2026 Regular Session

HOUSE BILL NO. 1156

BY REPRESENTATIVE BACALA

ENERGY: Enacts safety regulations for carbon dioxide transport and sequestration

AN ACT

To amend and reenact R.S. 30:1104(C)(introductory paragraph) and (E) and 1104.2(I), to enact R.S. 30:1103(17) through (46) and Part II of Chapter 11 of Subtitle I of Title 30 of the Louisiana Revised Statutes of 1950, to be comprised of R.S. 30:1121 through 1121.51, and to repeal R.S. 30:1107.1, 1107.2, 1113, and 1114, relative to safety regulations for carbon dioxide sequestration; to provide definitions; to provide for construction with other applicable laws, regulations, and authority; to make carbon dioxide sequestration and transport subject to the Right-to-Know laws; to provide for emergency preparedness and response; to provide for educational materials; to provide Class VI injection well application requirements; to establish safety regulations for Class VI injection wells and storage facilities; to provide for the duties of Class VI permittees; to provide for facility financial security requirements; to provide for facility and pipeline siting requirements; to require certain modeling; to provide for well construction, completion, and operating requirements; to provide for groundwater monitoring and contamination; to provide for required storage facility plans; to provide for facility reporting and records retention; to provide mechanical integrity requirements; to provide plugging and abandonment requirements; to provide site care and closure requirements; to establish safety regulations for pipelines transporting carbon dioxide for sequestration; to provide pipeline design, construction, operating, and maintenance

requirements; to provide for pipeline conversion; to provide pipeline monitoring, reporting, and record keeping requirements; to require procedural manuals for pipelines; to require emergency response training; to provide for pipeline personnel; to provide for public awareness; to provide requirements for pipelines in high consequence areas; to provide for enforcement and violations; to provide for the powers and duties of the secretary of the Department of Conservation and Energy; to direct the Louisiana State Law Institute to make certain technical changes and redesignations; and to provide for related matters.

Be it enacted by the Legislature of Louisiana:

Section 1. R.S. 30:1104(C)(introductory paragraph) and (E) and 1104.2(I) are hereby amended and reenacted and R.S. 30:1103(17) through (46) and Part II of Chapter 11 of Subtitle I of Title 30 of the Louisiana Revised Statutes of 1950, comprised of R.S. 30:1121 through 1121.51 are hereby enacted to read as follows:

§1103. Definitions

Unless the context otherwise requires, the words defined in this Section have the following meaning when found in this Chapter:

* * *

(17) "Administrator" means the Administrator of the Pipeline and Hazardous Materials Safety Administration (PHMSA) or his delegate.

(18) "Carbon dioxide plume" means the extent underground, in three dimensions, of an injected carbon dioxide stream.

(19) "Carbon dioxide stream" means the carbon dioxide that has been captured from an emission source, plus incidental associated substances derived from the source materials and the capture process, and any substances added to the stream to enable or improve the injection process.

(20) "Casing" means a metallic or nonmetallic tubing or pipe of varying diameter and weight, lowered into a borehole during or after drilling in order to support the sides of the hole and thus prevent the walls from caving, to prevent loss

of drilling mud into porous ground, or to prevent water, gas, or other fluid from entering or leaving the hole.

(21) "Cementing" means the operation whereby a cement slurry is pumped into a drilled hole or forced behind the casing.

(22) "Component" means any part of a pipeline which may be subjected to pump pressure including but not limited to pipe, valves, elbows, tees, flanges, and closures.

(23) "Confirmed discovery" means a reasonable determination, based on information available to the operator at the time a reportable event has occurred, even if only based on a preliminary evaluation.

(24) "Confining zone" means a geological formation, group of formations, or part of a formation stratigraphically overlying the injection zone that acts as a barrier to fluid movement above an injection zone.

(25) "Corrective action" means the use of methods approved by the department's underground injection control program to ensure that wells within the area of review do not serve as conduits for the movement of fluids into underground sources of drinking water.

(26) "Flow rate" means the volume per time unit given to the flow of gases or other fluid substance which emerges from an orifice, pump, turbine, or passes along a conduit or channel.

(27) "Geologic sequestration" means the long-term containment of a gaseous, liquid, or supercritical carbon dioxide stream in subsurface geologic formations. This term does not apply to carbon dioxide capture or transport.

