ADVANCED METER PROGRAM: STAFFING PLAN AND PROJECT UPDATE

Riverside Public Utilities

City Council
December 17, 2019

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ADVANCED METER INFRASTRUCTURE

AMI is a system of:

1. **Advanced meters**
2. **Communications networks**
3. **Data management**

It allows **two-way communication** between a customer's meter and the utility. The system transmits near **real-time information** about usage.

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METER DATA MANAGEMENT SYSTEM

An MDMS **validates**, **estimates** and **edits** the meter data to ensure the data is **accurately transferred** to the Customer Information System (CIS) for billing.

MDMS → **Customer Information System (CIS)** → **Billing**

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RIVERSIDE'S PROGRAM APPROACH

1. **Primary Goal**: maximize investment in existing meters.

2. **ERT Overlay**: install fixed network utilizing new AMI meters and collection devices to collect data from the existing meters, while providing new AMI functionality.

3. **Phased Approach**: Alpha and Beta Proof-of-Concepts, before rolling out Full Implementation.

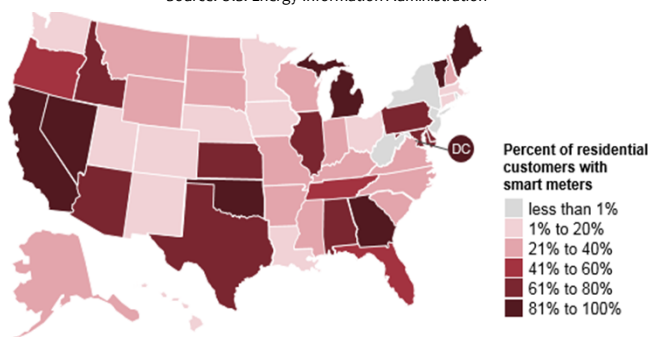4. **Best Practices**: utilize lessons learned from many other utilities that have already implemented AMI

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AMI IS THE CURRENT STANDARD FOR ELECTRIC METERING

In 2017, there were 78.9 million electric AMI installations in the US, which is over 50% of electric customers

By 2022, advanced meter installations worldwide will surpass 1.2 billion

Residential Smart Meter Adoption Rates by State - 2016
Source: U.S. Energy Information Administration
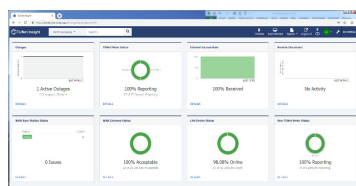

Percent of residential customers with smart meters

- less than 1%
- 1% to 20%
- 21% to 40%
- 41% to 60%
- 61% to 80%
- 81% to 100%

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AMI DEPLOYMENTS IN CALIFORNIA

PROGRAM UPDATE
ALPHA PROOF-OF-CONCEPT

AMI Test Lab

Field Install

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ALPHA POC ACCOMPLISHMENTS

✓ Installed collectors and repeaters

✓ Activated data routers (4 per collector)

✓ Installed AMI meters

✓ Associated AMI and ERT meters to the HES

✓ Retrieved on-request meter consumption and voltage readings

✓ Retrieved outage data

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ALPHA POC ACCOMPLISHMENTS (CONT'D)

✓ Obtained electric ERT meter read data through AMI devices

✓ Performed remote AMI meter connects / disconnects

✓ Received alerts and alarms for pre-programed events (such as high and low voltage events)

✓ Performed single and mass AMI meter uploads into CIS

✓ Validated communication device and meter coverage

✓ Implemented new CIS work orders

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ALPHA POC ACCOMPLISHMENTS (CONT'D)

✓ Implemented new CIS electric meter install and exchange process

✓ Implemented new meter data download/upload process

✓ Implemented new reading process for existing Multi-Vendor Reading System (MVRS)

✓ Successful results from extensive testing of all impacted systems – CIS, HES, MVRS, hand-held device

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COMMUNITY/CUSTOMER ENGAGEMENT CAMPAIGN

1. AMI Program webpage
2. Postcard mailer to all Alpha POC customers
3. Letter mailed to all Alpha POC customers
4. AMI Program 1-page flyer, available at all customer service locations
5. Program information sessions for RPU staff, Council Members, and City Executive Management

