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Approved as Recommended
and so Ordered
by the Commission

(Signed)

KATHLEEN H. BURGESS
Secretary
Issues & Effective April 22, 2015

STATE OF NEW YORK
DEPARTMENT OF PUBLIC SERVICE

April 1, 2015

TO: THE COMMISSION

FROM: OFFICE OF CONSUMER SERVICE

SUBJECT: CASE 14-G-0160 – Petition of Central Hudson Gas and Electric Corporation, for approval of the Elster Q Sonic Plus Multi-Path Ultrasonic gas meter.

RECOMMENDATION: It is recommended that the Commission approve the Central Hudson Gas and Electric Corporation's petition and allow the Elster Q Sonic Plus Multi-Path Ultrasonic gas meter to be used in New York State to monitor natural gas flow for electric generation applications.

INTRODUCTION

By letter dated April 21, 2014, Central Hudson Gas and Electric Corporation (Central Hudson) requested approval of the Elster Q Sonic Plus Multi-Path Ultrasonic (Q Sonic) gas meter. Central Hudson intends to use the Q Sonic to record high load gas usage to the Danskammer Generating Plant. The Q Sonic Plus is manufactured by Elster Instromet, Rijkmakerlaan 9, 2910 Essen, Belgium.

Pursuant to the State Administrative Procedure Act (SAPA) §202(1), the petition was published in the State Register on June 11, 2014. The comment period expired on July 28, 2014, and no comments were received.

BACKGROUND

The Q Sonic meter is an inferential meter type that determines the gas flow rate by measuring the travel time of high frequency sound pulses through flowing gas. This is achieved with the use of three pairs of transducers that are installed in the gas meter wall. The transducers alternately send sound pulses emitted from one transducer and are received by the other transducer, thus creating an acoustic path.

Under no gas flow conditions, ultrasonic sound pulses travel at the speed of sound. With gas flowing through the meter, the speed of sound pulse traveling downstream of the gas flow is increased by the projection of gas flow velocity onto the acoustic path. The speed of sound pulse sent upstream of the gas flow is decreased by the same projection of the gas flow velocity onto the acoustic path. The difference in speed of sound travel times is related to gas flow velocity along both acoustic paths. The data from the upstream and downstream transducers allow for the calculation of the gas flow velocity and the gas volume flow rate through the meter. The Q Sonic is equipped with internal pressure and temperature modules that measure the amount of gas pressure and temperature passing through the meter, and adjusts the amount of gas flow based on differences in the delivered gas temperature and pressure.

The Q Sonic maintains a solid state Signal Processing Unit (SPU) that is externally attached to the meter. Gas delivery pressure, temperature, and the velocity of gas are electronically sent to the SPU, which then calculates the amount of mass gas flow that passes through the meter. The SPU maintains 16MB of re-writable memory that allows for the storage of data. The SPU maintains a visual display to allow for the monitoring of the Q Sonic energy flow and has a diagnostic display which indicates the Q Sonic health. The SPU is equipped

with an electronic Ethernet and USB output for connection to ancillary equipment and laptop computers. According to Elster, the SPU maintains a flameproof housing that meets the National Electric Code NEC Class 1, Division 1 specifications allowing the Q Sonic to be placed in enclosed spaces where possible explosive materials are present.

TESTS

To ensure the accuracy of the Q Sonic meter, Elster engaged the European Union of Metrology and Weights and Measures to conduct performance tests on the Q Sonic meter. The results of these tests found the Elster Q Sonic meter to meet accuracy specifications within one percent. The Q Sonic meters purchased for the Danskammer Generating Plant were performance tested by TransCanada Calibration LTD[1]. The TransCanada performance tests indicated the Q Sonic maintained accuracy within Commission requirements and national standards at minimum and maximum flow rates.

RECOMMENDATION

Staff recommends that the Commission approve the Elster Q Sonic Plus Multi-Path Ultrasonic gas meter for use in New York State.

[1] TransCanada Calibration LTD (TransCanada) is a recognized international laboratory capable of testing meters to meet American Gas Association specifications. TransCanada employs personnel having thorough practical and theoretical knowledge of ultrasonic meters, with adequate training in electronic meter design and theory, and in making precise measurements. The electronic equipment and test standards employed by TransCanada conform to the applicable international standards. Furthermore, the accuracy of the test equipment used by TransCanada was established by comparison with standards and accuracy traceable to Measurement Canada and the National Institute of Standards and Technology.

It is recommended that:

1. The petition of Central Hudson Gas and Electric Corporation for approval of the Elster Q Sonic Plus Multi-Path Ultrasonic gas meter in New York State be approved; and

2. this proceeding is closed.

Respectfully submitted,

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