(28) "Ground water" means water below the land surface in a zone of saturation.

(29) "High consequence area" includes the following:

(a) Commercially navigable waterways, where a substantial likelihood of commercial navigation exists.

(b) High population areas or urbanized areas, as defined and delineated by the United States Census Bureau, that contain fifty thousand or more people and has a population density of at least one thousand people per square mile.

(c) Other populated areas or places, as defined and delineated by the United States Census Bureau, that contain a concentrated population, such as an incorporated or unincorporated city, town, village, or other designated residential or commercial area.

(30) "Injection zone" means a geological formation, group of formations, or part of a formation receiving fluids through a well. For Class VI projects, it must also be of sufficient areal extent, thickness, porosity, and permeability to receive carbon dioxide through a well or wells associated with a geologic sequestration project.

(31) "Personal protective equipment" means clothing, equipment, and devices worn on, or carried by, a person to minimize exposure to hazards.

(32) "PHMSA" means the Pipeline and Hazardous Materials Safety Administration.

(33) "Pipe" or "line pipe" means a tube, usually cylindrical, through which carbon dioxide flows from one point to another.

(34) "Pipeline" or "pipeline system" means all parts of a pipeline facility through which carbon dioxide moves in transportation including but not limited to line pipe, valves, and other appurtenances connected to line pipe, pumping units, fabricated assemblies associated with pumping units, and metering and delivery stations and fabricated assemblies therein.

(35) "Pipeline facility" means new and existing pipe, rights-of-way, and any equipment, facility, or building used in the transportation of carbon dioxide.

(36) "Plugging" means the act or process of stopping the flow of water, oil or gas into or out of a formation through a borehole or well penetrating that formation.

(37) "Point of injection" means the last accessible sampling point prior to release into the subsurface environment through an injection well.

(38) "Post-injection site care" means the appropriate monitoring and other actions, including corrective action, needed following cessation of geologic sequestration injection to ensure that underground sources of drinking water are not endangered.

(39) "Pressure front" means the zone of elevated pressure in the subsurface created by injection where there is a pressure differential sufficient to cause the movement of injected fluids or formation fluids into an underground source of drinking water.

(40) "Public water system" means a system for the provision to the public of piped water for human consumption, if such system has at least fifteen service connections or regularly serves at least twenty-five individuals and includes any collection, pretreatment, treatment, storage, and distribution facilities used primarily in connection with the system.

(41) "Rupture-mitigation valve" means an automatic shut-off valve or a remote-control valve that a pipeline operator uses to minimize the volume of carbon dioxide released from the pipeline and to mitigate the consequences of a rupture.

(42) "Site closure" means the point or time, as determined by the department's underground injection control program, at which the owner or operator of a geologic sequestration site is released from post-injection site care responsibilities.

(43) "Underground source of drinking water" means an aquifer or portion of an aquifer which supplies any public water system or contains a sufficient quantity of ground water to supply a public water system and which currently supplies drinking water for human consumption or contains fewer than ten thousand milligrams per liter of total dissolved solids and which is not an exempted aquifer.

(44) "Well monitoring" means the measurement by on-site instruments or laboratory methods of the quality of water in a well.

(45) "Well stimulation" means processes used to clean the well bore, enlarge channels, and increase pore space in the interval to be injected enabling fluids to move more readily into the formation.

(46) "Workover" means to perform one or more of a variety of remedial operations on an injection well, such as cleaning, perforation, changing tubing, deepening, squeezing, plugging back, and other measures.

§1104. Duties and powers of the secretary; rules and regulations; permits

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C. Prior to the use of any reservoir for the storage of carbon dioxide and prior to the exercise of eminent domain pursuant to the provisions of R.S. 19:2(11) and R.S. 30:1108 by any person, firm, or corporation having such right under laws of the state of Louisiana, and as a condition precedent to such use or to the exercise of such rights of eminent domain pursuant to the provisions of R.S. 19:2(11) and R.S. 30:1108, the secretary, after public hearing pursuant to the provisions of R.S. 30:6, held in the parish where the storage facility is to be located, shall have found ~~at least one of~~ the following:

