

GLOSSARY

GLOSSARY OF TERMS

Alumina Feed Systems. The devices and method used to supply alumina (Al_2O_3) to the reduction cells. State-of-the-art technology uses automated systems controlled by computer to add alumina to individual cells as needed based on the voltage across each cell.

Ambient Air Quality. The prevailing quality of the surrounding air in a given area in terms of the type and amounts of various air pollutants present.

Anadromous Fish. Species of fish (such as salmon) that are hatched in fresh water, mature in salt water, and return to fresh water to spawn.

Anode Preparation Facility. The part of an aluminum plant at which anodes are made. In a plant using Soderberg anodes, it consists mainly of crushers and mixers which process petroleum coke and coal tar pitch into a paste-like material which bakes and hardens in place at the pot. More paste is added as the anode is consumed in the reduction reaction. In a prebake plant, the paste is pressed around a steel stud and baked in a furnace to form a hard anode, several of which are installed on a reduction cell, and which are replaced periodically as they are consumed in the reduction process.

Anode. In an aluminum reduction cell (or pot), the upper carbonaceous electrode through which direct electric current is delivered to effect the electrolytic reduction of alumina (Al_2O_3) to aluminum metal (Al) and which is consumed as a source of carbon for the reaction.

Average System Cost. The fully allocated cost of a utility's generation and transmission system. Under the Regional Power Act, a utility may sell power to BPA at the utility's average system cost and purchase the same amount of power back from BPA at a lower rate based on the costs of the Federal Base System.

Baseload Generation. The minimum load in a power system over a given period of time.

Cathode. In an aluminum plant, the electrode which receives the direct electric current and which consists of the carbonaceous part of the reduction cell lining and the collector plate or bar.

Cell Lining. The carbonaceous material packed into an aluminum reduction cell to act as a cathode and firebrick or other refractory material to protect the steel shell and provide some insulation.

Contract Demand. The maximum amount of Industrial Firm Power a DSI could purchase under its BPA Power Sales Contract.

Dissolved Oxygen Content. The amount of oxygen dissolved in water, necessary for the life of fish and other aquatic animals.

Effluent. A discharge or emission of a liquid waste.

Horizontal Stud Soderberg. A type of aluminum production technology in which the anode material is added in a paste-like form and bakes in place at the reduction cell. Electricity is conducted to the anode through steel pins inserted horizontally into the anode through holes in the casing that retains the anode.

Industrial Firm Power. Power intended to have assured availability to a BPA industrial customer on a contract demand basis, but which allows certain rights of restriction on the part of BPA (see Section 1.3).

Load Factor. The ratio of the average load to the peakload during a specified period of time, expressed in percent.

New Resources Firm Power Rate. A rate based on costs of new resources added to meet load growth which is charged for serving load growth of regional investor-owned utilities and for serving any new large single loads (additions of over 10 average MW in any one year at any one facility) on public utility systems.

Nitrogen Supersaturation. A condition of water in which the concentration of dissolved nitrogen exceeds the saturation level of the water. Excess nitrogen can evolve bubbles of nitrogen in the circulatory systems of fish.

Nonfirm Energy. Energy which is subject to interruption or curtailment at any time by the supplier and hence, does not have the guaranteed, continuous availability of firm power.

Operating Demand. The maximum rate at which electric energy may be requested by a DSI over a designated period and delivered without penalty. Demand is expressed in kilowatts or megawatts, or in kilovolt-amperes or megavolt-amperes. Operating demand is set by each DSI and may be increased upon 90 days' notice or as otherwise scheduled in Exhibit C of the DSI's Power Sales Contract. Operating demand cannot exceed contract demand.

Pacific Northwest Power Act. Signed into law December 5, 1980, the Act provides for coordinated planning of the Pacific Northwest's energy future, through a Regional Planning Council with representation from Oregon, Idaho, Montana, and Washington.

Particulate Concentrations. Finely divided solid or liquid matter in the air or in a gaseous discharge. Some particulates are dust, smoke, fumes, mist, spray, and fog.

Peaking Energy. Energy from operation of generating facilities to meet maximum instantaneous electrical demands.

Potlines. A set of aluminum reduction cells (pots) which are connected electrically in series. A potline may contain 200 pots or more.

Power System Reserves. Extra generating capacity and/or ability to shed certain loads in order to protect service to firm loads when a failure occurs on the generating system or transmission system.

Prebake. A type of aluminum production technology in which the anode is formed and baked prior to its installation at a reduction cell, or "pot." See Anode Preparation Facility.

Preference Clause. The preferential use of Federal resources by public bodies and cooperatives, as accorded to such utilities in the Bonneville Project Act.

Preference Utilities. Cooperatives and public bodies which have preferential rights to Federally generated hydro power under the Bonneville Project Act.

Priority Firm Power. Sale of firm power to be used within the Pacific Northwest by public bodies, cooperatives, Federal agencies, and IOUs participating in the residential and small farm exchange under Section 5(c) of the Pacific Northwest Power Act.

Probabilistic Model. A form of mathematical model used to predict the most probable outcome in a realm of uncertainty by averaging the results of many calculations involving two or more variables. In each such calculation, each variable is selected randomly from within some defined range.

Quartile. The Direct Service Industries' operating demands are divided into quarters. The upper quartile is that quarter of the DSIs' load which BPA may restrict for any reason or which the DSIs may curtail for any reason.

Riparian. Of, pertaining to, situated, or dwelling on the bank of a river or other body of water.

Salmonid. Fish belonging to the family of salmonidas, including salmon, trout, char, and allied freshwater and anadromous fishes.

Total Suspended Solids. A water pollution term referring to a measure of the quantity of all non-dissolved materials in a volume of water.

Vertical Stud Soderberg. A type of aluminum production technology in which anode material is added in a paste-like form and bakes in place at the reduction cell. Electricity is conducted to the anode through steel pins inserted vertically into the top of the anode.

Water Budget. A river operating constraint developed by the Northwest Power Planning Council in its Fish and Wildlife Program to provide certain volumes of water to achieve desired flows during April 15 to June 15 to increase the flow of water between dams on the Columbia River.

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