Remote Controlled Mid-circuit Recloser Operation Savings
What’s a Recloser?

- A recloser is designed to automatically close after opening to allow a temporary fault to clear.

- Improves service continuity two ways:
  - by automatically restoring power after a temporary fault
  - by potentially isolating a sustained fault preventing a total circuit lockout.
Nova Mid-circuit Recloser

MID CIRCUIT RECLOSER SOUTH 21ST AND KANSAS
Service Continuity Improvements

Between 2007 and 2013:

• 873 momentary outages

• 220 sustained outages
  ▫ 204,577 customer interruptions saved
  ▫ 31,105,000 customer minutes saved

• $5,500,000 installation cost
  ▫ $27 per customer interruption
  ▫ $0.18 per customer minute
High Frequency Performing Reclosers

<table>
<thead>
<tr>
<th>Momentary</th>
<th>Sustained</th>
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<tbody>
<tr>
<td>Outages</td>
<td>CI Saved</td>
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<td>CMI Saved</td>
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- **Top 1/3**
- **Mid 1/3**
- **Low 1/3**

Taking Your Reliability to Heart.

Westar Energy
High Frequency Performing Reclosers

- 24 of 124 reclosers (about 20%) accounted for over 60% sustained recloser outages

- About 68% of customer interruptions saved and 79% of customer minutes saved were on these 24 reclosers
Should We Add Reclosers?

• 79 12kV circuits have 1,500+ customers with no recloser
  ▫ Of those 79, identified 21 worst performing circuits

• Annual Projections Savings
  ▫ Additional 854 CI saved
  ▫ Additional 146,000 CMI saved

• 3% improvement annually
Recommendation

- Evaluate the basis for adding more mid-circuit reclosers
- Further evaluate our current recloser placement to optimize savings