



12.6: Southwestern Michigan RTEP Overview

PJM operates the BES transmission facilities (and others monitored at lower voltages), within the southwestern footprint shown on Map 12.28, 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 RTEP Issues and Upgrades

PJM’s annual RTEP process assesses transmission facilities in Southwestern Michigan for compliance with NERC reliability criteria violations. This can include identification of the need for new baseline enhancements and for network upgrades to accommodate the interconnection of new generating resources within the AEP TO zone.

Map 12.28: PJM Service Area in Southwestern Michigan

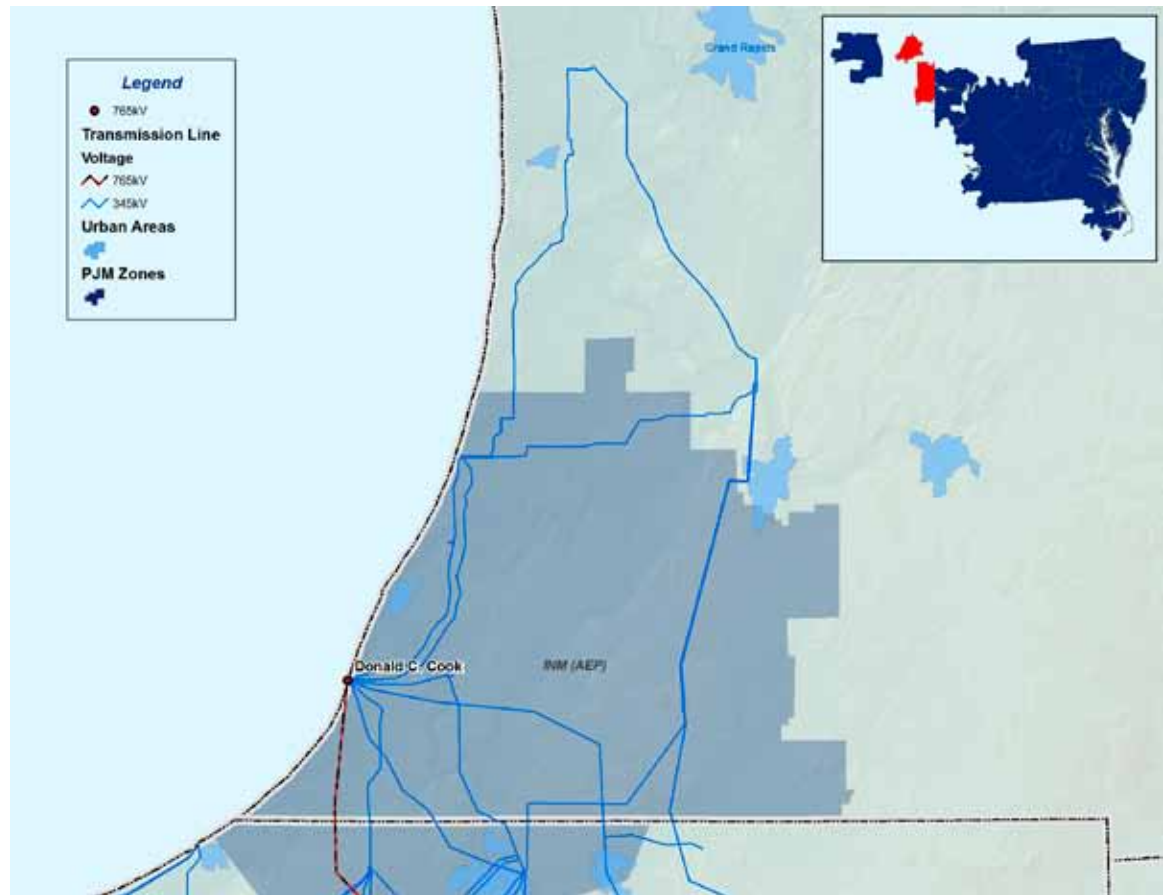


Table 12.25: Critical Issues in Southwestern Michigan

RTEP Topic	Report Section	Importance
Load Growth Trends	2.1	10-year forecasted peak power demand for individual TO zones
Load Management Trends	2.2	Impacts of Load Management as a capacity resource
Generator Interconnection Plans	2.3	New sources of electric power to meet customer demand
Wind and other renewable fuel sources	2.3.3, 2.3.4	Potential for wind and other renewable fuel generating resources to meet RPS requirements
Generator Deactivations	2.4	Impact on transmission requirements from generation removed from operation
Merchant Transmission Interconnection Plans	2.5	Impact of merchant transmission interconnection requests
2014 BES Upgrades Below Backbone 500 kV Level	8.4	Resolving zone-specific NERC-based reliability criteria violations
Market Efficiency Studies	10.2	Assessing RTEP upgrades for potential market efficiency benefits
Operational Performance	2.6, 8.5	Addressing transmission performance observed in actual operations
Long-term PJM Challenges	13.1, 13.2, 13.3, 13.4, 13.5, 13.6	Impacts of ATSI, new LDAs, PRD, smart grid, FERC policy, state policy, RPS
2010 RTEP Sensitivity Studies	13.7	Sensitivity tests related to load, generation and loop flow parameters

These and other key critical RTEP issues are summarized in Table 12.25 which also identifies the other sections of this report where additional discussion may be found.

