WEC Energy Group

- 4.4 million customers
- 69,000 miles of electric lines
- 47,000 miles of natural gas lines
- Power plant capacity – 8,600 MW
▪ First utility in the city of Chicago (1850)
▪ Delivers natural gas to about 843,000 customers in the city of Chicago.
▪ Operates 4,400 miles of main and over 500,000 services
Agenda

- Program Summary
  - Anodes
  - CP Test Leads
  - Inactive Service Cut-Offs
  - Leak Repair
Anode Installations

- Began in 2009 to decrease restoration costs
- Installations for first 2 years saw failure rates that resulted in a formal audit (400 cores)
- Most failures due to:
  - Poor compaction
  - Improper use of grout
  - Insufficient curing time
Anode Installations

- Improvements
  - Communication with contractor about expectations
  - Better training

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Cores</th>
<th>Estimated Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>1272</td>
<td>$483,500</td>
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<tr>
<td>2018</td>
<td>725</td>
<td>$275,500</td>
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<tr>
<td>2019 (to date)</td>
<td>68</td>
<td>$27,640</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>2065</strong></td>
<td><strong>$786,640</strong></td>
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Keyhole Coring with Integrated Test Station

- Effort to expand keyhole technology to installation of test stations occurred in 2015
- Input from other gas utilities and GTI
- Pilot installations on company owned property in high traffic areas
- Results brought to CDOT for approval
Keyhole Coring with Integrated Test Station

- All street Test Lead/Anode installations are performed through a keyhole.
- CDOT preferred method of excavation.
- 2015-2018, ~1000 test station cores have been installed at ~$750,000 in restoration savings.
Keyhole Core - Fabrication

- 18” X 12” core with 6” test station box molded into the center by corrosion contractor
- Prefabricated with Sakrete high strength 5000 plus mix and allowed a 48 hour cure time
400 E. Monroe
Inactive Service Cut-Offs

- Started in 2017
- Currently performed by one contractor with multiple crews
- Permits issued quicker
- Restoration Savings
  - No degradation fees ($5K-20K each opening)
  - Avoids full intersection replacement
- Approximately 2,050 keyhole cut offs completed
  - Reserved specifically for inactive services
- ~$1.2M Savings in Restoration
Workmanship Issues

- Reinstatement to same hole
- Height
Leak Repairs

- Pilot practice began April 2018
- 6” Cast iron low pressure bell joints
  - 34 leaks repaired by Permabond
  - 5 leaks repaired by other means
- Currently performed by one contractor
- Restoration savings ~$200,000
- Being discontinued