

Kansas Administrative Regulations

Kansas Corporation Commission

Article 3.—Production and Conservation of Oil and Gas

82-3-1200. Definitions; compressed air energy storage.

The terms and definitions in K.A.R. 82-3-101, with some definitions modified as follows, shall apply to these regulations for compressed air energy storage, in addition to the new terms and definitions specified: (a) "Abandonment" means the process of plugging all compressed air energy storage wells and removing all surface equipment at a storage facility.

(b) "Air" means the portion of the atmosphere, external to buildings, to which the general public has access.

(1) "Cushion air" means the volume of air maintained as permanent air storage inventory throughout compressed air energy storage operations.

(2) "Working air" means any air in a compressed air energy storage cavern or reservoir in addition to the cushion air.

(c) "Certified laboratory" means a laboratory certified by the Kansas department of health and environment.

(d) "Class I injection well" means any of the following:

(1) Any well used by a generator of hazardous waste, or an owner or operator of a hazardous waste management facility, to inject hazardous waste beneath the lowermost formation containing an underground source of drinking water within one-quarter mile of the wellbore;

(2) any industrial or municipal disposal well that injects fluids beneath the lowermost formation containing an underground source of drinking water within one-quarter mile of the wellbore; or

(3) any radioactive waste disposal well that injects fluids below the lowermost formation containing an underground source of drinking water within one-quarter mile of the wellbore.

(e) "Compressed air energy storage" means the process of compressing and injecting air into an underground geologic stratum and withdrawing the air to generate electricity.

(f) "Compressed air energy storage cavern" and "cavern" mean an underground cavity, created in a bedded salt formation by solution mining, where compressed air is stored.

(g) "Compressed air energy storage reservoir" and "reservoir" mean a porous geologic stratum, vertically separated from overlying usable water formations by a laterally continuous vertical flow barrier, where compressed air is stored.

(h) "Compressed air energy storage well" and "storage well" mean a well capable of injecting air from the surface into a cavern or reservoir, or withdrawing air from the cavern or reservoir to the surface, including any wellbore tubular good, wellhead, air flow line, brine line, and surface equipment used to maintain cavern or reservoir integrity, through the last positive shutoff valve.

(1) "Active well" means a storage well that is not in plugging-monitoring status and is not plugged.

(2) "Cavern storage well" means a storage well used to inject air into or withdraw air from a cavern.

(3) "Reservoir storage well" means a storage well used to inject air into or withdraw air from a reservoir.

(A) "Injection well" means a reservoir storage well used to inject compressed air from the surface into a reservoir.

(B) "Withdrawal well" means a reservoir storage well used to withdraw compressed air from the reservoir to the surface.

(i) (1) "Compressed air energy storage facility" and "storage facility" mean the cavern or reservoir, the leased acreage above a cavern or reservoir and within a storage facility boundary, and the following:

(A) Electrical generating facility;

(B) equipment used to maintain cavern or reservoir storage integrity;

(C) injection and withdrawal flow line, valve, and equipment connecting the electrical generating facility to a storage well; and

(D) storage well, observation well, and monitoring well.

(2) (A) "Cavern storage facility" means a storage facility that utilizes a cavern.

(B) "Reservoir storage facility" means a storage facility that utilizes a reservoir.

(j) "Corrosion control system" means any process used to prevent corrosion at a storage facility, including cathodic protection, metal coating, corrosive inhibiting fluid, and non-corrosive internal lining.

(k) "Decommission" means to declare in writing that air injection and withdrawal activities will cease at the operator's storage facility.

(l) "Electrical generating facility" means a building or area that contains the equipment used to generate electricity, including any air compressor train, recuperator, expander, and combustion turbine, but not including any brine line, air flow line located outside the electrical generating facility, or surface equipment used to maintain cavern or reservoir mechanical integrity.

(m) "Excavated mine cavity" means a rock formation with a portion of the rock material removed, not including any cavern created by solution mining.

(n) "First fill" means the process of filling the cavern storage well and cavern with air and displacing saturated brine to the surface.

(o) "Fracture gradient" means the ratio of pressure per unit of depth, measured in pounds per square inch per foot, that if applied to a subsurface formation would cause the formation to physically fracture.

(p) "Kansas board of technical professions" means the state board responsible for licensing persons to practice engineering, geology, and land surveying in Kansas.

