



### **Zone 3 - 2016 study results**

Refer to Table ZS-2 and Figure ZS-10

#### *Summary of key findings*

- Numerous low voltages and line overloads along with the potential for voltage collapse in the Madison area signal the need for another new 345-kV source on the west side of Madison,
- Low voltage problems were observed in the Boscobel area under single contingency conditions with the Gran Grae 161/69-kV transformer prior outage.
- Due to 69-kV system load growth in Verona and Spring Green areas, the West Middleton-Stage Coach 69-kV line requires higher capacity.

In 2009, ATC received the regulatory CPCN approval for the Rockdale-West Middleton (Cardinal) 345-kV line project. This project will address line overloads and low voltage issues in Dane County and is planned to be in-service in 2013.

ATC Asset Management has determined that currently ATC has no spares for a 161/69-kV transformer installed in the system and the spare equipment lead-time is in excess of 1 year. The provisional project of installing one 8.16 Mvar capacitor bank at Boscobel 69-kV substation and upgrading the existing 5.4 Mvar bank with an 8.16 MVAR bank is advanced from 2019 to 2015. The advance is mainly due to single contingency low voltage constraints near Boscobel area observed in the 2011 10-Year Assessment with the prior outage of the existing 161/69 kV transformer.

Upgrading the West Middleton-Stage Coach 69-kV line is needed by 2015. It will address potential line overload problems under single contingency conditions. In addition, under the certain transformer prior outage condition, the West Middleton-Stage Coach 69-kV line can be overloaded after another transformer outage.

Past 10-Year Assessments found thermal and voltage issues involving the 69-kV loop between North Lake Geneva and Brick Church under contingency conditions. A new 138kV line between North Lake Geneva – South Lake Geneva was proposed for 2016 to resolve these issues. However, recent load forecast reduction has resulted in ATC delaying the North Lake Geneva – South Lake Geneva project in-service date from 2016 to 2018. This area continues to be under review to determine when the next system additions are warranted.

No performance limits were exceeded for Category A conditions for all 2016 analysis.



# 10-Year Assessment

An annual report summarizing proposed additions and expansions to ensure electric system reliability.

# 2011

**September 2011 10-Year Assessment**  
**[www.atc10yearplan.com](http://www.atc10yearplan.com)**

The lead times necessary to implement the corrective plans that are scheduled for 2012 through 2016 were considered and taken into account prior to assigning an in-service date for each associated project. All of the projects scheduled for the near term planning horizon have an "In-service date" that matches the "Need date", except the following projects:

*Projects whose "Need date" precedes the "In-service date"*

- Uprate Fitchburg-Nine Springs and Royster-Pflaum 69-kV lines, move AGA to the Femrite-Royster 69-kV line and install Nine Springs capacitor bank. The need year is listed as 2008. The in-service year is 2013. Post-contingency generation dispatch or distribution load bridging will be utilized as an interim mitigation measure to alleviate potential single-contingency thermal and voltage issues.

*Projects whose "In-service date" precedes the "Need date"*

- None