

ATC Planning Zone 2 Issues March 4, 2003

2002 10 Year Assessment Update – February 2003

Report posted at www.atcllc.com. Discussion of Zone 2 found on p. 13-14.

UP Area Needs

1. Increase Flow South limitations/reduce # of TLRs/reduce redispatch
2. Address Hiawatha-Indian Lake system separations/reduce # of TLRs
3. Address physical system condition issues
4. Improve reliability of service to Manistique area
5. Customer perspectives? Validation of these needs/issues? Other needs?

Hiawatha-Indian Lake – Deferral of parts of original project

1. Phase 1 (improve service to Manistique area) is proceeding; subsequent phases are on hold pending completion of full 'conduit' analysis
2. 'Conduit' components/issues
 - Hiawatha-Indian Lake
 - Plains-Amberg-Stiles
 - Hiawatha-Straits
3. Analysis of conduit components is underway
 - Short term (1-3 months) – focus on reduction of high redispatch costs
 - Intermediate term (within a year)
 - Long term (beyond one year)
4. Operating implications
 - Flow South limitations
 - Hiawatha-Indian Lake system separation
5. Schedule for resolution
 - Short term ASAP
 - Others will be addressed in 2003 Assessment

Options Under Consideration

1. Short term
 - Capacitors
 - Control scheme for switching reactors on Stiles-Morgan
 - Opening 6912
 - Other operating considerations

2. Intermediate term

- Additional capacitor banks
- D-SMES
- Phase shifting transformers

3. Long term

- Hiawatha-Indian Lake
 - Proceed with remaining original project phases
- Plains-Stiles
 - Rebuild as double circuit 138 kV
 - Rebuild as double circuit 345/138 kV
 - Convert West Marinette-Amberg (area) 69 kV to 138 kV plus rebuild Amberg-Plains at 138 kV
 - Construct Cranberry-Conover 138 kV plus convert Plains-Conover 69 kV to 138 kV
 - Construct Venus-Plains 138 kV (single or double circuit)
 - Construct Venus-Plains double circuit 345/138 kV
 - Rebuild Morgan-Plains 345 kV to double circuit 345/138 kV
 - Alternate construction techniques
- Hiawatha-Straits
 - Construct second (parallel) 138 kV line
 - Rebuild Hiawatha-Pine River-Straits as double circuit 138/69 kV
 - Convert Hiawatha-Pine River-Straits 69 kV to 138 kV