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Approved as Recommended
and so Ordered
by the Commission

JACLYN A. BRILLING
Secretary

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STATE OF NEW YORK
DEPARTMENT OF PUBLIC SERVICE

June 18, 2008

TO: THE COMMISSION

FROM: OFFICE OF CONSUMER SERVICES

SUBJECT: CASE 07-E-1503 - Petition of General Electric Company for approval of the GE Energy I-210+ and I-210+c lines of Electricity Meters, filed in C 279.

RECOMMENDATION: It is recommended that the Commission approve the petition of General Electric and permit the use of the General Electric I-210+, I-210+c and I-210+n electric meter lines.

APPLICATION

By petition dated December 17, 2007, General Electric Energy (General Electric or GE) requests Commission approval of the GE I-210+, I-210+c and I-210+n electric meter product lines. In accordance with 16 NYCRR Part 93, Niagara Mohawk Power Corporation d.b.a. National Grid has submitted to the Secretary to the Commission a letter of intent to use the meters in residential and commercial applications for revenue metering and billing applications. In accordance with the State Administrative Procedure Act (SAPA) the petition was noticed in the State Register on March 19, 2008. The comment period expired on May 3, 2008 and no comments were received.

GENERAL DESCRIPTION

The GE I-210+, I-210+c and I-210+n product lines are solid state electronic meters for measuring electric kilowatt hour (kWh) energy. The I-210+ meter base assembly contains current sensing transformers that feed electric current signals to the meter's metrology circuit that contains an analog-to-digital converter. The circuit contains an 8-bit microcontroller and an analog-to-digital converter that reads accumulated energy at specific intervals and calculates energy consumption to be displayed on the meter register. This circuit transfers meter data to a nonvolatile, electrically erasable, programmable, read-only memory (EEPROM) device that is used to store meter data. The nonvolatile memory device does not require a battery to retain meter data when electric power is not present. The I-210+, I-210+c and I-210+n product lines are equipped with soft switch firmware and a modular communication connector that allows the utility to upgrade the I-210+, I-210+c and I-210+n functionality while in service. The GE I-210+ soft switch firmware allows the utility to turn on meter functions remotely to increase its functionality. The GE I-210+ is equipped with a modular 'plug n play' communication connector that is compatible to radio-based data communication technology. This versatility allows the GE210+ meter line to be retrofitted with utility preferred communication devices while in service.

The I-210+ meters are available as single phase socket based meters for residential and commercial applications. The I-210+n meter is functionally similar to the I-210+ single phase meter but contains additional circuitry to support poly-phase network applications. The I-210+ and I-210+n can be applied to 120 volt alternating current and 240 volt alternating current applications. The GE I-210+ and I-210+n are designed to measure delivered and received energy, and can be upgraded by implementing a set of soft switches to allow for a communication module.

The I-210+c meters are electrically similar to the I-210+ meter line in single phase and in network electric configuration. The I-210+c are designed for use in commercial applications and can be upgraded to support additional functionality by adding additional circuitry or enabling its soft switches to provide demand and load profile data intervals, record time of use events and power quality information, and allow for a communication device.

Staff reviewed the GE I-210+ product line and determined when properly equipped with communication hardware the I-210+ line will assist customers to understand their usage behavior so they can alter their consumption patterns and energy usage in order to save on utility bills. The GE I-210+ meter line can therefore be upgraded to be compatible with utility advanced metering infrastructure (AMI), communication infrastructures and billing systems, if and when the Commission decides to approve utility AMI plans, and should not present an impediment to such conversion in the future.¹

General Electric requests approval to use the I-210+, I-210+n, and I-210+c metering lines in meter Forms 1S, 2S, 3S, 4S, 12S, and 25S, and meter Classes - 20, 100, 200, 320. The I-210+, I-210+c and I-210+n meters have a price range from \$25.00 to \$350.00 depending on hardware configuration, electrical functionality, and volume.

TESTS

General Electric certifies that the GE I-210+, I-210+c and I-210+n electronic meter product lines are designed and tested to comply with the applicable requirements as stated in the American National Standards Institute ANSI C-12.1 and C-12.20 Codes for electric metering and 16 NYCRR Part 93.

¹ The author of this memorandum is a member of the AMI Staff team.

The applicant further states that the tests were conducted by personnel with thorough practical and theoretical knowledge of solid state meters, with adequate training in electronic meter design and theory, and in making precise measurements. As mentioned the equipment employed to test the meters conforms to the applicable requirements of ANSI C-12.1 and C-12.20. The accuracy of the test equipment used by General Electric has been established by comparison with standards whose accuracy is traceable to the National Institute of Standards and Technology (NIST).

Staff of the Department of Public Service witnessed performance tests on the GE I-210+, I-210+c and I-210+n meter lines and found the meters to perform within the tolerances of the applicable ANSI 0.5 accuracy requirements. Staff requested further testing by National Grid to determine the effects of extreme temperature conditions on the performance of the I-210+, I-210+c and I-210+n meter lines. Under Staff's direction, National Grid simulated winter conditions in their environmental meter testing chamber for prolonged time intervals to determine if the I-210+, I-210+c and I-210+n meters can withstand extreme temperature conditions and continue to perform within the required ANSI accuracy range. The results showed that the I-210+, I-210+c and I-210+n sample maintained measurement accuracy within the limits required by the Commission across various ampere and power factor loads, and under extreme temperature conditions.

RECOMMENDATION

It is recommended that the Commission approve the petition of General Electric and approve the use of the General Electric I-210+, I-210+c and I-210+n product lines for revenue metering and billing applications for residential and commercial installations in New York State.

Respectfully submitted,

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