Operational Strategies for Rolling Blackouts and Brownouts
Planning, Academic, and Administrative Unit Efforts and Communications
Introductions

F&S Utilities and Energy Services

- Robert Roman, Director of Utilities and Energy Services
- Mike Larson, Associate Director of Utilities Production
- Sushanth Girini, Utilities Distribution Management Engineer
- David Hardin, Associate Director of Energy Management Systems (EMS) Controls
- Paul Foote, Energy Efficiency & Conservation Specialist
Rolling Blackouts and Brownouts

• What are they?
  
  A brownout is a reduction in or restriction on the availability of electrical power in a particular area. A blackout is a failure of electrical power supply.

• Why are we talking about them?
  
  In April, the Midcontinent Independent System Operator (MISO) announced that projected electric capacity shortfalls in the organization’s north and central regions this summer might leave those areas at increased risk of temporary, controlled outages.

• How are we mitigating our risk?
  
  Facilities & Services is updating operational strategies designed to meet the university’s energy needs should those situations arise. Methods will include performing urgent contingency planning as necessary.
Curtailment Plan

• Identifies procedures to reduce electrical energy load on campus
• Includes protocol for protracted electrical energy shortages in the MISO region
• Procedures are initiated and implemented by F&S in a nondiscriminatory manner with consideration of essential service requirements from U of I Stakeholders
• Goal is to effectively administer and achieve curtailment while providing fair and equitable treatment to U of I stakeholders, minimizing adverse impacts to faculty, staff, and students, and complying with State laws and regulations
### OPERATIONAL STRATEGIES *(Sample Plan)*

<table>
<thead>
<tr>
<th>STAGE</th>
<th>ACTION TYPE</th>
<th>PERCENTAGE LEVEL</th>
<th>CURTAILMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Voluntary</td>
<td>None specified</td>
<td>Uniform among all U of I Consumers</td>
</tr>
<tr>
<td>2</td>
<td>Voluntary</td>
<td>5% +</td>
<td>Uniform among all U of I Consumers</td>
</tr>
<tr>
<td>3</td>
<td>Mandatory</td>
<td>5% to 15%</td>
<td>Uniform among all U of I Consumers</td>
</tr>
<tr>
<td>4</td>
<td>Mandatory</td>
<td>15%</td>
<td>Uniform among all U of I Consumers</td>
</tr>
<tr>
<td>5</td>
<td>Mandatory</td>
<td>15% plus possible feeder and building isolations</td>
<td>Uniform among all U of I Consumers plus F&amp;S actions including forced feeder and building isolations and possible blackout outs.</td>
</tr>
<tr>
<td>Stage 1:</td>
<td>F&amp;S will commence or continue communication of curtailment info to U of I Consumers. As appropriate, F&amp;S will assist in briefing the media about the shortage.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>---------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stage 2:</td>
<td>F&amp;S will (a) notify Consumers of the percentage level of voluntary curtailment; (b) provide curtailment information to Consumers; (c) answer Consumer questions about curtailment; (d) provide curtailment reports; and (e) provide more detailed information to the media than provided in Stage 1.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stage 3:</td>
<td>F&amp;S will (a) notify Consumers of the percentage level of mandatory curtailment; (b) calculate weather-normalized Base Billing Period data and Curtailment Targets for all Consumers; (c) provide Curtailment Targets to all Consumers who request such data; (d) provide Consumers with information about how to notify F&amp;S of essential service requirements.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stage 4:</td>
<td>F&amp;S will notify Consumers of any applicable changes in mandatory curtailment.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stage 5:</td>
<td>F&amp;S will collaborate with U of I stakeholders to develop and implement the most effective methods for securing the required load curtailment and to minimize the economic and human hardships of the last stage of load curtailment, which is feeder and building isolations.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Event Day Action Plans

• Each U of I college, department, and/or building has been asked to develop an Event Day Action Plan to identify strategies that will be implemented when called upon to shed load.

• F&S will notify the campus community of possible grid outages through various media types:
  • Specific to college, department, or building groups
  • Massmail system
  • E-week and other departmental media
  • Social media as necessary
• Identification of critical equipment that must remain in operation is as important as identification of non-essential equipment that can be shut down to shed load

• Examples of load shedding include:
  • Turning off or dimming lights
  • Turning off non-essential equipment and power strips
  • Shutting down unused offices, classrooms, conference rooms, etc.
  • Shifting schedules (flattening the curve)
Campus Electric Load Curves

**Summer** (July 13 - July 14)

**Winter** (Dec 24 - Dec 25)
• Recap

• Questions?

  Paul Foote  gfoote2@illinois.edu

• Thank you for your time and efforts!!