii) VENDOR acknowledges that Cardholder Data is owned exclusively by CUSTOMER, credit card issuers, the relevant Payment Card Brand, and entities licensed to process credit and debit card transactions on behalf of CUSTOMER, and further acknowledges that such Cardholder Data may be used solely to assist the foregoing parties in completing a transaction, supporting a loyalty program, providing fraud control services, or for other uses specifically required by law, the operating regulations of the Payment Card Brands, or this Agreement.

(iii) To the extent Cardholder Data is regularly maintained on the premises or property of VENDOR, VENDOR shall maintain a business continuity plan addressing the possibility of a potential disruption of service, disaster, failure or interruption of its ordinary business process, which business continuity plan provides for appropriate back-up facilities to ensure VENDOR can continue to fulfill its obligations under the Agreement.

(iv) VENDOR agrees that, in the event of a Data Security Breach arising out of or relating to VENDOR's premises or equipment contained thereon, VENDOR shall afford full cooperation and access to VENDOR's premises, books, logs and records by a designee of the Payment Card Brands to the extent necessary to perform a thorough security review and to validate VENDOR's compliance with the PCI Standards; provided, that such access that be provided during regular business hours and in such a manner so as to minimize the disruption of VENDOR's operations.

(l) VENDOR represents that the security measures it takes in performance of its obligations under the Agreement and this Rider are, and will at all times remain, at the highest of the following: (a) Privacy & IT Security Best Practices (as defined by ISO 27001/27002); and (b) any security requirements, obligations, specifications, or event reporting procedures set forth in Schedule A.

(m) In addition to any other insurance required to be provided by VENDOR hereunder, VENDOR shall also provide the Cyber-Insurance coverage meeting the requirements specified in Schedule B, attached hereto and made part hereof. VENDOR shall also comply with the terms and

AVANGRID Privacy and Data Security Rider

conditions in Schedule B as they relate to any insurance required to be provided by VENDOR pursuant to this Agreement.

(n) Notwithstanding anything in the Agreement or this Rider to the contrary, VENDOR shall indemnify, defend and hold CUSTOMER, its affiliates, and their respective employees, officers, representatives and contractors, harmless from and against all Losses caused by, resulting from, or attributable to VENDOR's breach or violation of applicable laws, regulations or any of the terms and conditions of this Rider. VENDOR's obligation to indemnify, defend, and hold harmless shall survive termination or expiration of the Agreement and this Rider.

(o) Failure by VENDOR to comply with any requirement of this Rider shall constitute a material breach of the Agreement and a VENDOR default thereunder. CUSTOMER shall be allowed to terminate the Agreement, and CUSTOMER shall have all rights and remedies provided by law or equity under the Agreement and this Rider.

***

[*Signature page follows*]

AVANGRID Privacy and Data Security Rider

IN WITNESS WHEREOF, CUSTOMER and VENDOR have caused their representatives to execute and deliver this Privacy and Data Security Rider.

CUSTOMER	VENDOR
By: _____	By: _____
Name:	Name:
Title:	Title:
Date:	Date:
By: _____	
Name:	
Title:	
Date:	

[*Signature page to Privacy and Data Security Rider*]

AVANGRID Privacy and Data Security Rider

Schedule A

General Security Requirements

(a) The following definitions are relevant to this General Security Requirements Schedule:

(i) "Cyber-infrastructure" means electronic information and communication systems and services, as well as the information contained therein. These systems, both those housed within facilities as well as those that are cloud-based, be they proprietary or third-party, in any manner, are comprised of hardware and software for processing (creating, accessing, modifying and destroying), storing (on magnetic, electronic or other formats) and sending (shared use and distribution) information, or any combination of said elements that include any type of electronic device such as, without limitation, standard computers (desktop/laptop) with internet connections, digital storage methods used on computers (e.g. hard drives), mobiles, smartphones, personal digital assistants, data storage media, digital and video cameras (including CCTV), GPS systems, etc.

(ii) "Protected Information" means Personal Data and Company Data as defined in the Rider.

(iii) Capitalized terms not otherwise defined in this Schedule shall have the meaning set forth in the Rider.

(b) VENDOR must, always, know the level of information protection that should be afforded to the Protected Information as well as the corresponding standards and applicable laws and regulations, and it shall adopt the Technical and Organizational Measures adequate thereto. VENDOR shall, at least, maintain Technical and Organizational Measures consistent with the type of Protected Information being processed and the services being provided by VENDOR, to secure Protected Information, which measures shall implement industry accepted protections which include physical, electronic and procedural safeguards to protect the Protected Information supplied to VENDOR against any Data Security Breach or other security incident, and any security requirements, obligations, specifications or event reporting procedures set forth in the Agreement, the Rider or this Schedule. As part of such security measures, VENDOR shall provide a secure environment for all Protected Information and any hardware and software (including servers, network, and data components) to be provided or used by VENDOR as part of its performance under the Agreement on which Protected Information is contained.

(c) When the scope of the Agreement implies the use or connection of VENDOR's Cyber-infrastructure to that of CUSTOMER, the VENDOR shall have reasonable Technical and Organizational Measures for its protection and for the prevention of any security incident.

(i) The connection between the CUSTOMER's and the VENDOR's network is not permitted, unless expressly agreed to in writing, in which case it must be done by establishing encrypted and authenticated virtual private networks, and the number of interconnection points between the two

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networks must be the minimum that is compatible with the required level of availability. The connection to the VENDOR's network shall be removed as soon as there is no need for it.

(ii) Direct user connections from the VENDOR to CUSTOMER's network are not permitted, unless authorized in writing by CUSTOMER and only for a limited period of time.

(iii) If the Agreement is fully or partially performed at the VENDOR's premises or property, the VENDOR must establish mechanisms and procedures for physical access to said premises or property to prevent unauthorised persons from accessing Cyber-infrastructure or Protected Information.

(d) VENDOR shall establish mechanisms and procedures for identifying, authenticating and controlling logical access necessary to prevent unauthorised persons from accessing its Cyber-infrastructure elements and CUSTOMER's Protected Information, and, in particular:

(i) VENDOR will have procedures based on the principle of least privilege when granting, assigning and withdrawing authorized access and permissions to its personnel or the personnel of its subcontractors, where applicable, including privileged users or administration taking into account the need for the use, the confidentiality of the Protected Information and the resources for the performance of their tasks;

(ii) VENDOR will maintain an updated inventory of the access granted and will withdraw access from personnel who cease working in connection with the Agreement within a period of less than twenty-four (24) hours. Credentials must always be encrypted when stored and transmitted; and

(iii) VENDOR shall have policies and procedures that ensure the strength of the passwords and that they are updated regularly. Passwords shall be changed during the installation processes of new hardware or software. VENDOR's default passwords shall be changed.

(e) VENDOR shall implement Technical and Organisational Measures necessary to ensure operational continuity under applicable service level agreements (including but not limited to contingency plans, backup and recovery procedures). In particular:

(i) VENDOR shall make backup copies of the Protected Information as frequently as is required for the services being provided by VENDOR and according to the nature of the data, establishing the appropriate procedures and mechanisms to ensure that the data can be retrieved, that only authorised VENDOR personnel can access it and that they are transferred and stored in such a way as to prevent access or manipulation by unauthorised persons; and

(ii) The same security measures shall apply to backups as to the original Protected Information.

AVANGRID Privacy and Data Security Rider

(f) In the event that CUSTOMER has expressly authorized VENDOR to use its own IT equipment for accessing CUSTOMER's Cyber-infrastructure, the VENDOR shall guarantee and undertake that there are adequate security measures to protect the stationary or portable IT equipment and mobile devices used to access such Cyber-infrastructure or for storing, processing or transmitting the Protected Information, including but not limited to:

(i) Automatic locking if the device is left unattended for a certain period of time. User authentication will be required for unlocking.

(ii) Protection against malicious software and known vulnerabilities.

(iii) Updating the operating system as often as the vendor requires.

The VENDOR shall maintain an action procedure should the equipment or device be lost or stolen, ensuring, to the maximum extent possible that the event be communicated promptly, Protected Information be deleted safely in accordance with recognised standards, and access to CUSTOMER's systems or systems containing CUSTOMER's Protected Information be suspended.

Before equipment is reused or replaced, the VENDOR must protect, or if applicable remove, all the Protected Information stored on it, ensuring that unauthorised personnel or third parties cannot access or recover it.

(g) The VENDOR shall establish adequate procedures to guarantee protection against loss or unauthorised processing of files, computer media and paper documents containing Protected Information and guarantee that they are destroyed when the reasons for their creation no longer apply. Extracting data from a file and downloading it to a server or delivering it electronically is considered equivalent to computer media for the purposes of complying with these measures.

AVANGRID may request information concerning any Processing of Protected Information by the VENDOR.

(h) The VENDOR shall include security measures appropriate to the nature of the Protected Information Processed in developing, maintaining and testing the equipment that will be used to perform the services being provided by VENDOR. The VENDOR will adopt secure code development standards and ensure that no real data is used in test environments. If necessary, CUSTOMER's express written authorisation will be required, and the same security measures required for the work environment will be applied to these test environments.

(i) When the scope of the Agreement includes the supply of equipment and/or materials, the VENDOR shall prove that best security practices and standards have been applied for the design, fabrication, maintenance, and, where applicable, installation of the supplied equipment and/or materials, including its components.

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For any such equipment and/or materials with information processing capacity or network connectivity options:

(i) The VENDOR shall provide evidence or certificates that guarantee design security, firmware/software updates and malware protection.

(ii) The VENDOR shall conduct periodic analyses of vulnerabilities and inform CUSTOMER about any necessary updates, especially those that affect security.

(iii) All internet connected devices shall be protected with adequately complex passwords that can be changed by CUSTOMER.

(iv) The configuration of devices, equipment and materials shall be adjustable exclusively according to AVANGRID's needs, and any unnecessary functionality deactivated. Should the VENDOR conduct any configuration, documentation to that effect shall be provided.

(j) VENDOR should fully implement the mitigation actions available on the APTs Targeting IT Service Provider CUSTOMERS site page to protect against this malicious activity. VENDOR should implement the following specific actions:

(i) Apply the principle of least privilege to their environment, which means customer data sets are separated logically, and access to client networks is not shared;

(ii) Implement robust network and host-based monitoring solutions that looks for known malicious activity and anomalous behavior on the infrastructure and systems providing client services;

(iii) Ensure that log information is aggregated and correlated to enable maximum detection capabilities, with a focus on monitoring for account misuse; and

(iv) Work with CUSTOMER to ensure hosted infrastructure is monitored and maintained, either by the service provider or the client.

(k) The VENDOR shall implement a procedure to notify of and manage any Data Security Breach or security incidents, which it will disclose among its Personnel, and will act with special diligence in those cases involving critical elements of CUSTOMER's Cyber-infrastructure or Protected Information or when the reputation or legal responsibility of CUSTOMERS or the interests of the persons whose information is Processed may be affected.