12.6.1 – Load Growth and Existing Generation

Internal Load Growth

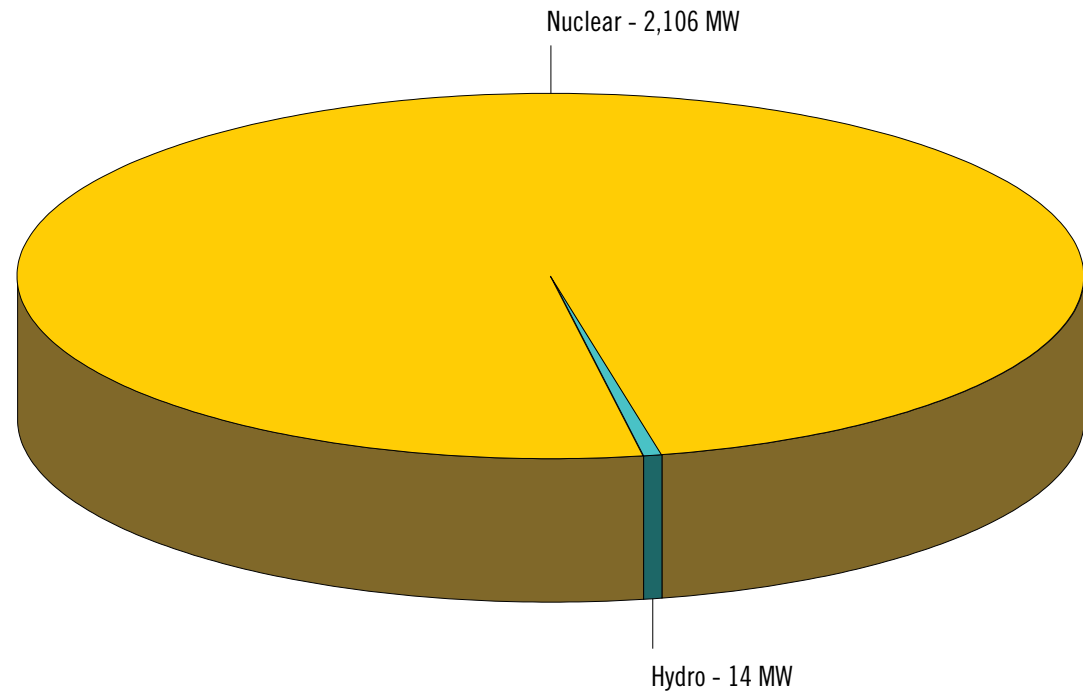
Load growth for summer and winter periods is shown in **Section 12.0.2**. Peak summer load growth rates for the AEP Transmission Owner zone within PJM is expected to be 1.2 percent on average over ten years through 2019. The peak winter load growth rate for AEP is expected to be 0.7 percent on average over ten years through 2018/19.

Forecasted loads are modeled in power flow studies used to develop PJM’s RTEP through December 2009. PJM’s RTEP includes baseline transmission upgrades to meet expected 2014 peak load conditions. PJM’s ongoing RTEP process continues to study anticipated needs for additional transmission expansion plans to meet load growth requirements beyond 2014 as well.

Existing Generating Capability

Figure 12.13 provides a snapshot of the existing installed capacity by fuel type in southwestern Michigan.

Figure 12.13: Existing Installed Capacity in Southwestern Michigan



*** NOTE**

Values presented in this figure comprise installed capacity as of December 31, 2009 that is located within the PJM RTO and eligible to participate in RPM auctions. Specifically regarding wind, this figure does not include any additional wind powered generation that received capacity injection rights during the second half of 2009 but which would be expected to participate in future RPM auctions. Nominal ratings of wind-powered facilities are typically many times larger than installed capacity values, as discussed and presented in **Section 2.3.4**.

12.6.2 – Generator Interconnection Requests

Four interconnection requests were active or under construction in southwestern Michigan as of the close of Queue V4 on January 31, 2010, as summarized in Table 12.26 and shown on Map 12.29.

The generator interconnection projects in this Table are either under construction or active in PJM’s interconnection process. 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 12.26. 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.

