

November 5, 2018

BY HAND DELIVERY AND ELECTRONIC MAIL

Luly E. Massaro, Commission Clerk
Rhode Island Public Utilities Commission
89 Jefferson Boulevard
Warwick, RI 02888

RE: Docket 4237 - National Grid 2018 Contact Voltage Annual Report Responses to PUC Set 2

Dear Ms. Massaro:

I have enclosed ten (10) copies of the Company's¹ response to data request PUC 2-1 in the above-referenced docket.

Please be advised that the Company is seeking protective treatment of Confidential Attachment PUC 2-1, as permitted by PUC Rule 1.2(g) and by R.I. Gen. Laws § 38-2-2(4)(B). This filing also contains a Motion for Protective Treatment in accordance with PUC Rule 1.2(g) and R.I. Gen. Laws § 38-2-2(4)(B). In compliance with Rule 1.2(g), National Grid is providing the confidential version of Attachment PUC 2-1 in a sealed envelope marked, "**Contains Privileged and Confidential Materials – Do Not Release.**"

This transmittal completes the Company's responses to the second set of data requests issued by the PUC in this matter.

Thank you for your attention to this filing. If you have any questions, please contact me at 781-907-2121.

Very truly yours,



Raquel J. Webster

Enclosure

cc: Docket 4237 Service List
John Bell, Division
Leo Wold, Esq.

¹ The Narragansett Electric Company d/b/a National Grid (the Company).

Certificate of Service

I hereby certify that a copy of the cover letter and any materials accompanying this certificate was electronically transmitted to the individuals listed below.

The paper copies of this filing are being hand delivered to the Rhode Island Public Utilities Commission and to the Rhode Island Division of Public Utilities and Carriers.



Joanne M. Scanlon

November 5, 2018
Date

**Docket No. 4237 – Commission’s Proceeding Relating to Stray
and Contact Voltage Pursuant to Enacted Legislation
Service List updated 10/4/18**

Name	E-mail Distribution List	Phone
Raquel Webster, Esq. National Grid 280 Melrose Street Providence, RI 02907-1438	Raquel.webster@nationalgrid.com ;	401-784-7667
	Celia.obrien@nationalgrid.com ;	
	Joanne.scanlon@nationalgrid.com ;	
Leo Wold, Esq. Dept. of Attorney General 150 South Main St. Providence, RI 02903	lwold@riag.ri.gov ;	401-274-4400
	John.bell@dpuc.ri.gov ;	
	Al.contente@dpuc.ri.gov ;	
	Thomas.kogut@dpuc.ri.gov ;	
	joseph.shilling@dpuc.ri.gov ;	
	jmunoz@riag.ri.gov ; dmacrae@riag.ri.gov ;	
Greg Booth Power Services, Inc.	gbooth@powerservices.com ;	919-256-5900
Original & 9 copies file w/: Luly E. Massaro, Commission Clerk Margaret Hogan, Commission Counsel Public Utilities Commission 89 Jefferson Boulevard Warwick, RI 02888	Luly.massaro@puc.ri.gov ;	401-780-2107
	Margaret.hogan@puc.ri.gov ;	
	Cynthia.WilsonFrias@puc.ri.gov ;	
	Alan.nault@puc.ri.gov ;	

confidential (un-redacted) version of Attachment PUC 2-1 because Schedule C, which National Grid has redacted, includes competitively sensitive commercial pricing information.²

II. LEGAL STANDARD

The PUC's Rule 1.2(g) provides that access to public records shall be granted in accordance with the Access to Public Records Act (APRA), R.I. Gen. Laws § 38-2-1 *et seq.* Under the APRA, all documents and materials submitted in connection with the transaction of official business by an agency is deemed to be a "public record," unless the information contained in such documents and materials falls within one of the exceptions specifically identified in R.I. Gen. Laws § 38-2-2(4). Therefore, to the extent that information provided to the PUC falls within one of the designated exceptions to the public records law, the PUC has the authority under the terms of APRA to deem such information to be confidential and to protect that information from public disclosure.

Rhode Island General Laws § 38-2-2(4)(B) provides that the following types of records shall not be deemed public:

Trade secrets and commercial or financial information obtained from a person, firm, or corporation which is of a privileged or confidential nature.

The Rhode Island Supreme Court has held that this confidential information exemption applies where disclosure of information would likely (1) impair the Government's ability to obtain necessary information in the future; or (2) cause substantial harm to the competitive position of the person from whom the information was obtained. Providence Journal Company v. Convention Center Authority, 774 A.2d 40 (R.I. 2001).

² The contract is subject to a non-disclosure agreement between National Grid and the vendor, and, pursuant to the procedures set forth in the NDA, the vendor has confirmed that the pricing information contained in Schedule C of the contract must be kept confidential.

The first prong of the test is satisfied when information is voluntarily provided to the governmental agency and that information is of a kind that would customarily not be released to the public by the person from whom it was obtained. Providence Journal, 774 A.2d at 47.

III. BASIS FOR CONFIDENTIALITY

The Company requests confidential treatment of the unredacted version of Attachment PUC 2-1 because this document includes competitively sensitive pricing information that governs the terms of the mobile testing. Disclosing this information to the public could harm the competitiveness of the Company's solicitations for mobile testing in the future and also harm the mobile vendor's competitive position. In addition, the pricing information is the subject of a non-disclosure agreement between National Grid and the vendor.

IV. CONCLUSION

Accordingly, for the foregoing reasons, the Company respectfully requests that the PUC grant this motion for protective treatment of Confidential Attachment PUC 2-1

WHEREFORE, the Company respectfully requests that the PUC grant this Motion for Protective Treatment of Confidential Information.

Respectfully submitted,
**THE NARRAGANSETT ELECTRIC
COMPANY d/b/a NATIONAL GRID**
By its attorney,



Raquel J. Webster (RI Bar #9064)
National Grid
40 Sylvan Road
Waltham, MA 02451
(781) 901-2121

Dated: November 5, 2018

The Narragansett Electric Company
d/b/a National Grid
RIPUC Docket No. 4237
In Re: 2018 Contact Voltage Annual Report
Responses to Commission's Second Set of Data Requests
Issued on October 11, 2018

PUC 2-1

Request:

Please provide a copy of the current contract with the mobile testing vendor.

Response:

Please see Confidential Attachment PUC 2-1.

REDACTED VERSION

nationalgrid

AGREEMENT

BETWEEN

THE NARRAGANSETT ELECTRIC COMPANY

AND

**WILLBROS ENGINEERS (U.S.), LLC.
TULSA, OKLAHOMA**

FOR

RHODE ISLAND CONTACT VOLTAGE SURVEY & TESTING SERVICES

ASSOCIATED SAP CONTRACT № 4400005515*

* Referenced Contract number is for 'internal use only'. Internal SAP Purchase Order's will be issued against this Contract, and those PO numbers will be referenced by the Contractor to cite for invoicing purposes. *

October 26, 2015

AGREEMENT

This Agreement, made and entered into on the date when signed by the party signing last in time, by and between The Narragansett Electric Company (Company), and Willbros Engineers (U.S.), LLC. (Contractor), a limited liability company, having its principal place of business at 2087 East 71st Street, Tulsa, OK 74136, for the Work identified as:

Rhode Island Mobile Contact Voltage Survey & Testing Services

Contract ID: 4400005515

ARTICLE 1 - SCOPE OF WORK

- 1.1. The Contractor hereby agrees to provide all materials, equipment, apparatus tools, labor, Services, and facilities to perform all the Work in accordance with this Agreement. Work shall include, but not be limited to, field testing, investigation, and documentation of contact voltage using mobile electric field detectors in designated contact voltage risk areas of Rhode Island.

ARTICLE 2 - CONTRACT DOCUMENTS

- 2.1. The following documents, including all attached schedules, appendices, exhibits or other attachments thereto, are incorporated by reference as if fully set forth herein, and are hereinafter referred to collectively and individually as the "Contract Documents" or the "Agreement":
 1. Agreement
 2. SCHEDULE A, National Grid Terms and Conditions for Service Firm Purchase Orders Form 00300 (Rev. 12 August 2015) and Supplemental Conditions for Rhode Island Mobile Contact Voltage Survey and Testing Services, dated October 2, 2015;
 3. SCHEDULE B, Mobile Contact Voltage Testing Program Scope of Work, dated August 27, 2015 and National Grid Electric Operating Procedure, Equipment Elevated Voltage Testing, Doc. # NG-EOP G016 (latest revision);
 4. National Grid Request for Proposal Doc564287325 JDR_RI Mobile Elevated Voltage Survey + Testing_FY16;
 5. Willbros Engineers (U.S.), LLC's response to National Grid Request for Proposal Doc564287325 JDR_RI Mobile Elevated Voltage Survey + Testing_FY16;
 6. SCHEDULE C, Price Schedules
 - a. C-1: Fixed Price Payment Schedule for Annual Survey & Testing of Designated Contact Voltage Risk Areas
 - b. C-2: Supplemental Units Schedule
 7. SCHEDULE D, National Grid Safety Procedure N-1402 Contractor Safety Requirements;
 8. SCHEDULE E, Non-Disclosure Agreement dated September 2, 2015;
 9. SCHEDULE F, NGSP 6 – Background Check Requirements for Contracted Service Providers – Attachment A - National Grid Requirements for Contractor Employee Background Checks (For National Grid Level 2 Baseline & Supplemental Requirements) 09-01-15 and Willbros Engineers (U.S.), LLC. Attachment B2;
 10. SCHEDULE G, National Grid Contractor Environmental Requirements – Contracted Services – Environmental Procedure No. 6 – Appendix C – Rev. No. 5;
 11. SCHEDULE H, Willbros Engineers (U.S.), LLC's Contractor Compliance Affidavit – Compliance with U.S. Department of Transportation Regulations 49 CFR Parts 40, 199 & 382

ARTICLE 3 – TERM & SCHEDULE

- 3.1. This Agreement shall be effective when executed by all parties. It shall continue in full force and effect until December 31, 2018, subject to extension at Company's option.
- 3.2. All warranties provided for herein shall remain in full force and effect until their stated expiration.
- 3.3. Any Work to be performed under this Agreement shall be commenced in accordance with the schedule(s) developed by the Contractor and accepted by the Company for each assignment. The Contractor shall prepare updated schedules as requested by the Company.
- 3.4. The Company shall not be bound to any set quantities or financial liabilities, except for services ordered and received and may secure services similar in nature from other entities without the consent of or any liability to the Contractor.

ARTICLE 4 – CONTRACT PRICE & PAYMENT

- 4.1. The Contract Price shall be the total price to be paid by the Company to the Contractor in Accordance with the prices set forth in the Price Schedules, incorporated herein as Schedule C.
- 4.2. Within thirty days of submittal of the reported results of each annual survey and testing cycle Contractor shall submit to Company their invoice.
- 4.3. Contractor's invoicing detail shall include charges assessed for the annual survey, testing, and reporting, as well as the individual unit quantities for Safety Setups.
- 4.4. Invoices shall reference the Purchase Order Number, the name of the Company's Field Representative who supervised the Work, and any Work Order Number identified by the Company's Field Representative.

Send Original Invoice to:
National Grid
Accounts Payable, C-1
300 Erie Boulevard West
Syracuse, NY 13202
Attn: Bart Cass
PO# 32000XXXX

ARTICLE 5 - NOTICES

Notices required or permitted under this Agreement shall be addressed to:

To Company:

National Grid Global Procurement
300 Erie Boulevard West
Syracuse, New York, 13202
315.428.3149

Jarrett.Regard@nationalgrid.com

Attention: Jarrett Regard

To Contractor:

Willbros Engineers (U.S), LLC.
2087 East 71st Street
Tulsa, Oklahoma
516.287.6454

Rick.Reed@willbros.com

Attention: Rick Reed

IN WITNESS WHEREOF, each party hereto has caused this Agreement to be executed by its duly authorized representative on the day and year set forth below.

Company:
The Narragansett Electric Company

Contractor:
Willbros Engineers (U.S.), LLC.

Signed:  _____

Signed:  _____

By: Jarrett Regard

By: Jacob M. Flud

Title: Sr. Buyer

Title: Senior Vice President - Finance & Administration

Date: 10/26/2015

Date: 10/26/15

Schedule A

National Grid Terms and Conditions for Service Firm Purchase Orders Form 00300 (Rev. 12 August 2015)

And

Supplemental Conditions for Rhode Island Mobile Contact Voltage Survey and Testing Services, dated
October 2, 2015



**TERMS AND
CONDITIONS
FOR
SERVICE FIRM
PURCHASE ORDERS**

Form 00300 (Rev. 12 August 2015)

Table of Contents

1.0 DEFINITIONS 1

2.0 SCOPE OF WORK 4

3.0 CONTRACTOR PERSONNEL 4

4.0 TIME OF PERFORMANCE 5

5.0 PERMITS AND LICENSES 6

6.0 SHIPMENT 6

7.0 RISK OF LOSS 6

8.0 WARRANTY/REMEDY 7

9.0 PRICE/PAYMENT 8

10.0 TAXES 9

11.0 INSPECTION AND QUALITY ASSURANCE 9

12.0 FINAL INSPECTION/ACCEPTANCE/PAYMENT 11

13.0 WITHHOLDING PAYMENT 11

14.0 CHANGES TO WORK SCOPE/AGREEMENT CHANGES 12

15.0 SURVIVAL 13

16.0 SAFETY 13

17.0 MINIMIZING DISRUPTIONS 13

18.0 TERM/TERMINATION 13

19.0 COMPANY’S RIGHT TO SUSPEND THE AGREEMENT 16

20.0 EMERGENCY ASSISTANCE 17

21.0 FORCE MAJEURE 17

22.0 LIABILITY AND INDEMNIFICATION 18

23.0 INSURANCE 19

24.0 RIGHTS, CLAIMS AND DISPUTES 21

25.0 RIGHTS AND REMEDIES; COMPANY LIABILITY 21

26.0 DISCREPANCIES AND CLAIMS 21

27.0 DOCUMENTS/INTELLECTUAL PROPERTY 22

28.0 CONFIDENTIALITY/PROPRIETARY INFORMATION 23

29.0 PUBLICITY 24

30.0 COMMUNICATIONS WITH REGULATORS, MEDIA, OR PUBLIC 24

31.0 MEETINGS AND REPORTS 25

32.0 NERC CIP 25

33.0 CLEANING UP 25

34.0 LABOR RELATIONS 25

35.0 ADDITIONAL CONTRACTS AND INTERESTS 26

36.0 LIENS/BONDS 27

37.0 ASSIGNMENT/SUBCONTRACTING 27

38.0 ENTIRE AGREEMENT 28

39.0 SEVERABILITY/MISCELLANEOUS 29

40.0 COMPLIANCE WITH LAWS AND STANDARDS 29

41.0 ENVIRONMENTAL COMPLIANCE..... 29

42.0 UTILIZATION OF SMALL BUSINESS CONCERNS 30

43.0 EQUAL EMPLOYMENT OPPORTUNITY 30

44.0 JURISDICTION AND GOVERNING LAWS 31

45.0 WAIVER 32

46.0 PROVISIONS REQUIRED BY LAW DEEMED INSERTED 32

47.0 NOTICES 32

48.0 PREVENTION OF CORRUPTION AND BRIBERY 32

49.0 RECORDS..... 34

50.0 REGULATORY FILINGS 34

51.0 E-COMMERCE/ISNETWORLD 35

1.0 DEFINITIONS

For purposes of these Terms and Conditions and as used in the purchase order or Agreement incorporating these Terms and Conditions, the following commonly used terms, wherever used with initial capitalization, whether in the singular or the plural, are defined as follows:

- 1.1 “Affiliate” means any entity Controlled by, Controlling, or under common Control with an entity.
- 1.2 “Agreement” means the form of agreement document executed by the Company and the Contractor setting out, among other things, the parties and the term. Where no such form of agreement document is entered into, the Agreement shall be the purchase order issued to the Contractor by the Company which refers expressly to these Terms and Conditions. For the avoidance of doubt, a notification by the Company to the Contractor of the award of a contract shall not constitute an Agreement and shall not create any contract between the Company and the Contractor. For the further avoidance of doubt, where a purchase order and a formal form of agreement document are issued by the Company, then the formal form of agreement document shall take precedence and no contract shall be formed until that form of agreement document has been executed by both parties.
- 1.3 “CIP” means Critical Infrastructure Protection as defined in the contract document that contains the NERC reliability standards.
- 1.4 “Company” or “Owner” means National Grid USA Service Company, Inc. and/or one or more of its Affiliates, successors and assigns identified in the Agreement.
- 1.5 “Contract Administrator” means the Company’s representative(s) designated to direct, inspect and coordinate the performance and delivery of the Work.
- 1.6 “Contract Documents” means all documents identified as such in the Agreement.
- 1.7 “Contract Number” means the SAP numeric associated with the Agreement.
- 1.8 “Contract Price” shall have the meaning set forth in the Agreement, or if not expressly set forth, shall mean the total amount to be paid by the Company to the Contractor under the Agreement.
- 1.9 “Contractor” means the business entity named in the Agreement as the party furnishing Work to the Company, and, if authorized by the Company, Contractor’s successors and assigns.
- 1.10 “Control” (including with correlative meanings, the terms “Controlling,” “Controlled by” and “under common Control with”) means the possession directly or indirectly of the power to direct or cause the direction of the management and policies of an entity, whether through the ownership of voting securities, by trust, management agreement, contract or otherwise, provided, however, that beneficial ownership of 50% or more of the voting equity interests of an entity shall be deemed to be Control.
- 1.11 “Critical Asset” means facilities, systems, and equipment which, if destroyed, degraded, or otherwise rendered unavailable, would affect the reliability or operability of the Bulk Electric System (as defined by FERC).
- 1.12 “Critical Cyber Assets” mean Cyber Assets that are essential to the reliable operation of Critical Assets.
- 1.13 “Cyber Assets” means programmable electronic devices and communication networks including hardware, software, and data.

- 1.14 “Day” means a calendar day, except that if an obligation of the Agreement falls due on a Saturday, Sunday or legal holiday in the jurisdiction where the Site is located such obligation shall be due the next regular working day.
- 1.15 “Dollars” and “\$” means United States of America dollars.
- 1.16 “Final Acceptance” means that date when the Company issues a certificate to the Contractor certifying that the Work has been fully performed in accordance with the terms and conditions of the Agreement.
- 1.17 “HUBZone Small Business Concern” means a Small Business Concern that appears on the List of Qualified HUBZone Small Business Concerns maintained by the Small Business Administration.
- 1.18 “Indemnified Parties” means the Company, its Affiliates, and their officers, directors, employees, agents, successors and assigns, and any third party that Company or its Affiliates are required to hold harmless or indemnify by law or pursuant to: (a) a contract or agreement for Work and Services performed under or in connection with this Agreement or (b) any property or access rights obtained in support of the Work and Services performed under or in connection with this Agreement.
- 1.19 “Insured Parties” means the Company or Owner, its Affiliates, and their officers, directors, employees, agents, successors and assigns and any third party that Company or its Affiliates are required to hold harmless or indemnify by law or pursuant to: (a) a contract or agreement for operations, Work, and Services performed under or in connection with this Agreement or (b) any property or access rights obtained in support of the operations, Work, and Services performed under or in connection with this Agreement.
- 1.20 “ISNetworld” and “ISN” mean the fee-based third party services contracted by Company to receive, store, manage and maintain various records for Company related to Contractor safety and vendor On-boarding.
- 1.21 “NERC” means the North American Electric Reliability Corporation.
- 1.22 “Partial Performance Payment” means the payment to which the Contractor is entitled for Work actually performed after the Company has provided Contractor with notice to commence Work and before the Company terminates all or a portion of the Agreement for convenience.
- 1.23 “Party” means either the Company or the Contractor, and any reference to “Parties” shall mean the Company and the Contractor.
- 1.24 “Physical Security Perimeter” means the physical completely enclosed (“six-wall”) border surrounding computer rooms, telecommunications rooms, operations centers, and other locations in which Critical Cyber Assets are housed and for which access is controlled.
- 1.25 “Prohibited Act” means:
- 1.25.1 offering, giving or agreeing to give to the Company, any of its Affiliates, or any persons associated with it or them including its or their officers, employees or agents, any gift or consideration of any kind as an inducement or reward: (i) for doing or not doing (or for having done or not having done) any act in relation to the obtaining or performance of the Agreement or any other contract with the Company or any of its Affiliates; or (ii) for showing or not showing favor or disfavor to any person in relation to the Agreement or any other contract with the Company or any of its Affiliates;

- 1.25.2 entering into the Agreement or any other contract with the Company, any of its Affiliates, or any persons associated with it or them where a commission has been paid or has been agreed to be paid by the Contractor or on its behalf, or to its knowledge, unless, before the relevant contract is entered into, particulars of any such commission and of the terms and conditions of any such contract for the payment thereof have been disclosed in writing to the Company;
- 1.25.3 committing any offense: (i) under the United Kingdom’s Bribery Act 2010 (or engaging in any activity, practice or conduct which would constitute an offense under that act if such activity, practice or conduct had been carried out in the United Kingdom); (ii) under legislation creating offenses in respect of fraudulent acts, or (iii) at common law in respect of fraudulent acts in relation to the Agreement or any other contract with the Company or any of its Affiliates;
- 1.25.4 engaging in any activity, practice or conduct which does not comply with the Company’s anti-bribery and anti-corruption policies as notified in writing to the Contractor from time to time by or on behalf of the Company;
- 1.25.5 doing, or omitting to do, any act that will cause or lead the Company or any of its Affiliates to be in breach of the Bribery Act 2010 and/or the policies referred to in Section 1.25.4 above; or
- 1.25.6 defrauding, attempting to defraud or conspiring to defraud the Company or any of its Affiliates.
- 1.25 “Project” means the totality of a Company-defined scope, to be completed within a specified time and cost, and all things associated therewith, of which the Work performed under the Agreement may be the whole or a part and which may include work performed by the Company or its Affiliates or by other contractors.
- 1.26 “Purchase Order” means the serially numbered document issued by the Owner for accounting purposes. Purchase Order numbers should be referenced by the Contractor for invoicing purposes.
- 1.27 “Purchase Order Number” means the number identified as such in the Agreement which may be used for the Company’s internal accounting and document tracking.
- 1.28 “RFP” and “Request for Proposal” mean the documentation associated with the tender solicitation.
- 1.29 “Service-Disabled Veteran” means a veteran, as defined in 38 U.S.C. 101(2), with a disability that is service connected, as defined in 38 U.S.C. 101(16).
- 1.30 “Service-Disabled Veteran-Owned Small Business Concern” means a Small Business Concern not less than 51 percent of which is owned by one or more Service-Disabled Veterans or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more Service-Disabled Veterans; and the management and daily business operations of which are controlled by one or more Service-Disabled Veterans or, in the case of a Service-Disabled Veterans with permanent and severe disability, the spouse or permanent caregiver of such veteran
- 1.31 “Services” means all the labor and other services provided by the Contractor in connection with the Agreement.
- 1.32 “Site” means the geographical location or facility where the Work will be performed.
- 1.33 “Small Business Concern” means a small business as defined pursuant to Section 3 of the Small Business Act and relevant regulations promulgated pursuant thereto.

- 1.34 “Small Disadvantaged Business Concern” means a Small Business Concern that represents, as part of its offer, that it has received certification as a Small Disadvantaged Business Concern consistent with 13 CFR part 124, Subpart B; and that no material change in disadvantaged ownership and control has occurred since its certification.
- 1.35 “Specification” means the technical requirements and procedures, including any accompanying appendices, contained in, referenced by, or attached to the Agreement.
- 1.36 “Subcontractor” means any organization, firm or individual, regardless of tier, which the Contractor retains during the term of the Agreement to provide Goods or Services in connection with the Agreement.
- 1.37 “Supplemental Conditions” means those terms and conditions, if included in the Agreement, which add to or modify other Contract Documents and are incorporated by reference as if fully set forth in the Agreement. In the case of a conflict between the Supplemental Conditions and any other Contract Document, the Supplemental Conditions shall prevail.
- 1.38 “Veteran-Owned Small Business Concern” means a Small Business Concern not less than 51 percent of which is owned by one or more veterans (as defined at 38 U.S.C. 101(2)) or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more veterans; and the management and daily business operations of which are controlled by one or more veterans.
- 1.39 “Women-Owned Small Business Concern” means a Small Business Concern that is at least 51 percent owned by one or more women, or, in the case of any publicly owned business, at least 51 percent of the stock of which is owned by one or more women; and whose management and daily business operations are controlled by one or more women.
- 1.40 “Work” means all operations, duties, responsibilities, and obligations to be performed by the Contractor as specified, stated, indicated or implied, whether temporary or permanent, by the Agreement including, but not limited to, the provision of Services.

2.0 SCOPE OF WORK

- 2.1 Contractor shall perform all the Work and Services and do all that is necessary to complete its portion of the Project in accordance with the Agreement (including all Contract Documents and any attached schedules, exhibits and appendices which are incorporated by reference), and in accordance with all applicable permits, Federal, state, and local engineering, construction, safety, environmental, building and electrical codes, standards, directives, requirements, rules, regulations, laws and ordinances (whether the same are in force upon the execution of the Agreement or may in the future be passed, enacted or directed). The Contractor is, and shall at all times remain, an independent contractor.
- 2.2 Contractor shall furnish all necessary management, technical, and other personnel necessary for the timely prosecution of the Work to the Company’s satisfaction.

3.0 CONTRACTOR PERSONNEL

- 3.1 The Contractor shall, and shall require its Subcontractors to comply with the Company’s background check requirements as defined in the Company’s policies and procedures set forth in this Agreement and as may be amended from time to time.
- 3.2 In the event of the Contractor’s non-compliance with any or all of these background-check requirements, the Company may cancel the Agreement for its convenience pursuant to the termination provisions contained in the Agreement except that in no event shall the Company or its Affiliates be liable for any

termination cost/charges to the Contractor beyond compensation for Work performed up to the date of such cancellation.

- 3.3 The Contractor shall be wholly and solely responsible for all acts of its personnel while engaged in the Work. Any illegal acts, including but not limited to terrorism affecting property and/or personnel of the Company or its Affiliates, the Contractor or third parties shall be considered grounds for finding the Contractor in default and terminating the Agreement for cause in accordance with Section 18.1, in addition to all other rights and remedies available to the Company and its Affiliates under applicable law.

4.0 TIME OF PERFORMANCE

- 4.1 The Contractor shall perform the Work in accordance with the schedule agreed to by the Parties. Once commenced the Work shall be prosecuted continuously to completion unless otherwise agreed to by the Company. The Contractor shall notify the Company orally and then in writing of any anticipated delays; however, such notification shall not relieve Contractor of any of its obligations or affect any of the Company's available remedies.
- 4.2 The Contractor shall maintain a labor force of sufficient size and competence to conform to and complete all Work on schedule and within the scheduled hours and days set forth in the schedule unless otherwise directed or approved by the Company.
- 4.3 Contractor shall limit the Work at the Site to eight hours per day and 40 hours per week and normal working hours, between 7:00 a.m. - 5:00 p.m., Monday through Friday, unless otherwise specified elsewhere in the Agreement. Extended hours shall be subject to the Company's prior written approval.
- 4.4 **Time of performance is of the essence.** If, at any time during the term of the Agreement, except for delays occurring pursuant to Section 21.1, in the opinion of the Company the Contractor does not meet the schedule, the Company may for each incident of delay, at no additional cost to the Company, at its sole option, in addition to any other rights it may have:
- 4.4.1 Require the Contractor to get back on schedule by working additional shifts and/or additional days and/or increasing its manpower, supervision, and/or equipment; and/or
 - 4.4.2 Treat such failure as a material breach and repudiate and terminate the Agreement in accordance with Section 18.1 and collect damages; and/or
 - 4.4.3 Require the Contractor to pay the Company liquidated damages, as may be provided for in the Agreement, provided, however, once the Company elects liquidated damages for an incident of delay its right to invoke the remedies under 4.4.1 or 4.4.2 for such delay shall be extinguished.
- 4.5 Any failure by the Company to invoke any of the provisions of Section 4.4 shall not constitute a waiver of its right to subsequently invoke such provisions or its entitlement to any other damages provided for elsewhere in this Agreement.
- 4.6 No request for extension of time for completion of the Work, or any other change to an approved schedule, shall be granted to the Contractor unless in a writing signed by the Company, and except as provided in Section 21.1, 14.0, and 19.1.
- 4.7 Notwithstanding the foregoing, if the Contractor incurs delays and believes that changes in the Project or changed conditions beyond the Contractor's control are the cause of the delay, the Contractor shall provide prompt written notice to the Company in the manner set forth in Section 14.3 of the changes or changed conditions that it believes justify excusing the Contractor from meeting the schedule. If the Company agrees with the Contractor, the Company will, in accordance with Section 14.3, approve an extension of

time for completion of the Work. Such extensions of time however shall not include any additional payment for extended overhead.

- 4.8 If the Contractor is delayed by any act or omission by the Company, or by interference by a public authority, or strikes or injunctions, none of which are caused, instituted, or provoked by the Contractor or by any Subcontractor, agent, or representative of the Contractor, and if the Contractor cannot with reasonable diligence, due to such act or omission, interference, strike or injunction, make up for such delay or delays, then the specified date or dates for completion of the work or services or the portion or portions thereof so delayed will be extended by the Company by the amount of time for such delay as determined by the Contract Administrator. Notwithstanding the foregoing, no periods of such delay will be deemed to begin until written notice thereof has been given by the Contractor to the Company. If the Contractor cannot make up for such delay by applying reasonable diligence and speed, then the Contractor may receive compensation for such delay, if appropriate. The Contract Administrator shall determine the time period covered by the delay and the amount of compensation payable to the Contractor.
- 4.9 When necessary to accommodate the Company's operating requirements, the Company shall have the option to order any portion of the Project performed at times other than normal working hours or on weekends or holidays, in which event extra costs, if any, for such work shall be paid to the Contractor in accordance with Section 14.5.

5.0 PERMITS AND LICENSES

- 5.1 Permits and licenses of a temporary nature necessary for the prosecution of the Work shall be secured and paid for by the Contractor. Unless otherwise specified, permits, licenses and easements for permanent structures or permanent changes in existing facilities shall be secured and paid for by the Company. In either case the Contractor shall be responsible for prosecuting the Work in accordance with the provisions of all applicable permits and licenses.
- 5.2 The Contractor shall maintain all permits and licenses required and necessary to complete the Work so that it complies with all applicable laws, rules, regulations, requirements, orders, directives, ordinances, codes and standards of all Federal, state, and local governmental agencies having jurisdiction over the Company and its Affiliates, the Contractor, the Subcontractors, or the Project, whether the same are in force at the execution of this Agreement or may in the future be passed, enacted or directed.
- 5.3 The Contractor shall not enter into negotiations with any governmental authority or agency for acceptance of variations from or revisions to safety or health, or air, water or noise pollution laws or regulations relating to the Agreement or to the performance thereof, without the Company's prior written consent.

6.0 SHIPMENT

- 6.1 The Contractor shall bear all costs of transportation and shipment unless otherwise expressly provided in the Specification.

7.0 RISK OF LOSS

- 7.1 Risk of loss or damage to the Work shall remain with the Contractor until Final Acceptance by the Company, regardless of whether title has passed. The Contractor shall bear the risk of loss or damage to any Work during its repair, replacement, or cure if the Contractor is responsible for such repair, replacement or cure.
- 7.2 The Contractor shall be solely responsible for storage and protection of equipment and material (whether furnished by the Company or the Contractor) against deterioration or damage from any cause, vandalism, and theft until Final Acceptance.

- 7.3 The Contractor shall be responsible for the security of all materials and equipment under its custody and control.
- 7.4 The Contractor shall at all times conduct operations in a manner to ensure the safety of the general public and to avoid the risk of loss, theft, or damage by vandalism, sabotage, or any other means.

8.0 WARRANTY/REMEDY

- 8.1 The Contractor warrants that it is aware of the purpose for which the Work is being used and that its Work shall be suitable for such purpose. In addition to all other warranties, express or implied in fact or law, the Contractor warrants: 1) all Work shall conform to all requirements of the Agreement, including the Specification, and any Supplemental Conditions or change orders, if any; 2) if not otherwise specified, all Work shall be consistent with industry standards for the Services specified and the intended use by the Company; 3) all Services shall be performed by qualified, competent, and experienced personnel, and in accordance with the highest standards of care, skill, and diligence, and consistent with recognized and sound professional practices and procedures; 4) that all Work shall be free from defects in design, workmanship, and materials of any kind, for a period of twelve (12) months from the date placed in service or twenty-four (24) months from the date of receipt, whichever is later; 5) no Work shall infringe or violate the intellectual property rights of any third party, or violate any agreement or confidentiality obligation by which the Contractor may be bound; and 6) if any equipment is installed by Contractor in connection with the Services, all such equipment is installed to meet current OSHA regulations. Items of materials, equipment or otherwise shall not be substituted for those specified, nor shall "or equal" items be furnished pursuant to the Agreement without the Company's prior written approval. The Company's decision on item equality shall be final and binding.
- 8.2 If the Work provided by the Contractor or its Subcontractors fails to conform to the warranties set forth above, in addition to all other remedies available at law or equity, the Contractor shall, at its sole expense and at the Company's option, promptly: 1) re-perform the nonconforming Work; 2) refund the amount of money paid by the Company for such nonconforming Work; or 3) reimburse the Company for the cost of replacing, repairing, curing, or re-performing the nonconforming Work or having the nonconforming Work re-performed, cured, repaired, or replaced by a third party. The Company may require the Contractor to use overtime work at no cost to the Company if such additional effort will shorten the time the Work is nonconforming. All warranty Work performed by the Contractor shall be scheduled by and at times acceptable to the Company. If any warranty work is provided, the Contractor's warranties shall recommence upon the Company's acceptance of such repaired, re-performed, cured, or replaced Work and shall be in effect for the duration of the warranty period or for twenty-four (24) months after completion of the warranty work, whichever is later. The terms of this section shall survive termination of the Agreement and shall survive delivery, inspection, tests, acceptance, and use of the Work.
- 8.3 In addition to all remedies permitted by law, the Company reserves the right to reject and return to the Contractor for full credit and at the Contractor's expense, all Work that does not conform to the Company's specifications or requirements. Further, the Company may, at its option, and without limiting its other rights, cancel all or any unfilled part of the Agreement if conforming performance of the Work are not made within the time specified. The Company reserves the right to charge the Contractor, and the Contractor shall be liable for any loss or expense incurred as the result of the Contractor's failure to make timely performance of the Work. The acceptance of any late performance of the Work shall not constitute waiver to reject subsequent performance not made as originally scheduled.
- 8.4 If there are Contractor personnel at a Company Site, in the event that the Company believes, in its sole judgment, that any of the Contractor's personnel are objectionable, the Company shall so notify the Contractor, whereupon the Contractor shall promptly investigate and take appropriate corrective action including, where requested by the Company, removal of such personnel and replacement with personnel acceptable to the Company. Whenever required by law, regulations, or code, or any applicable governmental approval, the Contractor shall employ only licensed and properly trained personnel in the performance of the Work. The Contractor and all Subcontractors shall have full responsibility for all

employees employed on or in connection with the Project and shall employ only such employees who shall cooperate with all other individuals working at the Site.