(1) "Licensed professional engineer" means a professional engineer licensed to practice engineering in Kansas by the Kansas board of technical professions.

(2) "Licensed professional geologist" means a geologist licensed to practice geology in Kansas by the Kansas board of technical professions.

(3) "Licensed professional land surveyor" means a professional land surveyor licensed to practice land surveying in Kansas by the Kansas board of technical professions.

(q) "Leak" means any loss of air or harmful substances at the surface, including a loss from the wellhead, tubing, casing, around the packer, or an air flow line located outside an electrical generating facility.

(r) "Leak detector" means any device capable of detecting, by chemical or physical means, a leak of harmful substances or air.

(s) "License" means the revocable, written permission issued by the director to an operator to conduct compressed air energy storage activities.

(t) "Liner" means steel casing installed and cemented in the production casing.

(u) "Liquefied petroleum gas" and "LPG" mean any byproduct or derivative of oil or gas, including propane, butane, isobutane, and ethane, maintained in a liquid state by pressure and temperature conditions.

(v) "Loss of containment" means any migration of air beyond any boundary of a cavern storage well or reservoir storage facility.

(w) "Maximum allowable operating pressure" means the maximum pressure authorized by the director and measured at the wellhead.

(x) "Maximum operating pressure" means the maximum pressure measured at the wellhead over a 24-hour period.

(y) "Monitoring well" means a well used to sample and monitor a usable water aquifer.

(1) "Deep monitoring well" means a monitoring well used to sample and monitor the deepest usable water aquifer at a storage facility.

(2) "Shallow monitoring well" means a monitoring well used to sample and monitor the shallowest usable water aquifer at a storage facility.

(z) "Natural thermal gradient" means the ratio of degrees Fahrenheit per foot that exists in a subsurface formation before any well-drilling activity. (aa) "Normal operating condition" means that the wellhead master valve, each positive shutoff valve, and each manual valve at a storage facility can be fully opened and closed with reasonable ease and can hold pressure in the closed position. (bb) "Observation well" means a well used to detect or monitor a loss of containment associated with a cavern or reservoir.

(cc) "Operator" means the person recognized by the director as responsible for the physical operation and control of a storage facility.

(dd) "Packer" means an expandable mechanical device used to seal off any section of a well to cement, test, or isolate the well from a completed interval.

(ee) "Permit" means the revocable, written permission issued by the director for a compressed air energy storage facility to be used by a licensee.

(ff) "Pit" means any constructed, excavated, or naturally occurring depression upon the surface of the earth. This term shall include any surface pond.

(1) "Containment pit" means a temporary pit constructed to aid in the cleanup and to temporarily contain fluids resulting from oil and gas activities that were spilled as a result of immediate, unforeseen, and unavoidable circumstances.

(2) "Drilling pit" means any pit, including reserve pits and working pits, used to temporarily confine fluid or waste generated during the drilling or completion of any storage well, monitoring well, or observation well.

(3) "Emergency pit" means a permanent pit that is used for the emergency storage of fluid discharged as a result of any equipment malfunction.

(4) "Haul-off pit" means a pit used to store spent drilling fluids and cuttings that have been transferred from an area where surface geological conditions preclude the use of an earthen pit.

(5) "Reserve pit" means a pit used to store spent drilling fluids and cuttings that have been transferred from a working pit.

(6) "Settling pit" means a pit used for the collection or treatment of fluids.

(7) "Working pit" means a pit used to temporarily confine fluids or waste resulting from the drilling or completion of any storage well, monitoring well, or observation well.

(8) "Workover pit" means a pit used to contain fluids during the performance of remedial operations on a previously completed well.

(gg) "Plugged well" means a well that is filled with cement and abandoned.

(hh) "Plugging-monitoring status" means the status of a cavern storage well that is filled with saturated brine to monitor cavern pressure stabilization from the surface.

(ii) "Saturated brine" means saline water with a sodium chloride concentration greater than or equal to 90 percent.

(jj) "Solutioning" means the process of injecting fluid into a well to dissolve or remove any rocks or minerals, including salt.

(kk) "Supervisory control and data acquisition system" and "SCADA system" mean an automated surveillance system used to monitor and control storage activities from a remote location. (ll) "Usable water" means water containing not more than 10,000 milligrams of total dissolved solids per liter.

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***** Authenticated Kansas Administrative Regulation *****