12.6.3 – Generation Deactivations

PJM has not received notice of any anticipated generator deactivations in southwestern Michigan, through December 31, 2009.

12.6.4 – Merchant Transmission Interconnection Requests

PJM’s interconnection queues contained no requests for merchant transmission interconnection in southwestern Michigan, through January 31, 2010.

Map 12.29: Queued Generation Interconnection Requests in Southwestern Michigan

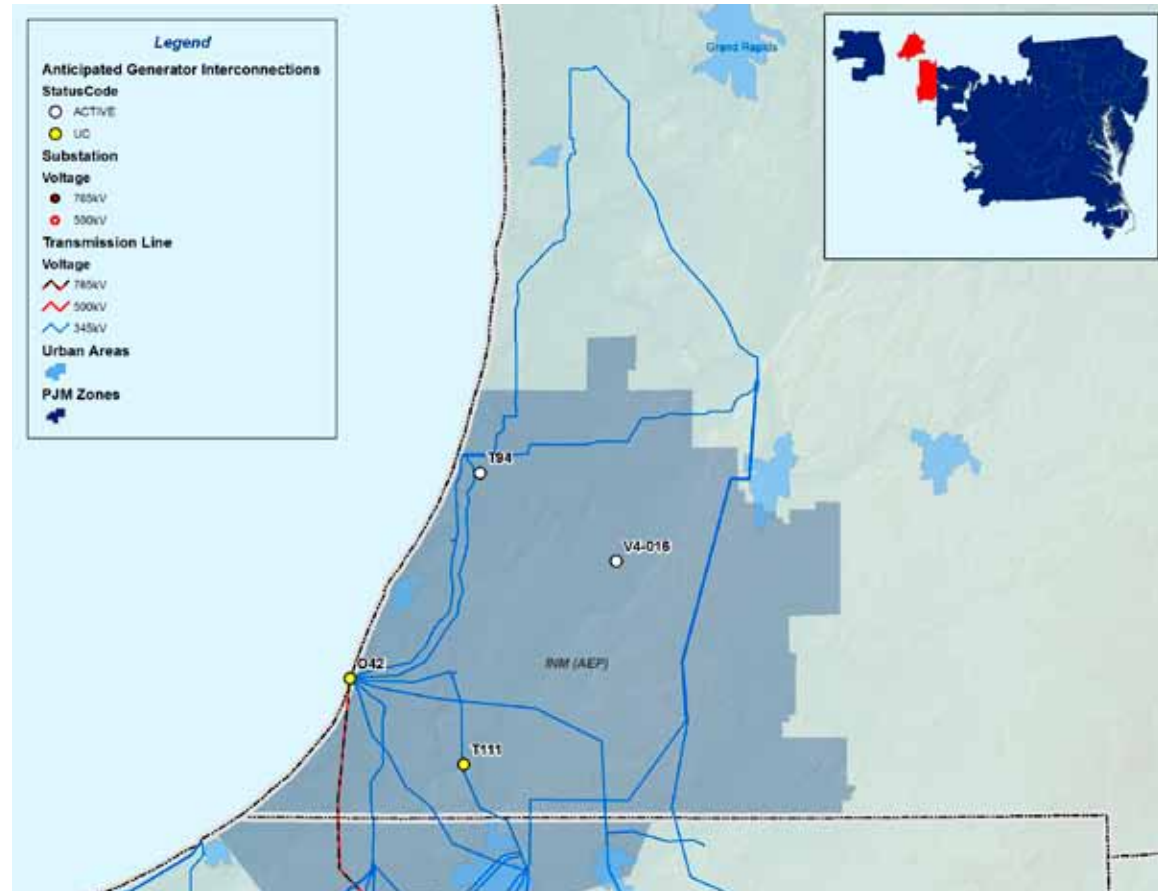


Table 12.26: Queued Generation Interconnection Requests in Southwestern Michigan

Queue	Project Name	MW	MWC	Status	Schedule	TO	Fuel Type
O42	Cook 345 kV	1100	84	UC	1/19/2007	AEP	Nuclear
T111	Buchanan Hydro - Niles 69 kV	8	8	UC	12/31/2008	AEP	Methane
T94	Cook - Palesades 34.5 kV	1035	1035	ACTIVE	3/1/2010	AEP	Natural Gas
V4-016	Valley 138 kV	200	26	ACTIVE	12/31/2012	AEP	Wind

12.6.5 – Transmission Expansion Plans in Southwestern Michigan

New RTEP planned transmission upgrades in southwestern Michigan greater than \$5 million as approved by the PJM Board during 2009 included one network upgrade to Cook - Palisades 345 kV circuit breakers required to resolve reliability criteria violations associated with interconnection request T94 per Table 12.27. Map 12.30 shows the location of this upgrade.

