Arizona's Cooperatives Summer Preparedness Report to ACC 2016

Presented by Arizona G&T Cooperatives

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Arizona G&T Cooperatives

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Who are the Arizona G&T Cooperatives?

- Arizona Electric Power Cooperative (AEPCO) is the not-for-profit Generation and Transmission Owner and Provider for three All Requirements Members (ARM) and Partial Requirements Members (PRM) Distribution Cooperatives.

- AEPCO and its Members serve a large geographical area – 12 counties, numerous cities, and 8 tribes – 150,000 meters and 350,000 member-consumers.

- Arizona Electric Power Cooperative and Southwest Transmission Cooperative merged into a single entity in 2016. Arizona G&T (AzGT) refers to the collective of AEPCO's generation transmission functions, as well as Sierra Southwest Cooperative Services.

Distribution Cooperatives Represented by AzGT

- G&T ***All*** Requirements Members:

Anza Electric Cooperative, Inc.

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Anza, California

Duncan Valley Electric Cooperative, Inc.

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Duncan, Arizona

Graham County Electric Co-op

Pima, Arizona

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Distribution Cooperatives Represented by AzGT (Cont.)

- G&T ***Partial*** Requirements Members:

Sulphur Springs Valley Electric Cooperative, Inc.
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Sierra Vista & Wilcox, Arizona

MOHAVE electric cooperative
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Bullhead City, Arizona

TRICO ELECTRIC COOPERATIVE, INC.
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Marana, Arizona

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Other AZ Cooperatives Included in AzGT's Report

NAVOPACHE ELECTRIC COOPERATIVE

Lakeside, Arizona

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AzGT Member Cooperatives' Service Territories

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Resource Providers' Services

- G&T Cooperatives
  - All Requirements Members receive all resource-related scheduling, trading and ancillary services under their All Requirements contracts.
  - PRMs need to contract for such services from G&T or third party providers.
    - For the summer of 2016, all PRMs will reside in the AzGT subsystem of Western Balancing Area with AEPCO as their Scheduling and Trading Agent.
  - Navopache receives all necessary resource-related services from PNM and is in PNM Balancing Area.