(l) The Supplier shall immediately notify CUSTOMER of the existence of any security incident, even if it does not qualify as Data Security Breach, always within a maximum period of one (1) day after becoming aware of it, or if shorter, the shortest legal period, and shall assist and cooperate with CUSTOMER in terms of any necessary communication to third parties and other reasonable measures to remedy the situation when CUSTOMER requests it or as required by law.

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Merely by way of example, the Supplier shall notify CUSTOMER the following:

(i) Access or attempts to access systems, equipment, applications, files, repositories, devices etc. by unauthorised persons or programs.

(ii) Disclosing or compromising protected Information including but not limited to credentials, authentication or encryption data.

(iii) Total or partial loss of data or information for any reason.

(iv) Uncontrolled distribution: sending information to people who should not receive it.

(v) Loss or removal of computer equipment or storage media, files, repositories or part of their contents.

(vi) Attacks caused by viruses / malicious software that may affect the exchange of information between the VENDOR and CUSTOMER.

(vii) Others: any irregularity or deficiency detected regarding compliance with the safety criteria indicated in this Schedule.

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Schedule B

Cyber-Insurance Requirements

(a) VENDOR shall during the term of the Agreement have and maintain the following insurance coverage:

(i) Cyber Errors and Omissions Policy providing coverage, on a per occurrence basis, for acts, errors, omissions, and negligence of employees and contractors giving rise to potential liability, financial and other losses relating to data security and privacy, including cost of defense and settlement, in an amount of at least $10 million dollars, which policy shall include coverage for all costs or risks associated with:

1) violations of data privacy or data security laws and regulations; and

2) cyber risks, including denial-of-service attacks, risks associated with malware and malicious code, whether designed to interrupt a network or provide access to private or confidential information; and

3) other risks specific to the work performed by VENDOR as shall be identified by CUSTOMER.

(ii) Such coverage shall be furnished by an insurance company with an A.M. Best Financial Strength Rating of A- or better, and which is otherwise reasonably acceptable to CUSTOMER.

(b) VENDOR warrants that the scope of all coverage evidenced to the CUSTOMER pursuant to this Agreement shall be the sole responsibility of the VENDOR to maintain at committed to levels required by this document and VENDOR, in any event of a loss, will take full responsibility for the payment of any policy deductible, self-insured retention, premium or retrospective premium obligation necessary to maintain coverage, and shall include coverage for any indemnification and hold harmless agreements made by the VENDOR pursuant to the Data Security Rider. VENDOR's failure to pay the applicable deductible, self-insured retention, or retrospective premium shall constitute a material breach of this Agreement, with damages equal to at least the amount of insurance lost or not provided due to such breach.

(c) All insurance coverage(s) provided by VENDOR pursuant to this Agreement shall be primary and non-contributing with respect to any other insurance or self-insurance which may be maintained by the CUSTOMER.

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Schedule C

Acceptable Use Requirements

The intent of this Schedule is to document requirements as they pertain to the Acceptable Use of the Electronic Devices and Cyber-infrastructure of Avangrid, Inc. and any of its subsidiaries (hereinafter "Avangrid") by contractors, consultants or other third parties.

Employees and other persons acting on behalf of Avangrid vendors shall be required to read, acknowledge their understanding of, and commit to comply with these Avangrid Acceptable Use Requirements.

Definitions

- A **User** is defined as any contractor, consultant or other third parties, including any employee of an Avangrid vendor, with access to or using Avangrid Electronic Devices or Cyber-infrastructure.

- **Cyber-infrastructure** Includes electronic information and communications systems and services, and the information contained in these systems and services. Those systems and services are composed of all hardware and software that process (creation, access, modification, and destruction), store (paper, magnetic, electronic, and all other media types), and communicate (sharing and distribution) information, or any combination of these elements.

- **Electronic Devices** include standard computer (workstation desktop/ laptop) with network connections, digital storage media used in standard computers (e.g. hard drives), telephone and voicemail systems, mobile phones, smartphones, tablets, Personal Digital Assistants (PDA), End Point Storage Devices (EPSD), digital and video cameras (including CCTV), mobile navigation systems, printers, photocopiers and scanners, fax machines, and all other similar of associated devices, etc.

    - **Avangrid Electronic Devices** are Electronic Devices owned and managed by Avangrid.

    - **Personally Owned Devices (POD)** are Electronic Devices (e.g. smart phones, tablets, laptops) privately owned and managed by Users.

    - **End Point Storage Devices (EPSD)** applies to the storage of data on devices that can be connected either by a USB drive, data cable or by wireless connection direct to any computing equipment within Avangrid, e.g. USB sticks, drives, thumb nails, pen drives, flash drives, memory cards, etc.

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1. Requirements and Practices

1.1 Electronic Devices

Avangrid Electronic Devices and resources are property of Avangrid and may be provided to Users for the pursuit of their professional activity.

1.1.1 The determining authority and responsibility for issuance of an Electronic Device shall rest with the Avangrid Business Area Leader (BAL) or department hiring manager.

1.1.2 Avangrid Electronic Devices shall be provided to Users configured with the required security hardware and software protections.

a. Compromising or interfering with the Electronic Devices' operating system, hardware, software or protection mechanisms is prohibited.

1.1.3 Users shall be responsible for the appropriate use of authorized Electronic Devices in accordance with their duties and responsibilities, including, but not limited to:

a. Protecting Electronic Devices from misuse.

b. Logging off or protecting Electronic Devices with a screen and/or keyboard locking mechanism, when unattended and when not in use.

i. Desktop and laptop computers shall be switched off or hibernating when unattended for a period more than one hour and always at the end of the workday.

ii. Desktop and laptop computer screens shall be locked by Users always when unattended.

c. Taking the following preventative measures to ensure that any Electronic Devices used to connect to Avangrid's Cyber-infrastructure are physically secured by:

i. Protecting Avangrid assets from unauthorized access and use by others,

ii. Leaving Electronic Devices in secured locations (e.g. locked cabinet or drawer, locked rooms in locked buildings as applicable),

iii. Not leaving Electronic Devices in plain view in unattended vehicles,

iv. Not leaving Electronic Devices in vehicles overnight,

v. Carrying laptops as hand luggage when traveling,

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vi. Positioning Electronic Devices so that they (and the information displayed) are not visible from outside a ground floor window, and

vii. Positioning the display screen of Electronic Devices such that it cannot be viewed by others in public places (e.g. train, aircraft, restaurants, etc.).

1.1.4 Users shall follow Avangrid procedures for immediately reporting lost, compromised, or stolen Electronic Devices.

a. The User shall notify the Service (Help) Desk and their Avangrid contact.

1.1.5 User shall follow Avangrid procedures for the return of Avangrid owned Electronic Devices when the use of those devices is deemed no longer necessary.

a. Users shall return all Avangrid Electronic Devices to their Avangrid contact immediately upon separation/ termination, which shall be responsible for collecting all Avangrid Electronic Devices.

1.1.6 The use of hot desks/ shared network access equipment shall be reserved for Users who do not regularly require the use of a portable Electronic Device (e.g. laptop) for their professional activities.

a. Users of hot desks/shared network access shall have a current network login.

1.2 Connection to Avangrid Cyber-infrastructure

1.2.1 All Electronic Devices which connect to the Avangrid Cyber-infrastructure network shall be Avangrid approved assets which have been configured in accordance with Avangrid standard configurations.

a. Non-Avangrid approved Electronic Devices shall not connect directly to the Avangrid Cyber-infrastructure (e.g. through Ethernet connection).

b. Wireless connections from an Avangrid office shall only be accomplished through Avangrid Electronic Devices and the Avangrid supported wireless infrastructure.

c. Guest wireless network accounts shall only be supplied on ‘as-need-be-basis’ following Avangrid approval processes.

d. Remote desk connections shall only be supplied on ‘as-need-be-basis’ following Avangrid approval processes.

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1.3 Use of Mobile Devices (for Remote Access)

1.3.1 The determining authority and responsibility for issuance of a mobile electronic device to perform Avangrid professional activities; access the Avangrid Cyber-infrastructure or store/transmit Avangrid information/data remotely shall rest with the Avangrid Business Area Leader (BAL) or department hiring manager.

a. Users shall remotely access Avangrid's Cyber-infrastructure utilizing only authorized hardware, software and access control standards (e.g. Avangrid approved VPN technology for Avangrid Electronic Devices or Citrix client).

b. At no time shall a remote User initiate two simultaneous connections to different networks (e.g., no split tunneling and no multi-homed connection).

c. Avangrid issued SIM cards shall not be swapped or used in non-Avangrid issued Electronic Devices.

d. Configuring a non-Avangrid issued Electronic Device for connection to the Avangrid corporate email system is strictly prohibited.

e. Users should be aware that Avangrid may monitor emails sent from and to non-Avangrid issued devices.

1.4 Personally Owned Devices

1.4.1 The use of Personally Owned Devices for access to and/or handling of Avangrid information/data and Avangrid Cyber-infrastructure is prohibited.

1.5 Treatment of Software and Applications

1.5.1 The acquisition and installation of software on Avangrid Electronic Devices shall be made using approved methods.

a. All access to company software and/or applications shall be subject to formal request and approval processes.

1.5.2 Users shall be prohibited from introducing or installing any unauthorized software, content or material.

1.5.3 The installation of any type of network access program peer (P2P) or similar (e.g., BitTorrent, Emule), as well as any other application for file sharing that could saturate Internet bandwidth, prevent access to other Users or slow down connections to technology and information resources is prohibited.

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1.5.4 Intellectual property, licensing and regulatory requirements shall be observed always. Downloading, obtaining, copying or redistributing materials protected by copyright, trademark, trade secret or other intellectual property rights (including software, music, video, images) is prohibited, even where such material is to be used for the pursuit of the professional activity.

a. Where materials protected by copyright, trademark, trade secret or other intellectual property rights are required for the pursuit of an Avangrid professional activity the appropriate license/permission shall be obtained prior to use.

1.6 Treatment of Information/Data

1.6.1 Information/data assets obtained or created during the engagement with Avangrid are the property of Avangrid and shall be treated in accordance with the applicable Agreement and Data Security Rider.

1.6.2 The storage of Avangrid information/data on Personally Owned Devices or non-Avangrid controlled or authorized environments, including non-authorized Electronic Devices is prohibited. Users shall not store AVANGRID owned information/data on devices that are not issued by AVANGRID unless explicitly and contractually agreed by both parties.

1.6.3 Where access to Personal Data is part of a Users' professional role and responsibilities, access shall be treated in accordance with all applicable data protection and/or privacy law(s) and regulation(s) and under strict access and usage guidelines.

1.6.4 Corporate storage spaces and network resources shall be used for file storage and/or exchange of professional information.