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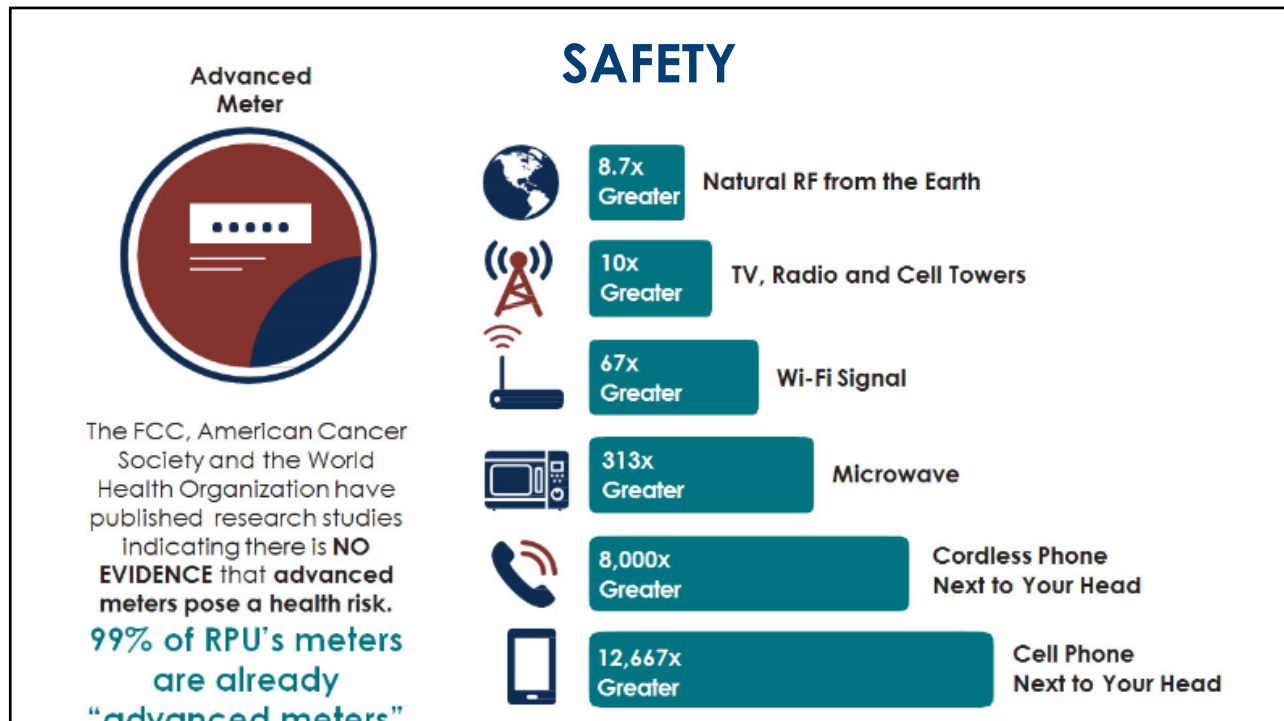
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PRIVACY AND SECURITY

1. All aspects of security for the AMI system adhere to the latest industry standards e.g. FCC, NERC CIP, NIST, etc.
2. Security techniques employed include:
   a. 2-factor authentication
   b. 256-bit encryption
   c. Access logging and audit records
   d. Role-based permissions
3. No personally identifiable information (e.g. names, payment information, addresses, etc.) are delivered over the radio network

https://www.riversideca.gov/privacy.asp

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SAFETY

Advanced Meter

🌎	8.7x Greater	Natural RF from the Earth
📡	10x Greater	TV, Radio and Cell Towers
📶	67x Greater	Wi-Fi Signal
📟	313x Greater	Microwave
☎	8,000x Greater	Cordless Phone Next to Your Head
📱	12,667x Greater	Cell Phone Next to Your Head

The FCC, American Cancer Society and the World Health Organization have published research studies indicating there is **NO EVIDENCE** that **advanced meters** pose a health risk.
99% of RPU's meters are already "advanced meters"

NEXT STEPS - BETA POC

1. Install all communication devices throughout RPU's service territory

2. Install 1,000 additional AMI meters

3. Complete/test system integration

4. Configure/test customer usage web portal

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FULL IMPLEMENTATION

1. Full implementation of the "ERT overlay"

2. Full AMI network with the deployment of approximately 24,000 additional AMI meters

    a) All commercial and industrial meters (approximately 12,500)

    b) Approximately 12,500 residential meters

3. Fully automated electric meter reading process

    a) AMI devices will collect data from all ERT meters

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STAFFING PLAN

In support of the changing environment and needs of the electric utility, the Human Resources Department is proposing operational changes, as summarized below and outlined in the Master Personnel Detail:

1. Field Services Division: Eliminate 1.0 FTE Utilities Field Services Manager

2. Electric Operations Division: Add 2.0 FTEs Utilities Electric Meter Technician

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PROJECT COSTS

Item	18/19	19/20	20/21	21/22	22/23	TOTAL
Tantalus AMI System	$140,000	$5,800,000	$1,327,644			$7,267,644
SmartWorks MDMS	$47,918	$595,732	$319,697	$395,665	$395,665	$1,754,677
EnQuesta Integration	$100,000	$275,000	$0	$0	$0	$375,000
Innovation & Technology Labor	$50,000	$230,000	$20,000	$0	$0	$300,000
Meter Test, IT and other Equipment	$150,000	$100,000	$0	$0	$0	$250,000
Customer Engagement Campaign	$150,000	$150,000	$0	$0	$0	$300,000
Contingency	$22,082	$77,918	$835,000	$0	$0	$935,000
TOTALS:	**$660,000**	**$7,228,650**	**$2,502,341**	**$395,665**	**$395,665**	**$11,182,321**

RECOMMENDATIONS

That the City Council:

1. Approve the proposed changes to the Fiscal Year 2019/20 Master Personnel Detail as described herein;

2. Approve an intradepartmental Budget Transfer of personnel funds totaling $155,668 from the Field Services Division 601000 to the Electric Operations Division 610000; and

3. Receive and file this project update on the implementation of the Electric Advanced Meter System and Meter Data Management System.