14.6: Southwestern Michigan RTEP Overview

PJM operates Bulk Electric System (BES) transmission facilities (and others monitored at lower voltages), within the Southwestern Michigan as shown on Map 14.29, including those of American Electric Power (AEP) in southwestern Michigan.

The transmission system in southwestern Michigan delivers power to customers from native generation resources and transfers across tie-line facilities with adjoining systems.

**Critical Regional Transmission Expansion Plan (RTEP) Issues and Upgrades**

PJM’s annual (RTEP) process assesses transmission facilities in Southwestern Michigan for compliance with NERC reliability criteria violations. In order to solve identified violations, PJM determines necessary baseline enhancements as well as network upgrades to accommodate the interconnection of new generating resources within the AEP transmission owner (TO) zone. **Section 16** provides a topical index of RTEP results, issues and challenges discussed in this report.
14.6.1 – Load Growth and Existing Generation

Internal Load Growth

Load growth for summer and winter periods is shown in Section 14.0.2. Peak summer load growth rates for the AEP Transmission Owner zone within PJM is expected to be 1.4 percent on average over ten years through 2020. The peak winter load growth rate for AEP is expected to be 0.9 percent on average over ten years through 2019/20.

Forecasted summer peak loads are modeled in power flow studies used in PJM’s 2010 RTEP studies. PJM’s RTEP includes baseline transmission upgrades to meet expected near-term 2015 peak load conditions. RTEP studies also assess anticipated needs for additional transmission expansion plans to meet long-term load growth requirements out through 2025 as well.

Existing Generating Capability

Figure 14.15 provides a snapshot of the existing installed capacity by fuel type in southwestern Michigan as of December 31, 2010.

Figure 14.15: Existing Installed Capacity in Southwestern Michigan (MW)

- Nuclear, 2,094
- Hydro, 14

Figure 14.16: Queued Capacity by Fuel Type in Southwestern Michigan (MW)

- Natural Gas, 1,035
- Nuclear, 84
- Methane, 6
- Wind, 26

Nameplate Energy = 200 MW
14.6.2 – Generator Interconnection Requests

Four interconnection requests were active or under construction in southwestern Michigan as of the close of Queue W4 on January 31, 2011, as summarized in Table 14.23 and shown on Map 14.30.

Section 2.3 of this report describes how generation interconnection requests are modeled in RTEP studies.

For the sake of reporting, generating resources that are fully in-service (designated “IS”) are included in the summary tabulation above but are NOT separately enumerated in Table 14.23.

A status code of “IS-NC” (in-service, no capacity) indicates a generator that is in-service for energy only. Such units have not requested consideration for capacity status.

A status code of “ISP” (in-service, partial) denotes a generating resource that is only partially in-service and has not reached full capacity status.

A generating unit is ineligible for full capacity status until all transmission upgrades needed to ensure deliverability are completed. Only then will PJM grant capacity status designation.

Figure 14.16 shows the fuel mix of queued generation interconnection requests in Southern Michigan that have requested capacity injection rights through the close of Queue W4 on January 31, 2011, excluding projects that are in-service and those that have withdrawn.

14.6.3 – Generation Deactivations

PJM has not received notice of any anticipated generator deactivations in southwestern Michigan, through December 31, 2010. A full list of all generation deactivation information is accessible on PJM’s website at URL: http://pjm.com/planning/generation-retirements/gr-summaries.aspx.
14.6.4 – Merchant Transmission Interconnection Requests
PJM’s interconnection queues contained no requests for merchant transmission interconnection in southwestern Michigan, through January 31, 2011.

14.6.5 – Transmission Expansion Plans in Southwestern Michigan
New RTEP planned transmission upgrades in southwestern Michigan greater than $5 million as approved by the PJM Board to resolve reliability criteria violations as shown in Table 14.24. Map 14.31 shows the location of upgrades.

A complete listing and status of all PJM Board-approved BES reinforcements – baseline enhancements as well as network upgrades to accommodate interconnection requests – can be found on PJM’s website via the following URL: http://www.pjm.com/planning/rtep-upgrades-status.aspx.
### Table 14.24: Major 2010 RTEP Plans in Southwestern Michigan

<table>
<thead>
<tr>
<th>Upgrade</th>
<th>System Upgrade Drivers</th>
<th>Date</th>
<th>Cost (M)</th>
<th>TO Zone(s)</th>
<th>2010 TEAC Review</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Construct new 345kV Switching Station at T94 Cook - Palisades</td>
<td>March 2010</td>
<td>10</td>
<td>AEP</td>
<td>7/14/2010</td>
</tr>
</tbody>
</table>
14.6.6 – Interconnection Requests for Generation Powered by Renewable Fuel Sources

As of January 31, 2011, PJM's interconnection queue contained two such generator interconnection requests: T-111, an 8 MW methane project, presently under construction, and V4-016, a 200 MW wind project, presently under study, as listed in Table 14.25 and shown on Map 14.32.

NOTE

In this table the MW and MWC columns represent two different values:
The MW column represents the total site nameplate capacity of the generators including the existing generation as well as the requested up rate.
The MWC column represents the installed capacity portion of the upgrade. For renewable projects the installed capacity portion of the project varies as described in Section 2.

Map 14.32: Interconnection Requests by Renewable Fuel Type

Table 14.25: Interconnection Requests by Renewable Fuel Type

<table>
<thead>
<tr>
<th>Queue</th>
<th>Project Name</th>
<th>MW</th>
<th>MWC</th>
<th>Status</th>
<th>Schedule</th>
<th>TO</th>
<th>Fuel Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>T111</td>
<td>Buchanan Hydro - Niles 69 kV</td>
<td>6.4</td>
<td>6.4</td>
<td>ISP</td>
<td>5/29/2009</td>
<td>AEP</td>
<td>Methane</td>
</tr>
<tr>
<td>V4-016</td>
<td>Valley 138 kV</td>
<td>200</td>
<td>26</td>
<td>Active</td>
<td>12/31/2012</td>
<td>AEP</td>
<td>Wind</td>
</tr>
</tbody>
</table>