- 8.5 The Contractor represents that it has fully acquainted itself with, and has carefully examined all documents and conditions relevant to the Work and the Project to insure that they are sufficient to properly complete the Work; all relevant plans, surveys, measurements, dimensions, calculations, and estimates to be sure that they contain no errors or inaccuracies; the nature and location of the Work, the character of equipment, materials and facilities needed preliminary to and during the prosecution of the Work; the general and local conditions (including environmental conditions and labor relations); and all other matters which can in any way affect the Project and the Work and its cost under the Agreement. The Company assumes no responsibility whatsoever for ascertaining for the Contractor any facts which the Contractor could have ascertained for itself through such investigation. The Contractor shall notify its Subcontractors of the requirements of this Section 8.5. Lack of knowledge of any of the foregoing matters shall not constitute an excuse for delay or failure of performance under the Agreement, nor shall it justify any increase in the price as determined under the Agreement. The Contractor hereby represents that it has all information and documentation with respect to equipment, materials, facilities or any other matters which are or will be necessary to enable the Contractor to safely and reliably perform the Work. Except as is otherwise specified within the Agreement, all loss or damage to the Contractor arising out of its performance of the Work, whether due to the elements, unforeseen circumstances, or otherwise, shall be sustained and borne by the Contractor at its sole cost and expense.
- 8.6 The Contractor hereby acknowledges and agrees that the Company will only be responsible for providing such materials and services as are expressly indicated to be the Company's responsibility in the Specification, if any.
- 8.7 Instructions or explanations given by the Contract Administrator or the Company to the Contractor to complete, clarify or give proper effect to the Specifications, if any, will be deemed a part of the Specifications. If there is any doubt as to the meaning of any portion or portions of the Specifications, such documents will be interpreted as calling for the best quality, as to materials, equipment and workmanship capable of being supplied or applied, and any explanation provided by the Contract Administrator's will be final and conclusive.
- 8.8 The Contractor shall obtain from each Subcontractor, and extend to the Company for its benefit, warranties for all Work performed or supplied by such Subcontractor, substantially identical to the warranties the Contractor is required to provide hereunder. Any such warranties shall be in addition to and shall not be limited by or themselves limit, the warranties of the Contractor otherwise provided in the Agreement. The Contractor shall deliver to the Company copies of any Subcontractor's warranties.

9.0 PRICE/PAYMENT

- 9.1 The Company will compensate the Contractor for Work provided on the basis of prices stated in the Agreement.
- 9.2 Standard payment terms are "2/10 Net 30." The Company shall pay all invoices not more than 30 Days after receipt by Company's Accounts Payable Department of a proper invoice and any required supporting documentation, subject to the Company's right to contest, in good faith, all or any part of the charges set forth therein. Payment shall not relieve the Contractor from any responsibilities or obligations under the Agreement, nor shall the Company's payment constitute acceptance or a waiver of any claim arising hereunder. No payment made hereunder, except for the final payment, shall be considered as acceptance of any Work. All payments shall be subject to correction or adjustment in subsequent payments.
- 9.3 Company reserves the right to utilize a variety of payment channels, including but not limited to Virtual Card, ACH, Ghost Cards and P-Cards. Contractor agrees that it will not impose a surcharge on Company's payment. Contractor shall ensure that with respect to credit card acceptance, it is in compliance with applicable law, and the rules set forth by the respective credit card network. Where applicable, Contractor

shall provide Company with proof of its compliance with the Payment Card Industry Data Security Standard (“PCI DSS”) and/or any related applicable requirements set forth by the PCI Security Standards Council (Ghost Cards only).

- 9.4 Contractor shall submit invoice(s) in accordance with the Agreement. Each invoice shall reference the Company’s Purchase Order Number. Such invoice(s) shall include cost breakdowns and schedule of performance of Services as specified by the Company. In addition to the specific requirements for each payment, the Contractor’s submittal of an invoice shall represent a certification by the Contractor that it has complied with all relevant terms of the Agreement, including, without limitation: a) the quality assurance requirements set forth in Section 11.0; b) all scheduling requirements set forth in Section 4.0; c) the safety requirements set forth in Section 16.0; and d) all environmental requirements set forth in Section 41.0.
- 9.5 The Company shall, without waiver or limitation of any rights or remedies, be entitled from time to time to deduct from any amounts due or owing the Contractor under the Agreement any and all amounts owed by the Contractor to the Company or a Company Affiliate, whether or not in connection with the Agreement.

10.0 TAXES

- 10.1 The Contract Price shall include sales, use and similar taxes, unless otherwise provided for in the Agreement. The Company shall not be responsible for any Federal, state, and/or local, personal property, license, privilege, or other like taxes, which may now or hereafter be applicable to the transactions under the Agreement.
- 10.2 Contractor shall pay or cause to be paid all taxes and employer contributions imposed by present and future Federal, state, and local laws with respect to compensation of employees of the Contractor and all interest and penalties payable under such laws as a result of noncompliance therewith, and the Contractor shall indemnify and hold harmless the Indemnified Parties from and against any and all claims, liabilities and expenses with respect to the foregoing.
- 10.3 The Company self-assesses sales taxes. For taxable materials and/or services delivered within each state in which the Work is performed, the Contractor shall not include sales tax as per direct payment permit. For the application of sales tax when rendering an invoice, the Contractor shall obtain a permit and adhere to the policies set forth in the following web page:

http://www2.nationalgridus.com/corpinfo/purchasing/payment_all_all.jsp

11.0 INSPECTION AND QUALITY ASSURANCE

- 11.1 The Contractor shall inspect all Work and make or cause to be made all tests required by the Agreement.
- 11.2 All Work will be subject to the Contract Administrator’s inspection, direction, and approval. The Contractor agrees to furnish all the information pertaining to the Work as the Contract Administrator may require.
- 11.3 The Company shall have the right to inspect any Work covered by the Agreement and, at no cost to the Company, the right to inspect and/or audit any of the Contractor’s or its Subcontractors’ inspection records and associated costs pertaining to the Agreement. Such audits may be performed by either or both the Company’s employees or professional auditing firms chosen by the Company. In the event the Work or associated costs are found to be deficient or not in accordance with the Agreement, the Company shall be entitled to seek reimbursement for such audit costs.

- 11.4 The Company shall advise the Contractor of errors, or variations from the requirements of the Agreement, and of defects in the Work, but it is expressly agreed that any omission on the Company's part to advise the Contractor of any such errors, variations, or defects or to provide any instructions or explanations shall not give the Contractor any right or claim against the Company, and shall not in any way relieve the Contractor from its obligation to provide the Work in accordance with the Agreement.
- 11.5 At any time during the term of the Agreement, the Company or its designated representative shall be entitled to: (1) conduct and/or witness any test required by the Agreement; (2) otherwise inspect, witness and/or test the Work; (3) review the Contractor's and Subcontractor's procedures and documents pertaining to inspection, testing or witnessing of tests; and (4) review the Contractor's and Subcontractor's documents pertaining to the Work. For such purposes the Company and its representatives shall be provided access to the Contractor's or Subcontractors' facilities or Work, when and in such manner as the Company may require. In the event the Contractor employs Subcontractors for any part of the Work, the Contractor shall require Subcontractors to comply with the provisions of this Section 11.5.
- 11.6 The Contractor shall provide and maintain an examination, inspection and testing system acceptable to the Company as required by the Agreement. The Contractor shall submit to the Company the results of all such examinations, tests and inspections and shall maintain records of the same and make them available to the Company.
- 11.7 In addition to any notice requirements otherwise set forth in the Agreement, the Contractor shall give the Company (a) five days prior written notice of any tests and inspections required by the Agreement, the Company or its representatives' instructions, laws, regulations or ordinances to be witnessed or approved by the Company, (b) timely notice of all other tests and inspections, and (c) 48 hours additional notice prior to actual performance of any test or inspection. Inspections by the Company shall be made promptly, and where practicable at the source of supply.
- 11.8 All testing and inspections required under the Agreement shall be done in accordance with the Agreement. The Company may perform technical inspection of the Work as may be set forth more fully in the Specification. The Contract Administrator shall have authority to reject all Work and materials which do not conform to the Agreement and respond to questions which arise in the execution of the Work.
- 11.9 Neither the Company's nor its representative's inspection or testing, or witnessing of tests or inspections of the Work nor its failure to perform, require or approve tests or inspections shall (1) affect the warranties and guarantees of the Contractor, (2) relieve the Contractor from any responsibility or liability with respect to workmanship, materials or equipment, (3) constitute an acceptance of the Work by the Company or an agreement by the Company that the Work meets specified requirements, (4) impair the Company's right to reject nonconforming or defective Work, (5) constitute a waiver by the Company of any rights under the Agreement, or (6) relieve the Contractor of any of its obligations under the Agreement, notwithstanding the Company's opportunity to inspect the Work, the Company's knowledge of the nonconformance or defect, or the Company's failure to earlier reject the Work.
- 11.10 The Company shall have the right to inspect all materials, supplies, and equipment that are to be incorporated in the Project and make or cause to be made all tests required by the Agreement. The making of such inspections and tests by the Company shall not relieve the Contractor of its responsibility for inspection and testing.
- 11.11 If the Company determines that any Work has not satisfactorily passed any test or inspection or does not meet the requirements of the Agreement or that the Contractor has not conducted or has improperly conducted any required test or inspection, the Company shall have the right, in addition to any other rights set forth in the Agreement, to (1) reject the Work and (2) stop the Work in accordance with Section 18.1.

12.0 FINAL INSPECTION/ACCEPTANCE/PAYMENT

- 12.1 Upon receipt of written notice from the Contractor that the Work is completed and ready for final inspection and acceptance, the Company shall inspect the Work and determine if the Work has been fully performed in accordance with the terms and conditions of the Agreement.
- 12.2 If the Company determines the Work is not complete, its written notice of rejection shall include a list of items that the Contractor shall finish in order for the Work to be complete under the terms and conditions of the Agreement. The Contractor shall within two Days of such notice provide for the Company's review and approval a schedule detailing when all defects will be corrected and/or the Work completed. Upon approval by the Company, the Contractor shall remedy such defective and incomplete portions of the Work. The steps in Sections 12.1 and this Section 12.2 shall be repeated until the Company accepts the Work as complete and so notifies the Contractor of its acceptance.
- 12.3 Upon Final Acceptance, final payment will be made.
- 12.4 Acceptance of the final payment shall constitute a waiver of all claims by the Contractor.
- 12.5 Final payment shall not relieve the Contractor of any warranty, guarantee or other continuing obligations under the Agreement.

13.0 WITHHOLDING PAYMENT

- 13.1 The Company may withhold payment, in whole or in part, to the extent and for the time reasonably necessary, in the Company's sole judgment and discretion, to protect the Company from loss caused by, but not limited to:
- 13.1.1 Defective Work not remedied;
 - 13.1.2 Claims filed or reasonable evidence indicating probable filing of claims against the Company or by the Company or other parties against the Contractor;
 - 13.1.3 Failure of the Contractor or Subcontractors (of any tier) to make payments properly to Subcontractors (of any tier) or for material or labor or for any taxes due;
 - 13.1.4 Damage to another contractor;
 - 13.1.5 Removal and replacement of condemned Work and/or material;
 - 13.1.6 Incomplete documentation;
 - 13.1.7 Inadequate insurance coverage;
 - 13.1.8 Disputed Work;
 - 13.1.9 Environmental damage caused by or exacerbated by Contractor or any Subcontractor;
 - 13.1.10 Bonding of a Contractor lien
 - 13.1.11 Failure of the Contractor or any Subcontractor to properly clean up the Site;
 - 13.1.12 Damage to utilities caused by Contractor or any Subcontractor;
 - 13.1.13 Damage to public or private property caused by Contractor or any Subcontractor; and
 - 13.1.14 Liquidated damages assessed to the Contractor.
- 13.2 When the above grounds are removed or the Contractor provides a surety bond satisfactory to the Company which protects the Company in the amount withheld, payment shall be made within 30 Days thereafter to the Contractor for the amount withheld.

- 13.3 In addition to the right to delay payment as set forth above, the Company shall have the right to require that the Contractor shall, in any event, take all necessary steps, at its sole cost and expense, to cause any lien filed against the Company's or its Affiliates' property to be satisfied on the record within ten days from the Company's notice that such lien has been filed.

14.0 CHANGES TO WORK SCOPE/AGREEMENT CHANGES

- 14.1 No additions to, deletions from, or alterations in the Work and no amendment or repeal of, and no substitution for any terms, conditions, provisions or requirements of the Agreement shall be made unless first authorized in writing by the Company. No oral changes in the Agreement shall be recognized by the Company unless in accordance with Section 26.2.
- 14.2 The Company may at any time make additions to or deletions from or changes in the Project and/or Work, including changes to the Specification or the schedule. If a Company-directed change will add to or deduct from the Contractor's cost of the Work or affect the schedule, the Contractor shall notify the Company in writing within five Days of receipt of such Company-directed change and provide a written estimate of such cost and/or schedule modifications and, if the Company approves, the Agreement will be adjusted accordingly. Any claim for an extension in the schedule caused thereby shall be adjusted at the time of directing such change and the value of any such change shall be determined as provided in Section 14.5.
- 14.3 If the Contractor desires a change in the Work necessary to complete the Work or believes that any order, instruction, request, clarification or interpretation of the Company, or its representatives or compliance with any laws, orders or regulations, constitutes a substantial change in the Work, the Contractor shall submit, to the Company, prior to performance of any such Work, and within five Days of receipt or discovery thereof, a written claim specifying the nature of the change, any increase or decrease in the cost of performing the Work, and any resulting change in the schedule. Within 30 Days of receipt of such notice, the Company shall determine whether the claim constitutes a change in the Work and if so to what extent the Agreement should be modified. The Company shall then notify the Contractor, in writing, of its decision. Any change in the schedule shall be specified in the Company's notice and any change in price as determined under the Agreement shall be determined in accordance with Section 14.5.
- 14.4 The Company may require the Contractor to proceed with Work that is the subject of a proposed or claimed change in the Work prior to the Company's consent to any change in the price or schedule, in which event the Company shall so notify the Contractor in writing, and the Contractor shall then proceed with the Work, and keep an accurate account of such, and the Contractor and the Company shall then negotiate in good faith with respect to such change.
- 14.5 If the Company authorizes a change in the Work as set forth in this Section 14.0 which adds to or decreases the cost of the Work, the Contractor shall proceed with the Work as changed, and the Company shall, in its sole discretion, adjust the price by (a) a mutually agreed upon lump sum or rate price, (b) a rate price as set forth in the Agreement or, (c) in accordance with the following:
- 14.5.1 Reimbursement for all Subcontractors, subject to the Company's prior authorization to subcontract in each specific instance of change, based on costs actually and reasonably incurred in performing changes. Applicable Subcontractor costs shall be subject to the same terms and conditions set forth in Section 14.5, unless otherwise agreed to by the Company; and
- 14.5.2 Reimbursement for the actual verifiable net (no mark-ups) cost of materials directly purchased in support of the extra Work as authorized by the Company.
- 14.6 If the Company authorizes a change in the Work which decreases the amount and cost of the Work, such decrease shall not constitute basis for a claim by the Contractor for any loss or damages including anticipated profit.

- 14.7 The Company shall not accept any changes submitted by the Contractor pursuant to this Section 14.0 after final payment.
- 14.8 All additional work shall be performed in accordance with the terms and conditions of the Agreement insofar as they are applicable thereto.

15.0 SURVIVAL

- 15.1 All provisions related to warranty, indemnification, confidentiality and proprietary rights shall expressly survive termination or expiration of the Agreement.

16.0 SAFETY

- 16.1 The Contractor shall be solely responsible and assume all liability for the safety and supervision of its employees and other persons engaged in the Work or on the Site. The Contractor shall establish and effectively and continuously implement a safety program. The Contractor shall, and shall require its Subcontractors and their employees to comply with all applicable Federal, state and local safety directives, requirements, rules, regulations, laws and ordinances, whether the same are in force upon the execution of the Agreement or may in the future be passed, enacted or directed, including without limitation, compliance with the safety regulations and standards adopted under the Occupational Safety and Health Act of 1970 (OSHA), as amended from time to time. The Contractor shall continually inspect the Project and supervise its personnel to determine and enforce compliance with the above provisions.
- 16.2 The Contractor shall, and shall require its Subcontractors and their employees to comply with the Company's Safety Requirements and all established Project safety rules as they may be amended from time to time and to take all necessary safety and other precautions to protect property and persons from damage or injury arising out of performance on the Project, whether the same are in force at the execution of this Agreement or may in the future be passed, enacted or directed.
- 16.3 The Contractor shall provide adequate safeguards, safety devices and protective equipment and enforce their use and take any other needed actions to protect the life, health and safety of the public and to protect property in connection with its performance on the Project.

17.0 MINIMIZING DISRUPTIONS

- 17.1 Work shall be performed in a manner which minimizes to the greatest extent possible any disruption to the surrounding landscapes, waterways, communities and the general public.

18.0 TERM/TERMINATION

- 18.1 Termination for Cause.
- 18.1.1 If, during the term of the Agreement, the Company notifies the Contractor that any part of the Work is defective or deficient or not in accordance with any provision of the Agreement, regardless of the stage of its completion or the time or place of discovery of such errors and regardless of whether the Company has previously accepted it, the Company may order the Contractor to stop performing the Work until such defect or default has been corrected at the Contractor's sole expense. If the Contractor does not correct the default or defect within ten Days of notice, the Company may suspend its performance until such defect or default is corrected, and/or removed and replaced at the Contractor's expense.

- 18.1.2 Contractor shall, at its sole expense, promptly replace and re-execute the defective or deficient Work in accordance with the Agreement.
- 18.1.3 If the Company corrects Work or has Work corrected that has been damaged or that was not done in accordance with the Agreement, the Company may deduct the cost from the price as determined under the Agreement, or invoice the Contractor for such costs, at its sole option. If the Company elects to invoice the Contractor, the Contractor shall remit to the Company such invoiced amount within 30 Days of the date of the invoice.
- 18.1.4 The Contractor shall not be entitled to an extension of time by reason of the Work being found defective, deficient or in any way not in accordance with the requirements of the Agreement.
- 18.1.5 Notwithstanding any other provision of the Agreement, if the Contractor: (1) fails to prosecute the Work with diligence or has fallen behind the schedule and if in the opinion of the Company, fails to take all necessary steps to remedy the Contractor's failure to comply with the terms of the schedule; (2) fails to make prompt payment when due to Subcontractors; (3) fails to comply with any of the terms or conditions of the Agreement; (4) sells or transfers all or substantially all of its assets without the Company's prior written consent; (5) enters into any voluntary or involuntary bankruptcy proceeding or receivership; (6) makes a general assignment for the benefit of its creditors; (7) experiences a labor dispute which threatens adversely to affect the progress or cost of the Project hereunder or the Company's operation; (8) abandons the Work; (9) loses control of the Work from any cause; (10) refuses or neglects to provide sufficient and properly skilled or other labor or sufficient materials of proper quality; or (11) directly or indirectly causes a disruption of the Project, or should its presence result in a disruption of the Project or the Company's operation, then the Company shall have the right, without prejudice to any other right or remedy to terminate the Agreement, in whole or part. Such termination shall be effective upon written notice to the Contractor setting forth (a) the date of the termination and (b) that the Contractor shall immediately discontinue the Work to the extent specified in such notice. The Company may exercise its right of partial termination under the Agreement any number of times.
- 18.1.6 In the event the Company terminates all or any part of the Agreement for cause, the Company may finish the Work or have the Work finished by a third party by whatever method it may deem expedient. The Company shall not be required to obtain the lowest price for completion of the Work, but may make such reasonable expenditures as may best accomplish such completion; and the Contractor shall not be entitled to receive any further payment until the Work is finished. If the unpaid balance of the Contract Price as determined under the Agreement exceeds the expense of finishing the Work, including compensation for additional managerial and administrative services and all other costs and expenses actually incurred by the Company as a direct result of the breach and termination, the Contractor hereby waives such excess. If such expenses exceed the unpaid balance, the Contractor shall pay the difference to the Company within 30 Days of the Company's notice thereof to the Contractor.
- 18.1.7 If all or any part of the Agreement is terminated for cause, the Company shall be entitled, at its option, to (a) retain any Work previously delivered to the Project or paid for by the Company, (b) require delivery of any Work and/or documents, regardless of their stage of completion which are in the Contractor's possession or control, (c) require the Contractor to assign to the Company all or any of the Contractor's rights with respect to orders or subcontracts which relate to the Project, (d) reject all or any of the Work, regardless of whether it has been delivered for the Project, (e) require the Contractor to cooperate with a new contractor for the period of time necessary to familiarize the new contractor with the Project, (f) have another contractor complete the Agreement at the Contractor's expense, and (g) require completion according to the terms of the Agreement of any Work which has not been terminated Contractor shall be required to refund to the Company any payments theretofore made for rejected Work. The Company shall be entitled to withhold from any payment otherwise due to the Contractor an amount sufficient to protect the Company from any outstanding or anticipated liens or claims in connection with Work which has not been rejected or anticipated costs to complete the Work in excess of the remaining Contract Price. The Company shall not be liable for any loss or damage (including, but not limited to,

special, indirect, incidental, or consequential damages or anticipated profits) incurred by reason of termination for cause of the Agreement.

- 18.1.8 No amount shall be paid or payable by the Company for the Contractor's termination costs including, but not limited to, demobilization costs, costs associated with the transfer or termination of personnel, or loss of anticipated profit.
- 18.1.9 All warranties and guarantees, including without limitation those set forth in Section 8.0, shall survive termination of the Agreement to the extent that they relate to Work which has not been rejected or terminated, and any other provisions of the Agreement which survive the date of termination shall continue to be binding upon the Contractor.
- 18.1.10 In the event that a termination by the Company of all or part of the Agreement for cause, under Section 18.1 is determined to have been made without cause, such termination shall thereafter be treated as termination for convenience under Section 18.2.

18.2 Termination for Convenience.

- 18.2.1 Notwithstanding any other provision of the Agreement, the Company may, at its sole discretion, at any time, for any reason, by notice to the Contractor, terminate the Agreement in whole or in part without cause, and such termination shall not constitute a breach of contract. Such termination shall be effective upon the date set forth in the written notice and the Contractor, unless otherwise directed by the Company, shall immediately:
- (a) Stop the Work hereunder on the date and to the extent specified in such notice;
 - (b) Place no further orders or subcontracts for any part of the Project other than for Work which has not been terminated;
 - (c) Terminate, as directed by the Company, all orders and subcontracts to the extent that they relate to Work which has been terminated;
 - (d) Settle, with the approval or ratification of the Company, to the extent the Company may require, all outstanding liabilities and claims arising out of the Contractor's termination of orders and subcontracts pursuant to Section 18.2;
 - (e) Assign to the Company, as required by the Company, any and all of the Contractor's rights with respect to orders or subcontracts which relate to terminated Work;
 - (f) Deliver to the Company, as required by the Company, any or all Work or documents, technical data or other information and materials regardless of their stage of completion, which are in the Contractor's possession or control;
 - (g) Use its best efforts to sell, transfer or otherwise dispose, for the Company's credit, in the manner, at the times, to the extent and at the prices directed or authorized by the Company, any or all of the Work, provided that the Contractor (a) shall not be required to extend credit to any buyer, and (b) may acquire any such Work upon the same terms as it would be entitled to sell or transfer such Work to a third party;
 - (h) Work with a new contractor for the period of time necessary to familiarize the new contractor with the Project;

- (i) Complete any Work which has not been terminated pursuant to such notice; and
- (j) Take whatever action may be necessary to preserve and protect the Work and to mitigate the Contractor's damages in connection with the partial or complete termination of the Agreement.

18.2.2 In no event shall the total of the Partial Performance Payment and/or termination costs (as provided in Section 18.2.6) exceed the price as determined under the Agreement.

18.2.3 The Contractor's claim for Partial Performance Payment and/or termination costs shall be contingent upon the Contractor's good faith diligent compliance with the provisions of Section 18.2, to the Company's satisfaction which will not be unreasonably withheld, and shall be submitted to the Company within three months of the effective date of termination for convenience. If such claim is not submitted within three months, the Contractor waives any right to the claim for Partial Performance Payment and/or termination costs.

18.2.4 All warranties and guarantees set forth in Section 8.0 shall survive termination of the Agreement to the extent that they relate to Work which has not been rejected or terminated, and any other provisions of the Agreement which survive the date of termination shall continue to be binding upon the Contractor.

18.2.5 A termination for convenience shall not entitle the Contractor to damage remedies that would normally arise as a result of breach of contract, whether such damage remedies are categorized as direct, special, indirect, incidental or consequential damages. Rather, the Contractor's rights are exclusively limited to Partial Performance Payment and/or termination costs.

18.2.6 In the case of termination for convenience of the Agreement, the Contractor's termination costs shall be limited to: (1) reasonable documented direct costs that are directly associated with termination responsibilities identified in Section 18.2; and (2) reasonable demobilization costs incurred within thirty days of the date of termination. In no case shall the Contractor be entitled to recover lost profits, nor to recover any costs and expenses associated with the inability of the Contractor to find work for idle employees and equipment that have been rendered idle as a result of termination of the Agreement.

18.3 In the case of termination of the Agreement, the Contractor, if notified to do so by the Company, shall promptly, but in any event no more than seven Days from the Company's request, remove any part or all of its equipment, material, and supplies, if any, from the Site, failing which the Company shall have the right to remove such equipment and supplies at the expense of the Contractor.

18.4 The Agreement shall become effective when executed by both parties and shall continue in full force and effect until the expiration of all guarantees, warranties and indemnities provided for therein, unless earlier terminated in accordance with Section 18.1 or 18.2.

19.0 COMPANY'S RIGHT TO SUSPEND THE AGREEMENT

19.1 The Company may at its sole discretion interrupt, suspend or delay execution of all or any part of the Project for any reason whatsoever upon written notice to the Contractor specifying the nature and expected duration of the interruption, suspension or delay. The Company's notice of suspension shall designate the amount and type of labor and equipment to be committed to the Work, if any, during the period of suspension. The Contractor shall utilize its labor, equipment and any other resources so that costs are minimized during the suspension. Except as provided in Section 34.6, if, in the Contractor's opinion, such interruption would result in substantially increased cost, the Contractor shall promptly notify the Company in writing in accordance with Section 14.0.

- 19.2 Contractor shall immediately resume any of the Work so interrupted, suspended or delayed when directed to do so by the Company. Except as provided in Section 18.1.8, the schedule and price as determined under the Agreement shall be revised to compensate for the interruption, suspension or delay. Adjustments to the price shall be adequate to compensate the Contractor for any verifiable reasonable costs or expenses the Contractor actually incurs as a direct result of the interruption, suspension or delay despite reasonable efforts to mitigate such costs and expenses. Such adjustment to the price and schedule shall constitute full settlement to the Contractor for the suspension. In no event shall the total paid to the Contractor exceed the Contract Price as set forth in the Agreement. In no event shall the Contractor be entitled to any damages, including loss of anticipated profits.
- 19.3 In its notice of suspension, the Company will designate what Work, if any, is to be continued. Upon receipt of such notice, the Contractor shall, unless otherwise directed by the Company:
- 19.3.1 Immediately discontinue the Work on the date and to the extent specified in the notice;
 - 19.3.2 Place no further orders or subcontracts for or in connection with the Project other than to the extent required in the notice of suspension;
 - 19.3.3 Promptly make every reasonable effort to obtain suspension upon terms satisfactory to the Company of all orders and subcontracts to the extent required by the suspension; and
 - 19.3.4 Continue to protect and preserve the Project.
- 19.4 Notwithstanding any other provision of the Agreement, no compensation or extension of time will be granted to the Contractor for any suspension to the extent that the suspension is caused directly or indirectly by the Contractor's acts or failure to act, including, but not limited to, the Contractor's failure to comply with the safety and environmental protection provisions of the Agreement or to the extent that an equitable adjustment is provided for or excluded under any other provision of the Agreement.
- 19.5 Notwithstanding the foregoing, if the Work may directly affect the continuity of electrical or gas service, the Company, at its option, may from time to time immediately suspend the Contractor's Work without prior written notice in order to avoid problems such as safety hazards or interruption of service.

20.0 EMERGENCY ASSISTANCE

- 20.1 If the Contractor is notified and requested to provide emergency assistance, by an entity other than the Company, the Contractor shall request a temporary release from the Agreement. It will be in the Company's discretion as to whether this request will be granted. If the Company agrees to temporarily authorize the release of the Contractor from its current obligations, both parties shall sign a temporary release document, indicating for whom the Contractor will be working and the anticipated release period. The temporary release document will include the Contractor warranties that the Company will not incur any costs or liabilities due to the Contractor's release and that the release will cause no significant delay in the completion of the Company's Project.

21.0 FORCE MAJEURE

- 21.1 Any delay of either party in the performance of its required obligations hereunder shall be excused if and to the extent caused by unprecedented weather conditions, fire, explosion, riot, war, strike by the Company's or its Affiliates' employees, court injunction or order, federal and/or state law or regulation, or order by any federal or state regulatory agency, but only to the extent that: 1) such events are beyond the reasonable control of the party affected, 2) such events were unforeseeable by the affected party and the effects were beyond its reasonable efforts to prevent, avoid or mitigate, 3) the affected party uses every reasonable effort to prevent, avoid or mitigate the effects, 4) prompt written notice of such delay be given by such affected party to the other; and 5) the party affected uses its best efforts to remedy the resulting effects in the shortest practicable time. Upon receipt of such notice, if necessary, the time for performing the affected activities shall be extended for a period of time reasonably necessary to overcome the effect of such delays.

Such extension shall be the sole remedy and compensation for each *force majeure* event. Notwithstanding the foregoing, the Company shall have the right to terminate the Agreement under Section 18.2.

- 21.2 The written notice required under Section 21.1 shall be sent by the affected party within five Days of the commencement of any such delay and shall specify the nature, cause, date of commencement and anticipated extent of such delay or nonperformance and whether it anticipates that any delays in scheduled delivery or performance will result. Such notice shall be submitted in ample time to permit full investigation and evaluation of any claimed delay or nonperformance. Failure to provide such notice shall constitute a waiver of any claim.
- 21.3 Within 30 Days after the termination of any delay occasioned by an event of *force majeure*, the affected party shall give written notice to the other party specifying the actual duration and impact of the delay.
- 21.4 Notwithstanding the foregoing, neither the Contractor's inability to obtain required permits on schedule, nor strikes and/or labor disputes involving the Contractor's and its Subcontractors' employees shall be considered a *force majeure* event.
- 21.5 The Company shall extend the schedule for changes in the Project, as provided in Section 14.0, for *force majeure* events, as provided in Section 21.0, or for suspension of Work, as provided in Section 19.0. Unless pursuant to Sections 14.0 or 19.0, extensions of time shall not be a basis for any increased payment under the Agreement.
- 21.6 Contractor shall give the Company prompt written notice of any occurrence or conditions which in the Contractor's opinion entitle it to an extension of time. Such notice shall be submitted in ample time to permit full investigation and evaluation of the Contractor's claim. Failure to provide such notice shall constitute a waiver by the Contractor of any claim.

22.0 LIABILITY AND INDEMNIFICATION

- 22.1 To the fullest extent allowed by law, the Contractor shall indemnify, defend, and save harmless the Indemnified Parties from any loss, damage, liability, cost, third party suit, charge, expense, or third party cause of action, including the Indemnified Parties' legal expenses, whether unconditionally certain or otherwise, as they exist on the effective date of the Agreement or arise at any time thereafter, (including but not limited to reasonable fees and disbursements of counsel incurred by an Indemnified Party in any action or proceeding between an Indemnified Party and any third party arising out of any damage or injury to property of an Indemnified Party, the Contractor and/or third parties (including real property, personal property and environmental damages), persons (including injuries resulting in death), or economic damages, directly or indirectly caused by or arising out of or in any way connected with (i) any act or omission of the Contractor in breach of the Agreement, (ii) any negligence, willful misconduct, or breach of law of the Contractor, its agents, employees, Subcontractors, and suppliers, (iii) any third-party claim under U.S. law pertaining to copyright infringement, trademark infringement, libel, slander, defamation, invasion of privacy, piracy, or plagiarism arising from the Company's use, consistent with the terms of the Agreement, of the final deliverables (except to the extent that such third-party claim arises from materials supplied by the Company, or any unauthorized modifications to the deliverables by the Company), (iv) any equipment, property or facilities used by the Contractor, its agents, employees, Subcontractors, and suppliers, or (v) failure of the Contractor or its Subcontractors to comply with Laws and Standards. The Indemnified Parties shall not be indemnified or held harmless against liability for damage arising out of bodily injury to persons or damage to property caused by or resulting from the sole negligence of the Indemnified Parties.
- 22.2 Contractor shall take prompt action to defend and indemnify the Indemnified Parties against claims, actual or threatened, but in no event later than notice by the Company to the Contractor of the service of a summons, complaint, petition or other service of process against the Company alleging damage, injury, liability, or expenses subject to the indemnification obligations set forth in Section 22.1. If such claim is subject to the foregoing indemnity obligation, the Contractor shall defend any such claim or threatened

claim, including as applicable, engagement of legal counsel, to respond to, defend, settle, or compromise any claim or threatened claim. The Contractor shall not settle any claim, action, suit or proceeding for which it is indemnifying the Company in a manner that would impose any legal liability or financial obligation on the Company without first obtaining the Company's written consent.

- 22.3 Furthermore, the Contractor understands that, in the event that it has breached its obligations under this Section 22.0, it is responsible for any and all reasonable costs and expenses incurred by the Company to enforce this indemnification provision.
- 22.4 If the Work, any intellectual property utilized by the Contractor in providing the Work, or the Company's use of the Work (each an "Infringing Element") becomes the subject of any claim, suit, or proceeding for infringement or other intellectual property right violation, the Contractor shall, at its sole expense and at the Company's option: 1) secure for the Company the right to its continued use, 2) replace the Infringing Element with a substantially equivalent, non-infringing item, or 3) modify the Infringing Element so that it is non-infringing.
- 22.5 The Company may participate in the defense and retain its own counsel in connection with any claim. If the Contractor fails to assume control of the defense of any claim, the Company may defend the claim at the Contractor's cost. The Company's defense of a claim does not relieve the Contractor from its obligations to indemnify.
- 22.6 The obligations under Section 22.0 shall not be limited in any way by any limitation on the Contractor's insurance or by a limitation on the amount or type of damages. In addition, the obligations under Section 22.0 shall not be limited in any way by any compensation or benefits payable by or for the Contractor or any Subcontractor under worker's compensation acts, disability benefit acts or other employee acts.
- 22.7 Royalties and fees for patents covering materials, articles, apparatus, devices, equipment or processes used in the Work shall be included in the Contract Price. The Contractor shall satisfy all demands that may be made at any time for such royalties or fees.
- 22.8 Contractor shall obtain from its Subcontractors, for the Indemnified Parties' benefit, agreements substantially similar to those contained in this Section 22.0. Notwithstanding any other provision of the Agreement, this Section 22.0 shall survive the termination or expiration of the Agreement.

23.0 INSURANCE

- 23.1 Insurance Requirements. From the commencement of the provision of Services, through acceptance or longer where specified below, the Contractor shall provide and maintain at its own expense insurance policies issued by insurance companies with an AM Best rating of B+ or better which meet or exceed the requirements listed herein:
- 23.1.1 Workers' Compensation and Employers' Liability Insurance as required by the applicable law. Coverage shall include the U.S. Longshoremen's and Harbor Workers' Compensation Act and the Jones Act (if the provision of the Services requires it);
- 23.1.2 Commercial General Liability (CGL) Insurance, covering all operations to be performed under the Agreement, with minimum limits of:

Combined Single Limit	\$1,000,000 per occurrence
General Aggregate and Product Aggregate	\$2,000,000

This policy shall include Contractual Liability and Products-Completed Operations coverage. If the Products-Completed Operations coverage is written on a claims-made basis, coverage shall be maintained continuously for at least two (2) years after acceptance of work completed in accordance with the Company.