* * *

E. The secretary may issue any necessary order providing that all carbon dioxide which has previously been reduced to possession and which is subsequently injected into a storage reservoir shall at all times be deemed the property of the party that owns such carbon dioxide, whether at the time of injection or pursuant to a change of ownership by agreement while the carbon dioxide is located in the storage facility, his successors and assigns; and in no event shall such carbon dioxide be subject to the right of the owner of the surface of the lands or of any mineral interest therein under which such storage reservoir shall lie or be adjacent to or of any person other than the owner, his successors, and assigns to produce, take, reduce to possession, waste, or otherwise interfere with or exercise any control there over, provided that the owner, his successors, and assigns shall have no right to gas, liquid hydrocarbons, salt, or other commercially recoverable minerals in any stratum or

portion thereof not determined by the secretary to constitute an approved storage reservoir. The secretary shall issue such orders, rules, and regulations as may be necessary for the purpose of protecting any such storage reservoir, strata, or formations against pollution or against the escape of carbon dioxide therefrom, including such necessary rules and regulations as may pertain to the drilling into or through such storage reservoir in compliance with the provisions of Part II of this Chapter.

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§1104.2. Unitization

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I. Except as provided in R.S. 30:1108(B)(2), nothing in this Section shall prevent persons having the right to do so from drilling through the storage unit in such manner as shall comply with the requirements of Part II of this Chapter and any rules of the ~~commissioner~~ secretary issued for the purpose of protecting the storage unit or an associated storage facility against pollution or invasion and against the escape or migration of carbon dioxide.

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PART II. CARBON DIOXIDE SEQUESTRATION SAFETY REQUIREMENTS

§1121. Applicability; construction with other laws

A. The provisions of this Part shall act as minimum criteria, standards, and requirements regarding Class VI injection wells and pipelines transporting carbon dioxide for geologic sequestration and shall not be construed to limit the secretary's authority to promulgate and enforce any rules deemed necessary or appropriate to ensure the safety of the public, emergency responders, and the natural resources of the state, including underground sources of drinking water.

B. Nothing contained in this Part shall be construed to relieve Class VI injection well permit applicants, owners, or operators or transporters of carbon dioxide for geologic sequestration from compliance with all applicable rules promulgated by state and federal agencies. Any conflict between the provisions of

this Part and applicable federal law, federal regulations, or state regulations required to be promulgated by federal law or regulations shall be resolved in favor of the latter.

C. The secretary may, to the extent he deems necessary or proper, waive in whole or in part compliance with any standard established under this Part, or modify, vary, or supplement the requirements of this Part, if he determines that compliance with such standard or requirement would cause the department or an operator to come into noncompliance with federal law or regulations or with any controlling agreement between the state and the federal government.

D. The requirements of this Part may be accomplished as part of, or in conjunction with, any other applicable safety requirements pursuant to state or federal law. Operators are not required to duplicate their efforts to satisfy the provisions of this Part if any such requirements are met pursuant to other applicable legal requirements. The department may accept documentation or other evidence of the operator's compliance with the provisions of this Part as appropriate to implement this Subsection.

SUBPART A. GENERAL

§1121.1. Scope

The provisions of this Subpart shall apply to both storage facilities and pipelines transporting carbon dioxide for geologic sequestration.

§1121.2. Right-to-Know law; applicability

A. Owners and operators shall be subject to the requirements of the Right-to-Know laws contained in R.S. 30:2361, et seq. and the administrative rules promulgated thereunder.

B. Storage facilities and pipelines governed by this Chapter shall be considered "facilities" for the purposes of R.S. 30:2363.

§1121.3. First responders; educational materials; emergency alert system

Prior to the commencement of operations, operators of storage facilities and pipelines shall coordinate with state and local emergency response agencies to accomplish the following:

(1) Prepare materials or programming designed to educate first responders, state and local governmental entities, and the public regarding the unique characteristics of a carbon dioxide release, how to identify a carbon dioxide release, how to report a suspected carbon dioxide release, and appropriate response actions.

(2) Identify the equipment and supplies necessary for effective emergency response to a release of carbon dioxide. At a minimum, the fire department having primary jurisdiction within a storage facility's area of review and one fire department in each parish traversed by pipeline which is likely to provide the initial response to a release shall have all equipment and supplies identified as necessary by the operator in their possession or readily available for their use prior to the commencement of injection or transportation operations. In addition, if any such fire department is lacking personal protective equipment identified as necessary during the pre-operational planning, the operator shall provide such personal protective equipment to the department. Operators, in coordination with appropriate emergency response agencies, shall periodically review the list of equipment and supplies deemed necessary for response and modify the list as appropriate to ensure that first responders are in the best position possible to properly and safely respond to a release.