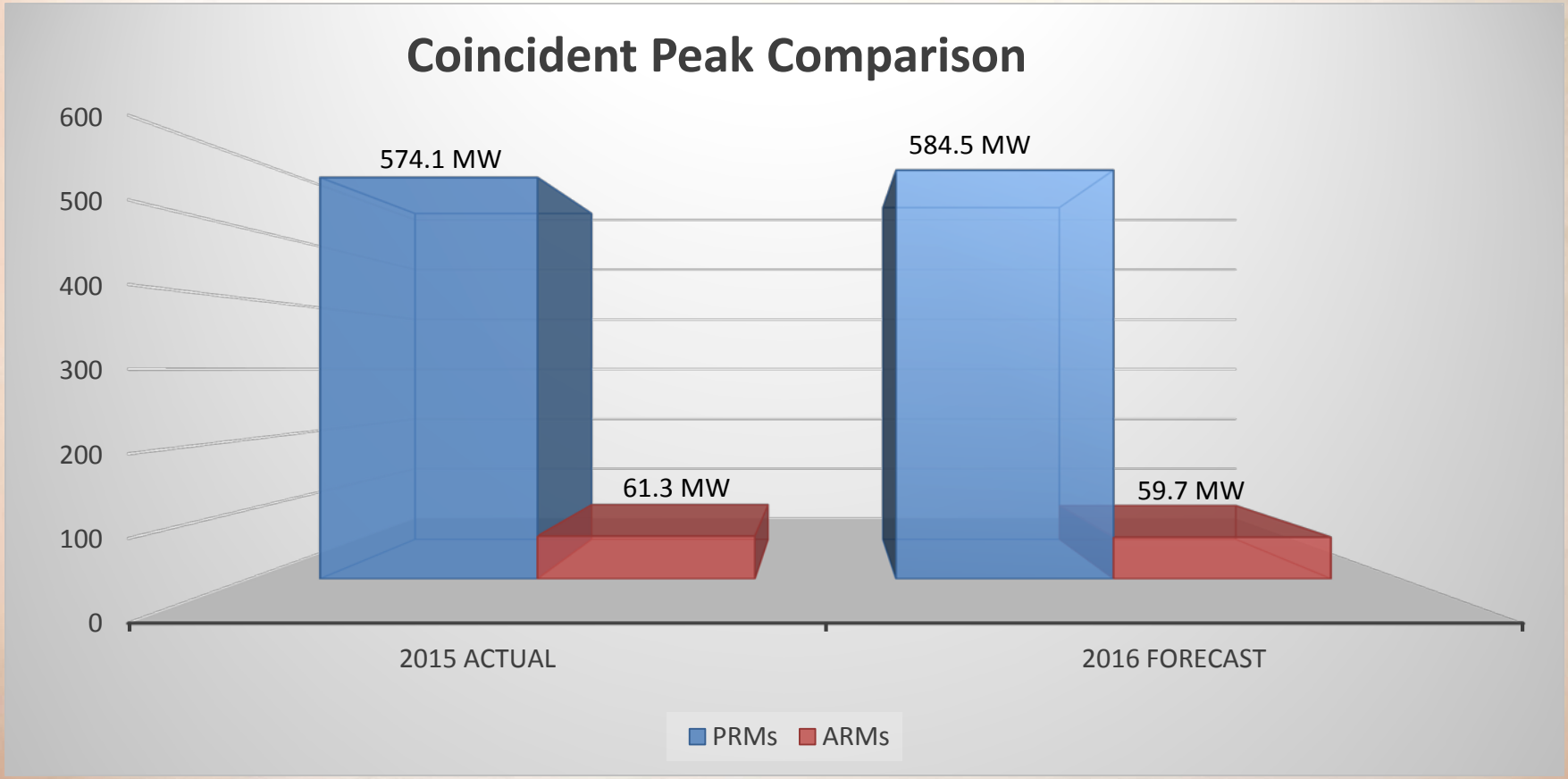
Peak Demand Summary

AEPCO has secured sufficient resources to meet the coincident peak demand for its ARMs and its allocated capacity obligation to each of its PRMs.

- Summer peak demand for AEPCO's ARMs for 2016 is projected to be 59.7 MW, in comparison with 2015's actual peak of 61.3 MW.
- Summer peak demand for AEPCO's PRMs for 2016 is projected to be 584.5 MW, in comparison with 2015's actual peak of 574.1 MW.
- PRMs supplement their Allocated Capacity (AC) in AEPCO resources in order to satisfy their summer peak load requirements. Additional resources and firm purchased power transactions are scheduled to fully meet PRM peak load requirements.

Navopache's projected summer peak load of 73 MW will be met by its 7 MW of federal hydro and the balance will be supplied by PNM as firm energy from PNM resources.

2016 Peak Forecast vs. 2015 Actual



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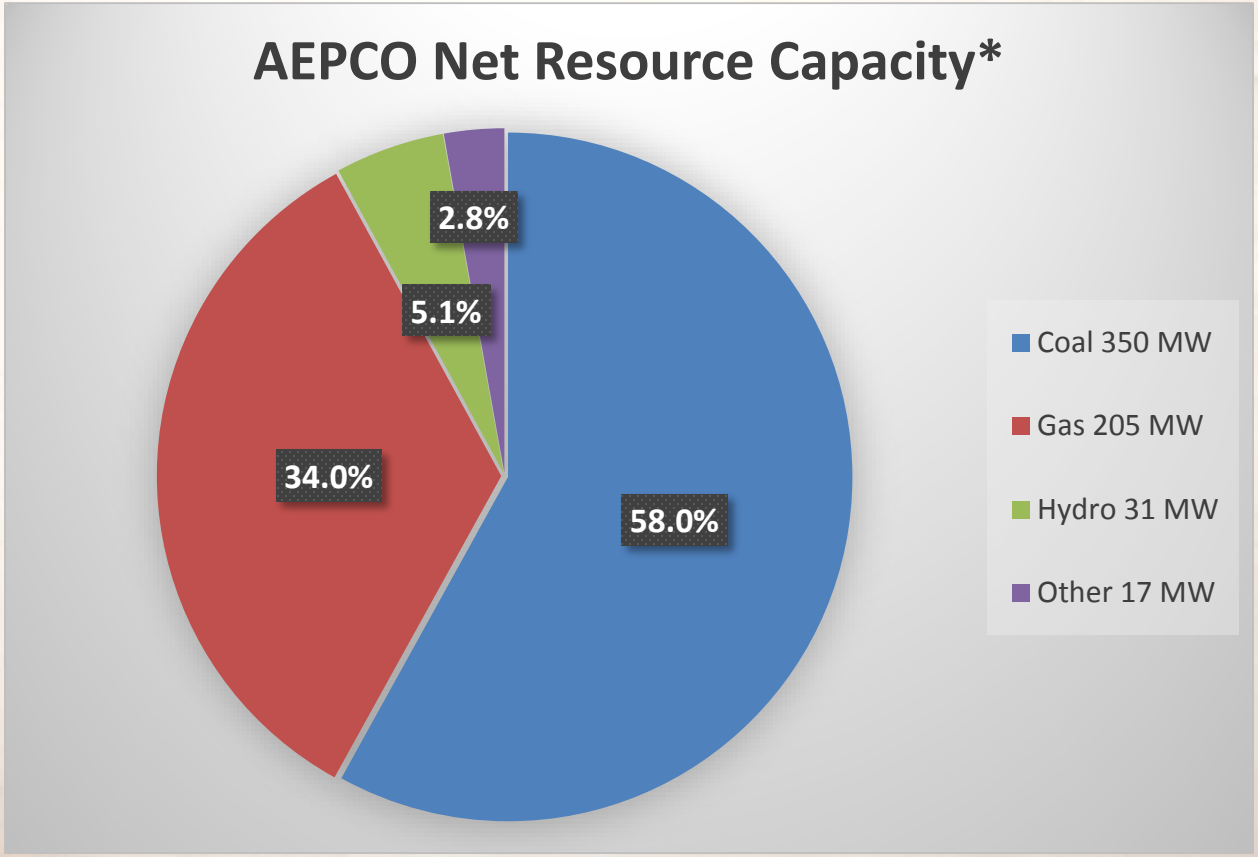
AzGT Resource Portfolio - 2016



