

BUILDING A WORLD OF DIFFERENCE

IRPS - 29 September 2016

AMI: POSITIVELY IMPACTING CUSTOMER SERVICE, OPERATIONAL EFFICIENCY, AND SAFETY AT GAS UTILITIES

JOSEPH TURGEON

PRINCIPAL CONSULTANT
GAS & WATER AMI SOLUTIONS



BLACK & VEATCH
Building a world of difference.®

BLACK & VEATCH CORPORATION

A LEADING GLOBAL ENGINEERING, CONSULTING AND CONSTRUCTION COMPANY TO THE POWER, GAS AND WATER INDUSTRIES



Black & Veatch

- Founded in 1915
- Global workforce of 10,000 employees with over 100 offices & projects on 6 continents
- \$3.8 billion in annual revenues
- Employee-owned corporation

Management Consulting Division

- World-class consultants
- Innovative ideas
- Industry best practices
- Common sense approach
- Technical knowledge
- Top-notch project execution



DELIVERING DAILY READS.....DAILY



AMR

- Walk-up/Drive-by reads
- Single ping reads → most commonly one read per month
- Single consumption values
- Meter to Collection Device one-way communication
- Focus on data collection & billing

AMI

- Fixed network for more frequent access to data
- Configurable time interval based reads (e.g. 15-min vs. 60-min)
- Multiple consumption values
- Secure two-way communication via encryption
- Focus on monitoring & management

AMI Takes You Beyond Metering!



AMI IMPROVES CUSTOMER SERVICE

Billing Management

- More timely and accurate meter reads
- Improve ability to resolve usage disputes during customer interaction
- More flexible settlement schedules
- Soft move-in / move-out
- Support advanced rate structures
 - Prepayment
 - Low Income Heating Assistance Program (LIHEAP) management
 - Balance notification
 - Time of use

Sustainability

- Granular intervals support conservation programs through usage awareness
- Web and smart phone portal access to monitor usage and receive alerts

Data Privacy

- Encrypted communications of meter data to the utility



AMI IMPROVES SAFETY

Workplace Safety

- Reduce on-the-job injuries
 - Sprains and strains from customer visits
- Reduce moving vehicle accidents
 - MVA, RVA
- Methane, odorant, and intrusion detection

Regulatory Safety

- PHIMSA compliance
 - Automated data collection and logging for regulatory reporting
 - Remote pressure sensing
 - District regulator stations
 - Cathodic protection monitoring
 - Galvanic
 - Impressed current

Public Safety

- Excess flow / broken pipe
- Tamper detection



CONCLUSION



AMI IS NOT JUST FOR ELECTRIC UTILITIES!

- Fixed network AMI is a transformative technology that can have positive impacts across the gas utility's business

APPENDIX



DEFINITIONS

Automated Meter Reading (AMR) is a one-way remote collection of consumption data from customers' utility meters using telephony, radio frequency, power-line and satellite communications technologies.

Gas Advanced Metering Infrastructure (AMI) is a full two-way communications network which provides time-synchronized interval meter data collected a minimum of daily and includes a data management system. It is a multi-purpose expandable network that can monitor and control devices deployed throughout the pipeline system. It enables efficient measurement and operations of the gas network and provides timely information to utility personnel and consumers.

Source: American Gas Association, Distribution Measurement and Regulation Committee, AMI Subcommittee

PHMSA

PIPELINE and HAZARDOUS MATERIALS SAFETY ADMINISTRATION

Code of Federal Regulations

TITLE 49 Transportation

Subtitle B – Other Regulations Relating to Transportation (continued)

Chapter I – Pipeline and Hazardous Materials Safety Administration,

Department of Transportation (continued)

Subchapter D – Pipeline Safety

Part 192- Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards



PHMSA: PRESSURE MONITORING RECORDING

§192.741 Pressure limiting and regulating stations: Telemetry or recording gauges.

(a) Each distribution system supplied by more than one district pressure regulating station must be equipped with telemetry or recording pressure gauges to indicate the gas pressure in the district.

(b) On distribution systems supplied by a single district pressure regulating station, the operator shall determine the necessity of installing telemetry or recording gauges in the district, taking into consideration the number of customers supplied, the operating pressures, the capacity of the installation, and other operating conditions.

(c) If there are indications of abnormally high or low pressure, the regulator and the auxiliary equipment must be inspected and the necessary measures employed to correct any unsatisfactory operating conditions

PHMSA: CATHODIC PROTECTION

§192.463 External corrosion control: Cathodic protection.

(a) Each cathodic protection system required by this subpart must provide a level of cathodic protection that complies with one or more of the applicable criteria contained in appendix D of this part. If none of these criteria is applicable, the cathodic protection system must provide a level of cathodic protection at least equal to that provided by compliance with one or more of these criteria.

(b) If amphoteric metals are included in a buried or submerged pipeline containing a metal of different anodic potential—

- (1) The amphoteric metals must be electrically isolated from the remainder of the pipeline and cathodically protected; or
- (2) The entire buried or submerged pipeline must be cathodically protected at a cathodic potential that meets the requirements of appendix D of this part for amphoteric metals.

(c) The amount of cathodic protection must be controlled so as not to damage the protective coating or the pipe.

§192.469 External corrosion control: Test stations.

Each pipeline under cathodic protection required by this subpart must have sufficient test stations or other contact points for electrical measurement to determine the adequacy of cathodic protection.



Building a **world** of difference.®

Together



BLACK & VEATCH