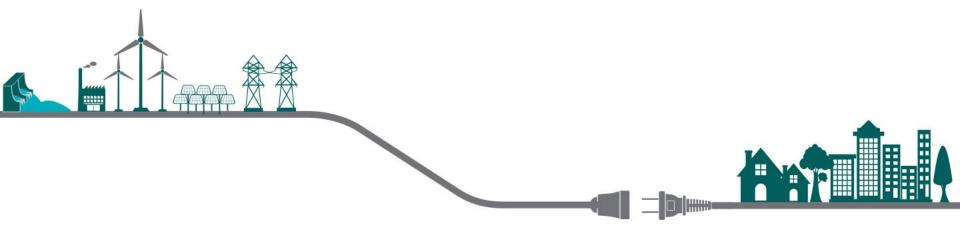
# Idaho Power Distribution



## **System Practices**



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## Idaho Power Distribution System Goal

"To <u>safely</u>, <u>reliably</u>, and <u>cost-effectively</u> meet near- and long-term load service requirements."

#### Core Principle of Distribution System Practices & Planning: Reliability

- Circuit management: Planning capacities, which are more conservative than thermal capacities, used to allow increased operational flexibility
- Standard asset sizes and voltages used to facilitate speedy restoration during maintenance or unplanned outages
- The distribution system designed to meet peak demand, regardless of the largest distributed generator on each circuit or transformer

#### Primary Driver of Decision-making: Cost-effectiveness

- General process for determining equipment replacement: Asset inspections, performance metrics, preventive maintenance
- Cost-benefit analysis for large distribution projects
- Project prioritization: All projects are ranked based on the costs and drivers including fit within budgeting, timing, and resource constraints.

# Four Core Evaluations of the Distribution System

- Load growth
- Aging infrastructure
- Non-wires Solutions
- Optimization and advances in equipment (grid modernization)

#### Load Growth

- Near-term forecasts: Seasonal peak demand forecasts on ~700 distribution circuits and 300 substation transformers are adjusted to reflect a 1-in-20 year peak temperature event
- Long-term forecasts are based on zoning and future land use

#### **Aging Infrastructure**

- Replacement of aging infrastructure (evaluated annually by cost center managers)
  - Based on equipment performance
  - Identified failure points from regularly scheduled patrols and inspections
  - Equipment obsolescence

#### Distribution

- Overhead Circuits
- Underground Circuits
- Line Equip (Regulators, Capacitors, Reclosers, Transformers)
- Line Switches
- Distribution Relays

#### Stations

- Transformers
- Circuit Breakers
- Protective Relays
- Instrument Transformers
- Batteries
- Communication
  Equipment

#### **Non-Wires Solutions**

- Optional solutions identified based on: Load shape
  - Time of peak
  - Forecasted growth of the area
- Non-wires solutions compared with traditional solutions for costeffectiveness including ongoing maintenance

#### **Optimization & Advances in Equipment (Grid Modernization)**

- SCADA monitoring
- New Volt/Var control system
- Distribution relay replacement program
- Field Area Network (FAN) addition to expand communication with system equipment