A complete listing of all PJM Board-approved BES reinforcements – baseline enhancements as well as network upgrades to accommodate interconnection requests – can be found on PJM’s Web site via the following URL: <http://www.pjm.com/planning/rtep-upgrades-status.aspx>.

12.6.6 – Interconnection Requests for Generation Powered by Renewable Fuel Sources

As of January 31, 2010, 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 12.26 and shown on Map 12.29.

Map 12.30: Major 2009 RTEP Upgrades in Southwestern Michigan

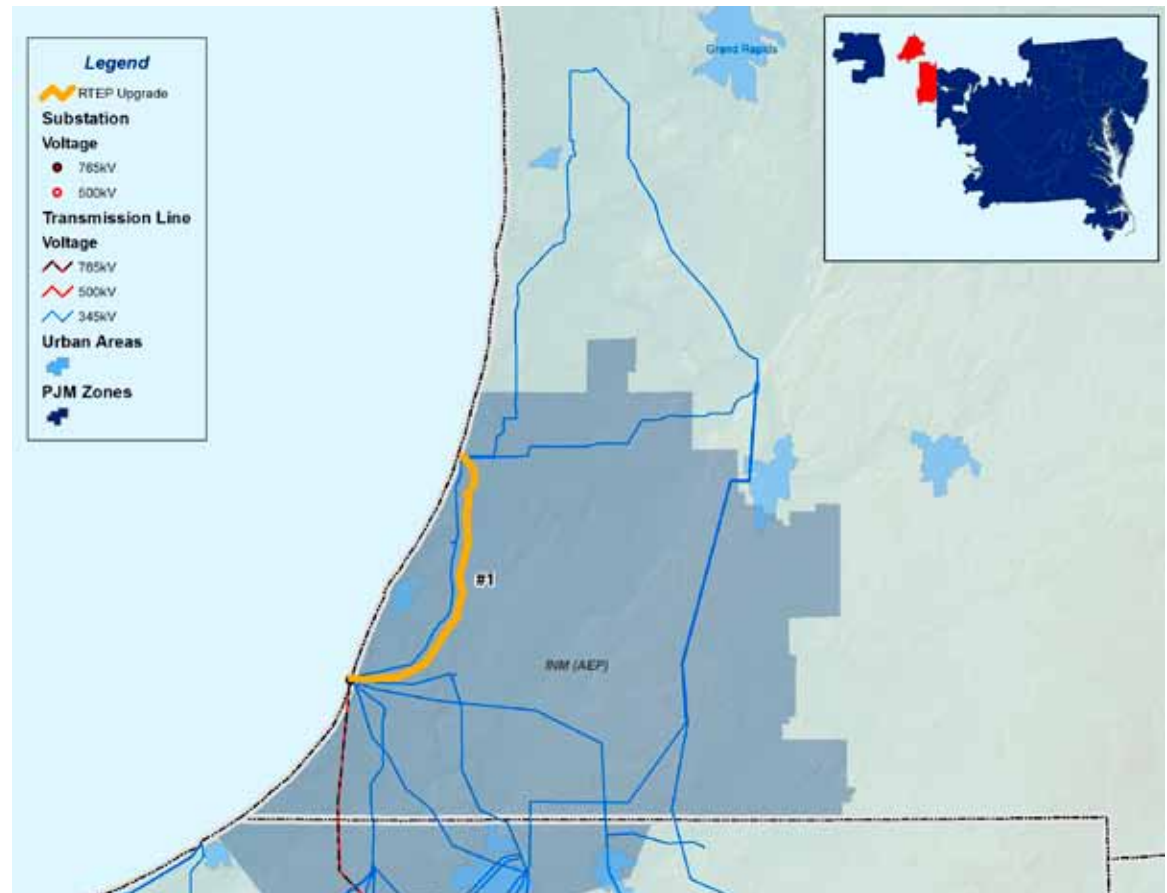


Table 12.27: Major 2009 RTEP Plans in Michigan

		System Upgrade Drivers									Date	Cost (M)	TO Zone(s)	2009 TEAC Review
		Baseline Upgrades					Network Upgrades			Supplemental Upgrade				
Upgrade		Baseline Load Growth / Deliverability & Reliability	Congestion Relief - Economic	Operational Performance	Generator Deactivation	TO Criteria Violation	Generation Interconnection	Merchant Transmission Interconnection	Long-term Firm Transmission Service	Criteria Compliance other than for Baseline				
1	Construct 5 breaker 345 kV ring bus for Cook - Palisades line						T94				March 2012	10	AEP	9/16/2009