1.6.5 Users shall store and share information/data in accordance with the terms and conditions with Avangrid and any applicable Data Security Rider.

1.6.6 Use of an End Point Storage Device (EPSD) (e.g. USB) shall be limited to those devices acquired through the Information Technology (IT) request process (e.g. ITSM/ServiceNow).

1.6.7 Printed information/data (hard copy) shall be:

a. Stored based on critically, e.g. hardcopy containing confidential and/or sensitive information/data shall be locked away when not required (or not in use).

b. Discarded, when no longer needed, based on criticality, e.g. confidential and/or sensitive hardcopy shall be shredded.

c. To be removed from printers, fax machines, copier rooms, and conference/ meeting rooms immediately.

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1.7 User Access Credentials and Passwords

1.7.1 Requests for access shall be made following access provisioning procedures.

1.7.2 Applications and network resources access shall be activated\deactivated in accordance with Avangrid activation\ deactivation procedures.

1.7.3 Users requiring duly justified privileged access rights will be assigned a specific "Privileged User ID"

a. Privileged User IDs shall be reviewed and confirmed at least semi-annually.

b. Regular professional activities shall not be performed from a privileged ID.

1.7.4 Users shall use strong, complex passwords and securely maintain secret authentication information (e.g. passwords, cryptographic keys, smart cards that produce authorization codes), including:

a. Not sharing or disclosing their Avangrid credentials (log on IDs-user names and/or passwords) with others inside or outside the company.

b. Keeping secret authentication information confidential, ensuring that it is not divulged to any other parties, including senior management and technical support.

c. Not recording (e.g. on paper, software file or hand-held device) secret authentication information, unless this can be stored securely, and the method of storing has been approved (e.g. password vault) by Corporate Security.

d. Changing secret authentication information when there is any indication of a possible compromise.

e. Reporting any incidents or suspected compromises by following Avangrid incident reporting procedures.

1.8 Internet Use and Social Media

1.8.1 Avangrid may make available internet access to users depending on their role and responsibilities.

a. Internet access shall be provided as a tool for business purposes, shall be used with moderation and shall be proportional to the work being undertaken.

b. Access to restricted websites shall be enabled at the discretion of Avangrid and shall be

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provisioned following the security exception process.

c. Only Avangrid approved surfing software shall be used to access the Internet.

1.8.2 A moderate and proportional use of the internet shall be allowed for non-professional activities, although web surfing is expressly prohibited for:

a. Accessing or posting of any racist or sexual content or any material that is offensive or defamatory in nature.

b. Accessing games, downloading video, music (MP3 or another format), or downloading any other files not related to the Avangrid related responsibilities.

1.8.3 Limited and occasional use of Avangrid Electronic Devices and resources to engage in Social Networking[1] and Blogging[2] is acceptable, provided that:

a. It is done in a professional and responsible manner.

b. It does not violate the Code of Ethics or any relevant Avangrid policy, procedure or rule.

c. It is not detrimental to Avangrid's best interests.

d. It does not interfere with regular work duties.

e. There is no breach of the prohibitions identified in these requirements.

1.8.4 Avangrid reserves the right to determine which websites and social media platforms can be accessible through Avangrid Electronic Devices or Cyber –infrastructure.

1.9 E-mail Use

1.9.1 All information created, sent, or received via Avangrid's e-mail system(s), including all e-mail messages and electronic files shall be the property of Avangrid.

1.9.2 Avangrid reserves the right to monitor, inspect and access such emails and electronic files.

1.9.3 The forwarding of Avangrid owned information/data to a personal e-mail account is prohibited.

[1] Social Networking is the use of dedicated websites and applications to interact with other users or to find people with similar interests.
[2] Blogging: A blog is a website containing a writer's or group of writers' own experiences, observations, opinions, etc., Blogging is posting to that website.

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1.9.4 Removing or circumventing any of the security controls enforced on the company email system (e.g. SPAM filtering, automatic email disclaimers, etc.) is prohibited.

1.9.5 Users shall not permit others to use their e-mail accounts. Based on user established permissions; calendars and/or mailboxes may be shared.

1.9.6 Limited use of an Avangrid e-mail account for personal purposes shall be regarded as acceptable provided that:

a. Use does not interfere with the normal performance of professional duties.

b. Messaging does not violate applicable laws, regulations, the Code of Ethics, or Avangrid policies.

c. Use is moderate both in terms of frequency and amount of memory and resources consumed.

1.9.7 Avangrid e-mails or messages containing company information/ data shall not be forwarded to external parties except where there is a specific business 'need to know'.

1.9.8 Avangrid electronic messaging shall not be used for transmitting, retrieving or storing any messages, files or attachments which constitute:

a. Harassing or discriminatory messages which relate to gender, race, sexual orientation, religion, disability or other characteristics protected by applicable laws and regulations.

b. Defamatory messages which adversely affect the reputation of a person or company.

c. Messages that violate copyright, trademark, trade secret or other intellectual property rights.

d. Obscene materials or images of a sexual nature.

e. Files or documents of an indeterminate origin or that, for any reason, may include computer viruses or in any way breach the security systems of the company or the recipient of the file or document, or may damage their IT systems.

f. Any material or images that might reasonably be expected to cause personal offense to the recipient.

g. Messages in violation of applicable laws, regulations, the Code of Ethics, or Avangrid policies.

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1.9.9 The retention period for e-mail messages shall be 18 months. Once the retention period has been reached, emails shall be automatically eliminated from the user's mailbox.

a. a. Users shall store messages and/or associated attachments in Avangrid provided network folders. Storage of messages and/or associated attachments on hard drives in .pst (personal mail folders) folders is prohibited.

1.9.10 Users shall report suspicious email messages (e.g. spam, phishing, etc.) the Service (Help) Desk and/or using the reporting tool REPORTER, available in Outlook.

1.10 Incident reporting

1.10.1 Users shall immediately report any unusual activity, incident or suspected event following Avangrid incident reporting procedures (e.g. Service (Help) Desk, REPORTER, etc.)

1.11 Contract Termination

1.11.1 Avangrid Electronic Devices assigned to or in the possession of a User shall be returned to Avangrid on or before the contract termination date or whenever it is determined that the use of the Electronic Device is no longer necessary. This includes the return of facility access badges.

1.11.2 Access to Cyber-infrastructure shall be deactivated (revoked) on or before a User's termination date in accordance with Avangrid access management processes.

2. No Expectation of Privacy

All contents of the Avangrid Electronic Devices and Cyber-infrastructure are the property of the company. Therefore, Users should have no expectation of privacy whatsoever in any e-mail message, file, data, document, facsimile, telephone conversation, social media post, conversation, or any other kind or form of information or communication transmitted to, received, or printed from, or stored or recorded on Avangrid's Electronic Devices or Cyber-Infrastructure.

3. Monitoring

3.1 Avangrid reserves the right to use monitoring controls, including software, to ensure compliance with these Acceptable Use Requirements document, and to record and/or monitor one or more Users' Electronic Devices and resources, e-mails and/or internet activity in accordance with regulatory and legal requirements.

a. This includes the right to monitor, intercept, access, record, disclose, inspect, review, retrieve, print, recover or duplicate, directly or through third parties designated for such purpose, any information/data contained on and any uses of the Electronic Devices and Cyber-Infrastructure. Avangrid may store copies of such information/data for a period of time

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after they are created and may delete such copies from time to time without notice. Users consent to such monitoring by acknowledging these requirements and using the Electronic Devices and Cyber-Infrastructure.

b. Accordingly, Users should not harbor any expectation of privacy in respect to the use of Avangrid Electronic Devices or Cyber-Infrastructure and should not consider the data contained on them as private.

4.2 Monitoring may take place at any time and without the need to notify or inform the User in advance, taking into consideration legal or regulatory limitations, where applicable.

4. Non Compliance

Violation and non-conformance to this guidance by third party workers may result in appropriate actions, including contract termination.

Schedule J "Avangrid Networks Contractor Safety Guide"

Avangrid Networks Contractor Safety Guide

ANHS-SOP-021

TABLE OF CONTENTS

1. INTRODUCTION

Avangrid Networks (Berkshire Gas, Central Maine Power, Connecticut Natural Gas, Maine Natural Gas, New York State Electric & Gas, Rochester Gas & Electric, Southern Connecticut Gas and The United Illuminating – the "Company") Contractor Safety Guide defines the safety requirements that contractors, subcontractors and agents must adhere to in order to perform work at Company facilities, properties or work sites. These Contractor Safety Work Rules set forth the Company's minimum expectations on the safety standards and policies of its contractors. Use and reference to this document will provide Contractors with clear expectations and will enable Company Contractors to share in Avangrid Networks' vision to be a world-class safety organization with zero injuries every day.

It is expected that all contractors who perform work for the Company comply with all federal, state and local laws and regulations governing workplace safety. This includes work authorized to take place at any Company facility, property, designated work site or construction site. Company policies may exceed the requirements of federal, state and local regulatory agencies, and are in addition to any procedures, policies, guidance, and/or work instructions of the contractor.

This document represents policies and safety-related work methods that are unique to the Company and that may go beyond OSHA rules. Contractors must follow these requirements as well as their own rules that meet or exceed OSHA and other regulatory requirements.

Use and reference to this document will provide Contractors with clear expectations and will enable Company Contractors to share in Avangrid Networks' vision to be a world-class safety organization with zero injuries every day.

These Contractor Safety Requirements shall be reviewed and at least annually and updated as necessary, as a result of a change in safety regulations or Company policies or procedures.

Questions regarding this procedure should be referred to Avangrid Health and Safety.

2. CONTRACTOR RESPONSIBILITIES

During the performance of any work at AVANGRID facilities, properties or work sites:

2.1. Contractors are and shall remain an independent contractor.
2.2. Contractors are responsible for their own safety compliance. Nothing stated in this Contractor Safety Guide shall relieve Contractors of their responsibility for the safety of its employees and public.
2.3. Contractors shall at all times comply with (1) all federal, state, and local safety and health requirements, (2) these Contractor Safety Guide work rules, and (3) its own safety procedures, policies, guidance, and/or work instructions.
2.4. Contractors shall inform its employees, subcontractors, and agents of these Contractor Safety Guide work rules prior to the commencement of any work, and shall at all times

be responsible for ensuring its employees, subcontractors, and agents comply with these Contractor Safety Guide work rules.

2.5. Contractors shall be responsible for keeping up-to-date with all changes to federal, state, and local safety and health requirements, and for communicating any such changes to its employees, subcontractors, and agents.

2.6. Contractors shall be responsible for communicating any changes to these Contractor Safety Guide work rules, as from time to time may be provided by the Company, to its employees, subcontractors, and agents.

2.7. Contractors shall be responsible for informing The Company of any changes to its own safety procedures, policies, guidance, and/or work instructions.

2.8. Contractors shall at all times comply with all Company guidance, specific work instructions, site-specific rules, and/or health and safety plans.

