



Memo

To: David Plyman

From: Jason Bird

CC: Sue Messer

Date: 10/7/2015

Re: Twombly Relay Replacement Recommendation

RMU recently had BHMG do a preliminary inspection of the existing protection scheme at the Twombly Substation. Twombly is currently using ABB series 2000 protection units throughout the distribution side of the substation, while the existing units were satisfactory units when they were installed the units have now become obsolete by ABB and repair and replacement parts are no longer being manufactured. BHMG's proposal is for the replacement of the ABB relays.

The benefits of replacing the existing relays now are better reliability for the distribution system, being able to bring back additional data to our SCADA system, and getting better fault data analysis to determine the root cause of an outage. Also there will be better protection coordination between the substation and distribution reclosers in the system. Both controllers would be SEL and therefore the protection curves between the two devices could be the same without the possibility of any overlap causing a nuisance trip. Another benefit of replacing the relays at this time would be improvement in the data collection that is currently going to our SCADA system. Communications protocols that are currently being implemented in the ABB relays is an older protocol that is not as secure as DNP or SEL protocols.

BHMG proposed adding in an additional RTAC communications processor just for the distribution side of the system. This would separate the out the communication of the 138kV system and the distribution system at Twombly. This would give separation between the two systems for better security. This would also allow for data stacking on the distribution side going to SCADA for optimal data collection. OSII who is currently our SCADA software supplier and who is going to be implementing upgrades on our system will also need to be involved to upgrade the SCADA screens at Twombly with the additional information that we would now be able to bring back. The recommendation would be have OSII do these upgrades after the relays have been changed out.

Jason Bird

Superintendent of Electric Operations.