



OPERATING RESERVES

Glossary

Glossary of Terms for Technical Requirements for Ancillary Services
Version 3.0



The terms listed below are used in the Technical Requirements documents with their respective definitions.

“Alberta Control Area” means the Control Area that is operated by the AESO in the province of Alberta.

“Alberta Electric System Operator” or **“AESO”** means the Independent System Operator (ISO) of Alberta.

“Ancillary Service(s)” or **“AS”** as defined in the Act means those services required to ensure that the interconnected electric system is operated in a manner that provides a satisfactory level of service with acceptable levels of voltage and frequency.

“Activation” or **“Activate”** means the act of the System Controller issuing a dispatch for a Reserve Resource to be in position to be able to Deploy Operating Reserves upon a System Controller AS Directive.

“AIES” means Alberta “Interconnected Electric System” as that term is defined in the Act.

“Area Control Error” or **“ACE”** means the instantaneous difference between actual and scheduled interchange, taking into account the effects of frequency bias (and time error or unilateral inadvertent interchange if automatic correction for either is part of the system’s AGC).

“AS Dispatch” means an instruction given to an Ancillary Service provider by the System Controller that notifies the provider that they may be required to supply Ancillary Services within those criteria agreed upon between the System Controller and the Service Provider.

“AS Directive” means an instruction given to an Ancillary Service provider by the System Controller with the understanding that the Participant must comply accepting that the facility owner retains the right and duty to take any action it deems prudent to protect the facility, its’ personnel, the public or the environment.

“Automatic Generation Control” or **“AGC”** means equipment that automatically adjusts a Control Area’s generation, from a central location, to maintain its frequency or interchange schedule plus or minus frequency bias.

“Contingency” means the unexpected failure or outage of a system component, such as a generator, transmission line, circuit breaker, switch, or other electrical element. A Contingency also may include multiple components, which are related by situations leading to simultaneous component outages.

“Contingency Reserve” means an amount of Operating Reserve sufficient to reduce Area Control Error to zero following loss of generating capacity, which would result from the most severe single contingency all in a manner which adheres to WECC criteria.

“Control Area” means a geographic area comprised of an electric system or systems, bounded by interconnection metering and telemetry, capable of controlling generation to maintain its interchange schedule with other control areas, and contributing to frequency regulation of the interconnection, all in accordance with the requirements of the WECC.

“Deployment” or “Deploy” means the act of the Reserve Resource responding to an AS Directive from the System Controller to deliver (in the case of a Generation Unit) or remove (in the case of a Load) the reserve energy into the AIES.

“Energy Market” means the electrical energy market operated by the AESO.

“Energy Market Dispatch” means a dispatch of a block of energy in the energy market merit order to change energy output or consumption.

“Facility” means a Resource or multiple of Resources that have a common interconnection to the AIES through a transmission station or substation.

“Flexible” means an Ancillary Services offer that does not have the entire volume of the offer dispatched but may be dispatched in part.

“Generation Unit” means a synchronous electrical machine together with its auxiliary equipment, including the automatic voltage regulator and the speed governor, capable of producing Real Power and/or Reactive Power.

“Gross Real Power” means the amount of Real or Reactive Power measured at the terminals of a Generation Unit.

“Host Control Area” means the Control Area outside of the province of Alberta that contains the Resource offering some Ancillary Service.

“Independent System Operator” or “ISO” means the entity that is responsible for operating the Alberta Control Area and whose role is defined in the Electric Utilities Act.

“Independent System Operator Operating Policies and Procedures” or “ISO OPPs” means the standards, policies, criteria, and practices established by the ISO to guide operation of the transmission system, as modified by the ISO from time to time.

“Load” means the instantaneous amount of electric energy delivered or required at any specific point or points on the system.

“Maneuverability” means the ability of a Resource to change its real power or reactive power output over time. Maneuverability is characterized by the ramp rate (e.g., MW/minute) of the Resource and, for Regulation, its acceleration rate (e.g., MW/minute).

“Maximum Real Power” the highest available Real Power capacity of the Resource.

“NERC” means the North American Electric Reliability Council and any successor organization.

“Operating Reserves” means the capability above system demand available to the AES within 10 minutes following a supply contingency, required to provide for system regulation and local area protection and to correct for or stabilize the system in the event of contingencies, load forecasting errors and forced outages to Generating Units. Operating Reserve includes either or all of the following in any combination at a given time:

- (a) Regulating Reserve
- (b) Spinning Reserve
- (c) Supplemental Reserve

“Position” (verb) means the action of preparing a Reserve Resource within 10 minutes to be able to Deploy the reserves contracted. For example, it includes reducing the Real Power output of a Generation Unit such as to be able to provide the contracted reserve.

“Real Power” means the rate of producing, transferring, or using electrical energy, usually expressed in kW or MW.

“Regulating Reserve Provider” means a person or organization that supplies Regulating Reserve service.

“Regional Reliability Council” means any one of the 10 Electric Reliability Councils that form NERC.

“Regulating Reserve” an amount of Spinning Reserve responsive to AGC, which is sufficient to provide normal regulating margin.

“Regulating Reserve Provider” means a person or organization that supplies Regulating Reserve service.

“Regulation” means the provision of generation and Load response capability, including capacity, energy, and Maneuverability, that responds to automatic controls issued by the System Controller.

“Remedial Action Scheme” or **“RAS”** means protection schemes designed to perform pre-planned corrective measures following a system disturbance to provide for acceptable system performance or equipment protection.

“Resource” means a Generation Unit or a Load for the purposes of providing some type of Ancillary Service.

“Spinning Reserve” means unloaded generation which is synchronized and ready to serve additional demand. It consists of Regulating Reserve and Contingency Reserve.

“Spinning Reserve Provider” means a person or organization that supplies Spinning Reserve.

“Supplemental Reserve” means that portion of Contingency Reserve that is not Spinning Reserve.

“Supplemental Reserve Provider” means a person or organization that supplies Supplemental Reserve.

“System Controller” or **“SC”** means the ISO.

“Western Electricity Coordinating Council” or **“WECC”** means one of the 10 Regional Reliability Councils that comprise NERC. Specifically, the Reliability Council that the AIES belongs to.