STRAITS HVDC FLOW-CONTROL PROJECT

Overview

ATC is proposing to install a high-voltage, direct-current flow-control device at the Straits Substation in St. Ignace, Mich., to better manage power flows into and out of the Upper Peninsula.

Need for the project

Despite significant upgrades to transmission infrastructure in the Upper Peninsula in recent years, operational challenges remain due to the delicate balance that exists between generation, load, market flows and transmission. ATC operators face challenges balancing the real-time reliability of the system and the need for outages to allow maintenance work to assure long-term performance.

The innovative, HVDC project will allow the flows between Upper and Lower Michigan to be controlled by MISO, maintaining appropriate thermal and voltage levels on the system. Approved by the MISO board of directors in June 2011, the project is eligible for cost-sharing as a baseline reliability project.

Project description

The station will use HVDC Light technology, designed by ABB, a leading international power and automation technology group. ABB will design and install the 200-megawatt station with two converters. In a back-to-back system, the two converters are connected directly to each other, without a DC transmission line, making it possible to fully control the power transfer through the connection.

The equipment will be housed in a tall control building with a footprint of about 280 feet by 110 feet.

Construction will start in late spring 2012 with an in-service date in 2014. Cost of the project is estimated to be $130 million, which is a less-expensive and faster solution compared to the portfolio of transmission lines studied as alternatives.