2.9. Contractors are required to immediately report to the Company (within 24 hours of occurrence) all accidents, injuries and incidents, including near misses, no matter how insignificant using Avangrid's form (ANHS-FOR-020D).

2.10. Contractors are required to ensure its employees, subcontractors, and agents are aware (1) of who to contact in case of an emergency and (2) that all accidents, injuries and incidents must be reported immediately (within 24 hours of occurrence) to their Company representative.

2.11. Contractors shall investigate and report on all accidents, injuries and incidents, including near misses, to the Company within five (5) days of each occurrence, which a written report generated and submitted to a Company representative and shall include a root cause analysis and a list of all corrective actions using Avangrid's form (ANHS-FOR-020D).

2.12. All written investigation reports are subject to review by the Company.

2.13. In the event any contractor is ever informed by a third party or has reason to suspect that it is not in compliance with any of the foregoing, it shall immediately notify Company (within 24 hours of discovery) of such noncompliance, and take all appropriate action to remedy such noncompliance to the Company's satisfaction.

2.14. Neither compliance with these Contractor Safety Guide work rules nor the Company's approval of any actions or procedures of contractors shall relieve contractors of its obligation to always use due care in performing work and to take any additional and necessary precautions to prevent injury, or property damage. Contractors shall ensure safe work practices are employed throughout the course of the project.

3. ADMINISTRATIVE SAFETY REQUIREMENTS

3.1. Pre-Bid Meetings

This section applies to all Contractors, as needed.

The pre-bid meeting is coordinated by the Company to provide bidders with an opportunity to acquaint themselves with contractual requirements and specific safety issues concerning the project, including Company-specific safety rules and known site

conditions. Pre-bid meetings may be held for some – but not necessarily all – projects, and will be held when determined necessary by the Company.

3.2. Worker Qualification Assurance

This section applies to all Contractors, as needed.

In order to meet Company safety requirements, the Contractor must describe how workers, including subcontractors, are qualified. The Contractor must supply information concerning the type of skills assessment performed, training programs, and how they ensure that employees demonstrate competencies. The Company reserves the right to verify Contractor competency.

The Contractor shall certify that:

- The Contractor has been informed of Company safety requirements;
- Employees and subcontractors have the appropriate qualifications to perform the work; and
- The Contractor agrees to comply with all applicable safety requirements.

The certification shall be in the form of a Letter of Assurance.

The bidder shall supply the background and qualifications for all management personnel through resumes, behavioral observations or other documents. The Company shall interview and approve management personnel if considered necessary.

Contractors bidding on new work shall provide this information to the Company contact or through ISNetworld.

3.3. Project Safety Plan

This section applies to high or medium risk work in detail commensurate with the scope of the project.

Contractors who perform medium or high risk-ranked contracted services shall submit a project-specific safety plan prior to the start of the project and/or at the pre-construction meeting. The Company representative will provide specific requirements of the format and/or forms to be completed.

At a minimum, the project safety plan shall include a completed safety hazards checklist and the Emergency Contact Sheet. This format is ideal for short-duration, small and/or simple projects. This minimum safety plan shall be referred to as the SHORT VERSION.

Long-term, large and/or complicated projects require the Contractor to complete a more detailed safety plan. This plan shall be referred to as the LONG VERSION. At a minimum, the LONG VERSION safety plan shall include the following elements:

- Roles and responsibilities
- Scope of work
- Task and hazard identification and risk assessment of the hazards
- Hazard mitigation/control procedures and work methods
- Incident analysis and reporting
- Compliance and monitoring
- Roles and Responsibilities

The plan shall identify who will be responsible for the project oversight and their qualifications. For example, if the work requires excavation, there must be someone on-site who would be qualified as a competent person as required by OSHA standard.

For multi-employer work-sites, the general Contractor is responsible for all their employees and subcontractors. The safety plan shall clearly state this responsibility.

Scope of Work - Briefly state the scope of work as provided by the Company. The plan must specifically address the project or contracted services requested by the Company. Therefore, the scope should be short and to-the-point.

Task Hazard Identification and Risk Assessment **-** The Contractor shall identify all significant tasks and the anticipated hazards. The Company refers to this process as a risk assessment.

The Contractor's cost to provide adequate safety measures and to comply with Company requirements must be considered and budgeted in the bid/proposal.

Hazard Mitigation Procedures and Work Methods - For each hazard, the Contractor shall specify measures that will be taken to mitigate these hazards. A table format is the simplest way to organize and present the task, hazard and mitigation steps. For example:

Location: Substation Yard

Task	Hazard	Mitigation Steps
Material Handling	Contact with overhead energized lines / equipment	Off load in the clear and have a safety observer present

Incident Analysis and Reporting **-** Follow the requirements referenced in this document.

Compliance Monitoring **-** Explain how you will ensure that both your employees and subcontractors will achieve safety compliance.

4. CONTRACTOR ORIENTATION

This section applies to all Contractors, as needed.

4.1. Contractor Orientation shall be conducted by a Company Representative, and is intended to serve as a resource in order to provide the Contractor with the tools necessary to educate their employees and subcontractors. The session is not intended to train the Contractor management, their employees or their subcontractors. The extent and content of the orientation session shall be determined by the Company and shall be commensurate with the scope and type of the Contractor's activities. The Contractor shall provide management representation at the orientation session.

After the completion of the orientation session, the Contractor shall certify in writing that:

- The Contractor has been informed of Company safety requirements;
- Employees and subcontractors have the appropriate qualifications to perform the work; and
- The Contractor agrees to comply with all applicable safety requirements.

The certification shall be in the form of a "Letter of Assurance", printed on the Contractor's letterhead, signed by a principal of the Contractor, and delivered to the Contractor's Company contact, or ISNetworld participants will upload this letter into ISNetworld to meet this requirement.

4.2. Information Transfer

As referenced in OSHA 1910.269(a)(3) and (a)(4), before work begins, the appropriate Company User's Representative shall provide the Contractor access to the follow information:

- The existing characteristics and conditions of the Company installations that are related to the safety of the work to be performed;
- Information about the design and operation of the Company installations that the Contractor needs;
- Arc flash studies;
- Ground fault studies;
- Voltage levels for tree trimming operations; and
- Danger poles tagging.

As referenced in OSHA 1910.269(a)(3), the Contractor shall ensure that each of its employees is instructed in hazardous conditions relevant to the work, and the Contractor shall advise the Company of any hazardous conditions found before and during the work.

5. GENERAL SAFETY REQUIREMENTS

5.1. *Pre-Construction Meetings*

This section applies to medium or high risk-ranked projects or activities.

5.1.1. Pre-Construction Meeting Guidelines

The Project Manager, Company Construction Supervisor or other designated User's Representative shall hold a pre-construction (project kickoff) meeting prior to the start of a medium or high risk-ranked project/service. Other attendees may include Company Health and Safety, Environmental, or Contractor management as needed.

The Contractor's Project Safety Plan will be discussed at this meeting, including a final review of the safety hazards checklist to ensure a proper hazard mitigation plan.

These hazard mitigation measures shall be reviewed, and work shall not commence, until these hazards have been adequately mitigated. The Owners Representative, or other User's Representative, will discuss with the Contractor the methods by which compliance will be achieved with Company safety requirements.

An Emergency Call List shall be exchanged with the Contractor. This list must contain 24-hour contact information for key Contractor and project personnel, including Owner's Representative and Safety Specialists. This list should be distributed to all concerned, as determined by the project team, prior to the start of work.

For routine contracted maintenance services, a review of associated safety issues and specific facility issues, restrictions or practices, such as evacuation procedures, must be discussed with the Contractor upon initial hiring. Any changes in the facility that may affect the safety of Contractor, Company employees or third parties must be communicated immediately.

5.1.2. Required Meeting Documents

The User shall document the meeting proceedings using the referenced Attendance Roster and Meeting Agenda:

- **Attendance Roster** (ANHS-FOR-020B): The participants shall print their names, phone numbers, and Company name on the Attendance Roster.
- **Meeting Agenda** (ANHS-FOR-020A): The meeting agenda checklist covers safety topics. A second page is provided to include action items and other significant issues identified during the course of the meeting.

5.2. Related Documents

Related documents may be used during the Pre-Construction Meeting as appropriate. This section explains their purpose.

Contractor Safety Requirements: The User is responsible for ensuring that the Contractor has a copy of the most current **Contractor Safety Guide** (ANHS-SOP-021). This document provides detailed guidance to the Contractor regarding Company safety performance expectations. The most current electronic copy can be obtained from your Avangrid contact and/or the ISN website.

Emergency Contact Sheet: This document can be used as by the User and Contractor to record key contact and emergency contact information.

5.3. Safety Meetings

This section applies to all Contractors, as-needed.

The Contractor shall have regular monthly (or more frequent) safety meetings with documented attendance of their employees and subcontractors.

Minutes of the safety meetings shall be documented in writing, and shall be available for inspection by the Company during the project period and for 30 days after the project is completed.

Weekly safety meetings/calls between the Company and Contractor management are required for all high-risk work. These meetings shall focus purely on safety.

5.4. Job Safety Briefs or Dynamic Risk Assessments

This section applies to all Contractors, as-needed.

Job safety briefs shall be documented in writing. Written job safety briefs, on the Contractor letterhead, shall be available at the job site for inspection, and retained for 30 days after the job is completed.

Each crew shall conduct these job safety briefs or dynamic risk assessments prior to each day's work, when there are changes to the work order or plan, and when a new worker joins the crew.

Each worker must have the opportunity to voice concerns. The work cannot begin until each worker signs off on the job safety brief stating that they have discussed the work and agree with the plan.

5.5. Incident Analysis

This section applies to all Contractors (regardless of risk ranking).

All Contractors are required to report to the Company, any work-related incidents involving injury or illness to employees or the public, or property damage to the Contractor's or Company's equipment. The first priority is to ensure that the injured receive medical treatment. The Company will provide the Contractor with the **Contractor Incident Report** (ANHS-FOR-020D) during the pre-construction meeting.

The Company contact will explain these reporting requirements in more detail prior to commencement of work.

An incident is defined as an event that has a human component, and results in, or could potentially result in, at least one of the following outcomes:

- Injury – incidents that cause harm to people;
- Property Damage – incidents that cause damage to property;
- Adverse Public Impact – incidents that disrupts service to the public or results in adverse public reaction; or
- Near-Miss – an incident which had the potential under different circumstances to result in an injury.

A hazardous condition is defined as a condition that can and is rectified immediately by the person who identified the hazard.

A significant hazard is defined as a condition that requires others to take actions to rectify and requires further investigation as to how the situation came to occur.

5.5.1. Incident Response Steps

In the event of an incident, the Contractor shall provide details of the incident to the Company that follows the steps below, using the **Contractor Incident Report** (ANHS-FOR-020D).