(3) Implement an emergency alert system that functions to alert all persons that may be impacted by any incident that poses an immediate threat to public health, safety, or welfare. This requirement may be met by using existing public service programs.

SUBPART B. CLASS VI INJECTION WELL SAFETY REQUIREMENTS

§1121.21. Scope

The provisions of this Subpart shall apply to all applicants for Class VI permits and the owners and operators of Class VI wells as well as the owners and operators seeking to convert authorized Class I, II, or V wells to Class VI wells.

§1121.22. General prohibitions; powers and duties of the secretary; administrative requirements

A. Prohibition of unauthorized injection. Any underground injection, except as authorized by a permit or rule, is prohibited. Construction or operation of any well required to have a permit pursuant to this Chapter and the rules promulgated thereunder is prohibited until the permit has been issued. Any underground injection that violates any provision of this Chapter or the rules promulgated thereunder is subject to enforcement action.

B. The secretary may prescribe additional requirements for Class VI wells or projects in order to protect underground sources of drinking water and the health, safety, and welfare of the public. In order to protect the health, safety, and welfare of the public, the secretary shall establish and may, from time to time, amend restrictions on incidental constituents in the carbon dioxide stream of any well permitted pursuant to this Chapter.

C. General administrative requirements.

(1) All tests, reports, logs, surveys, plans, applications, or other submittals required by this Subpart or applicable rules and regulations, or submitted for informational purposes, are required to bear the Department of Conservation and Energy serial number of any Class VI carbon dioxide sequestration well associated with the submittal.

(2) All applications, reports, plans, requests, maps, cross-sections, drawings, opinions, recommendations, calculations, evaluations, or other submittals including or comprising geoscientific work as defined by R.S. 37:711.1 et seq. shall be prepared, sealed, signed, and dated by a licensed professional geoscientist authorized

to practice by and in good standing with the Louisiana Board of Professional Geoscientists.

(3) All applications, reports, plans, requests, specifications, details, calculations, drawings, opinions, recommendations, evaluations, or other submittals including or comprising the practice of engineering as defined by R.S. 37:681 et seq. shall be prepared, sealed, signed, and dated by a licensed professional engineer authorized to practice by and in good standing with the Louisiana Professional Engineering and Land Surveying Board.

§1121.23. Duties of a permittee

A. A permittee shall, at a minimum, comply with all of the following duties:

(1) Duty to comply. The permittee shall comply with all conditions of the permit. Any permit noncompliance constitutes a violation and is grounds for enforcement action; permit termination, revocation and reissuance, or modification; or denial of a permit renewal application if the secretary determines that such noncompliance endangers underground sources of drinking water.

(2) Duty to reapply. If the permittee wishes to continue an activity regulated by a permit after the expiration date of his permit, the permittee must apply for and obtain a new permit.

(3) Duty to halt or reduce activity. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of the permit.

(4) Duty to mitigate. The permittee shall take all reasonable steps to minimize or correct any adverse impact on the environment, such as the contamination of underground sources of drinking water, resulting from noncompliance with the permit.

(5) Proper operation and maintenance. The permittee shall at all times properly operate and maintain all facilities, systems of treatment and control, and related appurtenances which are installed or used by the permittee to achieve compliance with the conditions of the permit. Proper operation and maintenance

includes effective performance, adequate funding, adequate operation staffing and training, and adequate laboratory process controls, including appropriate quality assurance procedures.

(6) Inspection and entry. The permittee shall allow inspection and entry as provided in R.S. 30:4.

(7) Duty to establish and maintain mechanical integrity. The permittee shall establish mechanical integrity prior to commencing injection. Thereafter, the permittee shall maintain mechanical integrity and shall give notice to the department when it is determined the injection well is lacking mechanical integrity. If mechanical integrity is lacking, the operator shall immediately cease injection into the well and the well shall remain out of injection service until such time as well mechanical integrity is restored to the satisfaction of the department. The operator may only resume injection upon written notification from the department that the owner or operator has demonstrated mechanical integrity.