- 23.1.3 Automobile Liability, covering all owned, non-owned and hired vehicles used in connection with the provisions of the Services with minimum limits of:
- | | |
|-----------------------|----------------------------|
| Combined Single Limit | \$1,000,000 per occurrence |
|-----------------------|----------------------------|
- 23.1.4 Watercraft Liability, if the provision of the Services requires the use of watercraft, with the same minimum limits of liability as outlined in Section 23.1.2.
- 23.1.5 Aircraft Liability, if the provision of the Services requires the use of aircraft, with a limit of liability of not less than \$10,000,000 combined single limit.
- 23.1.6 Professional Liability coverage, if professional services are required, with a limit of liability of the greater of \$1,000,000 or the value of the Purchase Order.
- 23.1.7 Other insurance as required and as mutually agreed upon by the Company and the Contractor.
- 23.1.8 Self-Insurance: Proof of qualification as a qualified self-insurer, if approved in advance in writing by the Company, will be acceptable in lieu of securing and maintaining one or more of the coverages required in this Section 23.0.
- 23.1.9 **National Grid USA its direct and indirect parents subsidiaries and affiliates shall be named as Additional Insured** on the Commercial General Liability and Automobile Liability policies. Contractor shall waive all rights of recovery against the Insured Parties for any loss or damage covered under those policies referenced in this Section 23.1 or for any required coverage that may be self-insured by the Contractor.
- 23.2 Subcontractors. In the event that the Contractor uses subcontractors in connection with the provision of the Services, the Contractor shall require all such subcontractors provide the same insurance coverages as shown in Sections 23.1.1, 23.1.2, and 23.1.3.
- 23.3 Certificate(s) of Insurance. Prior to providing the Services, Contractor shall promptly provide the Company with Certificate(s) of Insurance for all coverages required in the Agreement at the address National Grid USA, Attention Risk & Insurance Department, 300 Erie Blvd West, A-4, Syracuse, NY 13202. Policies shall provide that at least 30 days prior written notice shall be given to the Company in the event of any cancellation or diminution of coverage and certificates shall outline the amount of deductibles or self-insured retentions which shall be for the account of the Contractor. Such deductibles or self-insured retentions shall not exceed \$100,000 unless agreed to by the Company's Risk & Insurance Department.
- 23.4 Reservation of Rights. If any policy should be canceled before final payment by the Company to the Contractor and the Contractor fails immediately to procure other insurance as specified, the Company reserves the right to procure such insurance and to deduct the cost thereof from any sum due the Contractor under the Agreement or to invoice the Contractor.
- 23.5 Accident Reports. The Contractor shall furnish the Company's Risk & Insurance Department with copies of any accident report(s) sent to the Contractor's insurance carriers covering accidents, incidents or events occurring in connection with or as a result of the provision of the Services.

- 23.6 Full Policy Limits. The Contractor represents that it has full policy limits available and shall notify the Company's Risk & Insurance Department in writing when coverages required herein have been reduced as a result of claim payments, expenses, or both.
- 23.7 Indemnification Coordination. Nothing contained in these insurance requirements is to be construed as limiting the extent of the Contractor's responsibility for payment of damages resulting from its work under the Agreement, or limiting, diminishing, or waiving the Contractor's obligation to indemnify, defend and save harmless the Company and the Indemnified Parties in accordance with these Terms and Conditions.
- 23.8 Compliance. These requirements are in addition to any other insurance requirements which may be required elsewhere in the Agreement. The Contractor shall comply with any governmental and/or site specific insurance requirements even if not stated herein.

24.0 RIGHTS, CLAIMS AND DISPUTES

- 24.1 Any claim which the Contractor may have against the Company arising out of the Work shall be presented in writing to the Company no later than 30 days after the first occurrence of the circumstance which gave rise to the claim. The claim shall contain a concise statement of the question or dispute and the relevant facts and data (including the applicable Agreement provision) which support the claim. The Contractor shall furnish any additional information which the Company may require to enable it to evaluate and decide the claim.
- 24.2 Failure to submit any claim in such 30-day period shall constitute a waiver on the Contractor's part for entitlement to either additional reimbursement or additional time for performance under the Agreement.
- 24.3 Any dispute between the Company and the Contractor with respect to the Agreement that cannot be resolved in the normal course by the respective representatives of the Parties, shall be referred to the responsible officers of the Company and the Contractor for resolution. Notwithstanding the existence of a dispute, the Company shall be obligated to maintain payments not in dispute to the Contractor and the Contractor shall be obligated to proceed (or to continue) with the provision of Services unless otherwise directed by the Company.

25.0 RIGHTS AND REMEDIES; COMPANY LIABILITY

- 25.1 The rights and remedies of the Company herein shall not be exclusive and are in addition to any other rights or remedies provided by law or equity.
- 25.2 The Company shall in no event be liable to the Contractor for any incidental, consequential, special, contingent, multiple, or punitive damages in connection with the Agreement, including, without limitation, loss of profits, attorney's fees, or litigation costs for any actions undertaken in connection with or related to the Agreement, including without limitation damage claims based on causes of action for breach of contract, tort (including negligence), Massachusetts Chapter 93A (Regulation of Business Practices for Consumers Protection), or any other theory of recovery.
- 25.3 In no case shall the Company's liability to the Contractor exceed the price for Work as determined under the Agreement.

26.0 DISCREPANCIES AND CLAIMS

- 26.1 If the Contractor, in the course of the Work, finds any discrepancy between the Agreement, or what could have been reasonably inferred or interpreted therefrom, or any errors or omissions in the Agreement, or if the Contractor believes, determines or observes that performance of any part of the Project as required by

the Agreement would or might result in the Project being deficient or unsafe or failing to comply with standard practice, law or regulation, the Contractor shall immediately notify the Contract Administrator in writing and shall suspend that part of the Work until otherwise directed by the Company. Any Work done after such discovery or after the Contractor should have been reasonably expected to make such discovery, until authorized by the Company, shall be done at the Contractor's risk, and the Contractor shall be liable for all costs arising therefrom, unless otherwise authorized in writing by the Company.

- 26.2 Except in an emergency endangering life or property, if the Contractor claims that any instructions, written or oral, or other media issued after the date of the Agreement involve extra cost and/or an extension of time, it shall give the Company written notice thereof as set forth in Section 14.3. No such claim shall be valid unless so made.

27.0 DOCUMENTS/INTELLECTUAL PROPERTY

- 27.1 Contractor shall supply all documents in quantities and types, at times, according to instructions, and in the manner set forth in the Agreement. Upon the Company's request, any other documents prepared by the Contractor in connection with the Project shall be delivered to the Company upon completion, cancellation or termination of the Agreement. Any document, which is prepared by the Contractor in connection with the Agreement, shall be submitted in accordance with the Agreement, with sufficient time for the Company to review and comment.
- 27.2 The Company's review of or comments on any document shall not relieve the Contractor of its sole responsibility for the correctness and adequacy of the Contractor's Work, including but not limited to the correctness of design, detail, dimensions, or performance of any other obligation of the Contractor hereunder.
- 27.3 All documents furnished by the Company, including but not limited to the Specification, if any, and copies thereof and documents produced by the Contractor for the Company shall be the property of the Company, shall be used by the Contractor only for performance of the Project, shall not be used on any other jobs, shall not be delivered to any third parties except as is necessary for performance of the Project hereunder, and shall be returned to the Company upon completion, cancellation or termination of the Agreement.
- 27.4 The contract documents including, but not limited to, the Specification, if any, may not be complete in every detail. The Contractor shall comply with their manifest intent and general purpose, taken as a whole, and shall not ignore or misuse any errors or omissions therein to the detriment of the Project. Should any error, omission, conflict or discrepancy appear in the contract documents, referenced documents, or codes, standards or instructions, the Contractor shall immediately notify the Company in writing and the Company shall issue written instructions; however, unless otherwise instructed, the more stringent requirement shall apply. If the Contractor proceeds with any of the Work in question prior to receiving such instructions, then required corrections shall be at the Contractor's expense.
- 27.5 If the Contractor observes that any requirement specified in the Agreement is at variance with any governing laws, ordinances, rules, regulations, permits or licenses, it shall promptly notify the Company in writing before incurring any further liability, expense or obligation for the Contractor or the Company.
- 27.6 All documents prepared, procured, or developed by the Contractor and furnished to the Company in connection with the Project shall be the property of the Company and may be used by the Company without restriction, whether during the term of the Agreement or thereafter.
- 27.7 Any and all works, expressions, inventions, ideas, discoveries, improvements or developments (whether or not patentable), as well as all copyrights, patents, or trademarks thereof, that may be conceived or made by the Contractor or Contractor's partner(s), employee(s), agent(s), vendor(s), contractor(s), supplier(s) or any other party employed by Contractor, or subcontractor to Contractor of any tier, to satisfy its obligation under the Agreement shall be work made for hire and shall be deemed the property of Company. All such

works, expressions, inventions, ideas, discoveries, improvements or developments, as well as all copyrightable expressions thereof, shall be deemed to fit into one or more of the specifically enumerated categories of works contained in 17 U.S.C. Section 101 *et sea*, and any subsequent revisions thereof. The Contractor and/or Contractor's partner(s), employee(s), agent(s), vendor(s), contractor(s), supplier(s), or any other party employed by Contractor, or subcontractor to Contractor of any tier, to satisfy its obligation under the Agreement shall promptly furnish Company with complete information, including, without limitation, a written description thereof giving the date of the work, invention or expression and naming the inventors or authors and others involved in the development or writing of the work, invention or expression. Company shall have the sole power to determine whether or not and in which countries and jurisdictions patent application shall be filed or copyrights registered and to determine the disposition of title to and rights in any works, expressions, inventions, ideas, discoveries, improvements or developments and in any United States and foreign patent applications, patents or copyrights that may result. Memoranda, notes and experimental works, descriptions, diagrams and other data generated in performance of the Work pertaining to any and all works, expressions, inventions, ideas, discoveries, improvements and developments covered by the Agreement shall be available at reasonable times to Company. The Contractor shall assist Company in the implementation of this section by obtaining and providing detailed written descriptions of each invention, idea, discovery or expression sufficient for filing patent or copyright applications, by providing an evaluation of the patentability or copyrightability of each disclosure, by assisting Company in the prosecution of patent and copyright applications, and by executing or having executed by appropriate persons any and all documents which may be necessary or desirable to cause title in such inventions, ideas, discoveries, or expressions to vest with Company. The cost of such assistance shall be considered separate and distinct and shall be mutually agreed upon between the Company and Contractor.

28.0 CONFIDENTIALITY/PROPRIETARY INFORMATION

- 28.1 The Contractor hereby acknowledges that during the course of the Contractor's participation in a bid and/or selection process and in the performance of the requirements of the Agreement, the Contractor may be furnished with or exposed to information that is proprietary and confidential to the Company and/or its Affiliates ("Confidential Information"). The Party disclosing such Confidential Information is referred to herein as the "Disclosing Party" and the Party receiving such Confidential Information is referred to herein as the "Receiving Party." Confidential Information shall include but shall not be limited to information concerning pricing, terms and conditions, customers, employees, facility locations, techniques, methods, computer programs, software, drawings, maps, plans, and data relating to the Company and/or its Affiliates.
- 28.2 The Contractor agrees that (a) the Contractor shall use such Confidential Information only in connection with its participation in a bid and/or selection process or the requirements performed under the Agreement, and (b) shall not disclose such Confidential Information to third parties or use such Confidential Information for any other purpose without the prior written consent of an authorized representative of the Company.
- 28.3 The Contractor may disclose Confidential Information to its partner(s), employee(s), agent(s), vendor(s), contractor(s), Subcontractor(s), or any other party employed by the Contractor if and only if 1) such disclosure is necessary in order to perform the Work and/or Service under the Agreement; and 2) the party to whom the Confidential Information will be disclosed has executed and delivered to the Company a Non-Disclosure Agreement. If the Contractor has any question about whether information is Confidential Information, it shall contact the Company prior to disclosing such information for a determination as to its proprietary status.
- 28.4 Upon termination of the Agreement, the Contractor shall immediately return such Confidential Information, including without limitation any drawings, maps, or electronic data or copies thereof, to the Company.
- 28.5 Both Parties acknowledge that the breach of the Contractor's obligations under this provision will result in irreparable harm to the Company and/or its Affiliates. Any breach of these provisions by the Contractor

shall entitle the Company and/or its Affiliates to make use of any and all available remedies, at law and in equity, including, but not limited to, injunctive relief.

- 28.6 If either Party is required by law to disclose Confidential Information of the other Party (by oral questions, interrogatories, requests for information or documents, subpoena, civil investigative demands, regulation, statute or otherwise), the Party required to make such disclosure will, when permitted by law, (i) notify the other Party and provide the other Party the opportunity to review the Confidential Information, and (ii) provide the other Party the opportunity to seek a protective order or other appropriate remedy. In the event that a protective order or other remedy is not obtained or is not pursued within a reasonable period of time, the Party required to make disclosure or such Party's representatives will furnish only that portion of the Confidential Information that it is legally required to disclose and the Party required to make disclosure will request that confidential treatment be accorded to the Confidential Information by relevant third parties.
- 28.7 Notwithstanding anything to the contrary in this Section 28.0, neither Party shall be required to hold confidential any information that (i) becomes publicly available other than through disclosure by the Receiving Party; (ii) is independently developed by the Receiving Party; or (iii) becomes available to the Receiving Party without restriction from a third party, provided that such third party is not bound by a confidentiality agreement with the Disclosing Party or its representatives.
- 28.8 In no event shall data or information provided by the Contractor under the Agreement or generated as a result of performance of the Work thereunder be deemed as proprietary to the Contractor. Likewise, reports generated as a result of performance of the Work thereunder shall not be proprietary to the Contractor.
- 28.9 The obligations set forth in this Section 28.0 shall survive expiration or termination of this Agreement for a period of five (5) years.

29.0 PUBLICITY

- 29.1 Notwithstanding any other provision of the Agreement, the Contractor shall not, without the Company's prior written consent, publish any information pertaining to the Agreement, whether during the term of the Agreement or thereafter.
- 29.2 Contractor shall not display any sign, posters or other advertising matter in or around the Site without prior written approval of the Company.

30.0 COMMUNICATIONS WITH REGULATORS, MEDIA, OR PUBLIC

- 30.1 The Contractor shall immediately notify the Company of all communications from regulatory agencies including, but not limited to, notices, postings, letters, telephone calls or visits. If a Notice of Noncompliance or any other official correspondence is received by the Contractor from a regulatory agency, a copy of the notice or correspondence shall be provided to the Company within 24 hours of its receipt.
- 30.2 The Contractor shall immediately notify the Company of any inquiries from the media. Requests for information from the media shall be reviewed and approved by the Company prior to response by the Contractor.
- 30.3 The Contractor shall immediately notify the Company of any calls or other communications from the public. Requests for information from the public shall be reviewed and approved by the Company prior to response by the Contractor.

31.0 MEETINGS AND REPORTS

- 31.1 The Contractor shall attend Project meetings, if any, as often as deemed necessary by the Company during the term of the Agreement.
- 31.2 The Contractor shall submit to the Company specific reports as may be required elsewhere in the Agreement.

32.0 NERC CIP

- 32.1 For any Work that requires access to the Physical Security Perimeter at a current control house as identified by the Company, or is in the process of constructing a new control house environment, the Contractor shall, and shall require its Subcontractors to (1) complete the contract document containing “National Grid Contractor Requirements for Compliance with NERC Cyber Security Standards,” attached to this Agreement, and (2) comply with the terms and conditions and obligations of the Contractor with respect to NERC CIP. The Contractor shall be responsible hereunder for any breach of such terms and conditions and obligations of the Contractor with respect to NERC CIP under this Agreement to the extent caused by its Subcontractors.
- 32.2 In the event of non-compliance or breach on the part of Contractor, its employees, agents or subcontractors with or of any or all of the NERC Cyber Security Standards, the Contractor shall be solely liable for any and all resulting costs, losses, penalties, damages and liabilities, including any costs, losses, penalties, damages or liabilities incurred by the Company, and the Company may terminate this Agreement for cause, pursuant to the termination provisions contained herein.

33.0 CLEANING UP

- 33.1 The Contractor shall at all times keep its work areas on Company Sites in a neat, clean, and safe condition in accordance with the Agreement.
- 33.2 Upon completion of the Work, the Contractor shall remove all excess material, equipment, temporary facilities and rubbish from Company Sites; shall repair or replace, in an acceptable manner, all property which may have been damaged or destroyed at a Company Site; and shall leave Company Sites in a neat and presentable condition and return disrupted or damaged areas to the condition existing before the start of the Work. Approval of clean-up of any Company Sites is required from the Company prior to Final Acceptance.
- 33.3 In the event of the Contractor’s failure to comply with this Section 33.0, the Company shall be entitled to withhold from the Contractor, or obtain reimbursement from the Contractor for, any costs incurred in accomplishing the same.

34.0 LABOR RELATIONS

- 34.1 The Contractor shall give the Company prompt written notice of any labor dispute or anticipated labor dispute which may reasonably be expected to affect: (1) the cost, schedule or performance of the Project; (2) other activities at the Site; or (3) the Company’s ongoing operations.
- 34.2 The Contractor shall conduct its labor relations in accordance with its established labor agreements. The Contractor agrees to advise the Company, prior to making any new commitments, whether the negotiation of new agreements or understandings with local or national labor organizations affect the Work to be performed under the Agreement.

- 34.3 In addition to the Contractor's legal obligations under the Labor Management Relations Act, in the event the Contractor is a subscriber to a multi-employer bargaining association or group, the Contractor shall, if the Company so directs, participate to the fullest extent in the collective bargaining of that group with any of those labor organizations claiming jurisdiction over any portion of the Project under the Agreement or any subcontract.
- 34.4 To the extent applicable to Work being performed under the Agreement, the Contractor shall supply the Company with copies of all national agreements to which it is a party. No later than 30 Days before the expiration of any labor agreement which may affect the Project, the Contractor shall meet with the Company to discuss the appropriate course of action.
- 34.5 The Contractor shall take any and all steps that may be available in connection with the resolution of violations of collective bargaining agreements and jurisdictional disputes, including, without limitation, the filing of appropriate process with any court or administrative agency having jurisdiction to settle, enjoin or to award damages resulting from violations of collective bargaining agreements or jurisdictional disputes.
- 34.6 In the event of a labor dispute which threatens to adversely affect the progress or cost of the Project, the Company reserves the right to restrict additional hiring of employees by the Contractor or any Subcontractors, or to suspend or delay the Project, or in the Company's sole discretion to terminate the Agreement for cause under Section 18.1, without incurring contractual liability to the Contractor or its Subcontractors or suppliers. This section shall be applicable whether or not the Contractor or any Subcontractor is directly involved in such labor dispute and whether or not the dispute involves or affects employees or disputing parties standing in the proximate relation of employer and employee with the Contractor or Subcontractor.

35.0 ADDITIONAL CONTRACTS AND INTERESTS

- 35.1 Whenever work being done by the Company's or by other contractors' forces is contiguous to Work covered by the Agreement, the respective rights of the various interests involved shall be established by the Company to secure the completion of the various portions of the Project in an orderly and timely manner. At no time shall the Contractor restrict the movement of other personnel and/or equipment in the performance of their work.
- 35.2 The Contractor shall be responsible for promptly notifying the Company in the event that it shall be necessary to coordinate work between the Contractor and others.
- 35.3 The Company reserves the right to enter into other contracts related to the Agreement or the Project and may require any other contractor, including the Company or its Affiliates, to provide labor or materials to the Project, and such other contracts shall not be cause for the Contractor to claim a change in the Project under Section 14.0. The Contractor shall afford other contractors, the Company or its Affiliates reasonable opportunity for the introduction and storage of their materials and the execution of their work, and the Contractor shall cooperate with the Company, its Affiliates and any other contractors in coordinating their activities.
- 35.4 The Contractor acknowledges that coordination with other contractors, the Company or its Affiliates and occasional rescheduling of the Work or Project may be required and that minor delays in performance of the Work may result. Any difference or conflict which may arise between the Contractor and other contractors, or between the Contractor and workmen of the Company or its Affiliates, in regard to their work, shall be resolved as determined by the Company. Notwithstanding any other provision of the Agreement, the Contractor acknowledges that such coordination, occasional rescheduling and minor delays shall not justify an increase in the price as determined under the Agreement or an extension of time for delivery or performance.

- 35.5 The Contractor shall promptly remedy, at its sole expense, any injury or damage that may be sustained by other contractors or the Company and its Affiliates as a result of the Contractor's activities under the Agreement.
- 35.6 If the Contractor's Work depends upon the work of others, the Contractor shall inspect and give the Company prompt written notice of any defects in the work that renders it unsuitable for the Contractor to perform the Work.

36.0 LIENS/BONDS

- 36.1 The Contractor, for itself, its Subcontractors and all other persons performing under the Agreement hereby waives, to the full extent permitted by law, all right to have filed or maintained any mechanics' or other liens or claims for or on account of the services, labor or materials to be furnished under the Agreement. The Contractor shall pay punctually for all labor, equipment and materials and all liabilities incurred by it in performance of the Agreement, and when requested shall furnish the Company with satisfactory evidence of such payment.
- 36.2 The Contractor shall (1) indemnify and save harmless the Company and its Affiliates and their officers, directors, employees, agents, servants, and assigns from all laborers', materialmen's, and mechanics' liens upon the real property upon which the Project is located arising out of the Services, equipment and materials furnished by the Contractor and its Subcontractors in connection with the Project, and (2) to the full extent permitted by law, keep such property free and clear of all liens, claims, and encumbrances arising from the performance of the Agreement by the Contractor and Subcontractors.
- 36.3 The Contractor shall not cause or permit any lien or security interest to attach to any real or personal property of Company.
- 36.4 Within 15 Days of signing the Agreement, the Contractor shall, at the Company's option, provide the Company with an executed copy of each a Payment Bond, a Performance Bond and a Lien Bond for the Work in the amount of the Contract Price covering the payment of, and performance of all obligations arising under the Agreement and to keep the Company's property clear of any encumbrances relating to the Agreement. The Company may require additional bonds if the value of the Agreement, in the Company's opinion, is appreciably increased.
- 36.5 The Payment Bond and the Performance Bond form shall be AIA Document A312, as published most recently published by the American Institute of Architects, except that the definition of claimant found in the Payment Bond, shall be modified to include all persons or entities, of any tier, having a direct contract with the Contractor or with a Subcontractor (including suppliers), of any tier, to furnish labor, materials or equipment for use in the performance of the Agreement. All other parts of the definition of claimant shall remain unmodified. The Lien Bond shall be on the form as set forth in the Agreement.
- 36.6 The Contractor shall furnish a copy of the Payment Bond to all Subcontractors (including suppliers) with whom it has a contract to furnish labor, equipment or materials for use in the performance of the Agreement, and shall require that all Subcontractors, of any tier, supply copies of the Payment Bond to their Subcontractors (including suppliers).
- 36.7 The cost for the Payment Bond, Performance Bond, and Lien Bonds are included in the prices referenced in the Agreement or Purchase Order.

37.0 ASSIGNMENT/SUBCONTRACTING

- 37.1 The Agreement is binding upon the Parties and their heirs, executors, administrators, successors, and assigns. The Contractor shall not assign the Agreement, or any of the moneys to become due and payable

under the Agreement, or subcontract the whole or any part of the Work, without first having obtained the Company's written consent to such assignment or subcontract. Any such assignment or subcontract for which the Company's written consent is not obtained will be null and void. If the Contractor proposes to subcontract any of the Work, it shall give written notice thereof to the Company specifying the name, address, qualifications, and experience of the Subcontractor, and the specific Work which the Subcontractor is to perform. If the Company consents in writing, the Contractor may subcontract the specific Work to the Subcontractor. All Work performed for the Contractor by a Subcontractor shall be pursuant to an agreement between the Contractor and Subcontractor which binds the Subcontractor to the applicable terms and conditions of the Agreement for the benefit of the Company and its Affiliates.

- 37.2 The Company may assign the Agreement or any part thereof to any Affiliate.
- 37.3 If the Contractor terminates its existence as a corporate entity or if the Contractor is part of a merger, acquisition, sale, consolidation or take-over, or if all or substantially all of the Contractor's assets are transferred to another person, or business entity, the Company shall, in its sole discretion, have the right to terminate the Agreement as set forth in Section 18.1 or to require the Contractor's successor to carry out the duties and obligations of the Contractor under the Agreement.
- 37.4 If at any time during the performance of the Project, the Company determines that any Subcontractor is not performing in accordance with the Agreement, the Company may so notify the Contractor who shall take immediate steps to remedy the performance or to cancel the subcontract, whichever the Company so requests.
- 37.5 All Subcontractors shall be subject to the foregoing provisions, and nothing contained in the Agreement shall create any contractual relation between any Subcontractor and the Company or its Affiliates, nor relieve the Contractor of any obligation to perform the Work. No Subcontractor is intended to be or shall be deemed a third party beneficiary of the Agreement. As a condition of any subcontract, the Contractor shall require any Subcontractor to remove any claim it might have, in law or equity directly against the Company or its Affiliates. The Contractor shall be fully responsible to the Company for the acts and/or omissions of any Subcontractor and of persons either directly or indirectly employed by them, as it is for the acts and omissions of persons directly employed by the Contractor as if no Subcontractors were in place. Any obligation imposed by the Agreement upon the Contractor, where applicable, shall be equally binding upon and shall be construed as having application to any Subcontractor.
- 37.6 To the fullest extent permitted by law, the Contractor shall require Subcontractors to indemnify, defend at the Company's option, and hold the Indemnified Parties harmless from and against any and all claims, demands, actions, losses, damages and expenses, including attorney's fees and other expenses, resulting from or arising out of any of its Subcontractors' performance of Work or Services. The complete or partial failure of any insurance carrier to fully protect and indemnify the Indemnified Parties, or the inadequacy of the insurance, shall not in any way lessen or affect the obligation of the Contractor or its Subcontractors to indemnify the Indemnified Parties.
- 37.7 Notwithstanding any other provision of the Agreement, Section 37.6 shall survive the termination or expiration of the Agreement

38.0 ENTIRE AGREEMENT

- 38.1 The Agreement constitutes the entire Agreement between the Company and the Contractor with respect to the Work specified, and all previous representations relative thereto, either written or oral are hereby annulled and superseded. No modification of any of the provisions of the Agreement shall be binding unless in writing and signed by a duly authorized representative of each party hereto.

39.0 SEVERABILITY/MISCELLANEOUS

- 39.1 If any section, phrase, provision or portion of the Agreement is, for any reason, held or adjudged to be invalid or illegal or unenforceable by any court of competent jurisdiction, such section, phrase, provision or portion so adjudged will be deemed separate, distinct and independent and the remainder of the terms of the Agreement will be and remain in full force and effect and will not be invalidated or rendered illegal or unenforceable or otherwise affected by such adjudication. The parties shall negotiate in good faith an equitable adjustment in the affected provision of the Agreement; however, the validity and enforceability of the remaining parts thereof shall be otherwise fully enforceable. Paragraph headings are for the convenience of the Parties only and are not to be construed as part of the Agreement.

40.0 COMPLIANCE WITH LAWS AND STANDARDS

- 40.1 The Contractor shall, in connection with any Work provided by the Contractor hereunder, comply with all applicable federal, state and local laws, ordinances, rules, regulations, codes, permits, licenses, authorizations, and orders of any governmental body, agency, authority, or court having jurisdiction over the Company or the supply of the Work ("Laws").
- 40.2 In connection with any Work provided by the Contractor hereunder, the Contractor shall, and shall provide that its Subcontractors, agents, and representatives shall, at all times: 1) strictly comply with the Company's safety and environmental standards, rules, regulations, directives, and procedures, including, without limitation, Company's "Contractor Safety Requirements" and "Contractor Environmental Requirements and with any and all applicable federal, state, municipal, and local laws, rules, regulations, codes, and ordinances related to employee and public health, safety, and/or the environment (as in force upon the date of the Agreement and as in the future passed, enacted, directed, or amended), collectively, ("Standards,"); and 2) conduct all operations in a manner to ensure the safety of all personnel, the general public, and the protection of the environment and so as to avoid the risk of injury, death, loss, theft, or damage by accident, vandalism, sabotage, or any other means. In cases where one or more conflicting Standards may be applicable, the Contractor shall comply with the most stringent applicable Standard.
- 40.3 The Contractor warrants that it has not offered or given and will not offer or give to the Company or its Affiliates, or any of its or their officers, directors, employees, agents, trustees, successors or assigns ("Purchasing Parties") any gratuity, or any kickback within the meaning of the Anti-Kickback Act of 1986 in order to secure any business from or influence the Purchasing Parties with respect to the terms, conditions or performance of any contract with or purchase from the Company or its Affiliates.
- 40.4 Contractor shall, in connection with anything provided by the Contractor hereunder, comply with Company's Diversity Program requirements. Such requirements include but are not limited to completion and return of the "The Contractor Diversity Bid Form," quarterly reporting on the Contractor's utilization of diversified sellers, and maintenance of certifications from accredited institutions on file, which files will be subject to Company audit.

41.0 ENVIRONMENTAL COMPLIANCE

- 41.1 Without limiting the provisions of Section 40.0, the Contractor shall conduct all Work and Services in such a manner to minimize the impact upon the natural environment and shall comply fully with all applicable federal, state and local laws, ordinances, rules, regulations and permits for the protection and preservation of the environment, as may be amended from time to time, and all applicable environmental policies and practices prescribed by the Company, including without limitation, the Resource Conservation and Recovery Act, the Hazardous Materials and Transportation Act, the Occupational Safety and Health Act of 1970 ("OSHA"), the New York Environmental Conservation Law, regulations of the Environmental Protection Agency, the Department of Transportation and the New York Department of Environmental Conservation (when applicable for the jurisdiction) issued pursuant thereto, and the terms of Company's

Special Conditions of Contract - Environmental, if incorporated in the Agreement by the Company. The Contractor shall impose the requirements of this Section 41.0 upon its Subcontractors and suppliers.

- 41.2 The Contractor shall immediately notify the Company of any citations or notices incurred on the Project and forward copies thereof immediately upon receipt to the Company. If any violation of environmental permits, licenses, and other environmental regulations or statutes occurs, the Contractor shall take immediate action to mitigate any further violation. The Contractor shall immediately notify the Company of the violation and wait for further instructions from the Company. If the Company instructs the Contractor to remedy the violation, the Contractor shall contact the appropriate government agencies as required by law and report to the Company, in writing, what actions it has performed and intends to take to remedy the violation. The Contractor shall also report to the Company its intended procedures for preventing recurrence of such violations.
- 41.3 Contractor shall, at its expense, take all actions necessary to protect the Company, its Affiliates and all third parties, including without limitation employees and representatives of the Company, from any exposure to, or hazards of, hazardous and/or toxic wastes or substances. In the event of a release or discovery of hazardous waste, the Contractor shall respond in accordance with the Agreement.
- 41.4 If the Contractor fails to correct an environmental violation when directed by the Company to do so, the Company may direct a third party to do so at the Contractor's expense.
- 41.5 The Company will notify the Contractor of any observed non-compliance; however, failure of the Company to recognize or notify the Contractor of any non-compliance shall not relieve the Contractor of its contractual and legal responsibility for such non-compliance and to protect the environment.

42.0 UTILIZATION OF SMALL BUSINESS CONCERNS

- 42.1 It is the policy of the United States that Small Business Concerns, Veteran-Owned Small Business Concerns, Service-Disabled Veteran-Owned Small Business Concerns, HUBZone Small Business Concerns, Small Disadvantaged Business Concerns, and Women-Owned Small Business Concerns shall have the maximum practicable opportunity to participate in performing contracts let by any Federal agency, including contracts and subcontracts for subsystems, assemblies, components, and related services for major systems. It is further the policy of the United States that its prime contractors establish procedures to ensure the timely payment of amounts due pursuant to the terms of their subcontracts with Small Business Concerns, Veteran-Owned Small Business Concerns, Service-Disabled Veteran-Owned Small Business Concerns, HUBZone Small Business Concerns, Small Disadvantaged Business Concerns, and Women-Owned Small Business Concerns.
- 42.2 The Contractor hereby agrees to carry out this policy in the awarding of subcontracts to the fullest extent consistent with efficient contract performance. The Contractor further agrees to cooperate in any studies or surveys as may be conducted by the United States Small Business Administration or the awarding agency of the United States as may be necessary to determine the extent of the Contractor's compliance with this clause.
- 42.3 The Contractors acting in good faith may rely on written representations by their Subcontractors regarding their status as a Small Business Concern, a veteran-owned Small Business Concern, a Service-Disabled Veterans-owned Small Business Concern, a HUBZone Small Business Concern, a Small Disadvantaged Business Concern, or a Women-Owned Small Business Concern.

43.0 EQUAL EMPLOYMENT OPPORTUNITY

- 43.1 The Contractor shall comply with all applicable federal, state and local anti-discrimination laws, the standards and regulations issued thereunder and the amendments thereto, including Executive Order 11141

relating to age discrimination, Executive Order 11246 relating to equal employment opportunity, Executive Order 11625 relating to minority business enterprise, Executive Order 11701 relating to employment of veterans and Executive Order 11758 relating to handicapped employment. The aforementioned are incorporated herein as if set forth herein verbatim. The Contractor agrees to comply with the Human Rights Law of the State of New York (Section 15 of the Executive Law), if applicable.

43.2 Without limiting the foregoing, the Contractor agrees as follows:

43.2.1 Contractor will not discriminate against any employee or applicant for employment because of race, creed, color, sex or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, creed, color, sex or national origin. Such action shall include, but not be limited to the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the contracting officer setting forth the provisions of this nondiscrimination clause.

43.2.2 Contractor will in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, creed, color, sex or national origin.

43.2.3 Contractor will send to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding, a notice, to be provided by the agency contracting officer, advising the labor union or workers' representative of the Contractor's commitments under Section 202 of Executive Order No. 11246 of September 24, 1965, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

43.2.4 Contractor will comply with all provisions of Executive Order No. 11246 of Sept. 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.

43.2.5 Contractor will furnish all information and reports required by Executive Order No. 11246 of September 24, 1965, and by the rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the contracting agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

43.3 All subcontracts and agreements that the Contractor enters into to provide the Work under the terms of the Agreement shall obligate such Subcontractors to comply with the foregoing provisions.

44.0 JURISDICTION AND GOVERNING LAWS

44.1 Unless other governing laws and/or other jurisdictions are specifically established in the Agreement, the Agreement shall be deemed to be executed in the State of New York and shall be interpreted and enforced according to the Laws of the State of New York.

44.2 Unless otherwise specifically established in the Agreement, only the courts of New York shall have jurisdiction over the Agreement and any controversies arising out of the Agreement; any controversies arising out of the Agreement shall be submitted only to the courts of New York; the Contractor hereby submits to the courts of New York for the purposes of interpretation and enforcement of the Agreement.

- 44.3 Contractor hereby waives personal service by manual delivery and agrees that service of process on the Contractor in any action arising out of the Agreement may be made by registered or certified mail, return receipt requested, directed to the Contractor at its address set forth on the Agreement.

