

CORPORATE VOICE

Islanding Technique in Power Systems, the Way Forward

By ANIL SARDANA

With increasing demand for power, citizens across the country are concerned with potential blackouts and worsening conditions of networks and supply commitments of discoms. India has also suffered several large-scale outages in 2012, depriving an estimated 600 million people of electricity and various other dependent facilities.

While, the national grid has several interlocked and refined protection & relaying systems, for interrupting by design, which could be noticed as the cause of sinking the grid system and thus isolating the healthy network to remain stable and continue to achieve their desired objectives, but on several occasions such grid indiscipline could not be averted.

Further, with a view to complimenting and supplementing the discipline at the national grid level, it is important that the discoms need to have their own system well oriented to self-discipline. This is possible through what is popularly called "Islanding" of distribution network.

Islanding refers to a condition in which a source continues to get power in a location even when the electricity from the grid is not amenable to being continued due to disturbance in such system. So, the islanding helps the distribution network bid itself to get absolutely isolated to harms-away situation from the adjoining grid interconnections. It was due to this islanding that power supply in Jamshedpur remained undisturbed, when the entire Eastern Region collapsed in the summer of 2012.

This system has also been followed in Mumbai, which achieves electrical islanding through its own elements of Generation, Transmission

and Distribution. It cuts off the internal Mumbai network from external grid in case of any disturbance and helps manage its power demand through its own systems. After Islanding, load generation balance is achieved and the local system continues to feed essential systems like railways, stock exchange depending on the available generation capacity.

Post the implementation of this technique, there have been 37 major grid disturbances in Mumbai, and the city has survived 27 of those successfully and the system has achieved 100% success rate ever since 1997. It has operated successfully on all 16 occasions. The scheme has been provided on all tie points to simultaneously island and operate the Mum-

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bai system in isolation.

The 'Islanding scheme' at Mumbai has been a landmark achievement for the power sector in India. It becomes all the more relevant in today's time when the new government has proposed new schemes like Smart Cities.

It is imperative that India would require uninterrupted power supply and state-of-the-art power generation systems. The islanding technique would thus provide steady power supply in the event of a grid failure.

(The writer is, MD and CEO Tata Power)