Diversified Utility Services

- Electrical
- Natural Gas
- Water
- Chilled Water
- Hot Water
- Waste Water Treatment
- Solid Waste or Recycle
- Water Control
Service Area

- 38 square miles
Reedy Creek Energy Services

- Contractor to the Reedy Creek Improvement District

Walt Disney World

Reedy Creek Improvement District

Reedy Creek Energy Services
Unique in Utility Industry

- MISSION
  - Invisible
  - Close to Customers
  - Highest Reliability
Unique in Utility Industry

- Operate 7 days, 24 hours
- Workforce: 290 skilled, well-trained people
- Strict regulatory environment
Drinking Water

- Supplied from 12 wells on property - Florida Aquifer
  - Excellent water quality
    - Chlorination only
  - 68% of water returns as sewage to wastewater treatment facility
Wastewater Treatment

- 15 MGD annual average daily flow
  - 100% of treated wastewater becomes reclaimed (reuse) water
  - Solid residuals dewatered and composted
Reuse/Reclaimed Water

- Irrigation
- Cooling towers
- Vehicle washing

Storage tanks (15 million gallons)
Solid Waste Services

- Fleet of 24 trucks
  - 24 hours/day, 7 days/week
Solid Waste Services

- Collect 133,000 tons annually for disposal & recycling
  - 11,000 tons recycled
  - 2850 tons wood and yard waste chipped for blending in compost
- In-vessel food composting facility
Chilled Water

- Meet air conditioning demands
- Manage chiller plants
- 40,000 ton capacity
High Temperature Hot Water

- Average temperature of 350°F
- Provided to Magic Kingdom and resort hotels
  - Building heat
  - Domestic hot water
  - Chilled water production
Other Services

- Water control - Drainage
- Canal system maintenance
- Roadways & signs
Natural Gas Distribution

- Primary fuel for co-generation plant
- Heating
- Cooking
- Auxiliary boilers
- Swimming pools
Electric Generation & Distribution

- Purchase about 75% of power needs
- 196 MW peak load
- Remaining 25% of power needs (52.5 MW)
  Combined cycle co-generation plant
Electric Generation & Distribution

- 28 miles of 69 kV lines
  - 16 miles underground
  - Aesthetics, security, reliability
- 290 miles of underground 12 kV feeders
Electric Distribution

- Nine 69 kV substations
Electric Distribution

- Energy Control Center

24 hour coverage
Distribution Switchgear

- Metal Enclosed Switchgear
  - Switching Stations
  - Unit Substations
Distribution Switchgear

- 15 kV Metal Clad Switchgear
  - Arc-resistant
  - OSHA 1910.269
  - IEEE C37.20.7
Distribution Switchgear

**SEL-351A RELAY POINTS:**

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<th>Parameter</th>
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**BREAKER/SWITCH POINTS:**

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Old Device Id: S40 BUS-A A400
Distribution Switchgear

- Special Cases
  - Mixed Gear
Reliability That Never Stops

- Main Street USA
## Low-Voltage Switchgear

![Image of switchgear interface](image)

<table>
<thead>
<tr>
<th>ENERGY</th>
<th>SUBSTA</th>
<th>U519</th>
<th>RTU REMOTE-LOCAL</th>
<th>REMOTE</th>
<th>REMOTE-LOCAL</th>
<th>REMOTE</th>
<th>BR/SW #4 REM-LOC</th>
<th>REMOTE</th>
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<th>SWITCH #2</th>
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**Note:**
- **RTU REMOTE-LOCAL**: Remote
- **REMOTE-LOCAL**: Remote
- **BR/SW #4 REM-LOC**: Remote
- **SWITCH #1**: Closed
- **SWITCH #2**: Closed
- **MAIN BREAKER**: Closed
- **SWITCH #4**: Closed
- **CONTROL POWER #1**: On
- **CONTROL POWER #2**: On
- **CONTROL POWER #4**: Off
- **XFMR ALARM**: OK
- **ENERGY**: Remote
- **SUBSTA**: Remote
- **U519**: Remote
- **RTU REMOTE-LOCAL**: Remote
- **REMOTE-LOCAL**: Remote
- **BR/SW #4 REM-LOC**: Remote
- **SWITCH #1**: Closed
- **SWITCH #2**: Closed
- **MAIN BREAKER**: Closed
- **SWITCH #4**: Closed
- **CONTROL POWER #1**: On
- **CONTROL POWER #2**: On
- **CONTROL POWER #4**: Off
- **XFMR ALARM**: OK

**Specifications:**
- **KILOWATTS**: 153.56
- **VOLTAGE**: 485.02
- **HIGH LIMIT**: 514.00
- **LOW LIMIT**: 446.00
- **AMPS**: 253.10
- **HIGH LIMIT**: 2400.00
- **LOW LIMIT**: -10.00
- **BKR/SW #4 KW**: 115.57
- **BKR/SW #4 AMPS**: 187.80
- **HIGH LIMIT**: 2000.00
- **LOW LIMIT**: -10.00
Low-Voltage Switchgear

- Unit Substations
  - Indoor double-ended
Low-Voltage Switchgear

- Outdoor Switchboards
  - Animal Kingdom Conservation Station
Low-Voltage Switchgear

- Motor Control Centers

<table>
<thead>
<tr>
<th>Device</th>
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<tbody>
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Automation Networking

- System Control
## Automation Networking

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Automation Networking

- Process Control Systems
- Pump Station B MCC
Reedy Creek Energy Services

THANK YOU!
Reedy Creek Energy Services

Questions?