45.0 WAIVER

- 45.1 No delay or omission in the exercise of any right under the Agreement will impair any such right or will be taken, construed or considered as a waiver or relinquishment thereof, but any such right may be exercised from time to time and as often as may be deemed expedient. If any of the provisions of the Agreement are breached and thereafter waived, such waiver will be limited to the particular breach so waived and will not be deemed to be a waiver of any other breach under the Agreement.

46.0 PROVISIONS REQUIRED BY LAW DEEMED INSERTED

- 46.1 Each and every provision of law and governmental regulation required by law to be inserted in the Agreement is deemed inserted and the Agreement will be read and enforced as though the same were so included in the Agreement. If through mistake or otherwise any such provision is not inserted or is not correctly inserted, then, upon the application of either party, the Agreement shall be deemed to be amended to make such insertion or correction.

47.0 NOTICES

- 47.1 All notices, demands, requests, and other communications required or desired to be given hereunder must be in writing and sent by United States registered mail, return receipt requested, or by nationally recognized overnight carrier, and addressed to the person or position identified on the Agreement, at its address set forth in the Agreement and in the case of a notice given to the Company with a copy to General Counsel, National Grid, 40 Sylvan Road, Waltham, Massachusetts 02451.

48.0 PREVENTION OF CORRUPTION AND BRIBERY

- 48.1 Contractor shall conduct itself in an ethical manner and provide services to the highest ethical standards. The Contractor shall not be a party to the following: bribery of any kind; collusion with other contractors; regulatory agencies or other third parties; provision of enticements to the Company's officers, directors, employees, agents, successors, assigns, and servants in any form including, but not limited to, gifts, gratuities or other benefits. Without limiting the foregoing, the Contractor represents and warrants to the Company that the Contractor, its Subcontractors, its and their Affiliates, employees, officers, agents and shareholders, have not committed and shall not commit any Prohibited Act.
- 48.2 If the Contractor, any Subcontractor, any of its or their Affiliates, employees, officers, agents or shareholders, commit any Prohibited Act, then the Company shall be entitled to act in accordance with Sections 48.3 to 48.7 (inclusive) below.
- 48.3 If a Prohibited Act is committed by the Contractor, any of its Affiliates, or any of its or their employees, officers, agents or shareholders not acting independently of the Contractor and its Affiliates, then the Company shall be entitled to terminate the Agreement for cause, under Section 18.1, by giving written notice to the Contractor, specifying the date on which the Agreement shall terminate.
- 48.4 If a Prohibited Act is committed by an employee or agent of the Contractor or of any of its Affiliates, acting independently of the Contractor and its Affiliates, then the Company may give written notice to the Contractor of termination of the Agreement for cause, under Section 18.1, and the Agreement will terminate 10 business days after the date of such notice, unless, within such 10 business day period, the Contractor terminates (or arranges for the termination of) such employee's employment or agent's

engagement and (where applicable) ensures that the performance of such employee's or agent's obligations in relation to the Agreement are performed by another person.

- 48.5 If a Prohibited Act is committed by a Subcontractor or by an employee or agent of that Subcontractor not acting independently of that Subcontractor, then the Company may give written notice to the Contractor of termination of the Agreement for cause, under Section 18.1, and the Agreement will terminate ten business days after the date of such notice, unless, within such 10 business day period, the Contractor terminates the relevant subcontract and ensures that the performance of the Subcontractor's obligations in relation to the Agreement are performed by another person.
- 48.6 If the Prohibited Act is committed by an employee or agent of a Subcontractor acting independently of that Subcontractor, then the Company may give written notice to the Contractor of termination of the Agreement for cause, under Section 18.1, and the Agreement will terminate ten business days after the date of such notice, unless within such 10 business day period, the Subcontractor terminates the employee's employment or agent's engagement and ensures that the performance of that employee's or agent's obligations in relation to the Agreement are carried out by another person.
- 48.7 If the Prohibited Act is committed by any person not specified in Sections 48.2 to 48.6 (inclusive) above (or by any person specified in such conditions but acting in a capacity not specified in such conditions) then the Company may give written notice to the Contractor of termination of the Agreement for cause, under Section 18.1, and the Agreement will terminate 10 business days after the date of such notice, unless, within such ten business day period, the Contractor (a) arranges for the termination of such person's employment or engagement, and the appointment of their employer or the person who engaged them (where not employed or engaged by the Contractor or any relevant Subcontractor) and (b) ensures that the performance of that person's obligations in relation to the Agreement are performed by another person.
- 48.8 The Company shall specify, in any notice of termination under this Section 48.0 the general nature of the relevant Prohibited Act and the identity of the party whom the Company believes has committed such Prohibited Act.
- 48.9 Without prejudice to the Company's other rights and remedies, the Contractor shall indemnify the Indemnified Parties in full and on demand against all losses, liabilities, costs, claims and expenses incurred directly or indirectly by the Company as a result of the performance of any Prohibited Act by the Contractor, any Subcontractor, any of its or their Affiliates, employees, officers, agents or shareholders, or any of the Contractor's personnel in connection with the Agreement, its subject matter or any agreements (including any sub-contracts of whatever tier) relating to the Agreement.
- 48.10 Without prejudice to the other provisions of this Section 48.0, the Contractor shall ensure that:
- 48.10.1 all Contractor personnel are fully aware of the Company's policies on anti-bribery and anti-corruption notified in writing to the Contractor from time to time by or on behalf of the Company and that all Subcontractors and agents (of whatever tier) are engaged upon terms which contain provisions in relation to prevention of bribery and corruption which are no less onerous than this Section 48.0; and
- 48.10.2 it has and shall maintain in place throughout the term of the Agreement, its own policies and procedures, (including adequate procedures under the Bribery Act 2010), to ensure compliance with the Company's policies on anti-bribery and anti-corruption notified in writing to the Contractor from time to time by or on behalf of the Company, and will enforce them where appropriate.
- 48.11 The termination of the Agreement pursuant to this Section 48.0 shall entitle the Company and each of its Affiliates to terminate any other contracts between the Contractor and the Company, or the Contractor and

such Affiliate (as appropriate) on written notice to the Contractor, under their respective termination-for-cause provisions.

- 48.12 Notwithstanding Sections 24.0 and 44.0, any dispute relating to the interpretation of this Section 48.0 or the amount or value of any gift, consideration or commission shall be determined by the Company, and the Company's decision shall be final and conclusive.

49.0 RECORDS

- 49.1 Contractor shall, and shall require Subcontractors, for the Company's benefit, at their own expense, to maintain a method of accounting in accordance with generally accepted accounting procedures and practices with respect to all matters pertinent to the Agreement. In so far as the Contractor's and Subcontractors' books, records, books of account, correspondence, contracts and subcontracts, and vouchers pertain to Work under the Agreement, or claims made by the Contractor for extension of time, costs, or expenses under any provisions of the Agreement, they shall be made available to the Company or its authorized representative for inspection and audit and shall be kept in a manner which (1) adequately permits evaluation and verification of any invoices, payments or claims based on the Contractor's or Subcontractors' actual costs incurred in the performance of the Project and (2) permits the Contractor to furnish the Company an accurate written allocation of the total amount paid for the Project and such further records as may be reasonably required by the Company.
- 49.2 Contractor shall maintain records during the term of the Agreement, including any records relating to the employment or hiring of minorities and/or females, until (i) three years after the expiration of the last expiring warranty, or (ii) the expiration of any period for which the Company or its Affiliates are required, by any regulatory agency, to have such records maintained, whichever is later. Additionally, records that relate to disputes, appeals, litigation, or the settlement of claims arising out of the performance of the Agreement shall be retained until such disputes, appeals, litigation, or claims have been finally settled. In lieu of retaining such records the Contractor may deliver such records to the Company at any time after the expiration of the last expiring warranty. The Contractor agrees to make such records available to the Company or its authorized representative at no cost to the Company or its authorized representative for inspection or audit at any time during such period.
- 49.3 The Company shall give the Contractor and Subcontractors reasonable notice of any intended inspection or audit of their records.
- 49.4 The Company and its authorized representative shall have access, during normal working hours, to all necessary the Contractor and Subcontractor facilities and shall be provided with an adequate and appropriate work space in order to conduct inspections and audits of such records.
- 49.5 Contractor shall require Subcontractors to comply with the provisions of this Section 49.0 for the benefit of the Company.
- 49.6 If the Company's inspection or audit identifies any inconsistencies, errors or costs not expended in accordance with the Agreement, the Contractor shall make appropriate adjustments as may be required, including refund to the Company.

50.0 REGULATORY FILINGS

- 50.1 It is understood and agreed that the Agreement and Purchase Order may be required to be filed with a state regulatory agency having jurisdiction over the Company or one of its Affiliates prior acceptance in order for it to become fully effective and binding.

- 50.2 The Company shall promptly take all necessary steps to accomplish such filing, if deemed necessary, and, if so filed, the Agreement will be subject to and conditioned upon the agency's acceptance for filing within 90 days from the date of such filing. The Company agrees to notify the Contractor as soon as practicable of the receipt of agency's acceptance for filing.
- 50.3 If the agency's acceptance for filing is not received by the Company, the Agreement will be deemed null and void, and neither party will have any other or further liability to the other for anything arising out of or in connection with these Terms and Conditions, except as may otherwise be mutually agreed to by the parties.

51.0 E-COMMERCE/ISNETWORLD

- 51.1 The Company reserves the right, but shall not be obligated, to (a) convert all terms that are the subject of this transaction to an 'e-commerce' format to enable the Company to conduct its management of and performance under this Agreement over the Internet, and (b) to use the services of a third party provider to furnish or create the required "e-commerce" solution for such Internet capability.
- 51.2 If required by the Company, in accordance with Company's safety procedures and risk assessment for the Project, the Contractor shall participate, and shall require its Subcontractors to participate, in ISNetworld, at Contractor's cost.

SUPPLEMENTAL CONDITIONS

National Grid Terms and Conditions for Service Firm Purchase Orders Form 00300 (Rev. 12 August 2015)

The following terms and conditions are hereby incorporated by reference in the Agreement. In the case of a conflict between these Supplemental Conditions and any other Contract Document, these Supplemental Conditions shall prevail.

SECTION 8.1 shall be amended as follows:

The Contractor warrants that it is aware of the purpose for which the Work is being used and that its Work shall be suitable for such purpose. In addition to all other warranties, express or implied in fact or law, the Contractor warrants: 1) all Work shall conform to all requirements of the Agreement, including the Specification, and any Supplemental Conditions or change orders, if any; 2) if not otherwise specified, all Work shall be consistent with industry standards for the Services specified and the intended use by the Company; 3) all Services shall be performed by qualified, competent, and experienced personnel, and in accordance with the highest standards of care, skill, and diligence, and consistent with recognized and sound professional practices and procedures; 4) that all Work shall be free from defects in design, workmanship, and materials of any kind, for a period of twelve (12) months from the date of receipt; 5) no Work shall infringe or violate the intellectual property rights of any third party, or violate any agreement or confidentiality obligation by which the Contractor may be bound; and 6) if any equipment is installed by Contractor in connection with the Services, all such equipment is installed to meet current OSHA regulations. Items of materials, equipment or otherwise shall not be substituted for those specified, nor shall "or equal" items be furnished pursuant to the Agreement without the Company's prior written approval. The Company's decision on item equality shall be final and binding. The warranty remedies provided for in this section and Section 8.2 shall constitute Company's sole remedy for breach of warranty.

SECTION 8.2 shall be amended as follows:

If the Work provided by the Contractor or its Subcontractors fails to conform to the warranties set forth above, in addition to all other remedies available at law or equity, the Contractor shall, at its sole expense and at the Company's reasonable option, promptly: 1) re-perform the nonconforming Work; 2) refund the amount of money paid by the Company for such nonconforming Work; or 3) reimburse the Company for the cost of replacing, repairing, curing, or re-performing the nonconforming Work or having the nonconforming Work re-performed, cured, repaired, or replaced by a third party. The Company may require the Contractor to use overtime work at no cost to the Company if such additional effort will shorten the time the Work is nonconforming. All warranty Work performed by the Contractor shall be scheduled by and at times acceptable to the Company. If any warranty work is provided, the Contractor's warranties shall recommence upon the Company's acceptance of such repaired, re-performed, cured, or replaced Work and shall be in effect for the duration of the warranty period or for twelve (12) months after completion of the warranty work, whichever is later. The terms of this section shall survive termination of the Agreement and shall survive delivery, inspection, tests, acceptance, and use of the Work.

SECTION 22.1 shall be amended as follows:

To the fullest extent allowed by law and to the extent of its negligence or fault, the Contractor shall indemnify, defend, and save harmless the Indemnified Parties from any loss, damage, liability, cost, third party suit, charge, expense, or third party cause of action, including the Indemnified Parties' legal expenses, whether unconditionally certain or otherwise, as they exist on the effective date of the Agreement or arise at any time thereafter, (including but not limited to reasonable fees and disbursements of counsel incurred by an Indemnified Party in any action or proceeding between an Indemnified Party and any third party arising out of any damage or injury to property of an Indemnified Party, the Contractor and/or third parties (including real property, personal property and environmental damages), persons (including injuries resulting in death), or economic damages, directly or indirectly caused by or arising out of or in any way connected with (i) any act or omission of the Contractor in breach of the Agreement, (ii) any negligence, willful misconduct, or breach of law of the Contractor, its agents, employees, Subcontractors, and suppliers, (iii) any third-party claim under U.S. law pertaining to copyright infringement, trademark infringement, libel, slander, defamation, invasion of privacy, piracy, or plagiarism arising from the Company's use, consistent with the terms of the Agreement, of the final deliverables (except to the extent that such third-party claim arises from materials supplied by the Company, or any unauthorized modifications to the deliverables by the Company), (iv) any equipment, property or facilities used by the Contractor, its agents, employees, Subcontractors, and suppliers, or (v) failure of the Contractor or its Subcontractors to comply with Laws and Standards. The Indemnified Parties shall not be indemnified or held harmless against liability for damage to the extent arising out of bodily injury to persons or damage to property caused by or resulting from the negligence of the Indemnified Parties.

SECTION 23.4 shall be amended as follows:

Certificate(s) of Insurance. Prior to providing the Services, Contractor shall promptly provide the Company with Certificate(s) of Insurance for all coverages required in the Agreement at the address National Grid USA, Attention Risk & Insurance Department, 300 Erie Blvd West, A-4, Syracuse, NY 13202. Contractor shall provide at least 30 days prior written notice to the Company in the event of any cancellation or diminution of coverage and certificates shall outline the amount of deductibles or self-insured retentions which shall be for the account of the Contractor.

SECTION 24.1 shall be amended as follows:

Any claim which the Contractor may have against the Company arising out of the Work shall be presented in writing to the Company no later than 30 days after the first occurrence of the circumstance which gave rise to the claim. The claim shall contain a concise statement of the question or dispute and the relevant facts and data (including the applicable Agreement provision) which support the claim. The Contractor shall furnish any additional information which the Company may require to enable it to evaluate and decide the claim.

SECTION 25.2 shall be amended as follows:

The Company shall in no event be liable to the Contractor for any incidental, consequential, special, contingent, multiple, or punitive damages in connection with the Agreement, including, without limitation, loss of profits, attorney's fees, or litigation costs for any actions undertaken in connection with or related to the Agreement, including without limitation damage claims based on causes of action for breach of contract, tort (including negligence), Massachusetts Chapter 93A (Regulation of Business Practices for Consumers Protection), or any other

theory of recovery.

The Contractor shall in no event be liable to the Company for any multiple or punitive damages in connection with the Agreement. Except in the event of third-party claims, Contractor's liability to Company for incidental, consequential, special, or contingent damages, including, without limitation, loss of profits, for any actions undertaken in connection with or related to the Agreement, including without limitation damage claims based on causes of action for breach of contract, tort (including negligence), Massachusetts Chapter 93A (Regulation of Business Practices for Consumers Protection), or any other theory of recovery, shall in no event exceed the greater of the value of the agreement or the applicable insurance limit. The foregoing shall not be understood to be a limit on Company's rights under Section 4.4.2.

SECTION 36.7 shall be amended as follows:

The cost for the Payment Bond, Performance Bond, and Lien Bonds are to be paid by the Company.

SECTION 49.2 shall be amended as follows:

Contractor shall maintain records during the term of the Agreement, including any records relating to the employment or hiring of minorities and/or females, until (i) three years after the expiration of the last expiring warranty, or (ii) the expiration of any period for which the Company or its Affiliates are required, by any regulatory agency, to have such records maintained, whichever is later. Additionally, records that relate to disputes, appeals, litigation, or the settlement of claims arising out of the performance of the Agreement shall be retained until such disputes, appeals, litigation, or claims have been finally settled. In lieu of retaining such records the Contractor may deliver such records to the Company at any time after the expiration of the last expiring warranty. The Contractor agrees to make such records available to the Company or its authorized representative at no cost to the Company or its authorized representative for inspection or audit at any time during such period. Company's audit rights hereunder shall not extend to the underlying costs or composition of any lump sum price or unit price.

Schedule B

Mobile Contact Voltage Testing Program Scope of Work, dated August 27, 2015

And

National Grid Electric Operating Procedure, Equipment Elevated Voltage Testing, Doc. # NG-EOP G016
(latest revision)

2015 Mobile Contact Voltage Testing Program Scope of Work

1. Objective

On June 6, 2012, the contact voltage statute, R.I. Gen. Laws § 39-2-25, was signed into law. This statute required the Rhode Island Public Utilities Commission (“Commission”) and the Rhode Island Division of Utilities and Carriers (“Division”) to initiate a proceeding to establish a contact voltage program for The Narragansett Electric Company d/b/a National Grid (“National Grid” or the “Company”). Under the contact voltage program, National Grid is required to submit to the Commission a program designed to implement appropriate procedures to detect contact voltage on publicly accessible surfaces, such as sidewalks, roadways, storm drains, and streetlights that can become energized by faults to the electric underground distribution system. This program must include a survey of either one hundred percent (100%) or twenty (20%) of designated contact voltage risk areas to be determined by the commission by no later than October 31, 2015. The Company is required to conduct this RFP and will report the results back to the Commission.

2. Definitions

Stray Voltage: A voltage resulting from the normal delivery and/or use of electricity (usually smaller than 10 volts) that may be present between two conductive surfaces that can be simultaneously contacted by members of the general public and/or their animals. Stray voltage is caused by primary and/or secondary return current, and power system induced currents, as these currents flow through the impedance of the intended return pathway, its parallel conductive pathways, and conductive loops in close proximity to the power system. Stray voltage is not related to power system faults, and is generally not considered hazardous.

Contact Voltage: A voltage resulting from abnormal power system conditions that may be present between two conductive surfaces that can be simultaneously contacted by members of the general public and/or their animals. Contact voltage, which can exist at levels that may be hazardous, is caused by power system fault current as it flows through the impedance of available fault current pathways. Contact voltage is not related to normal system operation.

3. Scope of Work

Proposed work is field testing, investigation, and documentation of contact voltage using mobile electric field detectors. Contractor personnel will survey the electric distribution system in designated contact voltage areas of Rhode Island that are approved by the Rhode Island Public Utilities Commission (RIPUC or Commission) by driving a mobile sensor over public roads. The designated contact voltage risk areas include Newport, Pawtucket, Providence, Westerly and Woonsocket, and any additional areas approved by the Commission.

The Contractor will maintain data on each day's activities, each voltage condition detected, and progress towards the goal of completing a specified number of mobile surveys within a designated timeframe. The Contractor will provide daily progress reports and frequent spreadsheet updates/database uploads. The Contractor will also be required to provide detailed, auditable records of the survey and any contact voltages detected.

The Company is requesting pricing for the survey and testing of all Designated Contact Voltage Risk Areas as set forth below:

- Complete Survey and Testing of 100% of the Designated Contact Voltage Risk Areas by October 31, 2015.
- Complete Survey and Testing of 100% of the Designated Contact Voltage Risk Areas annually in 2016, 2017, and 2018.
- Complete Survey and Testing of 20% of the Designated Contact Voltage Risk Areas annually in 2016, 2017, and 2018.

Pursuant to the Pricing Sheet, please provide a bid price, by year and area percentage, to complete the survey and testing of all Designated Contact Voltage Risk Areas. The Company shall direct the percentage of the Designated Contact Voltage Risk Areas requiring survey and testing annually (20% or 100%), and all pricing shall be valid for the annual period specified regardless of the Designated Contact Voltage Risk Area percentage surveyed and tested in any prior or subsequent year.

Note: the Company shall not be bound to any set quantities or financial liabilities, except for services ordered and received. The Company reserves the right, at its sole discretion, at any time, for any reason, by notice to the Contractor, to terminate any agreement resulting from this RFP in whole or in part without cause, and such termination shall not constitute breach of contract.

Note: the schedule and percentages above may be altered, as required by the Company.

The Company will consider multiple vendors. Vendors may bid on the entire work package (testing and site-safety for all designated contact voltage areas) or one part of the work package (testing for all contact voltage areas and/or site-safety). A list of designated contact voltage risk areas to be scanned and tested is attached as Appendix 1 (Grid Maps and Schedule).

3.1. Coverage Requirements

Contractor will perform surveys of designated contact voltage that will cover publicly accessible surface roads in the designated contact voltage areas, *excluding* highways, parkways, tunnels, bridges, roads within city parks as well as identified private property. Specific territory is designated on the maps accompanying this RFP (Appendix 1: Grid Maps).

3.2. Testing Timeframe

Testing shall be performed during night hours, when streetlights are on. Testing will be conducted between 9:00 p.m. – 5:00 a.m. or 10:00 p.m. – 6:00 a.m., depending on the sunlight/sunset schedule to ensure that mobile surveying is performed when the streetlights are illuminated. During the time of testing, site safety resources will be required to respond to any contact voltage conditions found.

3.3. Contact Voltage Testing & Field Investigations

As the mobile detector vehicle moves through the survey environment, when there is an indication of an E-field anomaly, the operators must stop the vehicle and perform a manual field investigation for the presence of contact voltage. The manual field investigations will require the use of hand tools and testing of all metal surfaces and sidewalks within 30 foot radius of the point of where the Mobile unit indicates the presence of anomalous electric fields. To perform the field investigation, the Contractor must use a handheld E-field detector and the HD LV-5 Direct Contact Low Voltage Detector. If the handheld E-field detector or HD LV-5 gives a positive indication, the contractor will take a voltage reading using an approved multi-meter per National Grid EOP-G016 equipped with a Company approved 500 ohm shunt resistor. For any reading greater than or equal to 1V, the Contractor will also take a third harmonic measurement.

When performing a field investigation, the surfaces to be tested should include, but are not limited to, the following:

- National Grid facility covers, including those underneath parked vehicles
- Streetlights, traffic signals, pedestrian crosswalks and signs
- Street furniture (phone booths, bus shelters, other fixed items)
- All other metal items in or on the pavement, or touchable from publicly accessible walkways, such as curbs, fences, awnings, etc. (Investigators must not enter a customer's private fenced yards or property or the interior of buildings to check for voltage conditions).

Any positive indications by either handheld tool should be followed up with multi-meter measurements on the target structures. Voltage measurements must be taken with an approved multi-meter per National Grid EOP-G016 and an approved 500Ω shunt resistor and without the 500Ω shunt resistor. The investigators must verify that a suitable ground (i.e. a ground that is not energized) is used as reference. Ground source location must be marked with tape, paint or a flag for future testing of repair work.

For any contact voltage measurements detected with a 500Ω shunt resistor that are greater than or equal to 4.5 volt, a third harmonic measurement using an approved multi-meter must be taken. The details of all the contact voltage finding for each E-field detection (including false positives) location must be documented and voltage measurements greater than or equal to 4.5 volt identified with a Fluke multi-meter

and 500Ω shunt resistor must be reported to the Company. See Section 6 Corrective Action Requirements for Elevated Voltage Findings of the Company's EOP – G016.

The Contractor is responsible for training field personnel to operate the detector vehicles, handheld E-field detector, HD LV-5 detector, and approved multi-meter per National Grid EOP-G016 with a Company-approved 500Ω shunt resistor. Contact voltage findings greater than or equal to 4.5V measured with a 500Ω shunt resistor or greater than 1 volt and less than 4.5 volts and with a THD reading less than 10%, as discussed in item 2 below, must be reported to the Company as energized equipment using the *Stray Voltage Notification Process (see section 4.5 of Company EOP-G016)*. Reported voltage readings greater than or equal to 4.5V with the shunt resistor should be rounded to one decimal number (example 4.6V or 23.5V).

1. Guarded for the purpose of this requirement is defined as guarded by a person or a protective barrier that prevents public contact if the elevated equipment voltage found is greater than 4.5 volts.
2. If the voltage measures greater than 1 volt and less than 4.5 volts and is found to be consistent with system operation design (no visual evidence of a problem upon review) the vendor will conduct a total harmonic distortion test ("THD") to determine appropriate mitigation for any elevated voltage. THD will be determined by the use of a Fluke power quality clamp meter or a Fluke scope meter both of which have the ability to measure THD. Voltages that have greater than ten percent ("10 %") THD will be considered part of a normally operating electrical system, and no further action is required. In instances where the THD reading is less than 10%, this voltage can be the result of faulted phase conductors and will be considered as contact voltage and be mitigated to prevent public contact as set forth in (3) and/or (4) below.
3. If the voltage measured is determined to be contact voltage equal to or greater than 1 volt and less than 8 volts it can either be guarded in person or by a protective barrier that prevents public contact.
4. For voltages equal to and greater than 8 volts the Contractor must assemble a safety set-up, consisting of cones/barriers/tape, around the energized surface to prevent member of the public and their pets from coming in contact with the contact voltage. The area where energized equipment is found must be immediately and continuously safe-guarded until properly relieved by a National Grids repair crew, or by the Contractor's own site-safety personnel. The safety set-up is to remain on location until the contact voltage condition is mitigated by the repair crew.

3.4. Field Investigation Equipment

The Contractor is responsible for providing all tools required for the contact voltage identification process. The Contractor is also responsible for providing barrier tape, cones, approved digital multi-meters per National Grid EOP-G016, extended ground test leads, 500Ω shunt resistors, handheld E-field detectors, HD LV-5 Direct Contact Low Voltage Detectors, and any other tools needed to perform the field tests and studies. All material, equipment, and tools used by the Contractor are subject to Company approval.

3.5. Multiple Energized Structures at a Single Location

If at the same location, multiple structures/surfaces are found energized, the following reporting rules apply:

1. If there are multiple energized objects, other than street/traffic lights, found at the same location, report each object as a separate incident. In other words, each energized object found will be assigned a unique incident number. For example, if a hydrant, a section of sidewalk (specify approximate dimensions i.e. 5' x 3'), and a manhole cover (if cover is labeled 'Electric' please note), are energized, then three unique (separate) incidents should be reported.
2. Only the energized objects at a location should be reported. For example, if objects on the sidewalk, such as a fire hydrant is found energized but the sidewalk itself is not energized, then only the incidents should be reported.
3. If there are multiple energized objects including a street/traffic light, each should be reported as separate incidents.
4. Multiple metal pole lamps at the same intersection are multiple incidents and should be reported separately, supplying unique incident number.

4. Support Services

The mobile contact voltage survey process requires field support from (including but not limited to the following) site-safety personnel, office support, field overseers, personnel to manage data, tools, etc. Except for site-safety personnel, these services shall be included as part of the cost of testing.

4.1. Site-Safety Services

Where contact voltage is found and voltage measured with shunt resistor is greater than or equal to 4.5 volts, the testing contractor crews will stand by the location to protect the public and their pets from coming into contact with the energized structure(s). The site-safety contractor ("SSC") will be the first person dispatched to the area to allow for the testing crew to continue surveying. The site-safety contractor must respond to the location in their own vehicle. Once voltage greater than or equal to 4.5 V is confirmed using a voltmeter (multi-meter) and 500 ohm shunt resistor, the following should occur:

1. Testing personnel set up large cones or vertical stanchions with barrier tape at least 3 feet away from all sides of the energized structure to direct pedestrian traffic away from the area.
2. Testing personnel requests site-safety and remains on location until site-safety arrives.
3. Upon arrival, the SSC should position the vehicle in such a manner as to be as close as possible to the coned-off area with an unobstructed view of the area to be safeguarded. SSC will remain on location until relieved by a National Grid repair crew/representative
4. While the SSC is on location he/she is required to remain alert and aware of his/her surroundings at all times. The SSC must situate his/her vehicle in such a manner as to be as close as possible to the coned-off contact voltage area and with an unobstructed view of this area. The SSC cannot leave the location unguarded unless alternative site-safety arrangements have been made (i.e. SSC representative provides SSC relief to use the facilities, etc. on job locations).

4.2. SSC Training & Oversight

The Company will provide basic training to a Contractor representative(s) in safeguarding of structures under a train-the-trainer approach. The Contractor is responsible for training all Contractor employees and ensuring their staff is all qualified to perform site-safety services. The Contractor must provide documentation to the Company of the names and dates when Contractor personnel were trained and qualified. The Contractor must have site-safety oversight to ensure that all SSC are correctly performing their job functions and to address any issues/needs of the SSC personnel.

4.3. SSC Tool Requirements

SSCs need to respond to locations using their own vehicles. The SSC is responsible for ensuring that each site-safety contractor has a vehicle to commute between location and a mobile phone to use to make all required notifications and be contacted by.

4.4. Site-Safety Assignment Process

The site-safety person will be dispatched directly by the Testing Contractor.

4.5. Site-Safety Dispatch via Testing Contractor

Once the Testing Contractor determines that an SSC is needed on location, testing contractor dispatch will contact the SSC dispatch and request an SSC. The Testing Contractor will provide the SSC the incident number(s), the location, the contact voltage object, voltage measurement, third harmonic measurement and ground reference.

The SSC is expected to arrive on location immediately after receiving the call from the Testing Contractor. When responding to an intersection location, only one site-safety person per intersection is required unless the intersection is extremely large and/or the site-safety person would not have line of sight access to all safety setups at all times. No more than two site-safety positions shall be allowed at any one intersection. The Company must be able to contact Site-Safety at all time, as long as there are SSCs out on locations, regardless of whether testing is being conducted.

5. Documentation

Accurate and timely documentation is required and is critical to the success of the project.

5.1. Daily Reporting

The testing contractor shall send a report at the end of the testing shift to the Company listing each contact voltage condition found. The report should include, address, on street, cross street, object where voltage was detected; voltage measured with and without shunt resistor, third harmonic reading, latitude and longitude coordinates, and date/time condition was found. Updates will be made daily to the Company sent via email by 8am the morning after each testing day.

5.2. Site-Safety Report (via email or phone)

A Site Safety Report will be sent daily to the Company and include each event reported with incident number, date/time SSC arrived on location, SSC status (i.e. still on location, date/time SSC was relieved from location), address, street and cross street, number of site-safety personnel on location, who the SSC was relieved by. In addition, the site-safety contractor must provide the Company via email with status updates with this information throughout the day and night until all SSC(s) have been relieved from the location.

5.3. Contact Voltage Report

A Contact Voltage Report will be sent daily to the Company and include a list of contact voltage conditions found during the shift by incident number, date/time reported, voltage measured with/without shunt resistor reported, object/surface energized, object badge, location and type of ground reference used with markings, location address, street and cross street, latitude and longitude.

5.4. City Mileage and Events Report

A City Mileage and Events Report will be sent daily to the Company and for each designated contact voltage area list the number of vehicles deployed, events reported, the mileage covered during the night's shift, and the cumulative total of the events reported and mileage covered.

5.5. Method of Tracking Completion

Completion of routine survey area will be tracked by covering all streets and marking off defined grid maps. The Company shall provide detailed GPS LAT/LON locations of Underground testing areas that clearly define the testing area within each designated contact voltage area. The Contractor must maintain master maps and mark off streets until all contact voltage areas have been completed

5.6. Field Use Maps

For easier use in the field, the Contractor should generate smaller scaled versions of the attached GPS LAT/LON locations. These maps are ideally suited for use in the field as the crew can easily see the streets they are working on and can mark off progress easily with highlighter markers.

5.7. Marking of Paper Maps and GPS Tracking

Documentation of survey progress should be performed by using either paper or electronic maps. Paper maps or enlargements of the supplied UG distribution maps, can be marked with highlighters to track progress. The Contractor must keep a master set of maps for each survey, and highlight the completed streets and designate contact voltage areas in real time as progress is made (not after the survey). The marked-up maps are a deliverable at the conclusion of the project and will be maintained on file in the case the electronic data is unclear.

The GPS coordinates in decimal format of each event should be submitted on a daily basis in the Event Report, including the other details of the events.

6. Information Resources Requirements

The Contractor is responsible for assigning a dedicated Data Manager for this project who shall be accountable for:

- Maintaining the data exchanges;
- Supervising dispatch staff to ensure timely and accurate completion of daily and weekly reports;
- Support electronic data collection and downloads;
- Liaison with the Company's personnel overseeing the project to resolve any data inconsistencies or requests.

6.1. Data Collection, Recording, and Transmittal

Field investigators shall record data for each investigation they perform and for each contact voltage they detect using the on-board computer. The manual data entry required is the manual marking up of maps and the completion of the job information document to be given to the SSC.

Each investigation requires, at a minimum:

- Date of event
- Time of event
- Address
- Cross street
- Voltage detected w/ and w/o shunt resistor

Each contact voltage detected requires, in addition:

- Energized surface (manhole, streetlight, fence, etc)
- Third harmonic measurement
- Ground reference-point used and marked to make voltage measurement (e.g. hydrant, curb, or ground rod). When using a ground rod for the reference point, a flag must be used to identify the location of the ground rod. (i.e. Dig Safe push-in flags)
- Street/traffic light badge number (metal pole lamps only)

The Contractor shall submit sample reports for Company approval at least one week prior to the start of the survey program. Daily progress reports in Microsoft Excel format shall be sent to the Company by 8:00 a.m. each day. The Daily Report Template must be approved by the Company.

7. **Quality Assurance and Control**

The Contractor shall implement quality control procedures to ensure accuracy of data collection. The Company has the following quality control requirements and expectations:

1. **Vehicle Calibration:** Daily calibration and maintenance of calibration log. Contractor shall use an energized test source to test the responsiveness of the vehicles before and after each shift. A written log shall be maintained by the drivers to ensure the sensitivity of the detector is relatively steady over time. The test source should be proposed by the Contractor and must be approved by the Company. An example is a metal plate between two insulated plastic sheets mounted on the wall. Significant deviation from previously reported values should be reported to the Company representatives and a different vehicle, if available, may be used for the day.
2. **Work In Progress Audits:** Company personnel will conduct ride-along visits to ensure that vehicle operation, field investigation, data entry, and data retrieval are all being performed properly. Any discrepancies will be documented and addressed at the time of identification and correction will be made immediately. The work in progress audits shall be performed with each operating crew during the first four weeks. The Company may extend the duration of the initial work in progress audits. After the initial period, the Company will conduct periodic ride-along visits as needed.

3. **Data Audits:** Contact voltage jobs reported are identified by an incident number. The Company will reconcile jobs reported with jobs received daily to ensure that no jobs are missed. Site-safety standby start/end times will also be checked against Company records to maintain accurate and fair reporting and billing. Data Manager will be responsible to resolve any disputes arising from data conflicts of this nature.