The Contractor supervisor collects basic information about the incident from the employee or witnesses:

- What happened?
- Who and how many people were injured?
- What treatment was administered?
- What was the nature and seriousness of the injury?
- Where did the incident occur?
- When did the incident occur (date, time of day)?
- What was the cause of the accident?
- What type of work was performed?
- Were there any witnesses?

The Contractor shall conduct an investigation and provide a written report to the Owners Representative and Company Health and Safety for review and entry into the Cintellate Incident Data Management System.

The Contractor will then conduct an investigation that will identify contributing factors relating to the incident and the corrective actions that will be taken to prevent reoccurrence. The Contractor will notify the Owners Representative and Company Health and Safety when any action items have been completed. The

results of the incident investigation shall be described in a report prepared by the Contractor and provided to the Company.

Contractor vehicle accidents occurring during the performance of work will also be investigated and reported to the Owner's Representative and Company Health and Safety.

5.6. Other Reporting

Company requires the following monthly data for all work activities related to Company operations:

- OSHA Recordable Incident Rate (OIR)
- Lost Time Incident Rate (LTIR)
- Restricted Work Rate
- Number of near misses
- Number of workers
- Number of hours worked

5.7. First Aid / Medical Treatment

Contractors shall be responsible for the medical needs of its employees and its agents. Contractors must be prepared for any type of medical emergency that may occur on the work site. At a minimum, contractors must be equipped with first aid kits fully stocked to handle any type of medical emergency, and shall have procedures in place to transport its employees or agents to nearby medical treatment centers in the event of any employees or agents are injured at the work site.

5.8. Alcohol, Drugs, and Firearms

Under no circumstances may any alcoholic beverages (including those labeled "non-alcoholic"), controlled substances (except for drugs prescribed by a licensed medical professional), or firearms (including when otherwise permitted by law) be allowed on Avangrid facilities, properties or project work sites, including any parking lots. No individual selling, using, or under the influence of alcohol and/or drugs shall be allowed on Avangrid facilities, properties, or work sites. Anyone found with alcohol, drugs or firearms will be removed from the property. The only exception to this rule is that uniformed, government police personnel may carry firearms to the extent permitted by law.

5.9. Smoking

Smoking is strictly prohibited in all AVANGRID facilities and vehicles.

5.10. Housekeeping

Contractors shall be responsible for keeping the work site neat, clean, and free of any debris, trash, and hazards. Contractors shall store any materials or equipment on the work site in a neat and orderly fashion. Contractors shall routinely patrol the work site to ensure it is properly maintained, which, at a minimum, must be performed at the end of each shift.

5.11. Personal Protective Equipment (PPE) Requirements – General

This section applies to all Contractors (regardless of risk ranking).

It is the Contractor's responsibility and obligation to ensure that appropriate PPE is used. The following requirements are for reference by the Contractor but in no way absolve the Contractor from its responsibilities regarding PPE.

Basic PPE attire at construction sites and other similar work zones include, at a minimum:

- Clothing suitable for the work and the conditions under which the work is to be performed. Fire retardant (FR) clothing shall be worn when the contractor is exposed to flash hazard (8 calorie/cm2 minimum).
- Safety glasses (including side shields) meeting the ANSI Z87 standard shall be worn on all sites.
- Protective gloves or other hand protection when exposed to hazards that may cause cuts or lacerations, abrasions, punctures; chemical burns, thermal burns or that may be absorbed through the skin.
- Safety hard hats approved for protection against electrical hazards during any work wherever an overhead hazard exists, such as construction areas and substations and during maintenance of overhead lines and underground lines, and while working on or with all associated equipment.
- Approved high-visibility warning garments must be worn whenever contractors are working on or adjacent to roads and exposed to moving equipment.
- Safety footwear with a protective toe must be worn whenever contractors are working in areas where there is a danger of foot injuries due to falling and rolling objects or objects piercing the sole. Approved electrical hazard, safety footwear with a protective toe must be worn whenever contractors are working in areas where its employees' feet are exposed to electrical hazards.

The Contractor shall ensure that their employees and subcontractors use protective safety toe footwear when working in areas where there is a danger of foot injuries due to falling or rolling objects, or objects piercing the sole, and where such employee's feet are exposed to electrical hazards. Electrical Hazard (EH) rated footwear is required when entering all substations, working on or around electrical equipment over 50 volts, or in an area of expected downed wires. This requirement is based on OSHA 1910.136 and ASTM standard F-2413-05.

Guidance for additional PPE is referenced in other sections of this document.

5.12. Life Jackets

Contractors must provide its employees with a U.S. Coast Guard-approved life jacket or buoyant work vest whenever contractors are working in areas where there is the potential for falling into a river, lake, forebay, and headwater or where the danger of drowning exists. Such jackets or vests must be worn at all times and fastened properly to ensure adequate protection.

5.13. Site Office Trailers

All site office trailers shall be located on stable ground and located in a manner that does not interfere with site activities. All office trailers shall be kept level at all times. Office trailers shall be secured to the ground in order to prevent rollover during high winds. Access and egress shall be by means of OSHA approved steps and or platforms. All office trailers shall be equipped with fire extinguishers properly mounted on a wall near the door.

5.14. Hazardous Substances

Polychlorinated Biphenyls (PCBs), asbestos, lead, and other hazardous substances may be present on or at AVANGRID facilities, properties and work sites. Avangrid will provide contractors with information regarding the known presence of any hazardous substances in areas where the contractor is expected to perform work for AVANGRID. Contractors shall be responsible for establishing training and information programs for its employees and agents with respect to any such hazardous substances, and for ensuring its own compliance with the Occupational Safety and Health Administration's (OSHA) Hazard Communication Standard (HCS) (29 CFR § 1910.1200). Contractors must immediately notify Avangrid of any suspect or questionable substances encountered during any work performed for Avangrid, and ensure that all appropriate precautions with respect to such substances, including informing and training its employees or agents, have been taken prior to continuing any work.

5.15. Hot Work

Hot Work is any work that produces a flame, spark, or excessive heat and includes the use of burning or welding equipment, brazing equipment, explosives, open flames, grinders, and powder-actuated tools. Contractors must coordinate their activities with the AVANGRID Safety Department prior to commencing any Hot Work. Contractors must conduct a hazard assessment, demonstrating what appropriate actions will be taken to prevent the ignition of combustible and flammable materials, such as the use of welding tarps and fire watches, and ensuring an adequate number of fire extinguishers are readily available at the site where the Hot Work is to be performed. In all events, any Hot Work must conform to ***29 CFR 1910 subpart Q***.

5.16. Tools and Equipment

Contractors shall be responsible for providing the tools and equipment appropriate for the work that is to be performed. AVANGRID will not provide or lend tools or equipment to any contractors. All tools and equipment used at the work shall be maintained in a safe and operable condition and must at all times be used as designed and in accordance with the manufacturer's instructions. Under no circumstances may any tools or equipment be used that have had any safety guards or other devices removed, defeated or compromised in any way. ***Metal tape measures shall not be used near energized equipment or inside substations at any time.*** Power-operated hand tools shall be used in accordance with ***29 CFR 1926.302***.

5.17. GFCI

All electrical tools, lights and extension cords used outside or in damp locations must be insulated, isolated, or GFCI protected, and, in all instances, must conform to ***29 CFR 1926.404***.

5.18. Nail Guns and Powder-Actuated Tools

Only individuals who have been trained in the operation of the particular tool in use shall be allowed to operate a powder-actuated tool. Powder-actuated tool must be tested each day before loading to confirm that its safety devices are in proper working condition. In order to prevent striking an unintended object or person, all nail guns, Hilti guns and other similar tools must be used in such a manner that ensures the projected fasteners do not miss or penetrate the intended striking surface, which includes taking reasonable precautions to ensure that fasteners do not become airborne projectiles. Such precautions include, but are not limited to, directing the line of fire away from other persons (including passersby), preventing access to the opposite side of any striking surface (such as walls), and preventing access within 20 feet to any use of powder-actuated tools. All power-actuated tools used by contractors shall meet the requirements of ANSI A10.3-1970, and any use of power-operated hand tools at AVANGRID's work sites shall conform to ***29 CFR 1926.302***.

5.19. Ladders

Only ladders constructed of fiberglass may be used in and around electrical equipment, including during any work at AVANGRID's substations. Ladders must always be properly positioned on a stable base. All straight and extension ladders must be tied off at the top and bottom or footed by another person. Step ladders may only be used in the fully open position with the spreader brackets locked in place. All use of ladders must be in accordance with manufacturer's instructions, and no person may stand or sit on the steps or platforms on which standing or sitting is prohibited. All ladders used by contractors and all use of ladders at AVANGRID's work sites shall conform to 29 CFR 1926.1050-1926.1060.

5.20. Scaffolding

Prior to the commencement of any project or contracted work, contractors must establish with AVANGRID a competent person(s), and provide credentials supporting his/her competency, to oversee all aspects of any scaffolding that may be used at the work site. Comprehensive fall protection measures shall be maintained at all times during the erection of any scaffolding at AVANGRID's work sites, unless the person established by the contractor (or other competent person) concludes, and maintains documentation describing his or her conclusion, that using 100% fall protection or other restraint measures is not feasible or creates greater hazards, in which case contractors shall utilize as close to 100% fall protection or restraint measures as possible based on the conclusions set forth in such documentation. Unless validated by the person established by the contractor (or other competent person), who must be a "qualified person" as defined by 29 CFR 1926.450 and must maintain all documentation supporting his or her conclusion, scaffold components may not be used for fall protection or restraint anchorage points. The person established hereunder shall inspect all scaffolding and associated components at least once prior to each work shift, from the time scaffold erection has begun until scaffold dismantling is completed, and, if necessary, shall be responsible for affixing signs, tags or equivalent markings means to conspicuously indicate whether the scaffolding is safe to use or not safe to use. Any transfer of the established person's responsibility hereunder must be coordinated and clearly noted among AVANGRID and other parties involved. All scaffolds used by contractors and all use of scaffolds at AVANGRID's work sites shall conform to 29 CFR 1926 subpart L.

5.21. Rigging and Hoisting

Tag lines must be used any time lifting devices are used to handle or transport loads, except during times where there is any risk of tag lines coming into contact with energized parts. The swing load radius must be kept clear while a suspended load is being moved, and under no circumstances may a load be suspended over people. All lifting devices and its hardware shall be rated, properly maintained and properly connected for its proposed use. No load may be lifted without first determining its weight. Load charts shall be maintained at the work site and be available for AVANGRID's inspection upon request. All rigging and hoisting conducted at AVANGRID's work sites shall conform to 29 CFR 1910.176-1910.184.