*Excludes MW held back for losses and contingency reserves.

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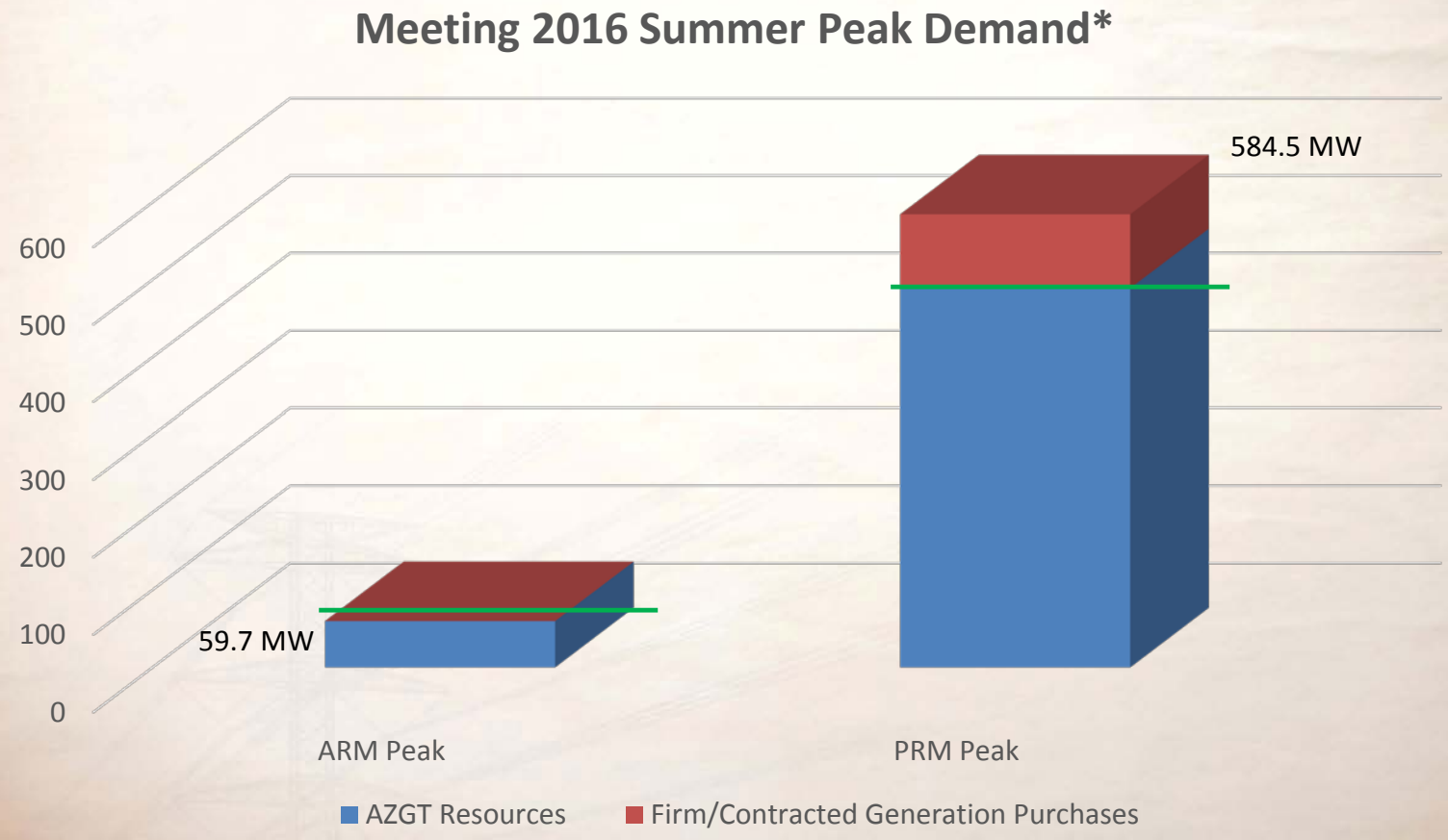
Summer 2016 Demand Forecast



