Monitoring Momentary Cessation of IBRs with Synchrophasors

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Momentary Cessation

Figure 1: Illustration of Momentary Cessation

Source – NERC Modeling Notification: Recommended Practices for Modeling Momentary Cessation
IBR Performance During External Fault
## Recent Events with Momentary Cessation

<table>
<thead>
<tr>
<th>Date</th>
<th>Location</th>
<th>Pre-Event MW</th>
<th>During Event MW</th>
<th>Post-Event MW</th>
</tr>
</thead>
<tbody>
<tr>
<td>May 28th, 2022</td>
<td>Site A</td>
<td>720</td>
<td>458</td>
<td>559</td>
</tr>
<tr>
<td></td>
<td>Site B</td>
<td>143</td>
<td>85</td>
<td>143</td>
</tr>
<tr>
<td>August 29th, 2022</td>
<td>Site A</td>
<td>896</td>
<td>692</td>
<td>763</td>
</tr>
<tr>
<td>August 31st, 2022</td>
<td>Site A</td>
<td>745</td>
<td>578</td>
<td>667</td>
</tr>
<tr>
<td></td>
<td>Site B</td>
<td>108</td>
<td>9</td>
<td>106</td>
</tr>
<tr>
<td>October 29th, 2022</td>
<td>Site A</td>
<td>874</td>
<td>698</td>
<td>777</td>
</tr>
<tr>
<td>November 5th, 2022</td>
<td>Site D</td>
<td>212</td>
<td>99</td>
<td>192</td>
</tr>
<tr>
<td>November 24th, 2022</td>
<td>Site B</td>
<td>96</td>
<td>1</td>
<td>95</td>
</tr>
</tbody>
</table>
## Recent Events with Momentary Cessation

<table>
<thead>
<tr>
<th>Date</th>
<th>Location</th>
<th>Pre-Event MW</th>
<th>During Event MW</th>
<th>Post-Event MW</th>
</tr>
</thead>
<tbody>
<tr>
<td>January 1(^{st}), 2023</td>
<td>Site D</td>
<td>222</td>
<td>127</td>
<td>223</td>
</tr>
<tr>
<td>January 3(^{rd}), 2023</td>
<td>Site C</td>
<td>76</td>
<td>-20</td>
<td>28</td>
</tr>
<tr>
<td>January 16(^{th}), 2023</td>
<td>Site D</td>
<td>222</td>
<td>1</td>
<td>204</td>
</tr>
<tr>
<td>February 7(^{th}), 2023</td>
<td>Site A</td>
<td>863</td>
<td>167</td>
<td>468</td>
</tr>
<tr>
<td></td>
<td>Site B</td>
<td>138</td>
<td>-11</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Site C</td>
<td>111</td>
<td>-8</td>
<td>99</td>
</tr>
<tr>
<td></td>
<td>Site D</td>
<td>78</td>
<td>47</td>
<td>2</td>
</tr>
</tbody>
</table>
August 31st Event

100 MW for 0.41 sec.

167 MW for 1.3 sec.
November 5th Event

218 MW

.3 sec.
November 24th Event

113 MW

.47 sec.
January 3rd Event

Site A
Site B
Site C
Site D

95 MW
.23 sec.
February 7th Event

- **Site A**
- **Site B**
- **Site C**
- **Site D**

**LL Voltage Magnitude**
- Peak: 845 MW
- Duration: 0.78 sec.

**ThreePhase Power Real**
- Peak: 120 MW
- Duration: 1.4 sec.
February 7th Event

3 sec.
150 MW
February 7th Event

85 MW

90 min.
February 7th Event

Syncrowave Operations

Dashboards

Historical Data

1d

Historical Date
02/06/2023

1d

Day Chart Range

Site A
Site B
Site C
Site D

5 Hours
Use Cases for Synchrophasor Monitoring of IBR Momentary Cessation Events

- Detecting IBR momentary cessation events requiring further analysis
- Model validation and planning
- Training grid operators on IBRs
- System awareness