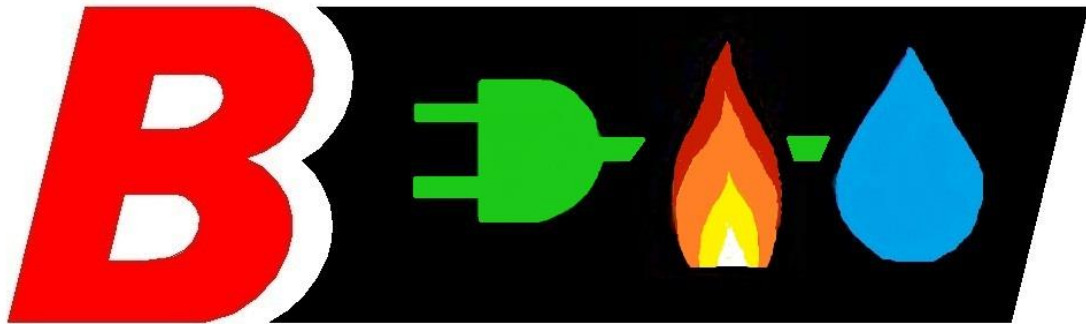


**BATH ELECTRIC, GAS & WATER SYSTEMS
2014 STRAY VOLTAGE DETECTION
AND
EQUIPMENT INSPECTION REPORT**



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April 1st, 2015

Hon. Kathleen H. Burgess, Secretary
New York State Public Service Commission
Three Empire State Plaza
Albany, New York 12223-1350

**Re: Case 04-M-0159 – Proceeding on Motion of the Commission to Examine the
Safety of Electric Transmission and Distribution Systems**

Dear Secretary Burgess:

Pursuant to the Public Service Commission's Order Directing Utility Filings issued January 5, 2005, in the above-referenced proceedings, Bath Electric, Gas & Water Systems submits this comprehensive compliance report, for the eight year. The report describes Bath Electric, Gas & Water Systems stray voltage detection and equipment inspection program conducted in 2014.

If you have any questions concerning this report, please contact the undersigned.

Respectfully submitted,



Guy Q. Hallgren, PMP
Director of Municipal Utilities

Enclosures

GQH/sd

c: NYMPA

Bath Electric, Gas & Water Systems 2014 Stray Voltage Detection and Equipment Inspection Report

Purpose:

On January 5, 2005, the Public Service Commission (“PSC”) issued an order instituting Electric Safety Standards. The Standards require utilities to conduct an annual system-wide stray voltage detection program and an equipment inspection program to mitigate stray voltage risks to the public.

This report describes Bath Electric, Gas & Water Systems stray voltage detection program and equipment inspection program conducted in 2014 and addresses the following:

1. Results of the stray voltage testing program
2. Additional stray voltage detection
3. Results of the electrical facility inspection program
4. Adherence to PSC Performance Mechanism
5. Analysis of results
6. Additional stray voltage related initiatives
7. Future improvements
8. Certification of stray voltage and inspection program

Overview of Bath Electric, Gas & Water Systems:

History:

In 1914 the Village of Bath residents approved a \$50,000 bond issue to purchase the electric generation coal fired steam facilities portion of the Bath Electric and Gas Light Company establishing a municipal electric system. During 1920, the gas portion of that company was purchased, again establishing a municipal gas system with its’ operating responsibility given to the Board of Light Commissioners. This three person board was established in 1916 and its’ members would be appointed by the Mayor and Board of Trustees of the Village of Bath. With natural gas being discovered in Rathbone and Woodhull in 1930, the Village of Bath entered into a service agreement with the Southern Tier Gas Company to build a pipeline from those communities. In 1931, the Village Board approved a proposal to augment and replace the steam generation of electricity with internal combustion diesel engines (1-300 hp; 2-450 hp) built adjacent to the existing steam facilities on Ark Street and were completely operational on January 23, 1933. The steam generation plant was retired soon there after. In 1934 , the Bath Water Works Company informs the Village Trustees that it is unable to supply the needed volume of water for fire protection in its’ agreement with the Village. In 1935 by public referendum, the Village Trustees approved a five person Municipal Utility Commission. The MUC members at that time elected to do business as “Bath Electric, Gas and Water Systems”. In 1950, a 10” trunk water main was constructed from the Bath Water Works property (now Spring Meadows Apartments property) to then Westinghouse Electric along with a new sewer trunk line to that area in 1951. In 1952, studies were conducted on the BEGWS electric generation system which showed that excessive new capital investments would be needed to correct poor load factors. The MUC found in turn that attractive conditions offered by NYSEG made it advisable for BEGWS to cease municipal electric generation. Under resolution of the MUC, a contract was signed to purchase all electric