*Represents possible capacity mix for peak load service under normal operating conditions.

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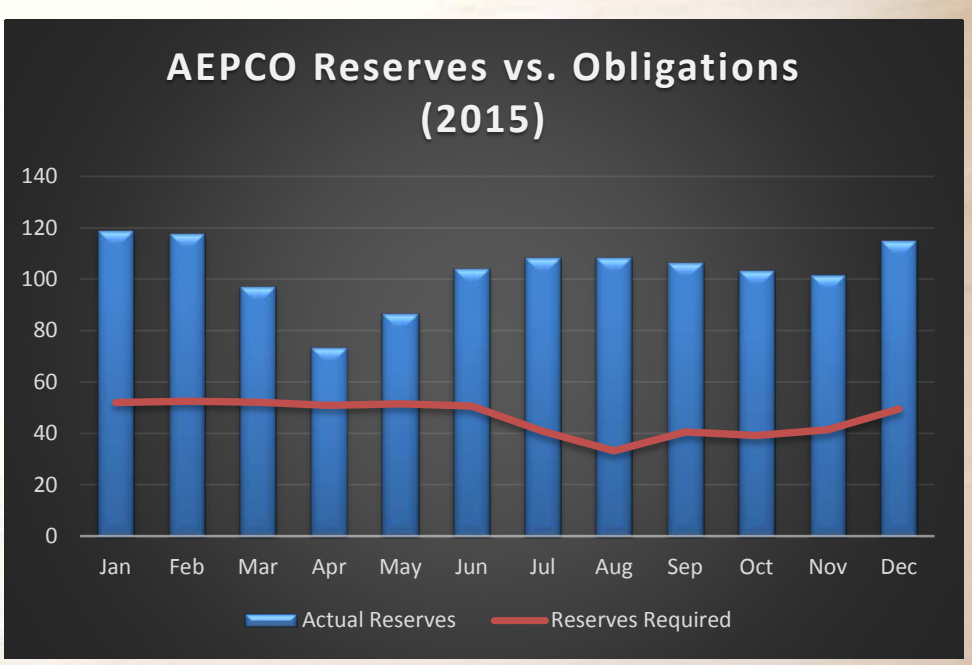
AzGT Reserves

- The Cooperative maintains an annually updated plan in case of the loss of its single largest hazard under peak load conditions.
  - For immediate response, AEPCO continues membership in the Southwest Reserve Sharing Group (SRSG).
  - For the event of an extended outage, AEPCO maintains:
    - Additional generation capacity which is 'held back' under normal operation.
    - Transmission Capacity to cover the largest unit outage.
    - Additional arrangements with transmission counterparties for emergency market access.



- These arrangements are sufficient to respond to forced generation outages or other potential service disruptions.

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AzGT Fuel Summary

- Coal
  - Guidelines are in place to maintain adequate fuel supply for full-load, prolonged operation.
  - Coal inventory is currently and is expected to be at adequate levels per Cooperative guidelines.
  - Coal supply and rail transportation contracts are in place to meet full requirements.
- Natural Gas
  - AEPCO has contracted with El Paso Natural Gas pipeline for firm gas transportation to supply its Apache Station units.
  - Transportation has been secured for both hourly peak usage and daily burn requirements.

AzGT Generation Preparedness

- Coal Unit Maintenance
  - Units have recently been tested to peak capacity performance standards.
  - In the Spring of 2016, both units underwent partial outages for scrubber maintenance.
  - In 2015, Apache Units 2 and 3 had minor outages in maintenance and improvements.

- Gas Unit Testing
  - ST1 is currently in maintenance overhaul, in which low-NOx burners will be upgraded.
  - All gas units have been recently tested to ensure startup capability and readiness for operational and reserve obligations.

