



**Feasibility Study Report
PID 215
31MW
Spherelene**

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I. Introduction

The purpose of this feasibility study is a preliminary evaluation of the system impact of the proposed generation on the Entergy transmission system. The study addresses the short circuit aspect only. The study determines if any short circuit problems would be caused by the addition of the PID-215 generation of 31 MW to the Entergy Transmission System at the Spherelene substation. The short circuit study was performed on the Entergy system short circuit model using ASPEN software. The requested in-service date for this facility is September 1, 2009.

II. Short Circuit Analysis / Breaker Rating Analysis

A. Model Information

The short circuit analysis was performed on the Entergy system short circuit model using ASPEN software. This model includes all generators interconnected to the Entergy system or interconnected to an adjacent system and having an impact on this interconnection request, IPP's with signed IOAs, and approved future transmission projects on the Entergy transmission system.

B. Short Circuit Analysis

The method used to determine if any short circuit problems would be caused by the addition of the PID-215 generation is as follows:

Three phase and single phase to ground faults were simulated on the Entergy base case short circuit model and the worst case short circuit level was determined at each station. The PID-215 generator was then modeled in the base case to generate a revised short circuit model. The base case short circuit results were then compared with the results from the revised model to identify any breakers that were under-rated as a result of additional short circuit contribution from PID-215 generation. The breakers identified to be upgraded through this comparison are *mandatory* upgrades.

C. Analysis Results

The results of the short circuit analysis, including priors PID's 197, 206, 207, 208, 210, 211, and 213 indicates that the additional generation due to PID-215 generators does not cause an increase in short circuit current such that they exceed the fault interrupting capability of the high voltage circuit breakers within the vicinity of the proposed generation. Also, when studied with no generation interconnection queue priors in service, no breakers were identified as being underrated due to the added fault current from the PID-215 generator.

D. Problem Resolution

There were no problems identified that were a result of the additional PID-215 generation.

The results of the short circuit analysis are subject to change. They are based upon the current configuration of the Entergy transmission system and Generation Interconnection Study Queue.