power from NYSEG. A Westinghouse substation of 7,500 Kw was purchased for Wilson Avenue. On April 4, 1962, the Village of Bath began accepting electric power from the NYPA from the Niagara Falls Hydro Electric Project. On May 19, 2008, the Village Trustees under resolution abolished the Municipal Utility Commission, and oversees the operations of the municipally owned utilities. On November 18, 2013, the Village Trustees under resolution reestablished the five person Municipal Utility Commission. Bath Electric, Gas and Water Systems currently employs 33 people to design, map, distribute, maintain, and account for electric, natural gas, water, and sewer services. We are the only municipality in New York State that handles all four utilities.

System Characteristics:

The Village of Bath has owned and operated the distribution system within the Village and spurs into the Town of Bath since 1914. It has grown from steam generation to diesel generation to purchasing transported power from NYSEG and the NYPA. Currently we are allotted 13.37 megawatts of hydroelectric power from the New York Power Authority which covers our peak loads for the system except for the months of November through April, weather depending. During these months of peak load, as a member of the New York Municipal Power Agency, we purchase additional power on the open market as a conglomerate with other New York State Municipality members to meet our demand. We currently have five substations totaling just over 30 megawatts of capacity for distribution through the system. On winter peak days we see as high as 22 megawatt peak loads. We are currently working on a \$7.4 million dollar upgrade to prepare to meet our increasing demand and loading for the future. An aerial map of our distribution system is attached (**See Appendix A**). We currently serve approximately 4500 electric customers.

Section 1 **2005 Stray Voltage Testing Program**

Bath Electric, Gas & Water Systems began its' Stray Voltage Testing Program on February 22, 2005. The Overhead Lines Supervisor, Mark Hawk and Director of Municipal Utilities, Guy Hallgren, explained the program scope to each of the electric department members including the positions of Lineman, Apprentice Lineman, and Laborers. It was determined that two Laborers under the direct supervision of the Overhead Lines Department Supervisor could be instructed to conduct efficiently this Stray Voltage Testing Program using the Extech Non-Contact AC Voltage and Current Detector (**See Appendix B**). Also used by Mr. Little and the two Laborers was the TDS Recon Pocket PC with GPS capabilities to record field data and stray voltage results which were downloaded everyday and compiled. As you inspect our four substation location spreadsheets, you will see the following subtitles for each location tested: Circuit Number; GPS Time; Y Coordinate (ft); X Coordinate (ft); Tester; Weather; Pole Owner; N E S W; Transformer; Street; Property Number; Structure Location; Town; Volt Detection; Volt Found; Volt Level; Comments; Light on Pole; Pole; Guy/Anchor; Riser Pipe; Traffic Signal Pole; Cross Walk Signal; Metal Light Pole; Pole Downground; Pedestal; Vault Cover; Manhole Cover; Handhole/Service Box; Fencing; Substation Enclosure; Switchgear; Other Descriptions of Structures; and Current Pole Number. Quality assurance of all recording and testing equipment was overseen by the Overhead Lines Department Supervisor with individual testers checking equipment daily and their supervisor performing monthly spot inspections during the testing period.

Bath Electric, Gas & Water Systems scope and approach to the 2005 Stray Voltage Testing Program was to conduct surveys from each of our four substation locations, extending up through each circuit from these. These four locations are as follows:

- Wilson Avenue Substation
- Fairview Drive Substation
- Hodgeman Lane Substation
- Faucett Road Substation

However this year's 2014 Stray Voltage Testing was performed by street instead of by circuit. As part of the BEGWS System Upgrade there will be one substation (Fairview Drive Substation) with six circuits as shown.

As you look through our 2014 Stray Voltage Testing Program, please be aware that our test results have been tabulated by these four substation locations mentioned above. All data collection sheets with each individual substation summary sheet are attached.

