

AN UNDER-FREQUENCY BASED ISLANDING SCHEME OF RAJASTHAN POWER SYSTEM

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ABSTRACT

This paper describes under frequency based islanding scheme of the Rajasthan power system. On the basis of simulation studies, under frequency based islanding scheme have been designed. The islanding power system consists of two generators having total 500 MW generation capacity and 475 MW average island load. Proposed island is connected through 5 numbers 220 KV circuits and 2 numbers of 400/220 KV transformers from the grid. Under frequency based islanding relays are placed at interconnecting points. Further under frequency based load shedding relays are also placed in the island to control the island frequency in the event of generation and load imbalance. On the basis of simulation studies frequency setting of under frequency load shedding relays have been decided so that in the case of mismatch between generation and load in the island proper load shedding may be activated. Simulation results are presented up to 10% overload of Island. Simulation results indicate that proposed island scheme is successful up to 10% overload of Island. Active and reactive power loading on generators are within limits up to 10% overload of Island and Island frequency is stabilized greater than 49 Hz. In all possible mismatch between island generation and load, frequency does not drop up to 47.50 Hz.

KEYWORDS: Auto Load-Shedding, Islanding, Rate of Change of Frequency, Under Frequency Load Shedding