5.22. Confined Space Entry (including Enclosed Space Entry)

Contractors shall treat all "confined spaces" as "permit-required confined spaces" (as each are defined under 29 CFR 1910.146) until a written hazard assessment is prepared documenting otherwise. Contractors must coordinate all entry into confined spaces (whether a permit-required confined space or a non-permit-required confined space) with an authorized AVANGRID safety representative, the local facilities/building supervisor, and any other work groups involved in the project to ensure the activities at the work site

do not affect the safety or health of any person. Contractors shall ensure that all practices and procedures utilized with respect to any entry into confined spaces and permit-required confined spaces conform to 29 CFR 1910.146.

5.23. Excavation Safety

Contractors shall ensure that all its employees and subcontractors who engage in excavation and trenching activities are properly trained and supervised. Prior to excavating, the Company shall follow the appropriate Call Before You Dig (CBYD) (CT) or Dig Safe (MA) procedures to obtain a markout of utilities.

5.23.1. The competent person in charge shall identify the excavation boundaries and employees shall keep the excavation work within these limits.

5.23.2. In New York, any contractor employee(s) involved in excavating into the ground must have completed the Certified Excavator Program through Dig Safely New York, Inc. and have a current certification. In other states, any contractor employee(s) involved in excavating into the ground must have some training from their respective 811 representatives.

5.23.3. For all excavations, sloping guidelines for Type C soil shall be used unless on-site competent person is able to determine otherwise (Type A or B). Sloping in Type C soil requires a 1.5 horizontal to 1 vertical ratio. Use sloping or protective systems (shoring, trench box):

- Any time the walls of excavations and trenches are unstable and have the potential for cave in.
- Any time the trench is 5 feet or more in depth.

5.23.4. Excavated spoils, materials, and equipment shall not be stored closer than 2 feet from the edge of a trench or excavation. Mobile equipment shall not be operated in close proximity to the edge, unless extra precautions are taken to shore or slope the walls back to a stable slope.

5.23.5. Supporting systems, (e.g., piling, cribbing, shoring, trench box) shall be designed by a qualified person and meet accepted engineering requirements and be in good serviceable condition. Engineering documentation (Tabulated data) of appropriate ratings shall be available on-site.

5.23.6. When employees are required to work in trenches 4 feet deep or more, an adequate means of exit, such as a ladder or steps shall be used and located no more than 25 feet of lateral travel. All ladders used shall extend a minimum of 3 feet above the top of the excavation.

5.23.7. A competent person shall inspect the excavation daily and after each rainstorm or when the conditions change.

5.23.8. Employees shall not work in excavations in which there is standing or accumulating water, unless authorized by a Competent Person.

5.23.9. Do not permit anyone to be under loads handled by power shovels, backhoes, or other material handling equipment.

5.23.10. Excavation equipment in proximity to exposed electrical conductors (backhoes, etc.) shall be grounded when applicable.

5.23.11. All excavations greater than 4 feet, where a potential hazardous atmosphere may exist, (e.g., swamps, landfills) shall be tested before entering. If the atmosphere is found to be hazardous (e.g., oxygen deficient, combustible gas, carbon monoxide, and hydrogen sulfide gas), mechanical ventilation shall be used to clear the atmosphere and continuous monitoring shall be required.

5.23.12. Whenever there is danger of escaping gas, or a potential or confirmed flammable atmosphere an employee will stand by on Fire Watch with an approved fire extinguisher, upwind, near the edge of the excavation.

5.23.13. Check excavations for gas before entering trenches or excavations to use welding equipment or other sources of ignition. Use a Combustible Gas Indicator to test for gas

5.23.14. When openings or obstructions in the street, on sidewalks, walkways, or in private property are being worked on, danger signals (e.g., barricades, warning signs, flags, or cones) shall be effectively displayed. Approved lights, flasher signals, or reflectors shall be prominently displayed at night. In addition, if the job- site is left unattended, adequate barriers, covers, etc., shall be required. Barricades shall meet MUTCD regulations.

5.23.15. All excavating and trenching activities performed at AVANGRID's work sites shall conform to applicable OSHA regulations, including 29 CFR 1926 subpart P.

5.24. Guarding of Holes and Openings

Contractors shall guard or place barricades around temporary openings in floors, walls, excavations, holes or other openings to prevent any inadvertent entry. Covers over or barricades around such openings shall conform to applicable OSHA regulations. Overnight guarding of excavations, holes or other openings must be a minimum of 6' page linked metal fence to prevent any inadvertent entry.

5.25. Work Zone Traffic Control

This section applies to all Contractors, as needed.

If work activity is on or near a road, the Contractor and their subcontractors will comply with all applicable parts of the most current US Department of Transportation's Manual on Uniform Traffic Control Devices (MUTCD).

If working in areas covered by state permits issued to the Company, Contractors are required to comply with the provisions (work practices and notifications) of the permit language.

5.26. Signs, Signals and Barricades

All work areas, whether indoors or outdoors, shall be clearly marked and delineated with appropriate signs, signals and barricades. Any areas restricted to entry by authorized persons will have a conspicuous barrier clearly marked by appropriate "DANGER", "CAUTION" or other signage that (1) clearly notes the nature of the hazard and (2) provides adequate guidance to the reader (the placement of orange cones or signs alone is generally not considered adequate). Any detours, whether for vehicular or pedestrian traffic, shall be clearly marked along the entire route. Contractors are responsible for checking and maintaining all signs, signals and barriers throughout the period of need, and for removing or covering the same when the period of need no longer exists. In the event signs or barriers are not available or their use is not practicable, such as for a momentary hazard exposure, contractors shall position employees to warn others of such hazards. At all times such signs, barriers or signals, shall conform to 29 CFR 1926 subpart G, MUTCD, ANSI Z35.1-1968 and Z35.2-1968, CT DOT and AVANGRID policy.

5.27. Lockout/Tagout

Work performed at AVANGRID facilities or work sites may require the use of a lockout/tagout system. Contractors must coordinate what lockout/tagout system will be used with an authorized AVANGRID safety representative prior to commencing any work that would require such a system, which may include AVANGRID's specific lockout/tagout protocols. All lockout/tagout must conform to 29 CFR 1910.147, 29 CFR 1926.417 and AVANGRID's specific protocols.

6. ELECTRIC SYSTEM SPECIFIC SAFETY REQUIREMENTS

6.1. *Flame-Resistant Clothing (FRC) Requirements*

This section applies to all Contractors, as-needed.

FRC shall be worn prior to personnel breaching electrical boundaries within work zones & substations, work on energized equipment/lines or when distance and position will expose the worker to electric arc or flame hazards. FRC shall also be worn during live gas work. FRC also includes arc-rated rain gear. This additional ensemble may also be required as part of the job.

FRC shall be worn as the outermost layer of clothing.

FRC shall be worn when workers measure voltages or test or ground electrical equipment or lines.

FRC shall be worn when work requires the use of rubber protective equipment or the use of insulated live line tools.

FRC shall be worn when workers control/operate electrical equipment over 50 volts at the device location or are within 10 feet of equipment which is being physically operated by another worker.

FRC shall be worn where a hazard identification sign is posted.

Contractors shall wear the appropriate FRC when working on or near energized equipment or when distance and position will expose the Contractor to electric arc or flame hazards. For LNG plants, visitors are required to wear FRC prior to entry. Note: Gas Contractor FRC requirements may differ slightly.

FRC shall meet a minimum arc rating of 8 cal/cm² (HRC 2) for energized electrical equipment unless otherwise specified based on increased potential of exposure. The FRC system for HRC 2 shall consist of an arc-rated FR shirt and FR pants, or FR coveralls.

In accordance with “Host Employer” requirements of OSHA 1910.269, the Company will provide guidance on the circuit by circuit arc flash studies. Also see **Section 4.2**.

6.2. Rubber Gloves and Sleeves

This section applies to all Contractors, as-needed.

Rubber glove use is required for work on all electrical apparatus at 50 volts or greater. When working at height, rubber gloves shall be donned before the worker leaves the ground and shall be worn until the worker returns to the ground (commonly referred to as “ground to ground” and “cradle to cradle”).

- Class 0 gloves are required for exposures up to 1,000 volts.
- Class 2 gloves are required for voltages between 1,000 and 15,000 volts.

Rubber sleeves must be worn where work is conducted within the minimum approach distances of primary electrical apparatus that is not de-energized, tested and grounded.

For voltages 15 kV and above, workers can use specialized equipment or work practices as long as these workers have been appropriately trained and qualified. The Company may request a letter of assurance from the Contractor.

Rubber glove exceptions for specific jobs (other than those listed in this section) are permitted only with the written approval of the local Company Operations Manager. No rubber gloves are required:

- When working in a properly established equipotential zone.
- When the operator remains at the same potential as the equipment by being off the ground and on the equipment.
- When a qualified worker performs transmission "hot stick" work on lines 69 kV or greater and no other energized wires are on the pole or structure below the worker.
- When work is performed on transmission structures carrying only energized conductors (115kV and above) and the Live Line Techniques are not being employed. While performing these activities, the worker shall utilize conductive clothing such as conductive gloves, conductive boots, leg straps and/or any other applicable conductive clothing.
- When climbing a steel structure to perform structural reinforcements, and while maintaining minimum approach distance from energized conductors or apparatus.
- When climbing a steel structure to access an area that has been properly grounded.

6.3. Isolation of Energized Apparatus

This section applies to all Contractors, as-needed.

Non-Reclosing Criteria and Live-Line Maintenance and Construction:

- The appropriate interrupting devices (breakers, reclosers, circuit switches, etc.) will be placed on NON-RECLOSING in accordance with the Company Switching and Tagging procedures.

6.4. Tagging Out Lines or Apparatus:

The Owner's Representative or other designated representative shall coordinate all switching and tagging in accordance with the most current Company Switching and Tagging procedures.

6.5. Grounding:

When the Company switches out lines or apparatus, any grounds that may be installed shall only be considered a visual reference, and shall not be considered a means to protect the Contractor's employees.

The Contractor is responsible to install their personal grounds, in accordance with all OSHA, Federal, State and local safety procedures.

In accordance with "Host Employer" requirements of 1910.269, the Company will provide guidance on the minimum size of the grounds to be used based on circuit available fault current. Grounding Mobile Equipment:

When mobile equipment requires grounding, it shall be solidly grounded by means of appropriate sized copper cable. The cable shall be fastened to a securely attached clean metallic portion of the equipment, or shall be fastened to a grounding stud provided for the purpose at one end and an adequate ground at the other end.

6.6. Minimum Approach Distance (MAD):

For Qualified Electrical Workers, follow the MAD tables in OSHA 1910.269.

For non-Qualified Electrical Workers, the OSHA clearances are 10 feet and up, depending on voltage.

6.7. Appointment of a Safety Observer

This section applies to all Contractors, as-needed.

If work is being performed where there is a potential for persons or equipment to come in contact with energized equipment, a Safety Observer will be appointed by the **Company** to aid in protecting employees and others from hazards. The Safety Observer will be a "Qualified Electrical Worker" with the training and experience specified in OSHA regulations, specifically the "Electric Power Generation, Transmission and Distribution Standard" 29 CFR 1910.269.

