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Transient Stability Optimization After Connecting A 132mw Gas Turbine Generator to A Weak Grid

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Abstract: *Needless to say, connecting a huge size generator to a weak electric grid leads to instability if the steady and transient stability are not well-studied. This paper presents tackling the abovementioned issue and finally optimizing the stability of both grid and turbine. One of the ways to achieve the stability is by properly resetting and tuning the load shedding system based on the gas turbine control system dynamic response.*

Tackling the instability issue has been performed by studding the turbine response through the control system trends of numerated events and accordingly approaching the optimum settings of the load shedding system of the grid.

The solution of the grid instability has been validated and deemed successful after adjusting the load shedding final settings and recording that many faults were occurred on the 33KV network and also many times of partial generation loss, but no effect on the turbine and grid stability.

Keywords: Instability, tackling, load shedding, event logs and trends, dynamic response

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