As BEGWS personnel progressed through the Stray Voltage Testing Program, no stray voltage was found.

We have included a Stray Voltage Summary Sheet for the four substation locations with totals. (See **Appendix B**)

Section 2

Additional Stray Voltage Detection

Please be aware that during routine work of the Overhead Lines Department during the 2014 Stray Voltage Testing Program period no stray voltage was detected in any other locations. The total number of calls received from customers would be none.

Section 3

2014 Electrical Facility Inspection Program

Bath Electric, Gas & Water Systems' approach to the Facility Inspection Program was that inspections were only to be conducted by the BEGWS positions of Overhead Line Supervisor, Assistant Line Supervisor, or a Lineman. Other positions would only be used for clerical purposes. Inspections included at a minimum: visual examination of poles, guy wires, risers, overhead cables and conductors, transformers, breakers, switches, and other aboveground equipment and facilities. We also inspected the interior of manholes, service boxes, vaults, and other underground structures.

This year the system inspection process did not take place as 37% of our system was inspected in 2013. The BEGWS Electrical Upgrade is still in process on the West side of the village. Changeovers are not reported on an ongoing basis but will be used for next year's inspection requirements.

The Bath Electric, Gas & Water Systems Program Plan included dividing the inspection process by substations and each individual substation circuitry, using the following list:

Wilson Substation

Circuits 101, 102, 104, 105, 106

Fairview Substation

Circuits 201, 202, 203

Hodgeman Substation

Circuits 301, 302

Faucett Substation

Circuits 401, 402

Once the BEGWS System Upgrade is completed there will be one substation:

Faucett Substation

Circuits 210,202,203,204,301, and 302

The BEGWS Action Plan was to inspect 35% of the electric distribution system facilities in 2013. With this said, we have completed reporting requirements.

The BEGWS Summary of Overhead and Underground Inspection (See Appendix C) normally looks at poles, trees and vegetation, conductor, transformers and other equipment. The total stray voltage sites inspected by BEGWS personnel was unknown. We expect to continue this BEGWS inspection process again in 2015.

Since 1996, BEGWS has done monthly inspections on our substation facilities. This includes looking for leaks, tank condition, foundation condition, pumps, piping, valves, structures, and soil condition. Any actions on these are recorded, repaired, and records filed. BEGWS considers 100% of our substations to be inspected for this reason. We have also included an example of a substation meter reading chart we do on a weekly basis and filed monthly, which includes meter reading, load tap changer, transformer reclosers, and backup battery status.

Section 4 **Public Service Commission Performance Mechanism**

This NYS Public Service Commission Safety Order requires 100% of publicly accessible electric facilities and street lights be tested for stray voltage. Of 1,119 items tested for stray voltage in our system, we found no stray voltage and also explained in Section 1 and 2, BEGWS has accounted for its' stray voltage testing.

The NYS Public Service Commission Safety Order also requires 100% of all electrical facilities be inspected in a five year period. In Section 3, BEGWS has accounted for all electrical facility inspections to meet this threshold.

Section 5 **Analysis of Results**

In summary, the Bath Electric, Gas & Water Systems stray voltage detection program for 2014 resulted in no locations found. 3028 items were tested in 2014 and with no locations found. We would conclude that stray voltage does not seem to be prevalent in the Bath electrical distribution system.

Section 6 **Stray Voltage Initiatives**

No additional programs related to stray voltage were conducted by Bath Electric, Gas & Water Systems beyond the scope of this order in 2014. We will however, work with other MEUA Members in the future to monitor and stay aware of new programs, work practices, any relative research and development, etc., which would pertain to the subject and Bath Electric, Gas & Water Systems.

Section 7 **Future Improvements**

Through the eighth year of the program, Bath Electric, Gas & Water Systems did notice the extreme amount of time, personnel, and equipment costs related to the stray voltage and inspection program for 2014. We hope these can be reduced in the coming year.

Section 8 **Certification of Stray Voltage and Inspection Program**

Please find the proper certification of Bath Electric, Gas & Water Systems stray voltage testing program included in **Appendix E**.

We have also included the proper certification of Bath Electric, Gas & Water Systems facility inspection program in **Appendix E**.