The Company requires that the Testing Contractor provide resources to investigate contact voltage conditions with Company personnel, where the testing contractor reported finding contact voltage but the Company was unable to substantiate the reported contact voltage findings. Such meets may be during the same shift or may have to be scheduled outside of the routine testing schedule. The investigation of such unsubstantiated reports will be at no additional cost to the Company. Field meets that need to be conducted outside of the routine schedule will be scheduled with the testing contractor at least a day in advance.

7.1. **Suspension of Work**

In response to most holidays, testing will be suspended (and consequently the need for site-safety services as well, unless already on a contact voltage location) on the following dates due to the holidays. Similar suspension of testing due to Company-observed holidays will apply subsequent timeframes.

- Memorial Day
- Independence Day
- Labor Day
- Columbus Day
- Veteran's Day
- Thanksgiving

Note: Holidays will change with Calendar year.

nationalgrid	ELECTRIC OPERATING PROCEDURE GENERAL	Doc. # NG-EOP G016 Page 1 of 20
	Equipment Elevated Voltage Testing	Version 2.0 – 09/30/13

INTRODUCTION

The purpose of this procedure is to outline the requirements for the annual equipment elevated voltage testing on National Grid Facilities in New York as required by the New York Public Service Commission’s “Electric Safety Standards” issued on January 5, 2005, the New York Public Service Commission’s “Order Adopting Changes to Electric Safety Standards issued and effective on December 15, 2008, the New York Public Service Commission’s “Order Requiring Additional Mobile Stray Voltage Testing” issued and effective on July 21, 2010 and the New York’s Public Service Commission “Order Granting Petition In Part and Modifying Electric Safety Standards” issued and effective on March 22, 2013.

This procedure also outlines requirements for equipment elevated voltage testing in Rhode Island and requirements by the Rhode Island Public Utilities Commission in Docket 4237 “Order to Establish a Contact Voltage Detection, Repair and Reporting Program” issued on November 9, 2012, and the subsequent order issued on February 1, 2013.

Additionally the Massachusetts Department of Telecommunications and Energy provided a series of recommendations on December 9, 2005, that have been included in this procedure.

While there are variances in requirements between New York, Massachusetts, and Rhode Island driven by particular regulatory requirements in each State, the minimum requirements are based on sound utility practice.

PURPOSE

This procedure applies to all personnel involved with or responsible for the testing, repair and reporting of facilities designated by this EOP for equipment elevated voltage. It should be noted that the term “Contact Voltage” has been adopted and is used in the EOP (refer to definitions section).

ACCOUNTABILITY

1. Standards, Policies and Codes
 - A. Update program as necessary.
 - B. Provide personnel guidance and assistance as requested.
2. Inspections & Maintenance
 - A. Ensure the equipment elevated voltage program as outlined in this EOP is implemented properly and timely.
 - B. Ensure that the program as outlined in the EOP is completed each year.
 - C. Provide qualified personnel to complete equipment elevated voltage testing.
 - D. Ensure all equipment elevated voltage inspectors have been trained.

PRINTED COPIES ARE NOT DOCUMENT CONTROLLED.		
FOR THE LATEST AUTHORIZED VERSION PLEASE REFER TO THE APPROPRIATE DEPARTMENT WEBSITE OR DOCUMENTUM.		
File: NG-EOP G016 Equipment Elevated Voltage Testing MGA	Originating Department: Standards, Policies & Codes	Sponsor: Susan Fleck

nationalgrid	ELECTRIC OPERATING PROCEDURE GENERAL	Doc. # NG-EOP G016 Page 2 of 20
	Equipment Elevated Voltage Testing	Version 2.0 – 09/30/13

3. Equipment Elevated Voltage Inspector

- A. Demonstrate the ability and proficiency to perform equipment elevated voltage testing per this EOP.
- B. Demonstrate the ability to become proficient in the use of the appropriate database.
- C. Possess the ability to do walking patrols, collect information, edit data, and guard unsafe facilities.
- D. Attend equipment elevated voltage training program.

4. Learning & Development

- A. Provide training upon request.

5. Distribution Network Strategy

- A. Provide input into program revisions.
- B. Ensure the equipment elevated voltage program as outlined in this EOP is implemented properly and timely.
- C. Ensure the program as outlined in the EOP is completed each year.
- D. Provide qualified personnel to complete equipment elevated voltage testing.
- E. Ensure all equipment elevated voltage inspectors have been trained.
- F. Provide program management.

REFERENCES

NYPSC Order 04-M-0159
NYPSC Order Adopting Changes to Electric Safety Standards
NYPSC Order Requiring Additional Mobile Stray Voltage Testing
RIPUC Docket 4237 Order 20871 (November 9, 2012) and Order 20950 (February 1, 2013)
Proposed Rhode Island Electric Contact Voltage Program, Revised October 2, 2012 (Docket 4237)
NYPSC Order Granting Petition in Part and Modifying Electric Safety Standards
Applicable National Grid Safety Rules & Procedures
Testing Equipment Operation Instructions

PRINTED COPIES ARE NOT DOCUMENT CONTROLLED. FOR THE LATEST AUTHORIZED VERSION PLEASE REFER TO THE APPROPRIATE DEPARTMENT WEBSITE OR DOCUMENTUM.		
File: NG-EOP G016 Equipment Elevated Voltage Testing MGA	Originating Department: Standards, Policies & Codes	Sponsor: Susan Fleck

nationalgrid	ELECTRIC OPERATING PROCEDURE	Doc. # NG-EOP G016
	GENERAL	Page 3 of 20
	Equipment Elevated Voltage Testing	Version 2.0 – 09/30/13

DEFINITIONS

Contact Voltage (Draft definition as defined by the Working Group of the Institute of Electrical and Electronic Engineers (IEEE)): Voltage resulting from abnormal power system conditions that may be present between two conductive surfaces that can come into contact by members of the general public and/or animals. Contact voltage is caused by power system fault current as it flows through the impedance of available fault current pathways. Contact voltage is not related to normal system operation and can exist at levels that may be hazardous.

Contact Voltage Area (CVA): Designated underground distribution areas within the cities of Providence, Pawtucket, Newport and Woonsocket established in the “proposed Rhode Island Electric Contact Voltage Program”, Revised October 2, 2012 (Docket 4237).

Equipment Elevated Voltage: An A.C. rms voltage difference between utility equipment and the earth, or to nearby grounded facilities that exceeds the lowest perceptible voltage levels for humans.

Equipment Elevated Voltage Inspector: The individual performing the equipment elevated voltage inspection.

Finding: Any confirmed voltage reading on an electric facility or streetlight greater than or equal to 1V measured using a volt meter and a 500 ohm shunt resistor.

Handheld Computer: An electronic data recording device that is used in the field to create a record of conditions found.

Mitigation: Corrective actions performed by the utility to address the stray voltage finding.

Proximity Detection Unit: A low voltage hand held detector used to test exposed metallic surfaces and conductors for the presence of low voltage from 6V to 600V.

Shall: The word shall is to be understood as mandatory.

Should: The word should is to be understood as advisory.

Stray Voltage: As defined by NYPSC the term “Stray Voltage” means voltage conditions on electric facilities that should not ordinarily exist.

Stray Voltage Testing: The process of checking an electric facility for stray voltage using a device capable of reliably detecting and audibly and/or visually signaling voltages in the range of 6 to 600 volts.

Total Harmonic Distortion (THD): This term has come into common usage to define either voltage or current “distortion factor.”

Distortion Factor (harmonic factor): The ratio of the root-mean-squared of the harmonic content to the root-mean-squared value of the fundamental quantity, expressed as a percent of the fundamental.

$$DF = \sqrt{\frac{\text{sum of squares of amplitudes of all harmonics}}{\text{square of amplitude of fundamental}}} * 100\%$$

PRINTED COPIES ARE NOT DOCUMENT CONTROLLED.		
FOR THE LATEST AUTHORIZED VERSION PLEASE REFER TO THE APPROPRIATE DEPARTMENT WEBSITE OR DOCUMENTUM.		
File: NG-EOP G016 Equipment Elevated Voltage Testing MGA	Originating Department: Standards, Policies & Codes	Sponsor: Susan Fleck

nationalgrid	ELECTRIC OPERATING PROCEDURE GENERAL	Doc. # NG-EOP G016 Page 4 of 20
	Equipment Elevated Voltage Testing	Version 2.0 – 09/30/13

DOCUMENT CONTENTS

Table of Contents

1.0 FACILITIES WHERE EQUIPMENT ELEVATE VOLTAGE TESTING/DOCUMENTATION IS REQUIRED – NEW YORK..... 5

2.0 FACILITIES WHERE EQUIPMENT ELEVATED VOLTAGE TESTING/DOCUMENTATION IS REQUIRED – RHODE ISLAND..... 7

3.0 FACILITIES WHERE EQUIPMENT ELEVATED VOLTAGE TESTING/DOCUMENTATION IS REQUIRED – MASSACHUSETTS..... 8

4.0 TEST EQUIPMENT..... 9

5.0 TEST PROCEDURE 10

6.0 CORRECTIVE ACTION REQUIREMENTS FOR ELEVATED VOLTAGE FINDINGS..... 12

7.0 DATABASE REQUIREMENTS 14

8.0 NEW YORK ANNUAL REPORTING AND CERTIFICATION REQUIREMENTS 15

9.0 MASSACHUSETTS REPORTING REQUIREMENTS..... 17

10.0 RHODE ISLAND REPORTING REQUIREMENTS..... 17

11.0 TYPE OF EQUIPMENT - APPENDIX A 19

12.0 REVISION HISTORY 20

PRINTED COPIES ARE NOT DOCUMENT CONTROLLED. FOR THE LATEST AUTHORIZED VERSION PLEASE REFER TO THE APPROPRIATE DEPARTMENT WEBSITE OR DOCUMENTUM.		
File: NG-EOP G016 Equipment Elevated Voltage Testing MGA	Originating Department: Standards, Policies & Codes	Sponsor: Susan Fleck

nationalgrid	ELECTRIC OPERATING PROCEDURE	Doc. # NG-EOP G016
	GENERAL	Page 5 of 20
	Equipment Elevated Voltage Testing	Version 2.0 – 09/30/13

1.0 FACILITIES WHERE EQUIPMENT ELEVATE VOLTAGE TESTING/DOCUMENTATION IS REQUIRED – NEW YORK

- 1.1 Street Lights and Municipally Owned Facilities
 - 1.1.1 Company owned metallic street lighting standards are required to be tested for equipment elevated voltage annually. This test is to be performed while the light is operating.
 - 1.1.2 Municipally owned street light systems that National Grid directly provides energy to shall be tested for equipment elevated voltage annually. National Grid will complete this testing unless assurances of the completion of required testing and transfer of such test data are made by the appropriate municipality. This test is to be performed while the light is operating.
 - 1.1.3 Municipal owned metallic traffic signal standards and accessible devices are to be tested annually for equipment elevated voltage by National Grid.
 - 1.1.4 All street lights identified on public thoroughfares regardless of ownership are to be tested annually.
 - 1.1.5 All street lights under a maintenance contract are to be tested annually. Exceptions not requiring equipment elevated voltage testing: private lighting, park associations, parking lots, fiberglass (or other non-conductive) street light standards, and locations where street light standards are not publicly accessible, such as facilities located in the center of highways that cannot be accessed without stopping traffic or creating potentially hazardous situations for the worker and/or public.
- 1.2 National Grid Substation Fences
 - 1.2.1 Metallic fencing surrounding substations with National Grid Facilities shall be tested for equipment elevated voltage annually. This fencing can be customer owned for customer stations, if a National Grid facility is part of the station.
- 1.3 Overhead Distribution Facilities
 - 1.3.1 Towers and/or metallic poles with distribution facilities shall be tested for equipment elevated voltage at an annual rate of twenty percent (20%) in conjunction with field inspections on a five-year cycle. 
 - 1.3.2 The following equipment on wood distribution poles requires equipment elevated voltage testing at an annual rate of twenty percent (20%) in conjunction with field inspections on a five-year cycle: 
 - 1. Metallic riser guard or conduit (company or non-company).
 - 2. Uncovered or uninsulated down ground (company or non-company).
 - 3. Down guy (company or non-company).
 - 4. Any other publicly accessible conductive piece of equipment (company or non-company) on the pole within reach from the ground.

PRINTED COPIES ARE NOT DOCUMENT CONTROLLED.		
FOR THE LATEST AUTHORIZED VERSION PLEASE REFER TO THE APPROPRIATE DEPARTMENT WEBSITE OR DOCUMENTUM.		
File: NG-EOP G016 Equipment Elevated Voltage Testing MGA	Originating Department: Standards, Policies & Codes	Sponsor: Susan Fleck

nationalgrid	ELECTRIC OPERATING PROCEDURE	Doc. # NG-EOP G016
	GENERAL	Page 6 of 20
	Equipment Elevated Voltage Testing	Version 2.0 – 09/30/13

1.3.3 Exceptions: Customer meters and customer meter poles are excluded.

1.4 Overhead Transmission Facilities

1.4.1 Towers and/or metallic poles with transmission facilities shall be tested for equipment elevated voltage at an annual rate of twenty-percent (20%) in conjunction with field inspections on a five-year cycle.

1.4.2 The following equipment on wood transmission poles or structures require equipment elevated voltage testing at an annual rate of twenty-percent (20%) in conjunction with field inspections on a five-year cycle:

- a. Metallic riser guard or conduit (company or non-company).
- b. Uncovered or uninsulated down ground (company or non-company).
- c. Down guy (company or non-company).
- d. Any other publicly accessible conductive piece of equipment (company or non-company) on the pole or structure within reach from the ground.

1.5 Underground Facilities

1.5.1 Annual equipment elevated voltage testing is required on all of the following equipment where accessible to the public.

- a. All metallic manhole covers, vault covers and grates, junction box covers, and handhole covers.

1.5.2 Pad-mounted transformers and switchgear are tested at an annual rate of twenty percent (20%) in conjunction with field inspections on a five-year cycle.

1.5.3 Starting in 2010 and continuing thereafter, unless changed by subsequent order of the NY Public Service Commission, two mobile stray voltage surveys shall be conducted annually in Buffalo and one mobile stray voltage survey is required to be conducted annually in Albany and Niagara Falls.

1.5.4 Exceptions: Non-metallic concrete or fiberglass pads or handholes or pull/splice boxes are not required to be tested.

1.6 Daily Job Site Test Requirements

1.6.1 Each job site where National Grid personnel or its contractors complete a work assignment shall be tested for equipment elevated voltage at the start and at the end of the work day or at the start or at the completion of the assignment. This testing requirement is considered good utility practice and does not require specific documentation.

1.6.2 Exceptions:

- a. Substation fencing will not require equipment elevated voltage testing unless scheduled as part of the inspection program or if work was done on the fencing.
- b. In a storm situation, where mutual aid is required, testing by other than National Grid personnel will not be required.

PRINTED COPIES ARE NOT DOCUMENT CONTROLLED.		
FOR THE LATEST AUTHORIZED VERSION PLEASE REFER TO THE APPROPRIATE DEPARTMENT WEBSITE OR DOCUMENTUM.		
File: NG-EOP G016 Equipment Elevated Voltage Testing MGA	Originating Department: Standards, Policies & Codes	Sponsor: Susan Fleck

nationalgrid	ELECTRIC OPERATING PROCEDURE GENERAL	Doc. # NG-EOP G016 Page 7 of 20
	Equipment Elevated Voltage Testing	Version 2.0 – 09/30/13

1.7 Exemptions

- 1.7.1 A completely fenced in area where access is denied to the general public and where access is only achieved by climbing a fence. Good judgment is required by the tester in these scenarios.

2.0 FACILITIES WHERE EQUIPMENT ELEVATED VOLTAGE TESTING/DOCUMENTATION IS REQUIRED – RHODE ISLAND

2.1 Company Owned Street Lights

- 2.1.1 Company owned metallic street lighting standards are required to be tested for equipment elevated voltage on a three-year cycle.
- 2.1.2 Exceptions: Testing shall not be completed at locations where street light standards are not publicly accessible, such as facilities located in the center of highways that cannot be accessed without stopping traffic or creating potentially hazardous situations for the worker and/or the public.

2.2 Overhead Distribution Facilities

- 2.2.1 Towers and/or metallic poles with transmission facilities shall be tested for equipment elevated voltage at an annual rate of twenty-percent (20%) in conjunction with field inspections on a five-year cycle..
- 2.2.2 The following equipment on wood transmission poles or structures require equipment elevated voltage testing at an annual rate of twenty-percent (20%) in conjunction with field inspections on a five-year cycle:
 - a. Metallic riser guard or conduit (company or non-company).
 - b. Uncovered or uninsulated down ground (company or non-company).
 - c. Down guy (company or non-company).
 - d. Any other publicly accessible conductive piece of equipment (company or non-company) on the pole or structure within reach from the ground.

2.3 Underground Facilities

- 2.3.1 Testing for equipment elevated voltage shall be done while completing scheduled inspections of underground equipment covered by NG-EOP UG006, Underground Inspection and Maintenance. The following items are to be tested on a five year cycle, pad-mounted transformers, pad-mounted switchgears, and metallic handhole covers.
- 2.3.2 Testing for equipment elevated voltage shall be completed on underground facilities while completing working inspections covered by NG-EOP UG006. The metallic items to be tested are manholes covers, vault covers and grates, handhole covers, splice box covers, junction box covers, pad-mounted transformers, pad-mounted switchgears, and submersible equipment covers.

PRINTED COPIES ARE NOT DOCUMENT CONTROLLED.		
FOR THE LATEST AUTHORIZED VERSION PLEASE REFER TO THE APPROPRIATE DEPARTMENT WEBSITE OR DOCUMENTUM.		
File: NG-EOP G016 Equipment Elevated Voltage Testing MGA	Originating Department: Standards, Policies & Codes	Sponsor: Susan Fleck

nationalgrid	ELECTRIC OPERATING PROCEDURE GENERAL	Doc. # NG-EOP G016 Page 8 of 20
	Equipment Elevated Voltage Testing	Version 2.0 – 09/30/13

2.3.3 Starting in Fiscal Year 2013 and continuing thereafter, unless changed by subsequent order of the Rhode Island Public Utilities Commission, mobile contact voltage surveys will be performed in designated Contact Voltage Areas (CVA) The mobile surveys will be performed on a five-year cycle. A survey of 100 percent of the CVA will be performed the first year of the program followed by 20 percent of the CVA in successive years.

2.4 Daily Job Site Test Requirements

2.4.1 Each job site where National Grid personnel or its contractors complete a work assignment shall be tested for equipment elevated voltage at the start and at the end of the work day or at start and at the completion of the assignment. This testing requirement is considered good utility practice and does not require specific documentation.

- a. In a storm situation, where mutual aid is required, testing by other than National Grid personnel will not be required.

2.5 Exemptions

2.5.1 A completely fenced in area where access is denied to the general public and where access is only achieved by climbing a fence. Good judgment is required by the tester in these scenarios.

3.0 FACILITIES WHERE EQUIPMENT ELEVATED VOLTAGE TESTING/DOCUMENTATION IS REQUIRED – MASSACHUSETTS

3.1 Company Owned Street Lights

3.1.1 Company owned metallic street lighting standards are required to be tested for equipment elevated voltage on a five year cycle.

3.1.2 Exceptions: Testing shall not be completed at locations where street light standards are not publicly accessible, such as facilities located in the center of highways that cannot be accessed without stopping traffic or creating potentially hazardous situations for the worker and/or public.

3.2 Overhead Distribution Facilities

3.2.1 Towers and/or metallic poles with transmission facilities shall be tested for equipment elevated voltage at an annual rate of twenty-percent (20%) in conjunction with field inspections on a five-year cycle.

3.2.2 The following equipment on wood transmission poles or structures require equipment elevated voltage testing at an annual rate of twenty-percent (20%) in conjunction with field inspections on a five-year cycle:

- a. Metallic riser guard or conduit (company or non-company).
- b. Uncovered or uninsulated down ground (company or non-company).
- c. Down guy (company or non-company).

PRINTED COPIES ARE NOT DOCUMENT CONTROLLED. FOR THE LATEST AUTHORIZED VERSION PLEASE REFER TO THE APPROPRIATE DEPARTMENT WEBSITE OR DOCUMENTUM.		
File: NG-EOP G016 Equipment Elevated Voltage Testing MGA	Originating Department: Standards, Policies & Codes	Sponsor: Susan Fleck

nationalgrid	ELECTRIC OPERATING PROCEDURE GENERAL	Doc. # NG-EOP G016 Page 9 of 20
	Equipment Elevated Voltage Testing	Version 2.0 – 09/30/13

- d. Any other publicly accessible conductive piece of equipment (company or non-company) on the pole within reach from the ground.

3.3 Underground Facilities

3.3.1 Equipment elevated voltage testing is required on all of the following equipment where accessible to the public on a five year cycle.

- a. All metallic manhole covers, vault covers and grates, junction box covers, handhole covers, pad-mounted transformers, secondary pedestals, and pad-mounted switchgears.

Exceptions: Non-metallic concrete or fiberglass pads or handholes or pull/splice boxes are not required to be tested.

3.4 Daily Job Site Test Requirements

3.4.1 Each job site where National Grid personnel or its contractors complete a work assignment shall be tested for equipment elevated voltage at the start and at the end of the work day or at the start or at the completion of the assignment. This testing requirement is considered good utility practice and does not require specific documentation.

- a. In a storm situation, where mutual aid is required, testing by other than National Grid personnel will not be required.

3.5 Exemptions

3.5.1 A completely fenced in area where access is denied to the general public and where access is only achieved by climbing a fence. Good judgment is required by the tester in these scenarios.

4.0 TEST EQUIPMENT

4.1 A hand held device (proximity detection unit) that is capable of detecting voltage from 6 volts to 600 volts.

4.2 A portable AC digital high impedance volt meter must have the ability to take readings with and without an input load impedance of 500 ohms.

4.3 The handheld devices utilized shall be certified by an independent test laboratory as being able to reliably detect voltages of 6 – 600 volts. The following units have been certified:

4.3.1 HD Electric model LV-S-5 (5-600 volts).

- Fluke 85
- Fluke 87
- Fluke 170 series or equivalent
- Fluke 175
- Fluke 177
- Fluke 179
- Fluke 187
- Fluke 189

PRINTED COPIES ARE NOT DOCUMENT CONTROLLED. FOR THE LATEST AUTHORIZED VERSION PLEASE REFER TO THE APPROPRIATE DEPARTMENT WEBSITE OR DOCUMENTUM.		
File: NG-EOP G016 Equipment Elevated Voltage Testing MGA	Originating Department: Standards, Policies & Codes	Sponsor: Susan Fleck

nationalgrid	ELECTRIC OPERATING PROCEDURE	Doc. # NG-EOP G016
	GENERAL	Page 10 of 20
	Equipment Elevated Voltage Testing	Version 2.0 – 09/30/13

- 4.4 Mobile Voltage Detection Equipment:
Narda 8950/10 Stray Voltage System
SVD2000 Stray Voltage Mobile Detector

5.0 TEST PROCEDURE

5.1 Job Briefing

- 5.1.1 At minimum, the following information shall be communicated to all personnel at the beginning of each shift for equipment elevated voltage testing:
- a. Structures are never to be touched with a bare hand while performing the tests, only the voltage detector or meter probe is to be used to make contact with the facilities.
 - b. Appropriate PPE shall be worn.
 - c. Each individual needs to be aware of his/her surroundings at all times.
 - d. Make sure to observe all traffic before entering a street, either at intersections or any other point.
 - e. Traffic safety vest (DOT Compliant Class II) is to be worn at all times when exposed to traffic. Be aware that when bending down, the visibility benefits of the traffic safety vest are diminished.
 - f. Obey all traffic control devices.
 - g. When working in the street, face oncoming traffic whenever possible.

5.2 Measurements for voltages will be performed in accordance with the following:

- 5.2.1 Initial measurements for the presence of voltage shall be made using a certified proximity detection unit as noted in the testing equipment certified equipment list in Section 4.0, 4.3.
- a. To verify the proper operation of the proximity detector, follow operating instructions for the particular certified unit being utilized, this is to be done daily.
 - b. After verification that the detection unit is working, approach the area/equipment to be tested. The proximity detector will illuminate prior to touching the area/equipment being tested if voltage is present. If the proximity detector does not illuminate in close proximity to the area/equipment touch the area/equipment to be tested with the probe of the unit.
- 5.2.2 If this test detects voltage, repeat the test with the portable AC voltmeter (The 500 ohm resistor is NOT used in this initial test):
- a. Measurements with a portable AC voltmeter shall be taken on clean bare metallic surface (structure, ground wire, etc.)
 - b. When using a portable AC voltmeter, connection shall be made to suitable neutral or ground source with the common (black) lead.

PRINTED COPIES ARE NOT DOCUMENT CONTROLLED.		
FOR THE LATEST AUTHORIZED VERSION PLEASE REFER TO THE APPROPRIATE DEPARTMENT WEBSITE OR DOCUMENTUM.		
File: NG-EOP G016 Equipment Elevated Voltage Testing MGA	Originating Department: Standards, Policies & Codes	Sponsor: Susan Fleck

nationalgrid	ELECTRIC OPERATING PROCEDURE	Doc. # NG-EOP G016
	GENERAL	Page 11 of 20
	Equipment Elevated Voltage Testing	Version 2.0 – 09/30/13

1. In locations where the neutral or ground point is at a distance in excess of the voltmeter lead length, the connection to the neutral/ground shall be made with up to 25' of # 16 stranded copper lead wire (covered), the other end of which shall be securely connected to the negative (black) probe of the meter. When using such "extension leads" appropriate care shall be taken in the placement of such leads so as to not create a physical hazard to workers, pedestrian or vehicular traffic.
 2. In locations where a system ground is not available, or the existing ground registered voltage upon the proximity test, a metal rod shall be firmly embedded into the earth to a depth of no less than 6" to create a ground reference point for the measurement to be taken. An alternate method is available for obtaining a ground reference point utilizing an aluminum plate in lieu of driving a ground rod. The reference point should be as close as practicable to the facility being tested to simulate an equipment elevated voltage situation (3' to 4'.) On occasion longer leads may be necessary to find undisturbed earth (up to 25'.)
- c. The "live" meter probe lead shall then be placed into contact with the structure under inspection to determine the voltage.
1. Voltages readings greater than 30 volts shall be recorded in the database for the site.
 2. For voltage readings less than 30 volts, install a 500 ohm input load impedance resistor on the volt meter. Take another voltage measurement and record this voltage in the database for the site.
- 5.2.3 Measurements for elevated voltages/contact voltage using mobile technology will be performed in accordance with the following:
- a. Mobile testing is performed by contract crews driving pre-determined routes in Contact Voltage Areas searching for elevated voltage levels. The equipment used is mounted to vehicles and detects voltage levels greater than 1 volt while driving at speeds of up to 25 mph near underground facilities. Once elevated voltages are detected the crew stops and performs a thorough check with certified manual testing equipment to determine if there is contact voltage present.
- 5.2.4 Any positive indications by either mobile testing or hand held tools shall be followed up with multi-meter measurements on the target structures. Voltage measurements shall be taken in accordance with Section 5.2.2 above. The investigators shall verify that a suitable ground (i.e. a ground that is not energized) is used as a reference. Ground source location shall be marked with tape, paint or flag for future testing of repair work.
- 5.2.5 A Total Harmonic Distortion (THD) test method will be implemented as a pilot for Rhode Island mobile elevated voltage testing. THD will be determined by the

PRINTED COPIES ARE NOT DOCUMENT CONTROLLED.		
FOR THE LATEST AUTHORIZED VERSION PLEASE REFER TO THE APPROPRIATE DEPARTMENT WEBSITE OR DOCUMENTUM.		
File: NG-EOP G016 Equipment Elevated Voltage Testing MGA	Originating Department: Standards, Policies & Codes	Sponsor: Susan Fleck

nationalgrid	ELECTRIC OPERATING PROCEDURE GENERAL	Doc. # NG-EOP G016 Page 12 of 20
	Equipment Elevated Voltage Testing	Version 2.0 – 09/30/13

use of a Fluke Power Quality clamp meter or a Fluke scope meter both of which have the ability to measure THD.

6.0 CORRECTIVE ACTION REQUIREMENTS FOR ELEVATED VOLTAGE FINDINGS

6.1 State Specific Requirements

6.1.1 New York

If equipment elevated voltage condition is found and verified by the Test Procedure in Section 5.0, the site is to be guarded until made safe by Company personnel or if municipally owned, made safe by the owner or company. Guarded for the purpose of this EOP is defined as guarded by a person or a protective barrier that prevents public contact if the equipment elevated voltage found is greater than 1 volt. **If the voltage measures less than 1 volt and is found to be consistent with system operation design (no visual evidence of a problem upon review) no further action is required.** If the voltage measures greater than or equal to 1 volts and less than 4.5 volts it can either be guarded in person or by a protective barrier that prevents public contact, contact your supervisor for required action. Sound judgment shall be utilized in this application. If the voltage measurement is greater than or equal to 4.5 volts it shall be guarded by an equipment elevated voltage inspector or a Company employee that has been trained to stand by on energized facilities, and immediate response is required using the notification in Section 6.3 below.

6.1.2 Massachusetts and Rhode Island

If equipment elevated voltage condition is found and verified by the Test Procedure in Section 5.0, the site is to be guarded until made safe by Company personnel or if municipally owned, made safe by the owner or company. Guarded for the purpose of this EOP is defined as guarded by a person or a protective barrier that prevents public contact if the equipment elevated voltage found is greater than 4.5 volts. **If the voltage measures less than 4.5 volts and is found to be consistent with system operation design (no visual evidence of a problem upon review) no further action is required.** If the voltage measures greater than 4.5 volts and less than 8 volts it can either be guarded in person or by a protective barrier that prevents public contact, contact your supervisor for required action. Sound judgment shall be utilized in this application. If the voltage measurement is greater than 8 volts it shall be guarded by an equipment elevated voltage inspector or a Company employee who has been trained to stand by on energized facilities; an immediate response is required using the notification in section 6.3 below

6.1.3 Rhode Island Total Harmonic Distortion Pilot

Under the Total Harmonic Distortion (THD) pilot in Section 5.2.5, if during mobile testing of the Contact Voltage Area the voltage measures greater than 1 volt and less than 4.5 volts and has a total harmonic distortion of less than 10% the voltage will be considered contact voltage. These areas will then be safeguarded from the public and permanent repairs will be made. If the total harmonic

PRINTED COPIES ARE NOT DOCUMENT CONTROLLED. FOR THE LATEST AUTHORIZED VERSION PLEASE REFER TO THE APPROPRIATE DEPARTMENT WEBSITE OR DOCUMENTUM.		
File: NG-EOP G016 Equipment Elevated Voltage Testing MGA	Originating Department: Standards, Policies & Codes	Sponsor: Susan Fleck

nationalgrid	ELECTRIC OPERATING PROCEDURE	Doc. # NG-EOP G016
	GENERAL	Page 13 of 20
	Equipment Elevated Voltage Testing	Version 2.0 – 09/30/13

distortion is greater than 10% and no visual defects are found, no further action will be required.

6.1.4 New York and Rhode Island

In the event of an elevated voltage finding on an electric facility or street light during the stray voltage test procedure, all publicly accessible structures and sidewalks within a minimum 30 foot radius of the electric facility or street light must be tested for stray voltage.

6.2 The following notification process for personnel to respond shall be utilized.

6.2.1 Notification by location:

a. New York: contact Systems Operations Dispatch 1-877-716-4996

b. New England North, Northborough Distribution Control Center:

1. North Shore (MA) 1-877-247-3606
2. Merrimack Valley (MA) 1-877-247-3607
3. Central (MA) 1-877-247- 3608
4. Western (MA) 1-877-247-3609

c. New England South, Northborough Distribution Control Center

1. Capital (RI) 1-877-247-3610
2. Coastal (RI) 1-877-247-3599
3. Southeast (MA) 1-877-411-3812
4. South Shore (MA) 1-877-411-5599

6.2.2 Inform the operator that this is an equipment elevated voltage call, giving inspector name, company (if not National Grid), unique ID, address where problem is identified, facility number, circuit number, ownership, type of equipment, voltage found and whether they are physically guarding or leaving the site after flagging and installing a protective barrier. National Grid personnel or designee will be assigned to respond.

6.3 Temporary repairs may be used to correct the equipment elevated voltage thereby removing the need to guard the site.

6.4 Except as noted in Section 6, 6.6, permanent repairs to the equipment shall be made within 45 days of the occurrence.

6.5 If permanent repairs can not be made within 45 days due to extraordinary circumstances, the company shall periodically perform site visits to monitor the condition of the temporary repair. For New York, all exceptions shall be identified and justified in the annual reporting of the program to the NYPSC.

6.6 The Stray Voltage Tester/Equipment elevated Voltage Inspector may detect a minimal voltage level that is attributable to the design of the facility and not the result of an improper condition, no corrective action is required in this instance.

PRINTED COPIES ARE NOT DOCUMENT CONTROLLED.		
FOR THE LATEST AUTHORIZED VERSION PLEASE REFER TO THE APPROPRIATE DEPARTMENT WEBSITE OR DOCUMENTUM.		
File: NG-EOP G016 Equipment Elevated Voltage Testing MGA	Originating Department: Standards, Policies & Codes	Sponsor: Susan Fleck

nationalgrid	ELECTRIC OPERATING PROCEDURE GENERAL	Doc. # NG-EOP G016 Page 14 of 20
	Equipment Elevated Voltage Testing	Version 2.0 – 09/30/13

- 6.7 The individuals conducting the equipment elevated voltage tests on street light standards shall have a supply of “Angel guards” available for installation if the cover is missing or wires are found to be exposed to the public at the time of testing. Angel guards shall only be installed after the testing of the street light standard is complete and 1) there is no indication of equipment elevated voltage above 1 volt, or 2) repairs have been completed to correct the equipment elevated voltage.
- 6.8 The equipment elevated voltage inspector shall report any potentially hazardous conditions found on National Grid facilities seen visually during the survey process.
- 6.9 Customer Owned Equipment
 - 6.9.1 Where the Company finds equipment elevated voltage above 1 volt and identifies its source as customer-owned equipment, the Company shall guard the site and notify the customer or a responsible person, as appropriate, that a potentially hazardous situation exists. The Company shall advise the customer or responsible person that the cause of the equipment elevated voltage shall be immediately remedied.
 - 6.9.2 Company personnel are encouraged to work with the customer to determine and rectify the problem. If the customer agrees to accept the Company’s assistance, the Company may charge a reasonable cost for this effort.
 - a. The Company may temporarily remove a customer’s meter or take such other actions as are appropriate and necessary to protect the public.

