

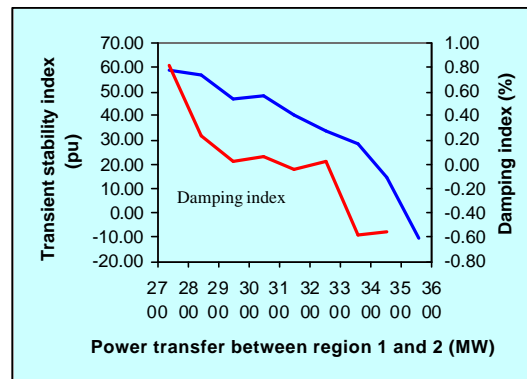
Special Protection System (SPS)

Special Protection System (SPS) or Remedial Action Scheme (RAS) as defined by NERC is designed to detect abnormal system conditions and take predetermined, corrective action (other than the isolation of the faulted element) to preserve system integrity and provide acceptable performance. As it is well known there is no generic SPS solution applicable to any power grid.

Doubletree Systems will work closely with power transmission companies to tailor SPS solution to each unique power grid. The Doubletree Systems' SPS solution and services will include:

1. Power system analysis and Contingencies Analysis to define existing power system security issues including:

- Thermal limits
- Voltage stability
- Transient stability
- Small-signal stability
- Frequency stability
- N-1/N-2 Contingencies & special events



2. Examine solution strategies with the transmission company which includes:

- Generation rejection
- Turbine fast valving – generator runback
- Under-frequency load shedding (UFLS)
- Under-voltage load shedding (UVLS)
- Remote load shedding
- Automatic shunt capacitor/reactor switching
- Controlled disconnection or interconnection
- Other

3. Provide High Availability Hardware & Controller with:

- Triple modular redundancy (TMR) / fault tolerant architecture
- Redundant communication



4. Verification by using simulation (RTDS and lab) to fully test the RAS solution as well as decide the set-points.

