Utilizing Real-Time Outage Data for External and Internal Reporting

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Introduction

- Outage reporting is becoming more critical to utilities, external entities and to the media
- Utilities, external entities and customers alike are looking for the most up-date information so that informed decisions can be made
- There are many different methods to display outage information for both internal and external reporting purposes
ComEd System Overview

- 3.8 Million Customers
- 11,300 Square Miles
- 5,300 Distribution Circuits
- 43,700 Distribution Overhead Miles
- 44,100 Distribution Underground Miles
- 1.4 Million Poles
- Over 740 Substations
- Over 5,700 Transmission Miles

Geographical Outage Reporting

- ComEd’s “eOutage” web tool utilizes information from various systems
  - Outage Management System (OMS)
  - Geographic Information System (GIS)
  - Customer Information System (CIS)
- “eOutage” is available internally to the company and externally for towns and IEMA
- Provides information to assist in making decisions on crew-movement and utilization of emergency services
“eOutage” Outage Map

“eOutage” Outage Map - Drill Down
“eOutage” Outage Map - Detailed Drill Down

“eOutage” Outage Map – Outage Details
Real Time Outage Reporting

- Web reports can be specifically designed to:
  - Monitor OMS ticket status
  - Monitor Estimated Time of Restoration (ETR)
  - Keep town officials informed
  - Keep media outlets informed
  - Assist in determining where and how many resources are needed most during storms
  - Provide current reliability indices performance
OMS Ticket Status Report

OMS Ticket Status
As Of 12/1/2006 1:03:26 PM

Select Outage Date Range:
From Date: 12/1/2006 00:00 To 12/1/2006 07:59

Outage Type:
OMS

Outage Start Date & Time Range: From 12/1/2006 00:00 To 12/1/2006 07:59
Click on the Open Ticket count to view the outage tickets.

The Daily/Storm Status Report is to be used for Customer Count.

<table>
<thead>
<tr>
<th>System</th>
<th>Outage Type</th>
<th>Open Tickets</th>
<th>Estimated Customers Out</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>OMS TOTAL TICKETS</td>
<td>OMS CHICAGO CUSTOMERS</td>
</tr>
<tr>
<td>OMS DEVICE</td>
<td>42</td>
<td>5059</td>
<td>14</td>
</tr>
<tr>
<td>OMS FEEDER</td>
<td>12</td>
<td>2215</td>
<td>12</td>
</tr>
<tr>
<td>OMS CUSTOMER</td>
<td>67</td>
<td>67</td>
<td>12</td>
</tr>
<tr>
<td>OMS SERVICE TRANSFORMER</td>
<td>17</td>
<td>301</td>
<td>12</td>
</tr>
<tr>
<td>OMS Total</td>
<td>129</td>
<td>7722</td>
<td>37</td>
</tr>
</tbody>
</table>

View All OMS Tickets

Outage Ticket Status Detail Report

Outage List
Select Outage Date Range:
From Date: 12/1/2006 00:00 To 12/1/2006 07:59

OMS 1 Records As of 4/18/2008 12:48:07 PM

<table>
<thead>
<tr>
<th>Outage ID</th>
<th>Area</th>
<th>Device</th>
<th>Device Code</th>
<th>Outage Code</th>
<th>Outage Details</th>
<th>Assigned by</th>
<th>Assigned On</th>
<th>Last Contacted</th>
<th>Last Commenced</th>
<th>Last Contacted</th>
<th>End Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>2345</td>
<td>77</td>
<td>device</td>
<td>123456</td>
<td>123456</td>
<td>123456</td>
<td>123456</td>
<td>123456</td>
<td>123456</td>
<td>123456</td>
<td>123456</td>
<td>123456</td>
</tr>
</tbody>
</table>
Town Status Report

Outage Data – Outside Chicago
Outage Start Date & Time Range: From 4/19/2008 11:00 To 4/19/2008 12:59
From: 4/19/2008 To: 4/19/2008

Current Customers Out by Town

<table>
<thead>
<tr>
<th>Town</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>IDA TWP</td>
<td>24</td>
</tr>
<tr>
<td>GROVE</td>
<td>5</td>
</tr>
</tbody>
</table>

Click here for Customers currently Out by Town By Region

Town Status Detail Report

IDA TWP Outage List

Select Outage Date Range:

- From: 4/19/2008 00:00 To 4/19/2008 12:59
- Exclude Customers Out of Service
- Outage Types: All
- Sort By: All

OMS 1 Records As of 4/19/2008 12:48:97 PM

<table>
<thead>
<tr>
<th>Outage ID</th>
<th>Address</th>
<th>Device ID</th>
<th>Device Type</th>
<th>Duration</th>
<th>Outage On</th>
<th>Outage Off</th>
<th>Status</th>
<th>Assigned</th>
<th>Assigned To</th>
<th>Last Out</th>
<th>Last Out Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>RMT102</td>
<td>6146</td>
<td>17/400</td>
<td>RTCO</td>
<td>102.50</td>
<td>4/19/2008 12:25:00</td>
<td>4/19/2008 12:35:37</td>
<td>PM</td>
<td>123</td>
<td>Joe Smith</td>
<td>0</td>
<td>4/19/2008 2:46:00</td>
</tr>
</tbody>
</table>
Estimating Restore Time

- Estimated Restore Time Report Utilizes
  - Current Crew Staffing
  - OMS outage counts
  - OMS outage extent
  - Repair times
  - Drive times
  - “What if” scenarios
### Real Time Reliability Indices

- Real-time reliability statistics can be calculated “on-the-fly” to keep utilities up-to-date on reliability performance.
- ComEd utilizes web reporting to keep employees up-to-date on its reliability performance compared to goals.
Conclusion

- Utilities, external entities and customers alike are looking for the most up-date information so that informed decisions can be made.

- With real time outage information now available at many electric utilities, this can be accomplished, with the ultimate result being an increase in reliability performance and ultimately customer satisfaction.