7.0 DATABASE REQUIREMENTS

- 7.1 The database in use shall be easily searchable for information and reporting.
- 7.2 Information fields required to be completed for facilities:
 - Survey Date
 - Region
 - District
 - Contractor
 - GIS ID/Asset # (Unique ID)
 - Facility Type
 - Owner
 - Feeder/Circuit
 - Line #
 - Tax District
 - Pole/Structure/Equipment ID
 - Street Name
 - Inspectors Name
 - GPS Taken
 - Pre-load Match
 - Equipment elevated Voltage Test Required
 - Voltage Found Y/N
 - Voltage Measurement

PRINTED COPIES ARE NOT DOCUMENT CONTROLLED.		
FOR THE LATEST AUTHORIZED VERSION PLEASE REFER TO THE APPROPRIATE DEPARTMENT WEBSITE OR DOCUMENTUM.		
File: NG-EOP G016 Equipment Elevated Voltage Testing MGA	Originating Department: Standards, Policies & Codes	Sponsor: Susan Fleck

nationalgrid	ELECTRIC OPERATING PROCEDURE GENERAL	Doc. # NG-EOP G016 Page 15 of 20
	Equipment Elevated Voltage Testing	Version 2.0 – 09/30/13

Type of Equipment (See Appendix A)
Immediate Action Taken
Person Notified
Permanent Repair Date
Type of Repair
Person Responsible for repair (Employee ID)

7.3 Information fields required to be completed for facilities in mobile testing

Survey Date
Region
District
Contractor
Facility Type
Owner
Pole/Structure/Equipment ID
Street Name
GPS taken
Voltage Measurements
Type of Equipment (see Appendix A)
Immediate Action Taken
Person Notified
Permanent Repair Date
Type of Repair

8.0 NEW YORK ANNUAL REPORTING AND CERTIFICATION REQUIREMENTS

- 8.1 Each Regional program supervisor shall provide certification to the program manager that the Region they supervise has complied with the equipment elevated voltage testing and inspection program as ordered by the PSC.
- 8.2 The program manager shall provide certification to the Vice President Distribution Network Strategy and the Senior Vice President of Customer Operations & Maintenance that the organization has complied with the equipment elevated voltage testing and inspection program as ordered by the PSC.
- 8.3 Written certification of the completion and results of every equipment elevated voltage test and inspection shall be completed, as well as a certification that all unsafe conditions identified have been remediated by appropriate company personnel.
- 8.4 The President or officer with direct responsibility for overseeing the equipment elevated voltage testing and inspection shall provide an annual certification to the NYSPSC that the Company has tested all of its publicly accessible conductive surface electric facilities and all street lights, as well as completed all required inspections.
- 8.5 The President or officer with direct responsibility for overseeing facility inspections shall provide an annual certification to the Commission that the utility is in compliance with its inspection program and has inspected the requisite number of electric facilities. Additionally, at the end of the five-year inspection cycle, the officer shall certify that all of the utility's electric facilities have been inspected at least once.

PRINTED COPIES ARE NOT DOCUMENT CONTROLLED. FOR THE LATEST AUTHORIZED VERSION PLEASE REFER TO THE APPROPRIATE DEPARTMENT WEBSITE OR DOCUMENTUM.		
File: NG-EOP G016 Equipment Elevated Voltage Testing MGA	Originating Department: Standards, Policies & Codes	Sponsor: Susan Fleck

nationalgrid	ELECTRIC OPERATING PROCEDURE	Doc. # NG-EOP G016
	GENERAL	Page 16 of 20
	Equipment Elevated Voltage Testing	Version 2.0 – 09/30/13

- 8.6 The annual reporting and certification is required by February 15 of each year. In addition to certifications, it shall address the following:
- 8.6.1 Details the results of stray voltage test results and inspections conducted over the 12-month period ending December 31 of the prior calendar year. (A separate report will be required for inspections from November 1 – December 31, 2008 to account for transition to calendar year reporting.)
 - 8.6.2 Addresses the performance mechanism contained in Section 10 of the PSC Order Adopting Changes to Electric Safety Standard effective December 15, 2008 (December 15, 2008 Order).
 - 8.6.3 Contain certification describe in 8.3, 8.4 and 8.5 of this section.
 - 8.6.4 Contain a breakdown of the voltage findings in a tabular format as detailed in Attachment 1 of the December 15, 2008 Order; for all findings that result in a reading of 1 V or more after completion of mitigation efforts, a detail report of company efforts shall be provided.
 - 8.6.5 Contain a breakdown of the shock reports received from the public as detailed in Attachment 2 of the December 15, 2008 Order.
 - 8.6.6 Discussion of the analysis undertaken on the causes of the stray voltage within the Company’s electric system, the conclusions drawn there from, the preventative and remedial measures identified, and the Company’s plan to implement those measures.
 - 8.6.7 Description of the priority levels used to gauge the severity of a deficiency, including repair timeframes, and details the requirements for training personnel to properly identify and categorize the deficiencies.
 - 8.6.8 Contain a breakdown of facilities to be inspected, unique inspection conducted per year, and the cumulative number of unique inspections conducted to meet the five year requirement.
 - 8.6.9 Contain a breakdown of the deficiencies found, permanent repair actions taken by year, whether a repair was completed within the required timeframe, and the number of deficiencies awaiting repair. This information should be provided on a yearly basis by priority level and by equipment groupings as detailed in Attachment 3 of the December 15, 2008 Order.
 - 8.6.10 Contain a review and analysis of the inspection results. Identifying areas of concern along with remedial actions or future plans to alleviate inadequacies in current program assets.
 - 8.6.11 Description of the quality assurance program along with the results from quality assurance activities conducted during the year.
 - 8.6.12 Any additional information that is pertinent to the issues addressed by the safety standards should also be included.

PRINTED COPIES ARE NOT DOCUMENT CONTROLLED. FOR THE LATEST AUTHORIZED VERSION PLEASE REFER TO THE APPROPRIATE DEPARTMENT WEBSITE OR DOCUMENTUM.		
File: NG-EOP G016 Equipment Elevated Voltage Testing MGA	Originating Department: Standards, Policies & Codes	Sponsor: Susan Fleck

nationalgrid	ELECTRIC OPERATING PROCEDURE GENERAL	Doc. # NG-EOP G016 Page 17 of 20
	Equipment Elevated Voltage Testing	Version 2.0 – 09/30/13

- 8.7 The Company shall file reports on their mobile stray voltage testing with the Secretary of the New York PSC within 45 days after completion of the mobile testing or February 15, 2011, whichever is earliest, and in each subsequent year. The filing shall include the historic results and costs associated with the manual test program in each area listed in Section 1.5 of this procedure.
- 8.8 The Company is required by the December 15, 2008 Order to have independence in the quality assurance program required by the order. The management and personnel performing the quality assurance activities shall be separate from those performing the required stray voltage testing and inspection activities.
- 8.9 The Company shall maintain its written certification and other documentary proof of its testing at its' Albany, Buffalo, and Syracuse office facilities. These documents shall be made available to the public for review upon request.

9.0 MASSACHUSETTS REPORTING REQUIREMENTS

- 9.1 National Grid shall submit an annual report that includes the following:
 - 9.1.1 Annual reports that list inspection and testing data, including number of inspections conducted by equipment type.
 - 9.1.2 Number of equipment elevated voltage events detected by inspection personnel versus call-ins or notification by third parties.
 - 9.1.3 Variance reports on current year inspection targets.
 - 9.1.4 Equipment elevated voltage events detected on equipment that is not included in equipment elevated voltage equipment inspection schedules (which will enable the DTE to determine if the company is inspecting and testing the correct equipment).
 - 9.1.5 Number of exceptional or non-routine events that required reporting to OSHA or other government organizations due to injuries or other substantive impacts

10.0 Rhode Island Reporting Requirements

- 10.1 National Grid shall submit an annual report that includes the following in a searchable form:
 - 10.1.1 Event record number
 - 10.1.2 Location of testing
 - 10.1.3 Date and time of testing
 - 10.1.4 Company or customer asset
 - 10.1.5 Failed equipment type
 - 10.1.6 Voltage recorded
 - 10.1.7 Personal injuries to members of the public, pets or property damage

PRINTED COPIES ARE NOT DOCUMENT CONTROLLED. FOR THE LATEST AUTHORIZED VERSION PLEASE REFER TO THE APPROPRIATE DEPARTMENT WEBSITE OR DOCUMENTUM.		
File: NG-EOP G016 Equipment Elevated Voltage Testing MGA	Originating Department: Standards, Policies & Codes	Sponsor: Susan Fleck

nationalgrid	ELECTRIC OPERATING PROCEDURE GENERAL	Doc. # NG-EOP G016 Page 18 of 20
	Equipment Elevated Voltage Testing	Version 2.0 – 09/30/13

- 10.1.8 Any other equipment involved and age
- 10.1.9 Prior incidents at this location in the past five years
- 10.1.10 Corrective actions taken at the location and date taken
- 10.1.11 Number of customers if service is interrupted while making repairs
- 10.1.12 Duration of interruption
- 10.1.13 Summary of investigation into cause of the incident
- 10.1.14 Number of calls to the company “shock” line
- 10.1.15 Total repair costs by Contact Voltage Area
- 10.1.16 All information as provided for in Section 7.3

The Company will provide a summary of the above information as part of the report. In addition, the Company will include a recommendation for which specific CVAs will be tested the following year, whether there are any recommended changes to the CVAs and whether there are any advances in technology for detection of elevated voltages.

PRINTED COPIES ARE NOT DOCUMENT CONTROLLED. FOR THE LATEST AUTHORIZED VERSION PLEASE REFER TO THE APPROPRIATE DEPARTMENT WEBSITE OR DOCUMENTUM.		
File: NG-EOP G016 Equipment Elevated Voltage Testing MGA	Originating Department: Standards, Policies & Codes	Sponsor: Susan Fleck

nationalgrid	ELECTRIC OPERATING PROCEDURE	Doc. # NG-EOP G016
	GENERAL	Page 19 of 20
	Equipment Elevated Voltage Testing	Version 2.0 – 09/30/13

11.0 TYPE OF EQUIPMENT - APPENDIX A

TYPE	CODE	EQUIPMENT DESCRIPTION
Distribution	910	Pole
	911	Regulator
	912	Sectionalizer
	913	Recloser
	914	Ground
	915	Guy
	916	Riser
	917	Switch Handle Mechanical Operated
	929	Distribution – Other (use comments)
Transmission	930	Pole
	931	Tower
	932	Guy
	933	Ground
	934	Riser
	935	Switch Hand Mechanical Operator
	949	Transmission – Other (use comments)
Underground	950	Handhole
	951	Manhole
	952	Switchgear
	953	Transformer
	954	Vault – Cover/Door
	969	Underground – Other (use comments)
Street Light	970	Handhole
	971	Standard
	979	Street light – Other (use comments)
Customer Street Light/Other	980	Handhole
	981	Standard
	989	Customer SL/Other – Other (use comments)
Traffic Control	990	Handhole
	991	Standard
	992	Control Box
	993	Pedestrian Crossing Pole
	999	Traffic control – Other (use comments)

PRINTED COPIES ARE NOT DOCUMENT CONTROLLED. FOR THE LATEST AUTHORIZED VERSION PLEASE REFER TO THE APPROPRIATE DEPARTMENT WEBSITE OR DOCUMENTUM.		
File: NG-EOP G016 Equipment Elevated Voltage Testing MGA	Originating Department: Standards, Policies & Codes	Sponsor: Susan Fleck

nationalgrid	ELECTRIC OPERATING PROCEDURE GENERAL	Doc. # NG-EOP G016 Page 20 of 20
	Equipment Elevated Voltage Testing	Version 2.0 – 09/30/13

12.0 REVISION HISTORY

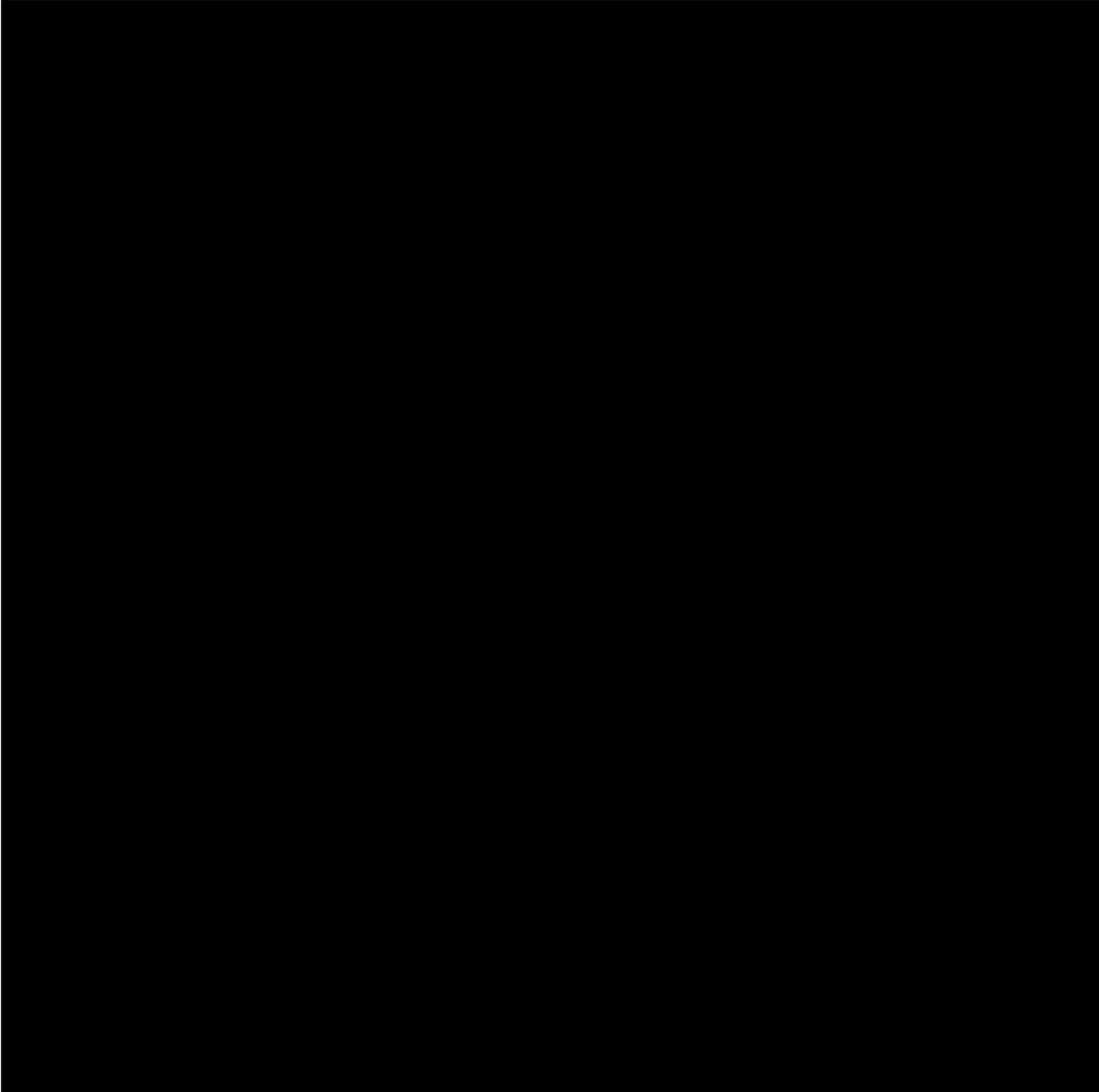
<u>Version</u>	<u>Date</u>	<u>Description of Revision</u>
1.0	04/01/11	This document supersedes document dated 08/17/09.
2.0	09/30/13	This document supersedes document dated 04/01/11.

PRINTED COPIES ARE NOT DOCUMENT CONTROLLED. FOR THE LATEST AUTHORIZED VERSION PLEASE REFER TO THE APPROPRIATE DEPARTMENT WEBSITE OR DOCUMENTUM.		
File: NG-EOP G016 Equipment Elevated Voltage Testing MGA	Originating Department: Standards, Policies & Codes	Sponsor: Susan Fleck

REDACTED VERSION

Schedule C

Price Schedules



Schedule D

National Grid Safety Procedure N-1402 Contractor Safety Requirements

National Grid Safety Procedure		Rev. No.	7
		Page No.	i
N-1402	CONTRACTOR SAFETY REQUIREMENTS	Date:	9/11/2013

FOREWORD

National Grid’s vision is to be a world-class safety organization, with zero injuries every day.

The Executive Safety Committee provides review and input for Safety Policies and Procedures through the Safety Policies and Procedures Subcommittee.

Safety Services is the owner of this procedure and is responsible for maintaining and implementing this procedure, soliciting comments from stakeholders and revising as necessary.

This document, “Contractor Safety Requirements”, represents the current contractor safety requirements that are unique to operations and various lines of business (LOB) at National Grid. This document does not reference actions that are required by OSHA, 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 National Grid as a contractual condition.

Please direct any questions regarding this document to the Safety Department.

This document will be updated as necessary to reflect changes in National Grid safety policies and procedures.

Record of Change

Date of Review/Revision:

Revision	Date	Description
1	08/5/2004	Initial
2	3/2/2005	Additions
3	01/30/2007	Additions
4	08/01/2008	Additions in red
5	08/01/2010	Additions in Bold
6	02/01/2011	Audit recommendations included
7	09/11/2013	Additions in Bold

PRINTED COPIES ARE NOT DOCUMENT CONTROLLED. FOR LATEST VERSION, PLEASE REFER TO THE NATIONAL GRID SAFETY & HEALTH SERVICES INFONET SITE.

National Grid Safety Procedure		Rev. No.	7
		Page No.	ii
N-1402	CONTRACTOR SAFETY REQUIREMENTS	Date:	9/11/2013

Table of Contents

	Page
1.0 Contractor Safety at National Grid	
1.1 Introduction.....	1
1.2 Risk Ranking of Work.....	2
1.3 Bidder Information Request – High Risk Work	2
1.4 Safety Compliance	2
2.0 General Safety Requirements	
2.1 Introduction	4
2.2 Applicability	4
3.0 Administrative Safety Requirements	
3.1 Pre-Bid Meetings	6
3.2 Project Safety Plan	6
3.3 Contractor Orientation.....	9
3.4 Worker Qualification Assurance.....	10
3.5 Pre-Construction Meetings	10
3.6 Safety Meetings	11
3.7 Job Safety Briefs.....	12
3.8 Incident Analysis	12
4.0 Technical Safety Requirements	
4.1 PPE Requirements – General	16
4.2 Flame Resistant Clothing	17
4.3 Rubber Gloves and Sleeves	18
4.4 Isolation of Electrical Apparatus.....	20
4.5 Appointment of a Safety Observer.....	23
4.6 Work Zone Traffic Control	23
4.7 Qualified Electrical Worker.....	23
4.8 Qualifying Non-Electrical Workers	24
4.9 Asbestos and Lead Hazards.....	25
5.0 Overhead Lines Work	
5.1 PPE Requirements	26
5.2 Fall Protection	26
5.3 Pole/Structure Inspection	26
5.4 Electrical Work Methods.....	27
5.5 Transmission Overhead lines	27

National Grid Safety Procedure		Rev. No.	7
		Page No.	iii
N-1402	CONTRACTOR SAFETY REQUIREMENTS	Date:	9/11/2013

6.0 Underground Operations Work

- 6.1** PPE Requirements 28
- 6.2** Enclosed Space Assessment and Ventilation 29
- 6.3** Enclosed Space Entry and Non-Entry Rescue 27
- 6.4** Equipment Safety Inspection 29

7.0 Substations – general 30

- 7.1** PPE Requirements 31
- 7.2** Notification of Control Authority..... 31
- 7.3** Work Area Identification 32
- 7.4** Herbicide Application..... 32

8.0 Gas Operations

- 8.1** PPE Requirement 33
- 8.2** Gas Operations 33

9.0 Forestry and Vegetation Management

- 9.1** PPE Requirements 34
- 9.2** Equipment and Work Methods 35
- 9.3** Training 36
- 9.4** Herbicide Application..... 36

10.0 EXPECTATIONS FOR SAFE VEHICLE OPERATION

- 10.1** Requirement for safe motor vehicle policy..... 37
- 10.2** Requirement to follow regulatory requirements..... 37
- 10.3** Specific driving licenses and driving records..... 37
- 10.4** Vehicle condition and safety equipment..... 37
- 10.5** Requirement to track employees driving records..... 37

11.0 LNG/Propane Transport and Handling

- 11.1** Training Requirements..... 38
- 11.2** PPE Requirements 38
- 11.3** Work Permit Process 38
- 11.4** Qualified Workers 38
- 11.5** D&A Testing Requirements..... 38
- 11.6** LP Plants..... 38
- 11.7** Herbicide Applications 39

12.0 Electric Generation

- 12.1** PPE Requirements 39
- 12.2** Training..... 39
- 12.3** Equipment & Excavations..... 40
- 12.4** Equipment Isolation..... 40
- 12.5** Herbicide Applications 40

National Grid Safety Procedure		Rev. No.	7
		Page No.	iii
N-1402	CONTRACTOR SAFETY REQUIREMENTS	Date:	09/11/2013

13.0 Civil Construction Work 40

14.0 Aviation Work40

PRINTED COPIES ARE NOT DOCUMENT CONTROLLED. FOR LATEST VERSION, PLEASE REFER TO THE NATIONAL GRID SAFETY & HEALTH SERVICES INFONET SITE.

National Grid Safety Procedure		Rev. No.	7
		Page No.	1
N-1402	CONTRACTOR SAFETY REQUIREMENTS	Date:	09/11/2013

1.0 CONTRACTOR SAFETY AT NATIONAL GRID

1.1 Introduction

Safety performance is a prime consideration in the selection of contractors. National Grid will stipulate Safety performance requirements and responsibilities in our contracts and purchase orders and will hold the contractor accountable for meeting the contractual requirements.

This document, "Contractor Safety Requirements", is updated periodically to communicate all aspects of National Grid contractor safety to bidders and current contractors.

National Grid's goal is to establish a long-term working relationship with contractors who share the same safety values and demonstrate those values through their work performance.

Contractor safety at National Grid involves three broad areas:

- (1) The Contractor Selection Process (Procurement)
- (2) Safety Communication
- (3) Safety Compliance

(1) **Contractor Procurement**

Contractor safety begins with the selection of contractors who have demonstrated a good safety record. This is accomplished through a process overview during the procurement process and the scope of work involved.

(2) **Safety Communication**

Safety communication covers all the avenues and forums in which National Grid and the contractor communicates safety. Communication begins early in the bidding phase and is on-going as an integral part of the contractor-customer relationship. The goal is to ensure clarity and to limit misunderstandings.

(3) **Safety Compliance**

Safety compliance is the process of ensuring that the provisions of the contract are being followed. National Grid will assign the Owners Representative or other designated individuals to provide guidance and oversight. The Contractor is responsible for their employees and subcontractors and shall be held accountable for ensuring compliance with all applicable safety rules while working on National Grid property.

National Grid Safety Procedure		Rev. No.	7
		Page No.	2
N-1402	CONTRACTOR SAFETY REQUIREMENTS	Date:	09/11/2013

1.2 Risk Ranking of Work

1. At the beginning of any project, National Grid will conduct a risk assessment for each anticipated work activity of a contracted service. National Grid will categorize these activities as low, medium or high risk. Risk refers to the chance of injury, property damage, or adverse public impact should the contractor deviate from the prescribed safety measures.
2. Activities that are designated as “high risk” means that death can result if safety measures are not followed. In general, any work related to electrical transmission and distribution, and gas/LNG operations shall be ranked by National Grid as High Risk.
3. The designation High Risk, Medium Risk, or Low Risk, refers only to the inherent risk associated with the work activity and is not an opinion on the ability of a contractor to work safely.
4. The Purchasing Agent will notify the bidder/contractor at the beginning of the procurement process if their contracted service has been ranked as high risk.

1.3 Bidder Information Request – High Risk Work

1. National Grid has established a relationship with ISNetworld to serve as the primary contractor information management system of National Grid bidder documents for high risk work activities. This is the first step in establishing a working relationship with National Grid. For Contractors already on the National Grid bid list, ISNetworld will request updated information quarterly.
2. The information that the Bidder provides serves as the basis for assessing safety qualification. For this reason, it is important that this form is approached in a candid and thorough manner. National Grid will review the submitted information. Any effort to avoid complete disclosure will disqualify the Bidder from bidding work at National Grid.

1.4 Safety Compliance

1. National Grid evaluates contractor compliance by conducting routine site visits, Compliance Assessments/SUSA visits and attending periodic contractor safety meetings.

National Grid Safety Procedure		Rev. No.	7
		Page No.	3
N-1402	CONTRACTOR SAFETY REQUIREMENTS	Date:	09/11/2013

2. If a safety violation is observed by a National Grid representative, the violation will be discussed with the contractor at the time of discovery.
3. The contractor must implement corrective actions and establish measures to prevent a recurrence through Incident Analysis (IA) process.
4. Individual contractor personnel who habitually violate safety rules should be identified, and the contractor should remove the individual(s) from the project. National Grid reserves the right to remove any contractor employee(s) who violate or pose a safety risk to themselves, our employees or the general public.
5. If a contractor is observed to be operating in a manner that creates an imminent danger to persons or property, it is the responsibility of all individuals observing the hazard to stop the job or that portion of the job impacted until the issue has been resolved to the satisfaction of National Grid, the Owners Representative or Safety Representative.
6. Contracts/POs shall require the contractor to immediately forward any citations or notices incurred on the project upon receipt to the appropriate company representative and/or ISNetworld. The company representative must distribute copies of the citation or notice to senior management, Safety, Procurement, and the Legal Department.
7. Willful and/or repeat violations of safety requirements by the contractor may be considered a breach of the contract and reason for contract termination.
8. If the contractor's overall safety performance is viewed as being unsatisfactory or noncompliant with contract provisions, and if the contractor is unwilling to demonstrate satisfactory program improvement, the contractor may be removed from the project as may be provided for in the contract.
9. National Grid documents safety compliance by completing a "Contractor Performance Evaluation." This documents both good and bad safety performance and this feedback will be used in the decision process for awarding future contracts.

National Grid Safety Procedure	Rev. No.	7
	Page No.	4
N-1402 CONTRACTOR SAFETY REQUIREMENTS	Date:	09/11/2013

2.0 GENERAL SAFETY REQUIREMENTS

2.1 Introduction

1. All contractors are required to comply with the requirements of the Occupational Safety Administration (OSHA), all other applicable federal, state, and local laws, ordinances, regulations, and other project and site-specific permits unless superseded by National Grid procedures.
2. This document represents policies and safety-related work methods that are unique to National Grid 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.
3. In cases where there is more than one method of compliance with a given safety rule or regulation, the contractor may deviate from National Grid practices if they can demonstrate to National Grid that the alternative practice provides an equal or greater margin of safety.
4. National Grid will provide more detailed information and guidance regarding specific procedures prior to commencement of work.

2.2 Applicability

1. This document applies to all contractors; however, most of the requirements are directed to contractors who perform work that is related to National Grid's core business functions: electrical transmission and distribution, and gas/LNG operations.
2. **In any contracted task, if a safety observer is required, it is the responsibility of the contractor to provide that person and insure the he/she is qualified to perform the role when needed.**
3. **When extension ladders are needed for any work a 4-1 pitch will be maintained and 3 points of contact will be maintained. If both hands are needed, a body belt can be utilized on a secure ladder.**
4. **Although not preferred, if hard hats are worn backwards, the suspension adjuster must always face the rear. Class E hard hats are required for all electrical work.**

National Grid Safety Procedure		Rev. No.	7
		Page No.	5
N-1402	CONTRACTOR SAFETY REQUIREMENTS	Date:	09/11/2013

5. 20KV EH overshoes are required when:

- ❖ **Workers on the ground are working within 50' of the master ground connection point to earth.**
- ❖ **Operating a wire trailer and pulling/tensioning machine.**
- ❖ **When contact with a winch truck or reel trailer that that is operating its pay out in the energized area.**
- ❖ **When hand digging in close proximity to energized cables within the tolerance zone.**
- ❖ **When making repairs in a trench to a faulted primary cable without de-energizing the adjacent energized primary cables in close proximity.**
- ❖ **When using approved live line tools to move energized primary cables in a trench.**
- ❖ **If removing UG cable rubber covering or arc suppression blankets from an energized cable.**
- ❖ **When working within MAD of downed electrical wires or foot patrolling for such wires.**
- ❖ **If setting poles and using truck controls from the ground.**

6. Although National Grid is not requiring their load securement requirements to be followed by contractors it is expected that all loads will be secured in accordance with DOT requirements.

- ❖ **As of January 2004, the Federal Motor Carrier Safety Administration (FMCSA) within the U.S. DOT published Cargo Securement Rules 393.100-136 Subpart I – Protection Against Shifting and Falling Cargo.**
- ❖ **Given the nature of National Grid's electric and gas operations, cargo securement is an integral aspect of routine work performed throughout our territory.**

7. Chaps are required to be worn by ANY person using a chainsaw to make a cut on the ground or assisting in that cut and within striking distance.

National Grid Safety Procedure		Rev. No.	7
		Page No.	6
N-1402	CONTRACTOR SAFETY REQUIREMENTS	Date:	09/11/2013

3.0 ADMINISTRATIVE SAFETY REQUIREMENTS

3.1 Pre-Bid Meetings

Applies to: All contractors, as needed.

The pre-bid meeting is coordinated by National Grid Procurement 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. This meeting may not be necessary for all contractors.

3.2 Project **Health & Safety Plan (HASP)**

Applies to: High and medium risk ranked contractors in detail commensurate with the scope of the project or activities.

1. Contractors who perform high risk-ranked services shall submit a project-specific safety plan prior to the start of the project and/or at pre-construction meeting. Your National Grid representative will provide you with specific requirements of the format and/or forms to be completed.
2. **For typical work that can be completed in 1-2 days, a documented job brief will be sufficient to address the hazards and proper mitigations**
3. **Work that will last 3-5 days** will require a completed safety hazards checklist and the Emergency Contact Sheet. **If a section of this list is selected as a hazard, than the proper mitigation will be listed in the expandable box below that section.** This minimum safety plan shall be referred to as the SHORT VERSION.
4. **For long-term work that will take 6 days or longer**, or complicated projects, the National Grid representative will require the contractor to complete a more formalized safety plan. This plan shall be referred to as the LONG VERSION.

National Grid Safety Procedure		Rev. No.	7
		Page No.	7
N-1402	CONTRACTOR SAFETY REQUIREMENTS	Date:	09/11/2013

5. At a minimum, the LONG VERSION safety plan shall include the following elements:
- A. Roles and responsibilities
 - B. Scope of work
 - C. Task and hazard identification and risk assessment of the hazards
 - D. Hazard mitigation/control procedures and work methods
 - E. Incident analysis and reporting
 - F. Compliance and monitoring

Any HASP completed long or short will be reviewed with every worker that needs to follow it and they will sign on that they understand it. This document will be on the job for review as needed and if requested by the National Grid representative.

A. 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.

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

Contractors must participate in or conduct one of the following types of phase if requested for their work:

HazOp, HazId, What if, or FMEA

Whoever is leading any requested PHA needs to be competent in the methodology to ensure a quality product. National Grid will not train contractors in how to perform the pha.

National Grid Safety Procedure		Rev. No.	7
		Page No.	8
N-1402	CONTRACTOR SAFETY REQUIREMENTS	Date:	09/11/2013

B. Scope of Work

Briefly state the scope of work as provided by National Grid **with enough detail that an auditor or someone not familiar with the contract could understand the task being performed.** The plan must specifically address the project or services requested by National Grid. Therefore, these plans should be short and-to the-point.

C. Task and Hazard Identification and Risk Assessment

The contractor shall identify all significant tasks and the anticipated hazards. National Grid calls this process a risk assessment.

The contractor’s cost to provide adequate safety measures and to comply with National Grid requirements must be considered and budgeted in the bid/proposal.

D. 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

E. Incident Analysis and Reporting

Follow the requirements referenced in this document.

F. Compliance Monitoring

Explain how you will ensure that both your employees and subcontractors will achieve safety compliance. **Jobs with over 100 workers at any point in time or in excess of \$1 million will require a full time safety representative hired by the contractor on site anytime work is to be performed. Qualifications of this safety representative must be acceptable to National Grid prior to hire.**

National Grid Safety Procedure		Rev. No.	7
		Page No.	9
N-1402	CONTRACTOR SAFETY REQUIREMENTS	Date:	09/11/2013

G. Environmental Compliance

Based on the scope of the work, any anticipated environmental risks shall be addressed by following all applicable National Grid procedures. Refer to EP-6, Appendix-A, environmental checklist.

33 Contractor Orientation

Applies to: All contractors, as needed.

1. Contractor orientation **may** be conducted by a National Grid 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 subcontractor
2. The extent and content of the orientation session shall be commensurate with the scope and type of the contractor's activities. **Our history working with the particular contractor will also be considered.**
3. **The orientation given to all contractors shall include as a minimum and is not limited to the following, OSHA 10, Electric Hazard Awareness, Safe Driving and Vehicle Operation, Ethical Business Behaviors, Permission to Work (on the NG Electric System – C&C), Dig Safe requirements, understanding HASP's, Insulate and Isolating techniques, Incident Reporting and Analysis requirements, written Job Briefs, Load Securement, Safety Observation, Hoisting and Rigging, Trenching and Shoring, and working near Railroads, Highways and Gas lines.**

Contractors shall keep a record of the orientation delivered to all new employees and made available to NG upon request

An "On Boarding" CD is available upon request. The CD features best practices learned through incident reporting, Near miss conditions and safety related policies and procedures.

National Grid Safety Procedure		Rev. No.	7
		Page No.	10
N-1402	CONTRACTOR SAFETY REQUIREMENTS	Date:	09/11/2013

4. The contractor shall agree to provide management representation at the orientation session.
5. After **being provided this document and the** completion of **any** orientation session **offered**, a contractor management official shall certify in writing that: (1) the contractor has been informed of National Grid safety requirements; (2) that employees and subcontractors have the appropriate qualifications to perform the work, and; (3) 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 your company's National Grid contact or ISNetwork participants will upload this letter into ISNetwork to meet this requirement.

National Grid Safety Procedure		Rev. No.	7
		Page No.	11
N-1402	CONTRACTOR SAFETY REQUIREMENTS	Date:	09/11/2013

3.4 Worker Qualification Assurance

Applies to: All contractors, as-needed.

1. In order to meet National Grid 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. National Grid reserves the right to certify contractor competency as needed.
2. The contractor management official shall certify the contractor has been informed of National Grid safety requirements; that employees and subcontractors have the appropriate qualifications to perform the work, and; that the contractor agrees to comply with all applicable safety requirements by certification in a Letter of Assurance as referenced in section 3.3.4.
3. The bidder shall supply the backgrounds and qualifications for all management personnel through resumes, behavioral observations or other documents. National Grid shall interview and approve management personnel if considered necessary.
4. Contractors bidding on new work provide this information to the National Grid purchasing agent via the “Bidder Information Request” form and/or ISNetworld National Grid On-boarding form.

3.5 Pre-Construction Meetings

Applies to: High Risk Ranked Projects or Activities

1. The project manager, and/or National Grid Construction supervisor, or other designated User’s Representative shall hold a pre-construction (project kickoff) meeting prior to the start of a high risk-ranked project/service. Other attendees may include; the Safety department, environmental as well as contractor management as needed.
2. The contractor’s Project **Health &** Safety Plan will be discussed at this meeting including a final review of the safety hazards checklist to insure a proper hazard mitigation plan.

National Grid Safety Procedure		Rev. No.	7
		Page No.	12
N-1402	CONTRACTOR SAFETY REQUIREMENTS	Date:	09/11/2013

3. These hazard mitigation measures shall be reviewed and work shall not commence until these hazards have been adequately addressed. The Owners Representative, or other user representative, will discuss with the contractor the methods by which compliance will be achieved with National Grid safety requirements.
4. An Emergency Call List should be exchanged with the contractor. This list must contain 24-hour contact information for key contractor and project personnel, including Owners Representative and Safety Specialists. This list should be distributed to all concerned, as determined by the project team, prior to the start of work.
5. For routine 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 or National Grid employees or third parties must be communicated immediately.

3.6 Safety Meetings

Applies to: All contractors, as-needed.

