

Proposed Definition of “Remedial Action Scheme”

Remedial Action Scheme (RAS)

A scheme designed to detect predetermined System conditions and automatically take corrective actions that may include, but are not limited to, ~~curtailing adjusting~~ or tripping generation ~~or other sources,~~ ~~curtailing or (MW and Mvar),~~ tripping load, or reconfiguring a System(s). RAS accomplish ~~one or more of the following~~ objectives such as:

- Meet requirements identified in the NERC Reliability Standards;
- Maintain Bulk Electric System (BES) stability;
- Maintain acceptable System BES voltages;
- Maintain acceptable BES power flows;
- Limit the impact of Cascading; or
- ~~Address other Bulk Electric System (BES) reliability concerns.~~

~~These schemes are not Protection Systems; however, they may share components with Protection Systems extreme events.~~

The following do not individually constitute a RAS:

- ~~a.~~ Protection Systems installed for the purpose of detecting Faults on BES Elements and isolating the faulted Elements
- ~~b.~~ Schemes for automatic underfrequency load shedding (UFLS) and automatic undervoltage load shedding (UVLS) comprised of only distributed relays
- ~~a-c.~~ Out-of-step tripping and power swing blocking
- ~~a.~~ Automatic ~~underfrequency load shedding (UFLS) programs~~
- ~~b.~~ ~~Undervoltage Load Shedding Programs (UVLS Programs)~~
- ~~b-d.~~ Autoreclosing/Reclosing schemes
- ~~e-e.~~ Schemes applied on an Element for non-Fault conditions, such as, but not limited to, generator loss-of-field, transformer top-oil temperature, high voltage overvoltage, or overload to protect the Element against damage by removing it from service
- ~~d-f.~~ Controllers that switch or regulate one or more of the following: series or shunt reactive devices, flexible alternating current transmission system (FACTS) devices, phase-shifting transformers, variable-frequency transformers, or tap-changing transformers, ~~or generation excitation,~~; and, that are located at and monitor quantities solely at the same station as the Element being switched or regulated

- e.g. FACTS controllers that remotely switch static shunt reactive devices located at other stations to regulate the output of a single FACTS device
- f.h. Schemes or controllers that remotely switch shunt reactors and shunt capacitors for voltage regulation that would otherwise be manually switched
- g.i. Schemes that automatically de-energize a line for a non-Fault operation when one end of the line is open
- h.j. Schemes that provide anti-islanding protection (e.g., protect load from effects of being isolated with generation that may not be capable of maintaining acceptable frequency and voltage)
- i.k. Automatic sequences that proceed when manually initiated solely by ~~an operator~~ a System Operator
- j.l. Modulation of HVdc or FACTS via supplementary controls, such as angle damping or frequency damping applied to damp local or inter-area oscillations
- k.m. _____ Sub-synchronous resonance (SSR) protection schemes that directly detect sub-synchronous quantities (e.g., currents or torsional oscillations)
- n. Generator controls such as, but not limited to, automatic generation control (AGC), generation excitation [e.g. automatic voltage regulation (AVR) and power system stabilizers (PSS)], fast valving, and speed governing

Existing ~~NERC Definitions~~ – Glossary of Terms ~~Definitions~~Used in NERC Reliability Standards

Special Protection System (Remedial Action Scheme)

An automatic protection system designed to detect abnormal or predetermined system conditions, and take corrective actions other than and/or in addition to the isolation of faulted components to maintain system reliability. Such action may include changes in demand, generation (MW and Mvar), or system configuration to maintain system stability, acceptable voltage, or power flows. An SPS does not include (a) underfrequency or undervoltage load shedding or (b) fault conditions that must be isolated or (c) out-of-step relaying (not designed as an integral part of an SPS). Also called Remedial Action Scheme.

Remedial Action Scheme

See “Special Protection System”