AzGT Transmission Overview

- 622 Miles of Transmission Line
- 26 Substations

- Transmission service agreements in place to meet all Members' load requirements:
  - WAPA
  - APS
  - SCE
  - Point-To-Point Contracts

- Backup and Contingency Agreements
  - APS
  - TEP

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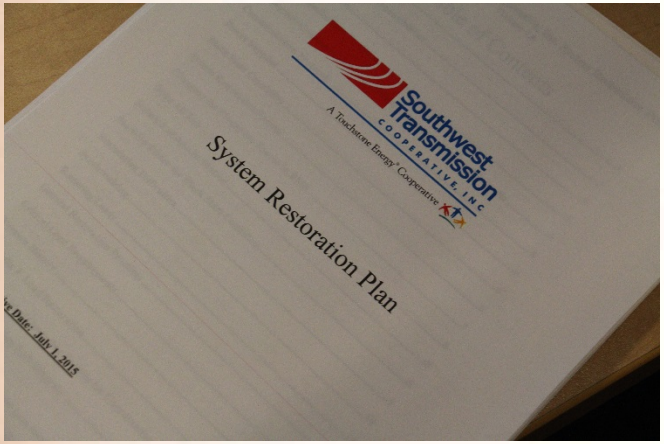
AzGT Transmission System Summer Preparation

- Transmission and substation maintenance and training scheduled to be complete prior to summer include:
  - All scheduled preventative maintenance activities prior to summer loads.
    - All power circuit breakers are tested on an annual basis to ensure functioning.
    - Transformer setting adjusted for optimal voltage levels.
  - Inspections and reliability
    - Every substation is inspected every 90 days.
    - Completed year **four** of a five year transmission wood pole ground line inspection program - testing pole strength and durability. Identified damaged poles are replaced before the start of the summer season.
  - Focused line-inspection and vegetation management activities
    - Inspection of all transmission lines performed biannually.
    - In Winter and Spring, special attention is given to high vegetation areas to avoid contact with transmission infrastructure.

Recent AzGT Transmission System Upgrades

Upgrade/Improvement	Substation	System Benefit
Capacitor Bank Installation	Sahuarita Three Points	Voltage Stability
Breaker & Relay Upgrades	Marana Sandario Three Points	System & Fault Reliability
Rebuilt Grounding Transformer	Greenlee Substation	System & Fault Reliability
RTU Installations	Most AzGT Substations	Grid Intelligence & Control

AzGT Operational Preparedness



- In March, all system operators participated in the Peak Reliability Coordinator regional restoration training.
- Updated G&T Joint Generation Contingency Reserve Plan for outage of largest generator.

Major Operational Improvements

2014
- Replaced sub-BA's Energy Management System and SCADA.

2015
- Completed WECC Audit of operations with *zero* violations.

2016
- Added System State Estimator to EMS System
- Upgraded Remote Terminal Units at substations.

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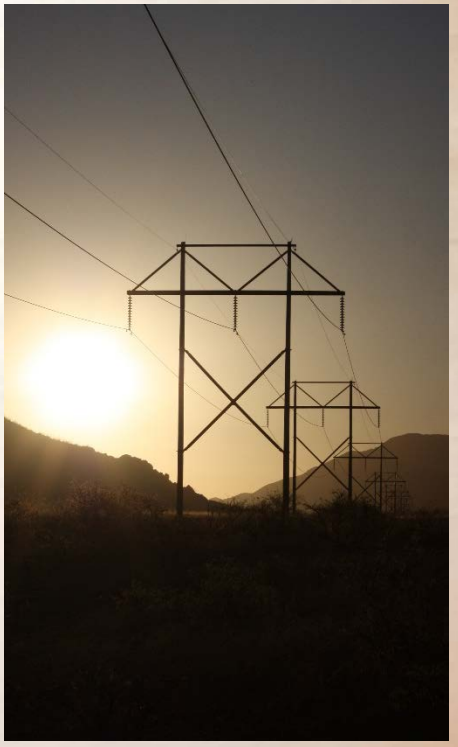
Summary of 2016 Summer Preparedness

- Existing resources, supplemented by firm purchases, will be sufficient to meet forecasted demand and energy needs.
- Fuel supply and transmission are in place to meet AEPCO's peak obligation.
- Operationally, AEPCO is well prepared, and contingency plans and reserves are in place for emergencies.
- Transmission system is well-maintained and ready to serve the load of ARM and PRM Members.



Questions?

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