1. The contractor shall have regular monthly safety meetings with documented attendance of their employees and subcontractors.
2. The safety meetings shall be documented in writing. **This document shall include topics, statistics, and updates on old business as well as new business raised. It will include the round table discussion by the workers and the actions on issues raised. This document will show who is responsible for actions developed and when they are due and when they are closed out as being completed.** This shall be available for inspection during the project period, and for 30 days after the project is completed.
3. **Weekly safety briefs to review recent incidents on the site or within the industry are recommended but not required. Attendance is not required for these, but it is recommended that these be conducted weekly to share safety reminders or incidents,**
4. **Weekly safety meetings/calls between National Grid and contractor management are required for all high-risk work. These meetings shall focus purely on safety.**

National Grid Safety Procedure		Rev. No.	7
		Page No.	13
N-1402	CONTRACTOR SAFETY REQUIREMENTS	Date:	09/11/2013

3.7 Job Safety Briefs

*Applies to: All contractors, **as-needed**.*

1. Job safety briefs shall be documented in writing. Written job safety briefs with the contractor letterhead, shall be available at the job site for inspection and retained for 30 days after the job is completed.
2. Each crew shall conduct these job safety briefs prior to each day's work **at the job location**, when there are changes to the **days** work **order or plan**, and when a new worker or **company** joins the crew additional briefs are required.
3. Each worker must have the opportunity to voice concern. The work cannot begin until each worker signs off on the job safety brief stating that they have discussed the work, **raised any questions**, and agree with the plan.
4. **Visitors to the work site will be asked to read and sign the job brief acknowledging they understand contents. If a visitor refuses to sign, the general foreman will note it on the brief and will not allow the visitor to enter.**
5. **SITE SIGNAGE will be required to be posted at the main entrance to each work site. The sign shall direct all visitors to check in with the Person In Charge (PIC), be escorted to a reception area and advised of all work currently in progress. The visitor is expected to comply with all related safety requirements and sign off on the Job Brief before entering the work site.**

National Grid Safety Procedure		Rev. No.	7
		Page No.	14
N-1402	CONTRACTOR SAFETY REQUIREMENTS	Date:	09/11/2013

3.8 Incident Analysis

Applies to: All contractors (regardless of risk ranking).

1. All contractors are required to report to National Grid, any work-related incidents involving injury or illness to employees, the public or property damage to the contractor's or National Grid's equipment. The first priority is to ensure that the injured receive medical treatment.
2. Your National Grid contact will explain these reporting requirements in more detail prior to commencement of work.
3. An incident is defined as an unplanned event that has a human component, and results in, or could potentially result in, at least one of the following outcomes: (1) Harm to people; (2) Damage to property; (3) Adverse public impact.

National Grid Safety Procedure		Rev. No.	15
		Page No.	13
N-1402	CONTRACTOR SAFETY REQUIREMENTS	Date:	09/11/2013

Categories of incidents include:

1. **Injury** – incidents that cause harm to people;
2. **Property Damage** – incidents that cause damage to property;
3. **Adverse Public Impact** – incidents that disrupts service to the public or results in adverse public reaction;
4. **Near-Miss** – an incident which had the potential under different circumstances to result in an injury.
5. A **hazardous condition** is defined as: A condition that can and is rectified immediately by the person who identified the hazard
6. A **Significant hazard**: A condition that requires others to take actions to rectify and requires further investigation as to how the situation came to occur.
7. **Process Safety** – measures, systems, procedures and policies which prevent incidents and protect employees, the public, and the environment from the effects of major accidents.
8. **Road Traffic Collision (RTC) – A moving motor vehicle incident with any vehicle other than one that measures hours instead of mileage.**

Incident Response Steps

In the event of an incident, the contractor shall provide details of the incident to National Grid that follows the steps below.

1. Contractor supervisor collects basic information about the incident from the employee or witnesses:
 1. What happened?
 2. Who and how many people were injured?
 3. What treatment was administered?
 4. What was the nature and seriousness of the injury?
 5. Where did the incident occur?
 6. When did the incident occur (date, time of day)?
 7. Were there any witnesses?

National Grid Safety Procedure		Rev. No.	7
		Page No.	16
N-1402	CONTRACTOR SAFETY REQUIREMENTS	Date:	09/11/2013

2. Contractor supervisor immediately calls the Owners Representative or National Grid point of contact. All incidents **should shall** be entered into the IMS as soon as possible by the National Grid supervisor or National Grid Designee. **If any calls to (1-866-322-5594) are made, user will be prompted to select option 2 for anything other than an employee injury.**
3. Contractor shall conduct an investigation and provide a written report if directed to do so by National Grid to the Owners Representative for review and entry into the incident management system (IMS).
4. 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 when any action items have been completed. The results of the IA shall be described in a report prepared by the contractor and provided to National Grid. The contractor shall use National Grid Incident Reporting forms which will be provided by your National Grid Representative.
5. Contractor vehicle accidents occurring during the performance of work will also be investigated and reported to National Grid.

Other Reporting

National Grid may periodically request the following annualized data for all work activities limited to National Grid operations:

- Lost Time Incident (LTI) rate for workers
- Restricted Work rate
- OSHA Recordable Incident (ORI) rate

4.0 TECHNICAL SAFETY REQUIREMENTS

41 Personal Protective Equipment (PPE) Requirements – General

Applies to: All contractors (regardless of risk ranking)

1. Basic PPE attire at construction sites and other similar work zones include, at a minimum: hard hat; safety shoes and safety glasses.

National Grid Safety Procedure		Rev. No.	7
		Page No.	17
N-1402	CONTRACTOR SAFETY REQUIREMENTS	Date:	09/11/2013

2. 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 working on or **near (within MAD) 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.
3. Guidance for additional PPE is referenced in other sections of this document.

4.2 Flame Resistant Clothing Requirements

Applies to: All contractors, as-needed.

1. Flame Resistant (FR) clothing shall be worn when personnel work on energized equipment/lines or when distance and position will expose the worker to electric arc or flame hazards. FR clothing shall also be worn during live gas work as outlined in the **gas PPE Matrix**. FR clothing also includes arc-resistant rain gear. This additional ensemble may also be required as part of the job.
2. FR clothing must be worn as the outermost layer of clothing.
3. FR clothing shall be worn when workers measure voltages or test or ground electrical equipment or lines.
4. FR clothing shall be worn when work requires the use of rubber protective equipment or the use of insulated live line tools.
5. FR clothing 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 **or worked on** by another worker.
6. **FR clothing shall be worn where a hazard identification sign is posted.**

National Grid Safety Procedure		Rev. No.	7
		Page No.	18
N-1402	CONTRACTOR SAFETY REQUIREMENTS	Date:	09/11/2013

7. Contractors shall wear the appropriate FR clothing when working on or near energized equipment or when distance and position will expose the contractor to electric arc or flame hazards. For substations and production plants, visitors are not required to wear FR clothing unless they are engaged in electrical work. Your National Grid contact will be able to determine whether FR clothing will be required based on the specific contractor task. Note: Gas contractor FR requirements may differ slightly. Please refer to National Grid PPE Matrix for Gas operations as needed.

8. FR clothing shall meet a minimum arc rating of 8 cal/cm² (HRC 2) for energized electrical equipment unless otherwise specified based on increased potential exposure. **Effective April 1, 2010,** The FR clothing system for HRC 2 shall consist of an arc-rated FR shirt and FR pants or an FR coverall. Note: Work on the Long Island electric system will require FR pants rated at 8 cal/cm² (HRC 2) and FR shirt rated at 4 cal/cm² (HRC 1) based on assessments performed to determine potential exposures.

9. Additional FR clothing protection is required when performing work on the distribution system in NY North and New England (legacy National Grid) stations listed in Table 2 - OH Distribution Exceptions. Please reference tables in the National Grid Safety Document titled, *ARC Flash Analysis and Mitigation*, Overhead Distribution Exceptions to 8 cal/cm² FR.

10. Contractors who may be involved with tasks requiring the implementation of this program shall be informed by National Grid. Contractors will be required to follow all aspects of OSHA and The National Electric Safety Code (NESC), Rule 410 A3 as it applies to the tasks they perform.

4.3 Rubber Gloves and Sleeves

Applies to: All contractors, as-needed.

1. Rubber glove use is required for work on all electrical apparatus at 50 Volts or greater. 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”, “cradle to cradle”).

National Grid Safety Procedure		Rev. No.	7
		Page No.	19
N-1402	CONTRACTOR SAFETY REQUIREMENTS	Date:	09/11/2013

2. Class 0 gloves are required for exposures up to 1000 Volts.
3. Class 2 gloves are required for voltages between 1000-15,000 Volts.
4. Rubber sleeves must be worn where work is conducted within the minimum approach distances of primary electrical apparatus that is not tested de-energized and grounded.
5. For voltages 23 kV and above, workers can use specialized equipment or work practices as long as these workers have been appropriately trained and qualified. National Grid may request a letter of assurance from the contractor
6. Rubber glove exceptions for specific jobs (other than those listed in this section) are permitted only with the written approval of the local National Grid Operations Manager.
- 7. It is the contractor's responsibility to wear class 2 rubber gloves when grounding trucks or equipment due to a possible difference in potential.**

Exceptions (no gloves required) 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 while maintaining minimum approach distances from energized conductors or apparatus.
- When climbing a steel structure to access an area that has been properly grounded.

National Grid Safety Procedure		Rev. No.	7
		Page No.	20
N-1402	CONTRACTOR SAFETY REQUIREMENTS	Date:	09/11/2013

4.4 Isolation of Energized Apparatus

Applies to: All contractors, as-needed.

1. *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 National Grid tagging procedures.

2. *Tagging Out Lines or Apparatus*

The Owners Representative or other designated representative shall coordinate all switching and tagging in accordance with the most current EOP on Clearance and Control.

Upon receipt of Clearance, the Owners Representative will present the Contractors person in charge with the “Contractor Permission to Work Form”, which states the specific apparatus that has been de-energized and that certain device(s) are tagged in the Protective Position and will remain so until the Contractors person in charge informs the Owners Representative of the completion of the work utilizing the “Contractor Completion of Work” section of the “Contractor Permission to Work” form.

The original transferred copy needs to be returned after the completion of work section is filled out & signed. In some cases the tailboard is outside & is susceptible to elements & damage.

No work will be performed until the “Contractor Permission to Work Form” is received from the National Grid “Clearance Person” (Construction Supervisor) stating that the equipment has been de-energized and a clearance to work has been given. The Contractors Permission to Work Form shall be attached to the crews Job Briefing and be kept at the work location.

National Grid Safety Procedure	Rev. No.	7
	Page No.	21
N-1402	CONTRACTOR SAFETY REQUIREMENTS	Date: 09/11/2013

After the “clearance” is received from the Grid representative, the various substation conductor bus and equipment to be worked will be tested and “Grounds” installed. Grounds shall be rated for the fault current of the line/equipment being grounded. (Note: Rubber Gloves and FR clothing are required when installing and removing grounds). The contractors “Person in Charge” (Construction Supervisor/General Foreman) shall be responsible for determining the location and number of grounds.

Vehicles and equipment may utilize a single 4/0 cu for grounding inside the substation. Employees working on de-energized lines and equipment shall always work between grounds.

Grounding

Prior to the application of any personal protective grounds, the circuit to be worked on must be tested for the presence of voltage using an approved potential detector. The worker must verify the detector is in operating order prior to and after testing for voltage. Minimum approach distances must be maintained during the testing, and appropriate PPE shall be worn. Testing for voltage shall be done at the point where the grounding devices are to be attached. Test all phases of the circuit to be worked on. A test shall be conducted at each location that grounds are installed.

When National Grid 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'. National Grid will provide guidance on the minimum size of the grounds to be used based on circuit available fault current. *Refer to EOP D002*, for Grounding size. Ground rods will be fully driven into the earth **away from the workers and work area**. T-Bar ground rods are not to be used on National Grid property.

National Grid Safety Procedure		Rev. No.	7
		Page No.	22
N-1402	CONTRACTOR SAFETY REQUIREMENTS	Date:	09/11/2013

The Clearance Person shall determine the required number and locations of grounds, insuring that work performed is between grounds, covering all potential sources. All three phases shall be grounded. (In stations, from each phase to the station ground grid). Grounds shall be placed as close to the work area as reasonably possible. Grounds shall be placed between the work area and all possible sources of inadvertent energization.

It is the contractor's responsibility to account for all their grounds and it is recommended that a ground cable tagging device be developed and utilized.

3. *Grounding Mobile Equipment*

When mobile equipment requires grounding, it shall be solidly grounded by means of appropriate sized copper cable **while using rubber gloves**. 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.

Non insulated booms such as digger derricks that have the possibility of encroaching MAD shall be grounded and barricaded. The ground is to trip the circuit and the barricade is to protect those that could touch the truck during this energization and hopeful tripping of the circuit.

4. *Minimum Approach Distance (MAD)*

Follow minimum approach distance (MAD) tables: clearance OSHA tables' unqualified distances are 10 feet and up depending on voltage. See section 4.7

National Grid Safety Procedure		Rev. No.	7
		Page No.	23
N-1402	CONTRACTOR SAFETY REQUIREMENTS	Date:	09/11/2013

4.5 Appointment of a Safety Observer

Applies to: All contractors, as-needed.

1. 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 contractor 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.
2. 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.

4.6 Work Zone Traffic Control

Applies to: All contractors, as needed.

1. 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).
2. If working in areas covered by state permits issued to National Grid, contractors are required to comply with the provisions (work practices and notifications) of the permit language. **These permits must be available on the job site upon request.**

4.7 Qualified Electrical Workers

Applies to: Electrical Projects/Activities.

1. National Grid expects that electrical contractor employees will already be electrically-qualified as required by OSHA in 29 CFR 1910.269.

National Grid Safety Procedure		Rev. No.	7
		Page No.	24
N-1402	CONTRACTOR SAFETY REQUIREMENTS	Date:	09/11/2013

2. 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, and;
 - 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.
3. 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.
4. National Grid requires contractors with electrically qualified employees to provide documentation on how they qualify their workers.

48 Qualifying Non-Electrical Workers

Applies to: All contractors, as-needed. (Examples: Tower painters, rock drillers, swamp matt installers, Core sample drillers, ect)

Qualifying non-electrical workers to work near energized lines and equipment

1. The contractor must provide 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).

National Grid Safety Procedure		Rev. No.	7
		Page No.	25
N-1402	CONTRACTOR SAFETY REQUIREMENTS	Date:	09/11/2013

2. The information provided to these workers must meet the requirements of paragraph 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;
- 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.

3. 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.

4.9 Asbestos and Lead Hazards in Electrical & Gas

Applies to: All contractors, as-needed.

1. Asbestos and lead materials associated with electrical and gas equipment includes, but is not limited to: cement-type cable covering, cable wrap, wire coatings, 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 and lead. Refer to National Grid Safety Procedures, F-615, F-617 and F-619 for guidance on asbestos and lead handling and removals.
2. Where asbestos material is present and likely to be disturbed, the National Grid representative and contractor shall coordinate how the asbestos hazard will be managed.

Note: Electrical or gas contractors who will encounter asbestos or lead as part of their electrical or gas work shall reference in their safety plan how they will address this hazard.

National Grid Safety Procedure		Rev. No.	7
		Page No.	26
N-1402	CONTRACTOR SAFETY REQUIREMENTS	Date:	09/11/2013

5.0 OVERHEAD LINE WORK

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.

5.1 PPE Requirements

Applies to: All contractors, as-needed.

1. All contractors shall comply with the applicable PPE and WZTC requirements referenced in Section 4.0. 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", "cradle to cradle".
2. 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: **Examples include:** Cable TV, telephone, fire alarm wire, etc.

5.2 Fall Protection

Applies to: All contractors, as-needed.

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 a *Buck-Squeeze*, *Miller Stop* fall or *Jelco* fall arrest systems. When working on wooden **and steel structures**, a full body harness and **either a Y lanyard such as** a Step Safe or Sheppard's Hook with retractable line **shall be used to provide 100% fall protection**. 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 Owners Representative or by another qualified user representative.

5.3 Pole/Structure Inspection

Applies to: All contractors, as-needed.

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

National Grid Safety Procedure		Rev. No.	7
		Page No.	27
N-1402	CONTRACTOR SAFETY REQUIREMENTS	Date:	09/11/2013

2. 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.
3. 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. [29 CFR 1910.269(q)]

5.4 Electrical Work Methods

1. Jumpers of any type shall not be used to keep transformers, Risers or transformer banks, energized for the purpose of changing potted porcelain cutouts. Refer to most current version of National Grid Electric Operation Procedure (EOP) D001 "Porcelain Fuse Cutout - Open Type."

Potted porcelain cutouts must be changed out when work is being completed on a pole even if this is not planed in the scope of the work provided.

Properly rated and inspected slings, chains or tongs will be utilized to move poles and equipment. Winch lines must not be wrapped around poles or looped around transformers ears to lift without a sling or chain.

5.5 Transmission Overhead Lines

1. 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.
2. 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.

National Grid Safety Procedure		Rev. No.	7
		Page No.	28
N-1402	CONTRACTOR SAFETY REQUIREMENTS	Date:	09/11/2013

3. All contractors using ATV's, **UTV's or RTV's** for transmission or forestry work, are required to follow all local OHRV requirements for PPE and Driving safety. **They are also required to show proof of individual operator training certifications for each operator. DOT helmets and safety glasses or goggles for anything without a seatbelt and roll cage. Such equipment with a roll cage and seatbelt can utilize a hard hat and chin strap.**
4. **At the end of each day, unless other arrangements have been made for an extended outage, grounds will be removed and the National Grid representative will be notified that all personnel are "clear" of the conductor bus work and equipment.**
5. **Where ever transmission line workers "touch" wires, a personal ground shall be installed at the work area to establish an equipotential zone.**

6.0 UNDERGROUND OPERATIONS WORK *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.

6.1 PPE Requirements *Applies to: All contractors, as-needed.*

All contractors shall comply with the applicable PPE and WZTC requirements referenced in Section 4.6.

6.2 Enclosed Space Assessment and Ventilation

Applies to: All contractors, as-needed.

1. The contractor shall test each space prior to removing manhole lids and entry in accordance with current National Grid enclosed space procedure. Refer to most current version of National Grid EOP-UG006.
2. Atmospheric testing must be continuous for the duration of the entry using an industry approved atmospheric tester.
3. When performing hot lead work or when indicated by atmospheric monitoring, engineering controls such as forced mechanical ventilation must be used when working in National Grid manholes during the entire performance of the work.

National Grid Safety Procedure		Rev. No.	7
		Page No.	29
N-1402	CONTRACTOR SAFETY REQUIREMENTS	Date:	09/11/2013

6.3 Enclosed Space Entry and Non-Entry Rescue

Applies to: All contractors, as-needed.

1. All manhole and sidewalk vault entry shall be conducted in accordance with National Grid enclosed space procedures. Refer to most current version of *National Grid Safety Procedure, I-902*.
2. All contractors who are qualified electrical workers will treat these spaces as “enclosed spaces” and follow non-entry rescue provisions.
3. **In some situations a boom is allowed for retraction from an enclosed space per the National Grid EOP.**
4. Steel cable or wire rope for non-entry rescue is prohibited.

6.4 Equipment Safety Inspection *Applies to: All contractors, as-needed.*

1. Inspect underground facilities (manholes, vaults, hand holes, splice boxes, junction boxes, padmount transformers, switchgear and submersible equipment) each time a crew performs work at one of these facilities. All separable components in these facilities are to be inspected by infrared instrumentation. Refer to most current version of National Grid EOP-UG001.
2. The infrared (IR) equipment shall be a Fluke 68 IR Thermometer. Current operating procedures are referenced in NG-USA EOP-001.
3. The format for data collected shall follow the National Grid Electrical Operating Procedure (EOP) NG- EOP UG006 entitled “Underground Inspection and Maintenance.”
4. “Touch Potential” testing of metal street lighting poles is required to be performed as a part of any maintenance work. References include NG- EOP G016 and National Grid Work Methods Bulletin #04-26 “TOUCH POTENTIAL TESTING OF METAL STREET LIGHTING POLES.”
5. Touch Potential testing results shall be recorded on the job safety brief and manhole inspection form which shall be given to the Owners Representative or designee and sent to the inspections department personnel.

National Grid Safety Procedure		Rev. No.	7
		Page No.	30
N-1402	CONTRACTOR SAFETY REQUIREMENTS	Date:	09/11/2013

6. All contractors working for National Grid shall use materials and equipment in accordance with the manufacturing guidelines. It is the contractors' responsibility to understand the manufacturers' limits and prescribed use of their tools and equipment before each use.
7. **Workers will test UG cable de-energized and gulliten the cable if need from outside the hole with rubber gloves in use at all times.**

7.0 SUBSTATIONS *Applies to: All contractors, as-needed.*

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

See separately issued NG Substation Maintenance Procedure SMP 499.01.2 for specifics regarding substation grounding practices.

Grounding plans for substation work as well as major distribution and transmission projects will be submitted to NGRID a minimum of 1 week prior to construction for review. This plan will show the steps, work area limits and ground cable size and amount. Once reviewed with the NGRID construction supervisor this plan will be reviewed with all working the job prior to the start by the contractor.

Use of an "Equipotential" step/platform or a conductive mat is required for access and egress from the crane or any other equipment, including aerial lift equipment that is connected to the substation ground grid and/or bonded to transmission line conductors when working outside of the station fence, in the ROW and area's inside the substation where there is no ground grid present. When work is performed inside the substation and there is a ground grid available, the "Equipotential" step/platform or conductive mat is not necessary.

All vehicles must be grounded and barricaded per OSHA standards.

Proper clearances shall be maintained from adjacent energized substation bus, energized portions of substation equipment and other transmission lines at all times.

Use of proper insulated tooling (shotguns and sticks) will be utilized per NECA standard maintaining minimum approach distances.

National Grid Safety Procedure		Rev. No.	7
		Page No.	31
N-1402	CONTRACTOR SAFETY REQUIREMENTS	Date:	09/11/2013

7.1 PPE Requirements

Applies to: All contractors, as-needed.

1. All contractors shall comply with the applicable PPE and WZTC requirements referenced in Section 4.0.
2. Contractors will wear an electrical flash PPE ensemble when switching disconnects or grounding in areas of indoor substations as Referenced in the *ARC Flash Analysis and Mitigation Policy*.
3. Fall protection or fall restriction devices shall be used when working at heights over 4 feet with the exception of ladder use.
4. Rubber gloves and Fire Resistant clothing are required when hand digging in a substation in or around energized conductors and shall meet the requirements referenced in section 4.2 for FR clothing.
5. 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 National Grid contact notified of the condition.
6. When using non-insulated man-lifts, and if provided by the manufacturer, a secure point of attachment for lifelines, or lanyards or deceleration devices, shall be utilized which is independent of the means of supporting or suspending the employee. **Workers feet will always remain on the floor.**

7.2 Notification of Control Authority When Entering a Substation

Applies to: All contractors, as-needed.

1. When a contractor enters and exits a National Grid substation, the contractor will ensure that the System Control Center is notified. While work is being conducted, gates must be monitored at all times or the gates shall be locked. Refer to National Grid EOPG022.
2. Unescorted entry in substations can only be provided to contractors who provide assurance that their employees and subcontractors are electrically qualified as specified in 29 CFR 1910.269. Refer to Section 4.0 of this document

National Grid Safety Procedure	Rev. No.	7
	Page No.	32
N-1402	CONTRACTOR SAFETY REQUIREMENTS	Date: 09/11/2013

7.3 Substation Work Area Identification (SWAI) *Applies to: All contractors, as-needed.*

1. Contractors who will be working in substations shall follow the SWAI procedure. National Grid will provide a copy of this procedure if required by the project. Refer to most current version of National Grid SMP499.10.2.
2. Qualified contractors as referenced in section 4.7 of this document shall install their own work area identification. National Grid shall arrange work area identification for non-qualified workers as required.
- 3. Designated storage areas will be posted in the yard and should be the only place items not being used that day are stored until needed.**

7.4 Herbicide Application *Applies to: All contractors, as-needed.*

1. Substation vegetation spraying shall be conducted unescorted only by contractor employees who have been designated as a Qualified Electrical Worker where applicable.
2. The spray applicator will have ID cards issued by Security with background checks available from the contractor.
3. Substations and Production plant management shall require a schedule of the spraying in their areas.
4. Once spraying begins, the contractor must contact local management on a daily basis to inform them of progress or changes to the schedule.
5. The contractor must post all stations with dated signs indicating when the station was sprayed. These signs should not inhibit access to the station.
6. 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.
7. When applying herbicides, contract employees shall wear goggles and other appropriate PPE to protect them from contact with herbicides in accordance with product labels.

National Grid Safety Procedure		Rev. No.	7
		Page No.	33
N-1402	CONTRACTOR SAFETY REQUIREMENTS	Date:	09/11/2013

8.0 GAS OPERATIONS WORK *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.

8.1 PPE Requirements *Applies to: All contractors, as-needed.*

1. All contractors shall comply with the applicable PPE and WZTC requirements referenced in Section 4.0.
2. The contractor shall wear all appropriate PPE and Class 2 rubber gloves for personal protection when digging or probing near (2 feet) of known electrical conductors and when the location of energized conductors is unknown.

8.2 Gas Operations

1. All contractors must meet the requirements of drug and alcohol testing in accordance with DOT Title 49 CFR Part 199.
2. Any contractor who performs covered tasks shall be operator qualified (OQ) as defined in the DOT Title 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 Operator Qualification written plan, (OQ Plan) Refer to the most current list of covered tasks in accordance with National Grids' Operator Qualification Program and the Northeast Gas Association, (NGA).
3. The Operator Qualified 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 and 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 3.4 of this document.
4. Contractor personnel involved with covered tasks may require certification by National Grid and an orientation of the involved tasks and National Grid Company standards. National Grid reserves the right to validate contractor qualifications prior to performing Live Gas work.
5. Atmospheres are to be tested with a properly calibrated Combustion Gas Indicator (CGI) or Gas Measurement Instrument (GMI) in accordance with National Grid excavation procedures as required.

National Grid Safety Procedure		Rev. No.	7
		Page No.	34
N-1402	CONTRACTOR SAFETY REQUIREMENTS	Date:	09/11/2013

6. 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. *Refer to National Grid Safety Procedure, M-1301 on Excavations, Trenching and Shoring, for additional guidance.*
7. At minimum, an approved 20lb. ABC type fire extinguisher must be at the worksite and readily available during all routine and live gas operations as conditions warrant.

9.0 FORESTRY AND VEGETATION MANAGEMENT

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.

9.1 PPE Requirements

Applies to: All contractors, as-needed.

1. For work along roads and other areas of vehicular traffic, contractors shall wear high visibility clothing or vests as referenced in section 4.0 and in addition to other PPE appropriate to the work.
2. 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.
3. Forestry contractors must wear a properly adjusted full-body fall protection 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.
4. 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.
5. Saws shall not be left unattended with the engine running.
6. 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.

National Grid Safety Procedure		Rev. No.	7
		Page No.	35
N-1402	CONTRACTOR SAFETY REQUIREMENTS	Date:	09/11/2013

7. Tree crews will not be allowed to fly their buckets in between the primary and secondary cables if MAD will be violated in process of doing so. In much of our construction, minimum approach distances can not be maintained and ducking down is not an option in avoiding inadvertent contact.

9.2 Equipment and Work Methods

Applies to: All contractors, as-needed.

1. 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.
2. 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.
3. For lump sum or unit price mileage trimming projects, a single foreman may supervise up to four (4) bucket trucks on the same project. However, in that case the minimum qualifications for the "lead" person on each of the other trucks shall be a Journeyman Tree Trimmer or equivalent (Qualified Line Clearance Tree Trimmer). At least one other employee on the truck shall be an OSHA defined, Qualified Line Clearance Tree Trimmer Trainee. For Upstate New York only, it is understood that a Qualified Line Clearance Tree Trimmer shall carry the title, wage and benefits as outlined in IBEW LU 1249's existing contract of a Journeyman Treeman and that a Qualified Line Clearance Tree Trimmer Trainee shall carry, at a minimum, the title, wage and benefits as outlined in IBEW LU 1249's existing contract of a Treeman Trainee, 2nd year.
4. By April 1st of each year, the contractor shall provide a list of employees that could reasonably be expected to work on National Grid property. This listing shall include:
 - identify the current pay classification of each employee,
 - the date of their progression to their current pay level,
 - the dates each employee completed each level of the contractor line clearance tree trimmers 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 completed CPR and first aid training,

National Grid Safety Procedure		Rev. No.	7
		Page No.	36
N-1402	CONTRACTOR SAFETY REQUIREMENTS	Date:	09/11/2013

- Identify each certified pesticide applicator, their certification number and category certified.

9.3 Training

Applies to: All contractors, as-needed.

1. Forestry contractor management will be required to attend safety council meetings hosted by National Grid as required. The contractor will ensure that all appropriate safety personnel for the National Grid territory are in attendance.
2. 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. Forestry contractors will be required to provide an updated Health & Safety Plan (HASP) by April 1st of each year for all work being conducted at National Grid.
3. All contractors using ATV's for transmission or Forestry work, are required to follow all local OHRV requirements for PPE and Driving safety

9.4 Herbicide Applications

Applies to: All contractors, as-needed.

Forestry contractor requirements for vegetation spraying are referenced under the Substations Work section 7.4 of this document.

A bump cap can be worn for this task that identifies the company and provides minor head protection at the same time from branches and the sun. Eye protection will be in accordance with the Chemical being used MSDS sheet which will be available on the job

National Grid Safety Procedure		Rev. No.	7
		Page No.	37
N-1402	CONTRACTOR SAFETY REQUIREMENTS	Date:	09/11/2013

10.0 EXPECTATIONS FOR SAFE VEHICLE OPERATION

Applies to: All contractors who will drive regularly in delivery of service for National Grid

- 10.1 Contractors are required to have a safe motor vehicle operation policy, and said policy must be communicated to their employees.**
- 10.2 Contractors are required to comply with the requirements of all federal, state and local regulations regarding safe motor vehicle operations.**
- 10.3 Contractors shall ensure that new and existing employees have valid Drivers Licenses in accordance with requirements of specific job duties and type of vehicles operated. Contractors must have acceptable driving records, and where their driving records are unacceptable, drivers shall not be permitted to drive on behalf of National Grid.**
- 10.4 Contractors shall provide vehicles in safe operating condition, in accordance with federal state and local regulations, with proper safety equipment as appropriate for the vehicle type and its intended use.**
- 10.5 Contractors shall track and evaluate their employees' vehicular accidents. Corrective actions, such as driver coaching, defensive driver training and medical/vision tests, should be applied where appropriate.**

National Grid Safety Procedure		Rev. No.	7
		Page No.	38
N-1402	CONTRACTOR SAFETY REQUIREMENTS	Date:	09/11/2013

11.0 LNG/PROPANE PRODUCTION, TRANSPORT AND HANDLING

Applies to: All contractors, as-needed

In addition to the other requirements referenced in this document, this section covers requirements that are specific to LNG/Propane Production.

11.1 Contractors who transport LNG/Propane at National Grid facilities are required to be certified in first aid/CPR and are required to complete frost-bite awareness training.

11.2 Basic PPE attire at production sites and other similar work zones include, at a minimum: hard hat, safety shoes and safety glasses and is referenced in Section 4.0 of this document. National Grid retains the right to enhance PPE requirements as conditions warrant.

1. The use of additional PPE shall be based on the task performed and the PPE matrix for work in production plants.

11.3 All personnel working at LNG plants will sign in and out of plants daily in the contractors log book. All other gas supply facilities require authorization under the Authorized National Grid Contractor Employee.

1. Prior to work beginning, trained plant personnel shall review and reissue as needed a work permit process which shall contain procedures which describe the work to be performed, valves and Lock-out/Tag-out numbers and valve locations. National Grid will provide a copy of this procedure if required by the project.

11.4 National Grid expects contractors working at LNG and LP plants to meet the requirements of 49CFR 193 Subpart H for health, training or experience and/or any applicable National Grid procedures that supersede the above requirements'. Contractors shall provide documentation on their qualified workers, as referenced in section 3.4 of this document.

11.5 All contractors must meet the requirements of drug & alcohol testing in accordance with 49CFR Part 199.

11.6 All Contractor personnel performing work in LP plants must meet the requirements' of the National Fire Protection Association (NFPA), part 59.

National Grid Safety Procedure		Rev. No.	7
		Page No.	39
N-1402	CONTRACTOR SAFETY REQUIREMENTS	Date:	09/11/2013

11.7 Herbicide Applications

Applies to: All contractors, as-needed

Contractor requirements for Production Station vegetation spraying are referenced under the Substations Work section 7.4 of this document.

12.0 ELECTRIC GENERATION

Applies to: All contractors, as-needed

In addition to the other requirements referenced in this document, this section covers requirements that are specific to Electric Generation.

12.1 PPE Requirements

Contract workers shall wear appropriate ear protection when working anywhere inside a generation plant and/or outside the plant where noise may be excessive. Acoustic barriers shall be maintained by the contractor as needed.

- 1 Safety shoes with a minimum height of six-inches are required in Generation plants.
- 2 FR Clothing-Contractors in Generation plants are required to wear 8-Cal clothing protection. For additional guidance refer to EGO-028 & EGO-029.

12.2 Training

1. Required training may include; PCB's, asbestos, mercury, confined space awareness and excavation competent person requirements. HAZCOM is required by contractors working in generation plants as applicable.
2. It is required for every contractor who works at a National Grid Generation Station, to attend an orientation regarding plant safety and as required, US Coast Guard Maritime Security (MARSEC) policies.

National Grid Safety Procedure		Rev. No.	7
		Page No.	40
N-1402	CONTRACTOR SAFETY REQUIREMENTS	Date:	09/11/2013

12.3 Equipment & Excavations

1. All excavations shall be performed in accordance with EGO-0005 and National Grid Safety Procedure M-1301 on Excavations, Trenching and Shoring.
2. Gasoline and diesel powered fork trucks may NOT be used inside the plant or other enclosed facility. Only propane/electric fork trucks are permitted except where additional hazards may exist.
3. Operators of fork trucks must be qualified and have a FDNY Certificate of fitness when working within NYC limits.
4. All wood products necessary for the work must be made of flame retardant material.

12.4 Equipment Isolation

1. For isolation of hazardous energy sources while working in Generation plants, please refer to EGO-0010, *Control of Hazardous Energy Sources-Work Permit System*.

12.5 Herbicide Applications

Applies to: All contractors, as-needed

Contractor requirements for Generation Station vegetation spraying are referenced under the Substations Work section 7.4 of this document.

13.0 Civil Construction work

1. Crews that are performing Excavations will include an excavation log with their job brief that states the soil type, expected depth and length as well as final depth and length. All required steps need to prevent collapse will be documented on this form as well prior to entry.

14.0 Aviation work

- ❖ Helicopter Crews of two or more will perform a pre flight documented job brief.
- ❖ Helicopter work will require the use of aviation helmets for both the pilot as well as the passengers.
- ❖ Those who fly and ride in helicopters will be required to participate in the “flying in the wires environment training prior to flight.
- ❖ Helicopter pilots must have a minimum of 500 document hours of flying in the wires environment prior to flying for National Grid.