The Safety Observer will be appointed:

- While positioning trucks, cranes or other equipment and where precise placement is required to avoid contact with or damage to existing equipment or circuits;
- While moving loads overhead that may come within OSHA clearance requirements; or
- At other times where assistance is needed to help direct specific tasks for the protection of personnel or property.

6.8. Qualified Electrical Workers

This section applies to Electrical Projects/Activities.

The Company expects that electrical Contractor employees will already be electrically-qualified as required by OSHA 1910.269.

OSHA defines a qualified electrical worker or "qualified employee" as a person knowledgeable in the construction and operation of the electrical power generation, transmission and distribution equipment involved and the associated hazards. According to 1910.269(a)(2)(ii), a qualified employee must be trained and competent in:

- The skills and techniques necessary to distinguish exposed live parts of electrical equipment;

- The skills and techniques necessary to determine the nominal voltage of exposed live parts;
- The minimum approach distances specified in 1910.269 corresponding to the voltages to which the qualified employee will be exposed;
- The proper use of special precautionary techniques, personal protective equipment, insulating and shielding materials, and insulated tools for working on or near exposed energized parts of electrical equipment; and
- The recognition of electrical hazards to which the employee may be exposed and the skills and techniques necessary to control or avoid these hazards.

Until these qualified employees have demonstrated proficiency in the work practices involved, they are considered to be employees undergoing on-the-job training and must be under the direct supervision of a qualified person at all times. According to the definition of a "qualified employee", the employee also must have demonstrated an ability to perform work safely at his or her level of training.

The Company requires Contractors with electrically qualified employees to provide documentation on how they qualify their workers.

6.9. Non-Electrical Workers

This section applies to all Contractors, as-needed.

The Contractor must provide Contractor orientation for non-electrical workers for the purpose of entering and working within restricted areas, such as a substation. This is a critical component of Contractor orientation for all non-electrical Contractors who will be working near energized lines and equipment (for example, civil Contractors).

The information provided to these workers must meet the requirements of OSHA 1910.269(a)(2)(ii). However, the orientation and training would not be as comprehensive as the training normally provided to a qualified electrical worker.

They must know:

- What is safe to touch and what is not safe to touch in the specific areas they will be entering;
- The maximum voltage of the area;
- The minimum approach distances for the maximum voltage within the area; and
- Proper use of protective equipment that will be used to provide protection for them and in the work practices necessary for performing their specific work assignments within the area.

Until these workers have demonstrated proficiency in the work practices involved, they are considered to be employees undergoing on-the-job training and must be under the direct supervision of a qualified person at all times. According to the definition of a "qualified employee", the employee also must have demonstrated an ability to perform work safely at

his or her level of training. It is expected that an orientation familiarizing the employee with the safety fundamentals above will be conducted before the worker is allowed to enter a restricted area.

6.10. Asbestos and Lead Hazards

This section applies to all Contractors, as-needed.

Asbestos and/or lead materials associated with electrical and gas equipment includes, but is not limited to:

- Cable covering/wrap;
- Wire covering;
- Coal tar pipe wrap; and
- Transite panels and conduits.

Removal of this material must be done by individuals specifically trained and qualified to handle asbestos or lead.

For projects or activities where asbestos material is present and may be disturbed, the Contractor Safety Plan shall include provisions detailing how the Contractor will address the hazard.

6.11. Overhead Line Work

This section applies to all Contractors, as-needed.

In addition to the other requirements referenced in this document, this section covers requirements that are specific to overhead line work.

PPE Requirements

All Contractors shall ensure appropriate PPE is utilized in accordance with applicable requirements and the guidance provided in this document. In addition, Contractors will follow ground-to-ground and cradle-to-cradle use of rubber gloves while carrying out work on energized overhead lines; commonly referred to as “ground to ground” and “cradle to cradle”.

Any foreign wire constitutes a potential energized source and rubber gloves shall be required. Any foreign wire on a pole or structure constitutes an energized source: cable TV, telephone, fire alarm wire, etc.

Fall Protection

All Contractors who climb structures such as wood poles or transmission towers shall utilize enhanced fall protection equipment and techniques. Enhanced fall protection means the use of a fall arresting device; examples include Buck-Squeeze, Miller or Jelco pole-choking systems when working on wooden structures, and a full-body harness and either a Step

Safe or Shepherd's Hook with retractable line when working on steel structures. Climbers shall never be allowed to drop or slide down a pole or structure more than two feet. Fall protection or fall restriction devices shall be used when working at heights over 4 feet, with the exception of ladder use.

Exceptions to fall protection shall be approved by the Owner's Representative or by another qualified User Representative.

Implementation of Safety Specifications for Site Pole Delivery and Handling

The establishment of a section in the specifications for transmission and distribution work involving poles to secure the site from the possibility of poles rolling using methods not easily defeated by the public is required. This section will outline the use of cradles on-site to secure the poles as well as the conditions of temporary storage areas such as grade, distance from changing grades, and ground.

All managers must be educated on the hazards of pole rolling, on identifying current and future hazards regarding the rolling of poles, and periodic refreshers on the safety issues regarding rolling poles through use of internal web communication tools.

The necessary specifications of temporary pole storage must be included in job briefs and the contractor safety SOP in order to ensure a contractor-based workforce (with high volatility and turnover) properly secures poles left on-site, as well as continuous identification of the hazards involved in rolling poles to ensure ongoing awareness.

Continuous safety auditing to ensure the hazards of rolling poles are being addressed and the established specifications for temporary pole storage are being implemented is required.

Pole/Structure Inspection

The Contractor shall ascertain the structural integrity of the pole or other structure prior to installation, removal or repair of equipment on the structure.

When work is to be performed on a wood pole, it is important to determine the condition of the pole before it is climbed. The weight of the employee, the weight of equipment being installed, and other working stresses (such as the removal or re-tensioning of conductors) can lead to the failure of a defective pole or one that is not designed to handle the additional stresses. For these reasons, it is essential that an inspection and test of the condition of a wood pole be performed before it is climbed.

If the pole is found to be unsafe to climb or to work from, it must be secured so that it does not fail while an employee is on it. The pole can be secured by a line truck boom, by ropes or guys, or by lashing a new pole alongside it.

In accordance with "Host Employer" requirements of OSHA 1910.269, the Company will provide guidance on tagging of "danger" poles. Also see **Section 4.2**.

6.12. Overhead Transmission Lines

For work on transmission circuits, red tape shall be placed around any energized pole, pole structure or tower adjacent to the de-energized line on which work is to be done.

When one circuit of a double circuit pole or tower line is de-energized for work, a red or orange flag shall be placed on the energized side of the pole or tower nine feet below the lowest energized conductor. In addition, on the side toward the energized circuit, a red or orange flag shall be placed at each arm level as employees work on them, or pass them, on the tower cage.

All Contractors using ATVs for transmission or forestry work are required to follow all local requirements for PPE and driving safety.

6.13. Underground Operations Work

This section applies to all Contractors, as-needed.

In addition to the other requirements referenced in this document, this section covers requirements that are specific to underground operations work.

PPE Requirements

All Contractors shall ensure appropriate PPE is utilized in accordance with applicable requirements and the guidance provided in this document.

Enclosed Space Monitoring and Ventilation

The Contractor shall test each space prior to removing manhole lids and prior to entry in accordance with OSHA 1910.146 and 1910.269.

Atmospheric testing must be continuous for the duration of the entry using an industry-approved monitor.

When performing hot lead work or when indicated by atmospheric monitoring, engineering controls such as forced mechanical ventilation must be used when working in Company manholes during the entire performance of the work.

Enclosed Space Entry and Non-Entry Rescue

All manhole and sidewalk vault entry shall be conducted in accordance with Company confined space procedures.

All Contractors who are qualified electrical workers will treat these spaces as “enclosed spaces” and follow non-entry rescue provisions.

Steel cable or wire rope for non-entry rescue is prohibited.

Equipment Safety Inspection

Inspect underground facilities (manholes, vaults, handholes, splice boxes, junction boxes, padmount transformers, switchgear and submersible equipment) each time a crew performs work at one of these facilities.

“Touch potential” testing of metal street lighting poles is required to be performed as a part of any maintenance work.

All Contractors working for the Company shall use materials and equipment in accordance with the manufacturing guidelines. It is the Contractor’s responsibility to understand the manufacturers’ limits and prescribed use of their tools and equipment before each use.

6.14. Substations

This section applies to all Contractors, as-needed.

In addition to the other requirements referenced in this document, this section covers requirements that are specific to work in Company substations.

PPE Requirements

All Contractors shall ensure appropriate PPE is utilized in accordance with applicable requirements and the guidance provided in this document.

Contractors will ensure FRC requirements are adhered to within substations.

Contractors will wear an electrical flash PPE ensemble when switching disconnects or grounding in areas of indoor substations in accordance with placards.

Fall arrest or fall restriction devices shall be used when working at heights over four feet, with the exception of ladder use.

Rubber gloves and Fire Resistant Clothing (FRC) are required when hand digging in a substation in or around energized conductors, and shall meet the requirements referenced in **Section 6.2** for FRC.

Contractors who perform any ground breaking activities in a substation within a pre-marked area will require Dig Safe marks to be in place; otherwise, the job must be suspended and a Company contact notified of the condition.

When using non-insulated man-lifts, and if provided by the manufacturer, a secure point of attachment for lifelines, lanyards or deceleration devices shall be utilized which is independent of the means of supporting or suspending the employee.

Notification of Control Authority When Entering a Substation

Before a Contractor enters and immediately after a Contractor exits a Company substation, the Contractor must notify the Energy Control Center (ECC). While work is being conducted, gates must be monitored at all times or the gates shall be closed and locked.

Unescorted entry into substations can only be provided to Contractors who provide assurance that their employees and subcontractors are electrically qualified as specified in OSHA 1910.269.

Substation Work Area Identification

Contractors who will be working in substations shall follow Company Safety Procedures and Company Standard Operating Procedures as designated in the pre-construction meeting or Health and Safety Plan.

Qualified Contractors shall install their own work area identification. The Company shall arrange work area identification for non-qualified workers as required.

Herbicide Application

Substation vegetation spraying shall be conducted unescorted only by Contractor employees who have been designated as a Qualified Electrical Workers where applicable.

The spray applicator will have ID cards issued by Security with background checks available from the Contractor.

Substations and Production management shall require a schedule of the spraying in their areas.

Once spraying begins, the Contractor must contact local management on a daily basis to inform them of progress or changes to the schedule.

The Contractor must post all stations with dated signs indicating when the station was sprayed. These signs should not inhibit access to the station.

The Contractor shall take care to prevent that any stored materials and equipment do not get covered with "overspray". Overspray represents a substantial safety hazard and cannot be allowed.

