

October 3, 2018

Mr. John Bell
Public Utility Rate Analyst
Rhode Island Division of Public Utilities and Carriers
89 Jefferson Boulevard
Warwick, Rhode Island 02888

Subject: Docket 4237; National Grid August 28, 2018 Contact Voltage Annual Report

Dear John:

I have reviewed National Grid's *2018 Contact Voltage Annual Report* dated August 28, 2018. This letter outlines my review, comments, and recommendations. On September 18, 2012 I prepared and filed testimony concerning Docket 4237, on December 19, 2013, I filed a memorandum with the Division in which I commented and provided recommendations concerning the National Grid *Stray and Contact Voltage Compliance Report* dated August 29, 2013. I have also provided letters containing comments and recommendations concerning each of the Annual reports on September 25, 2014, August 3, 2015, May 4, 2016 and October 6, 2017. My testimony and recommendations associated with the National Grid FY 2018 ISR Plan filing included an adjustment to the Contact Voltage Program due to the trend in changing ownership of streetlights to the municipalities. The Division recommended, and the PUC subsequently approved, moving from completing a 100% area survey to a 20% survey of the Designated Contact Voltage Risk Areas ("DCVRAs").

I found that National Grid's August 28, 2018 *Contact Voltage Annual Report* meets the requirements set forth in §39-2-25(b)(6)¹, while also incorporating all previous recommendations of the Division and multiple Commission Orders incorporating program additions and enhancements. Specifically, the Company complied with the PUC directive to complete surveys in 20% of DCVRAs, and located in Providence.² The Company appropriately reduced the number of the contact voltage survey areas to two DCVRAs in Providence (College Hill and Downtown).

The Company explained in detail the contact voltage survey process, and the findings and actions taken. It compared the FY 2018 results to the FY 2017 mobile surveys. Table 3 of the Company's report indicates a significant decrease in mobile events (now 13 versus 32 in 2017) with the majority of FY 2018 events associated with Streetlights (Table 2).

¹ §39-2-25(b)(6)- Annually report on contact voltage findings, including, but not limited to, the number and type of energized objects on both company-owned and customer-owned assets, voltage level, corrective action taken, shocks that occur to members of the public or to pets owned by members of the public, and any other information that the commission deems appropriate.

² Docket 4237 PUC Written Order issued September 4, 2018; page 6

**Table 3
 Comparison of Number of Mobile Events FY 2017 to FY 2018**

Number of Mobile Events	FY 2017	FY 2018
Readings less than 1 Volt	24	9
Readings Greater than 1 Volt but less than 4.5 Volts	7	2
Readings Greater than 4.5 Volts	1	2
Total	32	13

However, the comparison provided in Table 3 includes 100% of DCVRAs in FY 2017, while FY 2018 includes a subset of DCVRAs. A more accurate comparison would consider only those areas surveyed in both FY 2017 and FY 2018, which were College Hill and the Downtown area of Providence. The comparative results follow:

College Hill & Downtown Providence		
Number of Mobile Events	FY 2017	FY 2018
Readings less than 1 Volt	3	9
Readings > 1 Volt but < 4.5 Volts	3	2
Readings > 4.5 Volts	1	2
Total Number of Mobile Events	7	13

Overall, the number of mobile events has increased from 7 to 13 in the test area. The number of events less than 1 volt have increased from 3 to 9, while those above 1 volt show no significant variance from the previous year. Going forward, it is recommended that National Grid develop a methodology to compare survey results in the current year with results from the same DCVRAs in prior years. Otherwise, year-over-year statistics will reflect unrelated survey areas

The Company utilized THD readings for contact voltages between 1 and 4.5 volts to evaluate the usability of these readings in determining actionable contact voltage events. The Company has also incorporated a Shock Line, on which it received two calls. The Company found no elevated voltage in one case, and identified elevated voltage on customer owned equipment in the second situation. National Grid stated that they are in constant communication with the customer to address the concern as effectively as possible.³ I recommend that the Company continue its approach of remaining engaged with its customer, since elevated voltage issues may be contact or stay voltage events precipitated by customer equipment issues or contributions from the utility.

³ Contact Voltage Annual Report; page 19

The Company has used the mobile survey vendor TRC (formerly Willbros Engineering, LLC) since FY 2016. The next request for proposals for the contract will be for the FY 2020 mobile survey. The Company's RFP process should be comprehensive and incorporate multiple options, including 20%, 50% and 100% area testing pricing in order to have sufficient information for a contract that allows long term options without the need for price negotiations later.

The repair of identified events on municipal owned street lights has transitioned to municipal contractors. National Grid executed an agreement with the City of Providence which shifts the costs of repair and/or mitigation work to the City's contractors. Under this agreement, the Company was not responsible for, and incurred no repair costs in FY 2018. The Commission has directed the Company to determine whether remaining municipalities with Designated Contact Voltage Risk Areas would enter into an agreement similar to the one executed with Providence, and to report back to the PUC within three months.⁴ The Company's response is expected by December 4, 2018.

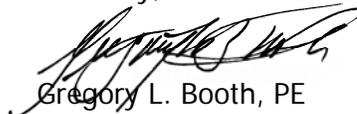
National Grid proposes to complete a survey of 20% of the DCVRA areas in prospective years. I anticipate that the Company will schedule upcoming surveys in Providence under the municipal agreement, since ten of the fourteen identified DCVRAs are located in the City. The Company also proposes continuation of post-mitigation annual testing and the use of THD testing.

Lastly, the Company has also recognized that the Institute of Electrical and Electronics Engineers ("IEEE") Standards Board's approved Standard P1695, *Guide to Understanding, Diagnosing and Mitigating Stray and Contact Voltage*, which is currently pending editorial revisions and approval. Potential updates to a related standard, P1696 *Standard for Terminology and Test Methods for Circuit Probes*, were discussed in the IEEE Technical Committee (TC-10) meeting on May 16, 2018, but no further actions resulted. Since there are no proposed changes to the contact voltage survey procedures or detection technology, the Company should continue its present process. The Company should continue to monitor IEEE committee activities and developments, and bring any standards changes to the attention of the PUC for future consideration.

I continue to believe that the program is mature and that remediation benefits are becoming evident. I support the Company's recommendations contained on pages 31 and 32 of its report. These are consistent with the Division's recommendations for the FY 2018 ISR Plan analysis process.

If you have any questions or would like additional clarification, please contact me.

Sincerely,



Gregory L. Booth, PE
President

glb/sk

⁴ Docket 4237 PUC Written Order issued September 4, 2018; page 6