Schedule E

Non-Disclosure Agreement dated September 2, 2015

NON-DISCLOSURE AGREEMENT

This Non-Disclosure Agreement (“**Non-Disclosure Agreement**”) dated as of **September 2, 2015**, (the “*Effective Date*”), between Willbros Engineers (U.S.), LLC (*Legal name of Service Firm/Consultant/Contractor*) a limited liability company (*Type of legal entity*) with offices at 2087 East 71st Street, Tulsa, OK 74136 (*Address of Service Firm/Consultant/Contractor*) and Niagara Mohawk Power Corporation d/b/a National Grid (“*National Grid*” or “*Company*”), a corporation, having offices at 300 Erie Blvd W, Syracuse, NY 13202 (each, individually, a “*Party*” and, collectively, the “*Parties*”).

WHEREAS, the Parties and their respective Affiliates (as such term is defined below) possess certain confidential and proprietary Information (as such term is defined below); and

WHEREAS, each Party may elect, in its sole discretion, to disclose Information to the other Party or its Representatives (as such term is defined below) in connection with National Grid Request for Proposal: Doc564287325 - JDR_RI Mobile Elevated Voltage Survey + Testing_FY16 and National Grid’s Rhode Island Mobile Elevated Voltage Program (the “*Purpose*”), subject to the terms and conditions of this Non-Disclosure Agreement.

NOW, THEREFORE, in consideration of the mutual covenants contained herein and for other good and valuable consideration, the sufficiency and receipt of which are hereby acknowledged, the Parties agree as follows:

§1. Certain Definitions.

(a) The term “*Information*” means

(i) all financial, technical and other non-public or proprietary information which is furnished or disclosed orally, in writing, electronically or in other form or media by the Disclosing Party and/or its Representatives to the Recipient and/or its Representatives in connection with the Purpose and that is described or identified (at the time of disclosure) as being non-public, confidential or proprietary, or the non-public or proprietary nature of which is apparent from the context of the disclosure or the contents or nature of the information disclosed; and

(ii) all memoranda, notes, reports, files, copies, extracts, inventions, discoveries, improvements or any other thing prepared or derived from the information described in §1(a)(i), above; and

(iii) all CEII (as such term is defined below).

(b) The term “*Recipient*” means a Party to whom the other Party or its Representatives discloses Information.

(c) The term “*Disclosing Party*” means the Party disclosing Information in its possession, or on whose behalf Information is disclosed, to a Recipient.

(d) The term "Representative(s)" means the officers, directors, managers, partners, members, shareholders, employees, agents, attorneys, accountants, contractors and advisors of a Party or its Affiliates.

(e) The term "Affiliate" means any person controlling, controlled by, or under common control with, any other person; "control" shall mean the ownership of, with right to vote, 50% or more of the outstanding voting securities, equity, membership interests, or equivalent, of such person.

§2. Permitted Disclosure and Critical Energy Infrastructure Information.

(a) Recipient shall receive all Information in strict confidence, shall exercise reasonable care to maintain the confidentiality and secrecy of the Information, and, except to the extent expressly permitted by this Non-Disclosure Agreement, shall not divulge Information to any third party without the prior written consent of the Disclosing Party. The foregoing notwithstanding, the Recipient may disclose Information to its Representatives to the extent each such Representative has a need to know such Information for the Purpose contemplated by this Non-Disclosure Agreement and agrees to observe and comply with the obligations of the Recipient under this Non-Disclosure Agreement with regard to such Information. The Recipient shall be responsible hereunder for any breach of the terms of this Non-Disclosure Agreement to the extent caused by its Representatives.

(b) The Parties acknowledge that Information and/or data disclosed under this Non-Disclosure Agreement may include "critical energy infrastructure information" ("CEII") as defined under applicable Federal Energy Regulatory Commission ("FERC") rules and policies. Recipient shall, and shall cause its Representatives to, strictly comply with any and all laws, rules and regulations (including, without limitation, FERC rules, regulations, orders and policies) applicable to any such CEII that is disclosed by or on behalf of Disclosing Party or that relates to any of Disclosing Party's or Disclosing Party's Affiliates' facilities. The Recipient shall not divulge, and shall cause its Representatives not to divulge, any such CEII to any person or entity, directly or indirectly, unless permitted to do so by applicable law and unless the Recipient has first obtained, in each case, the express specific written consent of the Disclosing Party and any affected Affiliate of the Disclosing Party. In any event, to the extent that the Recipient or any of its Representatives seeks or is ordered to submit any such CEII to FERC, a state regulatory agency, a court or other governmental body, whether in connection with the Purpose or otherwise, the Recipient shall (and, to the extent applicable, shall cause its Representatives to), in addition to obtaining the Disclosing Party's and its Affiliate's (as applicable) prior written consent, seek a protective order or other procedural protections to ensure that such information is accorded CEII status and is otherwise treated as confidential. With respect to CEII, in the event of any conflict or inconsistency between this Section and any other term or provision of this Non-Disclosure Agreement, this Section shall govern in connection with such CEII. This Section shall survive any termination, expiration or cancellation of this Non-Disclosure Agreement; the Parties shall, and shall cause their respective Representatives to, continue

to comply with this Section notwithstanding expiration of the Term (as such term is defined below) or any earlier termination of this Non-Disclosure Agreement.

§3. Exclusions from Application.

This Non-Disclosure Agreement shall not apply to Information that,

(i) at the time of disclosure by or on behalf of the Disclosing Party hereunder, is in the public domain, or thereafter enters the public domain without any breach of this Non-Disclosure Agreement by the Recipient or any of its Representatives,

(ii) is rightfully in the possession or knowledge of Recipient or its Representatives prior to its disclosure by or on behalf of the Disclosing Party hereunder,

(iii) is rightfully acquired by Recipient or its Representative(s) from a third party who is not under any obligation of confidence with respect to such Information, or

(iv) is developed by Recipient or its Representatives independently of the Information disclosed hereunder by or on behalf of the Disclosing Party (as evidenced by written documentation).

§4. Production of Information. The Recipient agrees that if it or any of its Representatives are required by law, by a court or by other governmental or regulatory authorities (including, without limitation, by oral question, interrogatory, request for information or documents, subpoena, civil or criminal investigative demand or other process) to disclose any of the Disclosing Party's Information, the Recipient shall provide the Disclosing Party with prompt notice of any such request or requirement, to the extent permitted to do so by applicable law, so that the Disclosing Party may seek an appropriate protective order or waive compliance with the provisions of this Non-Disclosure Agreement. If, failing the entry of a protective order or the receipt of a waiver hereunder, the Recipient (or any Representative of the Recipient) is, in the opinion of its counsel, legally compelled to disclose such Information, the Recipient may disclose, and may permit such Representative to disclose, that portion of the Information which its counsel advises must be disclosed and such disclosure shall not be deemed a breach of any term of this Non-Disclosure Agreement. In any event, the Recipient shall use (and, to the extent applicable, shall cause its Representatives to use) reasonable efforts to seek confidential treatment for Information so disclosed if requested to do so by Disclosing Party, and shall not oppose any action by, and shall reasonably cooperate with, the Disclosing Party to obtain an appropriate protective order or other reliable assurance that confidential treatment will be accorded the Information.

§5. Scope of Use. Recipient and each of its Representatives shall use Information disclosed by or on behalf of the Disclosing Party solely in connection with the Purpose and shall

not use, directly or indirectly, any Information for any other purpose without the Disclosing Party's prior written consent.

§6. No Representations; No Rights Conferred. Disclosing Party makes no representations or warranties, express or implied, with respect to any Information disclosed hereunder, including, without limitation, any representations or warranties as to the quality, accuracy, completeness or reliability of any such Information; all such representations and warranties are hereby expressly disclaimed. Neither the Disclosing Party nor its Representatives shall have any liability whatsoever with respect to the use of, or reliance upon, the Information by the Recipient or its Representatives. Neither Recipient nor its Representatives shall acquire any rights in Information by virtue of its disclosure hereunder. No license to Recipient or its Representatives, under any trademark, patent, or other intellectual property right, is either granted or implied by the disclosure of Information under this Non-Disclosure Agreement.

§7. Return or Destruction of Information. Recipient shall return and deliver, or cause to be returned and delivered, to the Disclosing Party, or destroy or cause to be destroyed (with certification of destruction delivered to Disclosing Party), all tangible Information, including copies and abstracts thereof, within thirty (30) days of a written request by the Disclosing Party (a "Request"). The foregoing notwithstanding, Recipient may retain one copy of such Information for archival purposes only and subject to compliance with the terms of this Non-Disclosure Agreement. Notwithstanding the foregoing, each Party agrees that the Recipient shall not be required to return to the Disclosing Party, or destroy, copies of Disclosing Party's Information that (A) reside on the Recipient's or its Affiliates' backup, disaster recovery or business continuity systems, or (B) that the Recipient or its Affiliates are obligated by applicable law and/or governmental regulations to retain. The Recipient agrees that, following its receipt of the Request, it shall neither retrieve nor use the Disclosing Party's Information for any purpose other than that specified in clause (B) above

§8. No Partnership, Etc. Nothing contained herein shall bind, require, or otherwise commit a Party (or any Affiliate thereof) to proceed with any project, sale, acquisition, or other transaction of or with the other Party or any other entity. No agency, partnership, joint venture, or other joint relationship is created by this Non-Disclosure Agreement. Neither this Non-Disclosure Agreement nor any discussions or disclosures hereunder shall prevent any Party from conducting similar discussions with other parties or performing work, so long as such discussions or work do not result in the disclosure or use of Information in violation of the terms of this Non-Disclosure Agreement. The terms of this Non-Disclosure Agreement shall not be construed to limit any Party's right to independently engage in any transaction, or independently develop any information, without use of any other Party's Information.

§9. Term and Termination. Except with respect to any Information that is CEII, Recipient's obligations and duties under this Non-Disclosure Agreement shall have a term of seven (7) years from the Effective Date (the "Term"). In the case of any Information that is CEII, Recipient's obligations and duties under this Non-Disclosure Agreement shall survive indefinitely (the "Special Information Term"). Either Party may terminate this Non-Disclosure Agreement by written notice to the other Party. Notwithstanding any such termination, all rights and obligations hereunder shall survive (i) for the Special Information Term for all CEII

disclosed prior to such termination, and (ii) for the Term for all other Information disclosed prior to such termination.

§10. Injunctive Relief. The Parties acknowledge that a breach of this Non-Disclosure Agreement by Recipient may cause irreparable harm to the Disclosing Party for which money damages would be inadequate and would entitle the Disclosing Party to injunctive relief and to such other remedies as may be provided by law.

§11. Governing Law; Consent to Jurisdiction. This Non-Disclosure Agreement shall be governed and construed in accordance with the laws of the Commonwealth of Massachusetts without regard to the principles of the conflict of laws contained therein. Each Party hereby submits to the personal and subject matter jurisdiction of the courts of the Commonwealth of Massachusetts for the purpose of interpretation and enforcement of this Non-Disclosure Agreement.

§12. Amendments. This Non-Disclosure Agreement may be amended or modified only by an instrument in writing signed by authorized representatives of all Parties.

§13. Assignment. This Non-Disclosure Agreement may not be assigned without the express written consent of all Parties hereto; provided, however, that National Grid may assign this Non-Disclosure Agreement to an Affiliate without the consent.

§14. Severability. Whenever possible, each provision of this Non-Disclosure Agreement shall be interpreted in such manner as to be effective and valid under applicable law, but if any provision hereof shall be prohibited by, or determined to be invalid under, applicable law, such provision shall be ineffective to the extent of such prohibition or invalidity, without invalidating the remainder of such provision or the remaining provisions of this Non-Disclosure Agreement. All obligations and rights of the Parties expressed herein shall be in addition to, and not in limitation of, those provided by applicable law.

§15. Entire Agreement. This Non-Disclosure Agreement constitutes the entire agreement among the Parties with respect to the subject matter hereof, and any and all previous representations or agreements with respect to such subject matter, either oral or written, are hereby annulled and superseded.

§16. Consents and Waivers. Any consent or waiver of compliance with any provision of this Non-Disclosure Agreement shall be effective only if in writing and signed by an authorized representative of the Party purported to be bound thereby, and then such consent or waiver shall be effective only in the specific instance and for the specific purpose for which it is given. No failure or delay by any Party in exercising any right, power or privilege under this Non-Disclosure Agreement shall operate as a waiver thereof, nor shall any single or partial waiver thereof preclude any other exercise of any other right, power or privilege hereunder.

§17. No Publicity. No Party shall issue any press release or make any other public announcement regarding the existence of this Non-Disclosure Agreement or any discussions among the Parties regarding the Purpose without the prior written consent of all Parties.

§18 Notices. Where written notice is required by this Non-Disclosure Agreement, such notice shall be deemed to be given when delivered personally, mailed by certified mail, postage prepaid and return receipt requested, or by facsimile or electronic mail, as follows:

To National Grid:

National Grid US Procurement
Attn: Jarrett Regard
300 Erie Blvd W
Syracuse, NY 13202

To:

Willbros Engineers (U.S.), LLC
Attn: Contracts Manager
Tulsa.Contracts@willbros.com

§19 Counterparts. This Non-Disclosure Agreement may be executed in one or more counterparts, each of which will be deemed to be an original copy of this Non-Disclosure Agreement and all of which, when taken together, will be deemed to constitute one and the same agreement. The exchange of copies of this Non-Disclosure Agreement and of signature pages by facsimile or other electronic transmission (including, without limitation, exchange of PDFs by electronic mail) shall constitute effective execution and delivery of this Non-Disclosure Agreement as to the Parties and may be used in lieu of the original Non-Disclosure Agreement for all purposes. Signatures of the Parties transmitted by facsimile or other electronic means shall be deemed to be their original signatures for all purposes. In proving this Non-Disclosure Agreement it shall not be necessary to produce or account for more than one such counterpart signed by the Party against whom enforcement is sought.

[Signatures are on following page.]

IN WITNESS WHEREOF, this Non-Disclosure Agreement has been executed by authorized representatives of the Parties as of the date first above written.

Niagara Mohawk Power Corporation

Willbros Engineers (U.S.), LLC

By: 
Name: Jarrett Regard
Title: Senior Buyer

By: 
Name: Jacob Flud
Title: Senior Vice-President Finance &
Administration

Schedule F

NGSP 6 – Background Check Requirements for Contracted Service Providers – Attachment A - National Grid Requirements for Contractor Employee Background Checks (For National Grid Level 2 Baseline & Supplemental Requirements) 09-01-15

And

Willbros Engineers (U.S.), LLC. Attachment B2

NGSP 6 – Background Check Requirements for Contracted Service Providers - Attachment A - National Grid Requirements for Contractor Employee Background Checks (For National Grid Level 2 Baseline & Supplemental Requirements) 09-01-15

1. Definition of “Contractor” and “Contractor Employees”

The entity or entities engaged or to be engaged under this contract to perform services for National Grid are alluded to throughout this document as “Contractor.” The individuals who will perform work for National Grid under this contract, including employees, principals, sole proprietors, sub-contractors, or contingent staff provided by the Contractor, are referred to as “Contractor Employees.”

2. Minimum Requirements

National Grid’s requirements for Contractor Employee background checks as defined below represent minimum requirements. Additional requirements may be deemed appropriate by National Grid or the Contractor or may be required by law, regulation, or other bodies having jurisdiction over the work or the Contractor. The Contractor must comply with any such additional requirements as are known or should reasonably be known by it.

To the extent the Contractor finds that the background check requirements are in conflict with State or Federal statutes, collective bargaining agreements, or other issues that would prohibit compliance, the Contractor should notify their Procurement Department representative for guidance and resolution.

3. Contractor Submittals

Contractor must complete and submit the attached B-1 or B-2 “Contractor Information Sheet and Compliance Statement for Employee Background Check Requirements” to National Grid.

4. Requirements for Background Checks to be Completed Prior to Performing Work

Background checks as defined below must be completed before any Contractor Employee begins work under the contract, whether brought on at the outset of a contract or at any other point in the contract term. Only with the written approval of the VP – Global Security may a Contractor Employee begin work in advance of background checks being completed. Requests for approval of any such allowance must be made by a National Grid manager and shall not extend *beyond 14 calendar days*.

Contractor is responsible for engaging National Grid’s Approved Background Check Provider to conduct the background checks (see Attachment C for instructions).

5. Identification Verification/Eligibility to Work in the Country:

Contractor Employees’ identities must be verified and they must be legally eligible to work in the country where the work is to be performed.

National Grid requires Consent Based Social Security Number Verification (CBSV) through the Social Security Administration as well as I-9/E-Verify through the US Department of Homeland Security. If the results of the E-Verify or CBSV return mismatches or adverse results and the Contractor desires to have the employee perform work for National Grid, the Contractor must submit this information in writing to National Grid’s Security Department. National Grid’s Security Department, in collaboration with the National Grid User, Legal and Ethics Departments, will determine if the Contractor Employee will be allowed to perform work for National Grid and will notify the Contractor in writing of its determination.

6. Social Security Trace

In addition to CBSV, I-9 requirements, and E-verify, National Grid requires a social security trace on Contractor Employees. This search reveals all names and addresses historically associated with the Contractor Employees provided number, along with the date and state of issue, and verifies if the number is currently valid and logical. This search may also reveal the use of multiple social security numbers, AKAs/aliases, and additional employment information that can then be used to determine the parameters of other aspects of the background investigation. Adverse action should not be taken based solely on this information.

7. Criminal History Background Checks

Contractor Employees performing work or providing services to National Grid are subjected to a criminal history background check. Such checks shall be conducted on all names, including alias names that are provided or developed, and include State, County and Federal checks based on jurisdictions of work and residence for the past seven years, as well as international jurisdictions, if available. All checks will include both misdemeanors and felonies. Checks must be performed on all current Contractor Employees and any new Contractor Employees hired or assigned to support the National Grid contract. Contractor Employees who work in certain sensitive areas that fall under regulatory requirements, i.e., NERC, are subject to additional periodic criminal history checks and must consent for a background check to be completed by a company selected by National Grid. If required, this information will be contained in the supplemental background check information contained in Section 14 of this document.

If the results of criminal history background checks or any other source of information in the Contractor's possession, including the contractor employee's employment application, reveals a Contractor Employee to have a misdemeanor conviction within the previous five years, a felony conviction, or active/outstanding warrant(s), and the Contractor desires to have the employee perform work for National Grid, the Contractor must submit this information in writing to National Grid's Security Department. National Grid's Security Department, in collaboration with the National Grid User, Legal and Ethics Departments, will determine if the Contractor Employee will be allowed to perform work for National Grid and will notify the Contractor in writing of its determination.

The following criteria will be used as guidance by National Grid in making the determination of whether the Contractor Employee will be allowed to perform work specified in the contract between your company and National Grid. These criteria should also be evaluated by the contractor prior to making a request to National Grid for the Contractor Employee to be approved for assignment to the National Grid contract:

- Number of convictions
- Nature, seriousness and date(s) of occurrence of the offense
- Rehabilitation
- Relevance of the crime committed in relationship to the work to be performed
- Unreasonable risk posed to National Grid property or to the safety of employees, other Contractors, and/or customers

Contractor notification responsibility: During the term of the contract if the Contractor becomes aware of information concerning a criminal conviction and/or pending criminal case of a Contractor Employee that would fit the above criteria for reporting to National Grid, this information shall be forwarded to

National Grid's Security Department for determination whether the Contractor Employee should be allowed to continue working or providing services for National Grid.

8. Sex Offender Registry Search

Most states maintain a sex offender database that is available as a source of public record. Individuals convicted of such crimes as sexual assault, aggravated criminal sexual conduct, luring or enticing, and kidnapping, or who have been found to be repetitive and compulsive by experts and the courts are required to register with their state authorities. Specific registration requirements are dictated by state laws and are based on dates of offense, sentence and/or release from custody. Consistent with the scope of the Criminal History Search, a search will be conducted in the applicant's provided and developed names, in the state(s) of the applicant's residence and place of work for the past seven years, if a statewide sex offender registry is maintained and accessible as public record. If no statewide registry exists, the National Sex Offender Registry, coordinated by the U.S. Department of Justice will be searched. If the results of the Sex Offender Registry Search show that the employee is a registered sex offender and the Contractor desires to have the employee perform work for National Grid, the Contractor must submit this information in writing to National Grid's Security Department. National Grid's Security Department, in collaboration with the National Grid User, Legal and Ethics Departments, will determine if the Contractor Employee will be allowed to perform work for National Grid and will notify the Contractor in writing of its determination.

9. Residential Address Verification

A seven-year address verification will be performed. The purpose of this check is to confirm that the address exists and relates to a real property, and to establish that the individual permanently resides or previously resided at the address. Verifying the address given by a prospective employee is important because it confirms that other information provided is correct. An individual may wish to omit their current or former address to conceal adverse information, such as criminal convictions.

10. Employment Verification

A three-year prior employment history verification will be performed. The purpose of this check is important as it serves to check the accuracy of information provided by the applicant. This check may also reveal prior employment with National Grid that should be further explored (see section 13 below). An individual may wish to omit prior employment history to conceal adverse information, such as criminal convictions.

11. 5 Panel Drug Screening

Drug screening will be performed. The screening includes amphetamines, cocaine, marijuana, opiates and PCP. If the Contractor Employee's drug screening shows positive results, the employee cannot work for National Grid for a minimum of one year, after which time they can re-apply. Drug tests that are inconclusive because of diluted samples are allowed one re-test. Second tests that are inconclusive because of diluted samples are treated the same as positive results. Exceptions will not be granted for individuals holding medical marijuana licenses.

12. Global Watch List Search

U.S. and Global official sanction and embargo lists will be searched to identify PEPs (Politically Exposed Persons), SDNs (Specially Designated Nationals), terrorists, organized criminals, money launderers, fraudsters and others considered high risk. If the employee is found on any of the lists searched as part the Global Watch List Search and Contractor desires to have the employee perform work for National Grid, the Contractor must submit this information in writing to National Grid's Security Department. National Grid's Security Department, in collaboration with the National Grid

User, Legal and Ethics Departments, will determine if the Contractor Employee will be allowed to perform work for National Grid and will notify the Contractor in writing of its determination.

13. Motor Vehicle Driving Record Check and Annual Reviews

All Contractor Employees who are required to operate a motor vehicle in conjunction with their contract with National Grid must be legally licensed and hold a valid driver's license appropriate to the vehicle being driven. This requirement applies to Contractor Employees who will be driving a company, personal or rental vehicle at least once per month for National Grid business exclusive of the commute to their regular reporting location. This includes Contractor-owned or leased vehicles and National Grid-owned/leased vehicles. A motor vehicle driving record check to include a commercial driver license search, when applicable, must be conducted by the Contractor annually in order to validate this requirement. If the results of the Motor Vehicle Driving Record Check returns adverse findings and the Contractor desires to have the employee perform work for National Grid, the Contractor must submit this information in writing to National Grid's Security Department. National Grid's Security Department, in collaboration with the National Grid User, Legal and Ethics Departments, will determine if the Contractor Employee will be allowed to perform work for National Grid and will notify the Contractor in writing of its determination.

14. Employees Previously Terminated or Removed from National Grid Work for Cause

National Grid will not permit Contractor Employees who were previously employed by National Grid and were terminated by National Grid for cause, or Contractor Employees who were previously removed from working on any contract for National Grid to work for National Grid.

15. Supplemental Background Check Information

Due to the nature of the work to be performed by the Contractor, National Grid requires that the background check include the following information, if checked. Contractor Employees with adverse findings will not be allowed to perform work for National Grid. Detailed specifications for these supplemental background checks will be provided to Contractors during the contracting process, when required.

- Education/verification of degrees
- Validation of required licenses (professional and/or legally required)
- Credit history
- Criminal History updates every 7 years
- _____
- _____

16. Subcontracted Service Providers

Consistent with National Grid contract terms and conditions, Contractor will impose these background check requirements on any of its subcontracted service providers whose engagements will extend beyond 14 days and will provide evidence of this upon request by National Grid or its agent. Service providers include, but are not limited to:

- Contractors
- Consultants

- Staffing Agencies (employees and contingent workers assigned to National Grid work)
- Professional Services Firms

Excluded from applicability are firms that provide solely delivery or removal services such as:

- Equipment, materials, or office supply manufacturers and distributors
- Delivery companies
- Waste or recyclables haulers

17. Removal of Contractor Employees from Work

If it is determined at any time that a Contractor Employee does not meet the background requirements or has falsified a document that is or was part of the background check, Contractor shall notify National Grid Security immediately. National Grid Security will determine if the Contractor Employee must be removed from the work and will notify Contractor in writing of its determination.

18. Contractor Employee with Adverse Findings

Should a Contractor desire to utilize an employee for work in support of National Grid despite adverse findings with any of the background checks performed, Contractor must submit a request in writing to National Grid's Security Department. Following receipt of such information, representatives from National Grid's Security, User, Legal and Ethics Departments will evaluate the background check information and make a determination whether the Contractor Employee should be allowed to perform work for National Grid. National Grid will issue its determination in writing, which the Contractor should retain for the duration of the contract.

19. Retention and Access to Contractor Records

Contractor must maintain a record of all background checks and correspondence with National Grid regarding background checks performed during the term of the contract and shall provide confirmation to National Grid upon request that the necessary background checks were performed and there were no adverse results. Upon reasonable notice, National Grid may perform an audit of Contractor's background check records, background check program and all supporting documents concerning the background of any Contractor Employee performing work for National Grid should questions arise of character, veracity of previous employment and education, or allegations of criminal activity on the part of Contractor Employees or upon request from the National Grid business unit; provided that National Grid may be asked to sign an additional confidentiality agreement in form and substance reasonably satisfactory to Contractor. National Grid's direct costs and the cost for any contracted audit services will be at the expense of National Grid.

20. National Grid's Right to Revise Requirements for Contractor Background Checks

National Grid reserves the right to revise its requirements for Contractor Employee background checks during the contract term, with which the Contractor must comply. Any such revisions will be provided in writing. The Contractor may choose to not accept the revisions and renegotiate or terminate the contract.

21. National Grid Security Department Contact Information:

All inquiries and submittals to National Grid’s Security Department and/or Digital Risk and Security Department as required in this document shall be directed as appropriate to:

	All mail inquiries and submittals	Emails or Phone calls should be directed to:
Security	National Grid Global Security Security Coordinator 40 Sylvan Road Waltham, MA 02451	Email: Security-US@nationalgrid.com Telephone: 781-907-3910
Digital Risk and Security	National Grid Director of Digital Risk and Security 40 Sylvan Rd Waltham, MA 02451	Email: itsecurity@nationalgrid.com Telephone: 781-907-2902

Attachment B-2 – Contractor Information Sheet and Compliance Statement for Employee Background Check Requirements (for National Grid Level 2 Baseline and Supplemental Requirements)

1. Contractor Company Information

Name: Willbros Engineers (us) LLC
Address 1: 2087 E 71st Street
Address 2: _____
City: Tulsa State: Ok ZIP: 74136

2. Who would you like National Grid to contact regarding questions on the information provided below?

Name: Ruth Zaldivar Telephone #: 918 499-2898
Fax #: 918 499-2729 E-Mail: Ruth.Zaldivar@willbros.com

3. Contractor certifies by signing and initialing below that it understands National Grid’s requirements for Contractor Employee background checks as defined in “National Grid Requirements for Contractor Employee Background Checks (For National Grid Level 2 Baseline & Supplemental Requirements)”, and that by engaging National Grid’s approved background check provider, Accurate Background, Inc., to perform checks on its employees, the following checks will performed:

Background Checks	Initial
a. Consent Based Social Security Number Verification (CBSV) and Identification Verification	RB
b. I-9 and E-Verify to Determine Eligibility to Work in the Country	RE
c. Social Security Trace	RB
d. Seven-year Criminal History Background Checks by State, County and Federal Jurisdictions	RE
e. Sex Offender Registry Search	RE
f. Seven-year Residential Address Verification	RE
g. Three-year Employment Verification (for new hires only)	RE
h. 5 Panel Drug Screening	RE
i. Global Watch List Search	RE
j. Motor Vehicle Driving Record Check and Annual Reviews (if applicable)	RE
k. Previously Terminated or Removed Workers (Attachment A paragraph 14)	RE
l. Supplemental Requirements as checked	RE
m. Sub-Contractor Requirements	RE

Ruth Zaldivar, Manager HR Ruth Zaldivar 9/9/15
4. Officer/Principal Name & Title Signature Date

Schedule G

National Grid Contractor Environmental Requirements – Contracted Services – Environmental Procedure

No. 6 – Appendix C – Rev. No. 5

NATIONAL GRID ENVIRONMENTAL REQUIREMENTS

Contracted Services – Environmental Procedure No. 6 – Appendix C – Rev. No. 5

INTRODUCTION

National Grid is committed to conducting business in a manner that preserves the quality of the environment by continuously seeking ways to minimize the environmental impact of past, present and future operations. We are also committed to conducting our activities to meet all applicable laws and regulations, as well as company policies and the requirements of our Environmental Management System (EMS) and require the same of our vendors. Therefore, environmental performance is a consideration in the selection of contractors. National Grid's Environmental Policy should be viewed at <http://www.nationalgridus.com/>.

National Grid retains the right to require the contractor to immediately cease work activities if, in the opinion of National Grid, the contractor is not performing work in an environmentally-responsible manner or is in violation of National Grid procedures.

APPLICABILITY

This document applies to all contractors, vendors, consultants and others (hereinafter collectively referred to as 'vendors') who have a contractual relationship with National Grid.

COMPLIANCE WITH REGULATORY REQUIREMENTS

Vendors are required to comply with Federal, state and local environmental regulations and all other applicable laws, ordinances, and regulations, and project and site-specific permits. Compliance of personnel with all environmental and other applicable regulatory law and regulations is essential in protecting the environment.

SPILL PREVENTION

The Vendor shall conduct all activities in a manner that will prevent a release to the environment. Spill prevention measures, including maintaining spill control materials, may be required based on the activity being performed and the potential for spills.

Immediate notification by the Vendor to the appropriate Company representative is required for all environmental incidents resulting in a release of oil/hazardous materials or damage to public or private property. A written report describing the incident and proposing preventative measures must be provided to the Company within 24 hours of the incident.

The Vendor is responsible to make all required notifications to regulatory agencies in the required time frame and to ensure that the release is properly responded to, including cleanup and disposal of waste materials. The Vendor is responsible for hiring contractors for the cleanup of releases, as necessary. The Vendor may request assistance from the Owner in determining whether notifications are required and for guidance in response actions. If the Vendor does not respond appropriately, the Owner reserves the right to assume response actions and recover costs incurred from the Vendor.

DISPOSAL

The Vendor will work with the Owner to characterize all work-related wastes to ensure proper management and shall arrange for disposal in accordance with Federal, state and local regulations. The Vendor will work with the Owner to prevent pollution at the source, minimize waste generation and recycle/reuse materials when economically feasible (e.g., recycle oily soil via asphalt batching). There shall be no onsite disposal of wastes unless specified by the Owner elsewhere in the Agreement.

CHEMICALS

The Vendor shall provide a Material Safety Data Sheet (MSDS) for each material to be used during the work. All chemicals must be approved for use by the Safety Department and the Environmental Department.

All unused chemical (non-waste) products originally brought to the property by the Vendor shall remain the responsibility of the Vendor and shall be removed by the Vendor at the conclusion of the Vendor's onsite activities.

Schedule H

Willbros Engineers (U.S.), LLC's Contractor Compliance Affidavit – Compliance with U.S. Department
of Transportation Regulations 49 CFR Parts 40, 199 & 382

CONTRACTOR COMPLIANCE AFFIDAVIT

Compliance with U.S. Department of Transportation Regulations 49 CFR PARTS 40, ~~& 199~~ & ~~382~~

Contractor shall comply with all state and federal drug and alcohol testing regulations applicable to operators of pipeline facilities and LNG storage facilities and contractors performing operating, maintenance or emergency-response functions thereon ("covered functions"), specifically those regulations codified in Title 49, Parts 199 and 40, et seq. of the Code of Federal Regulations. ~~Contractor shall comply with all federal drug and alcohol testing regulations applicable to contractors performing FMCSA "safety sensitive" functions specifically codified in Title 49, Parts 382 and 40, et seq. of the Code of Federal Regulations. Not applicable.~~

Contractor shall demonstrate such compliance by (i) submitting to National Grid's service agent The Transportation Advisor (TA Monitor) a copy of the written Anti-Drug/Alcohol Misuse Plan maintained and followed by Contractor pursuant to the regulations and all other data and information required to demonstrate compliance and (ii) submitting an affidavit to National Grid stating that all employees of Contractor performing safety sensitive functions for National Grid pursuant to this Agreement have passed a pre-employment drug test and are covered by a drug and alcohol program conforming to the requirements, and that any of the Contractor's employees or employees of subcontractors performing covered and/or safety sensitive functions for National Grid pursuant to this Agreement shall submit to required drug and alcohol tests to be conducted by Contractor or by National Grid.

Contractor shall allow National Grid and the appropriate state and federal authority's access to its property and records for the purpose of monitoring Contractor's compliance with federal drug and alcohol testing requirements.

Contractor shall also provide an education and training program regarding the effects and consequences of drug use and alcohol misuse as provided for in 49 CFR 199. The Contractor must provide National Grid's service agent TA with all required information. TA will provide each contractor with login credentials for reporting purposes. The Contractor shall ensure that any subcontractors engaged by the Contractor to perform both covered functions and safety sensitive functions are in compliance with the requirements.

National Grid's Service Agent for contractor monitoring:
The Transportation Advisor, Inc.
TA Monitor, P.O. Box 558
Palmer, MA 01069
Telephone (800) 608-8890
info@transadvisor.com
Contact: Lisa Murray / Eileen Withers

The Contractor shall indemnify and hold the company harmless from any losses, damages, penalties (including but not limited to fines) or injuries including attorney's fees and expenses, suffered by the company due to the Contractor's non-compliance with these requirements.

Any question related to this contract provision should be directed to the National Grid Purchasing Agent.



CONTRACTOR COMPLIANCE AFFIDAVIT

Compliance with U.S. Department of Transportation Regulations 49 CFR PARTS 40, & 199 ~~& 382~~

As the authorized representative of this Company, I hereby certify that we have in place a compliant drug and alcohol training and testing program for our employees who perform operating, maintenance or emergency response functions on gas pipeline or LNG facilities pursuant to U.S. Department of Transportation Regulations (PHMSA) 49 CFR Parts 40 and 199.

~~I hereby certify that we have in place a compliant drug and alcohol training and testing program for our employees who hold a commercial driver's license and perform safety sensitive functions pursuant to U.S. Department of Regulations (FMCSA) 49 CFR parts 40 and 382. Not applicable.~~

We acknowledge that National Grid requires our company to achieve a minimum annual random drug testing rate of 30% for PHMSA regulated employees (5% higher than the established federal minimum rate). For employees ~~covered by FMCSA~~, our company will achieve a minimum annual random drug testing rate of 50% and minimum annual random alcohol testing rate of 10%.

Employees subject to these regulations have been pre-employment/transfer drug tested and are subject to reasonable cause, post-accident, return to duty and follow up drug and alcohol testing pursuant to the regulation. We will provide the National Grid service agent, The Transportation Advisor (800-608-8890) a copy of our PHMSA Anti-Drug/Alcohol Misuse Plan and our ~~FMCSA~~ Drug and Alcohol policy for review prior to performing regulated (covered or safety sensitive) work and will comply with the requirements of SHW-101, dated April 11, 2014. We will report our covered employee pool list and statistical data quarterly into TA Monitor unless notified in writing of the need to report more frequently.

9/9/15
Dated

Willbros Engineering (U.S.) LLC
Legal Name of Firm or Corporation

Jason Cradit
Name (Print)


Signature