When applying herbicides, contract employees shall wear goggles and other appropriate PPE to protect them from contact with herbicides in accordance with product labels.

6.15. Gas Operations Work

This section applies to all Contractors, as-needed.

In addition to the other requirements referenced in this document, this section covers requirements that are specific to Gas Operations work.

PPE Requirements

All Contractors shall ensure appropriate PPE is utilized in accordance with applicable requirements and the guidance provided in this document.

The Contractor shall wear all appropriate PPE and Class 2 rubber gloves for personal protection when digging or probing near (within two feet) of known electrical conductors, and when the location of energized conductors is unknown.

Gas Operations

All Contractors must meet the requirements of drug and alcohol testing in accordance with DOT 49 CFR Part 199.

Any Contractor who performs covered tasks shall be operator qualified (OQ) as defined in the DOT 49 CFR Subpart N and all applicable state requirements pursuant to the state the Contractor is working in. Additionally, any qualifications of Contractor personnel shall be in full accordance with the Company's written OQ Plan. Refer to the most current list of covered tasks in accordance with the Company OQ Program and the Northeast Gas Association (NGA).

The OQ status of Contractor employees must be regularly updated and accessible via an on-line database by Company management. This listing must detail employees' current qualifications, current tasks to which they are qualified and the next recertification date, and provide documentation and a letter of assurance on their qualified workers as referenced in **Section 3.2.**

Contractor personnel involved with covered tasks may require certification by the Company and an orientation of the involved tasks and Company standards. The Company reserves the right to validate Contractor qualifications prior to performing Live Gas work.

Atmospheres are to be tested with a properly calibrated Combustible Gas Indicator (CGI) or Gas Measurement Instrument (GMI) in accordance with Company excavation procedures, as required.

Each employee in an excavation shall be protected from cave-ins by an adequate protective system, such as sloping, benching or an appropriate shoring system.

At minimum, an approved 20-pound ABC fire extinguisher must be at the worksite and readily available during all routine and live gas operations, as conditions warrant.

6.16. Forestry and Vegetation Management

This section applies to all Contractors, as-needed.

In addition to the other requirements referenced in this document, this section covers requirements that are specific to vegetation management work.

PPE Requirements

For work along roads and other areas of vehicular traffic, Contractors shall wear class III high visibility clothing or vests, in addition to other PPE appropriate to the work.

Flame Resistant Clothing is not required per the OSHA applicable Forestry standard. Forestry Contractors must instead wear natural fiber clothing when working within 10 feet of energized equipment.

Forestry Contractors must wear a properly adjusted full-body harness connected to an appropriate lanyard when working from an aerial lift. The lanyard must connect to an attachment anchored to either the boom or bucket mounting hardware. Attachment points anchored through only the fiberglass portion of the bucket are not acceptable.

Forestry Contractors will be required to wear chaps while operating a chainsaw or when assisting and/or working in close proximity to a chainsaw that is being operated.

Saws shall not be left unattended with the engine running.

The chain saw shall be started on the ground or where otherwise firmly supported. Drop starting a chain saw is prohibited.

One handed operation of a chain saw is prohibited.

When a Contractor employee carries a saw, the engine shall be off and/or covered, or the saw shall be carried with the blade to the rear and locked.

Equipment and Work Methods

Forestry Contractors will be required to utilize fiberglass sticks and stick saws for work around energized equipment, and to test/document their integrity annually. Test results and expirations shall be available on each vehicle as needed.

Forestry Contractors will be required to perform and document dielectric testing of all aerial units annually. Test results and expirations shall be available on each vehicle as needed.

By April 1st of each year, the Contractor shall provide a list of employees that could reasonably be expected to work on Company property. This listing shall include:

Identification of the current pay classification of each employee;

The date of progression to their current pay level;

The dates each employee completed each level of the Contractor line clearance tree trimmer training program;

The dates each employee completed their required OSHA safety and other training, or retraining, including any annual refreshers;

The date each employee last demonstrated their tree rescue and climbing proficiency, where applicable;

The date each employee last completed First Aid and CPR training; and

Identification of each certified pesticide applicator, their certification number and category certified.

Training

Forestry Contractor management will be required to attend safety council meetings hosted by the Company, as required. The Contractor will ensure that all appropriate safety personnel for Company territory are in attendance.

Forestry Contractors shall implement and provide the required training and certification programs necessary to provide OSHA-defined Qualified Line Clearance Tree Trimmers or Qualified Line Clearance Tree Trimmer Trainees.

All Contractors using ATVs for transmission or forestry work are required to follow all local requirements for PPE and driving safety.

Herbicide Applications

Forestry Contractor requirements for vegetation spraying are referenced in **Section 6.16**.

6.17. Safe Vehicle Operations

This section applies to all Contractors, as-needed.

Contractors are required to comply with the requirements of all federal, state and local regulations as well as their own Company policies for safe vehicle operations and licensing. In addition, the Company expects all Contractors to comply with regional as well as the Company policies that may apply.

7. EXCEPTIONS

This document does not reference actions that are required by other laws, rules or regulations. These are requirements that should be understood by the Contractor, and Contractor compliance with all applicable federal, state and local laws, rules and regulations is expected by the Company as a contractual condition.

8. MULTI-EMPLOYER WORKPLACE

For multi-employer work-sites, the general Contractor is responsible for all their employees and subcontractors. The safety plan shall clearly state this responsibility.

9. PROGRAM EVALUATION

The dates of reviews and revisions will appear on the last page of the program in the section titled “Reason for Change”.

Health and Safety shall have primary responsibility for annually reviewing this document, soliciting comment from stakeholders, and revising as necessary. The requirements of this policy or any future revision thereof, shall be effective the date of its issue unless otherwise noted.

10. RECORDKEEPING

The Contractor Safety Guide and subsequent reviews and revisions will be maintained by Avangrid Health and Safety. The Contractor Safety Guide shall be made accessible, by the contractor, to all field operations. The paper versions of the program will not be document controlled. The official, current version of this program may be obtained through your Avangrid contact person and / the ISNetworld website.

11. DEFINITIONS

Contracted Services: refers to any activity that is conducted by an organization or individual under the terms of a purchase order. Contracted services may include all types of construction and maintenance services, tree trimming, building maintenance and demolition, electrical structure dismantling, site restoration, engineering design, recycling and waste disposal, drilling, rigging, electrical, and utility pole/structure maintenance.

Project Management and Construction Delivery (P&CM): a department that provides project management expertise to other Company departments, especially for construction and large maintenance projects.

Contractor Orientation: intended to serve as a resource in order to provide the Contractor with the tools necessary to educate their employees and subcontractors. The session is not intended to train the Contractor management, their employees or subcontractors. The extent and content of the orientation session shall be commensurate with the scope and type of the Contractor’s activities.

Contractor Safety Requirements: this document outlines Company Contractor safety expectations. Procurement provides this document to all prospective Contractors. This document can be found on the Company Health and Safety intranet.

Core Business Functions: the Company core business functions are transmission and distribution of electricity, and distribution of natural gas.

Owner’s Representative: a Company employee or representative who is assigned to certain P&CM-contracted projects to check that the work is being performed in accordance with the contract, including the safety requirements.

Operator Qualifications (OQ): as defined in Transportation 49 CFR 192.801 through 192.809 and/or DOT pipeline qualified for gas Contractors doing work at the Company. Additional state requirements pursuant to the state the Contractor is working may be required. Other training may include American Gas Association (AGA) and The Northeast Gas Association (NGA).

Pre-Construction (Kick-Off) Meeting: a meeting arranged by the user prior to commencement of work by the selected Contractor(s).

Project Safety Plan: a project-specific document prepared by the Contractor prior to the pre-construction meeting. In this plan, the Contractor shall identify all significant tasks, their anticipated hazards and mitigation steps. It is the Contractor's responsibility to conduct their own risk assessment and to ensure that their project safety plan addresses all anticipated hazards.

Project/Service: a planned operation that is characterized by an activity, such as construction of a substation, which has a defined timeline and project close-out, and is typically secured under a one-time Purchase Order (PO). A service would be an activity that tends to be on-going and repetitive such as setting distribution poles where there is no defined project-close-out. Service work is typically secured under a Blanket PO. Both terms have been used interchangeably to describe the nature of the contracted service.

Project Team: a group that consists of the individuals involved with Contractor procurement and management; typically, a purchasing agent, user and Health and Safety representative.

Purchase Order (PO): an agreement/contract between the Company or one of its affiliated Companies and a Contractor to provide contracted services and/or materials. The PO is set up by Procurement. The term "Contract" and "PO" are similar and may be used interchangeably. A "Blanket PO" is set up for Contractors whose work is on-going. A "One-time PO" is set up for project work.

Qualified Electrical Worker: a person knowledgeable in the construction and operation of the electrical power generation, transmission and distribution equipment involved and the associated hazards.

Qualified Gas Worker: any Contractor who performs covered tasks shall be operator qualified (OQ) as defined in DOT Part 192 Subpart N and all applicable state requirements pursuant to the state the Contractor is working in. Additionally, any qualifications of Contractor personnel shall be in full accordance with the Company's OQ Plan. Refer to the most current list of covered tasks in accordance with the Company OQ Program and the Northeast Gas Association (NGA).

Requisition: a formal request by the user for Procurement to create a PO.

Request for Proposal (RFP): also known as the bidding document. It consists of the documents prepared by the user and Procurement that are submitted to bidders. The bidders submit their proposals or bids in response to the RFP documents.

Risk and Hazard: a hazard is an object, situation or activity that has the potential to cause harm. Risk is the likelihood or chance for the harm to occur.

Risk Assessment: the process of identifying hazards and calculating or ranking the associated risks according to:

- The likelihood of occurrence;
- The severity of the harm from the hazard; and
- The amount of time of exposure to the hazard.

User: a Company department, work group, engineer or other individual who directs a contracted service. Departmental management can assign responsibility to others, within or outside their department, to a Contractor hired to manage the project. Where project management duties are shared, it is the responsibility of the User to coordinate and specify the User's Representative's duties.

User's Representative: the User may designate a User's Representative to perform all or part of the User's duties. The User's Representative may include personnel who are engaged in various facets of Contractor management as designated by the User. It is the responsibility of the User to specify the extent of project oversight and responsibilities that shall be required of the User's Representative.

12. SUMMARY OF CHANGES

Effective Date	Section Number	Title	Description	Approved By:
8/5/2017	6.1	6.1.Flame-Resistant Clothing (FRC) Requirements	Change in scope for FRC requirements.	Jay Wahlberg
03/23/2018	6.14	Substations	Changes to FRC language.	Jay Wahlberg
07/2/2018	6.11	Overhead Line Work	Addition of pole delivery placement requirements.	Jay Wahlberg
07/2/2018	All	Format Change	Corrected Fonts	Jay Wahlberg