B. The issuance of a permit does not authorize any injury to persons or property or invasion of other private rights, or any infringement of state or local law or regulations.

C. Financial Responsibility.

(1) The permit shall require the permittee to have and maintain financial responsibility, insurance, and resources in compliance with this Subsection and applicable department rules for all phases of the geologic sequestration project prior to the issuance of authorization to begin operations.

(2) The secretary shall prescribe acceptable forms of financial responsibility and the manner by which a permittee shall demonstrate that appropriate financial responsibility instruments have been secured and maintained, including periodic review of existing financial responsibility for sufficient coverage. The secretary may disapprove the use of a financial instrument if he determines it is not sufficient to meet the financial responsibility requirements.

(3) Qualifying financial responsibility instruments shall be sufficient to address endangerment of underground sources of drinking water and to cover the costs of meeting the following requirements:

(a) Corrective action.

(b) Injection well plugging.

(c) Post-injection site care and site closure.

(d) Emergency and remedial response.

(4) In addition, the operator shall maintain third party insurance at a sufficient level to respond to any emergency or to perform any remedial action required.

(5) In order to determine the sufficiency of financial security and insurance, the secretary shall require the operator to prepare detailed written estimates of the costs of performing corrective action, plugging, post-injection site care and closure, and emergency and remedial response.

§1121.24. Siting criteria; area of review and corrective action

A. Applicants for Class VI permits and the owners and operators of Class VI wells shall demonstrate to the satisfaction of the department that Class VI wells are sited in accordance with the provisions of this Section.

B. At a minimum, the geologic criteria for siting shall include the following:

(1) An injection zone of sufficient areal extent, thickness, porosity, and permeability to receive the total anticipated volume of the carbon dioxide stream.

(2) The point of injection shall be at least one mile below the lowermost extent of an underground source of drinking water.

(3) Confining zones free of transmissive faults or fractures and of sufficient areal extent and integrity to contain the injected carbon dioxide stream and displaced formation fluids and to allow injection at proposed maximum pressures and volumes without initiating or propagating fractures in the confining zones.

(4) Confining zones shall in no event be less than three hundred feet thick.

C. Area of review and corrective action plan. The owner or operator of a Class VI well shall prepare, maintain, and comply with a plan to delineate the area of review for the proposed geologic sequestration project, periodically reevaluate the delineation, and perform corrective action as approved by the department. The secretary shall ensure the following minimum requirements are met:

(1) Area of review delineation.

(a) The area of review shall be delineated using computational modeling that accounts for the physical and chemical properties of all phases of the injected carbon dioxide stream and displaced fluids and shall be based on available site characterization, monitoring, and operational data.

(b) The method for delineating the area of review as well as the model to be used, assumptions that will be made, and site characterization data on which the model will be based shall be included in the plan submitted to the department for approval.

(c) Modeling shall include the projected migration of the carbon dioxide plume and formation fluids from commencement of injection activities through a department-approved terminal point. The model shall be based on geological data and site characterization, anticipated operating data for the life of the project, and the potential for migration through natural and artificial penetrations. The plan submitted shall account for any irregularities and data quality characteristics that may impact these model predictions.

(2) Corrective action.

(a) An applicant shall be required to perform all of the following:

(i) Identify all artificial penetrations of confining and injection zones within the area of review using department-approved methods.

(ii) Provide a description for each penetration, including well type, construction, date drilled, location, depth, record of plugging or completion, and any additional information the department may require.

(iii) Determine which abandoned wells in the area of review have been plugged in a manner that prevents the movement of carbon dioxide or other fluids that may endanger underground sources of drinking water, including use of materials compatible with the carbon dioxide stream.

(b) Owners or operators of Class VI wells shall perform corrective action on all wells in the area of review that are determined to need corrective action, using methods approved by the department.

(3) Reevaluation. Owners or operators shall reevaluate the area of review delineation and corrective action required as provided in this Paragraph.

(a) Regularly scheduled reevaluation shall be conducted based on a fixed term no longer than five years.

(b) Reevaluation may also be required prior to the next scheduled reevaluation when warranted by monitoring and operational conditions and data and such conditions and data shall be provided for in the approved plan.

(c) Following any reevaluation, the owner or operator shall submit to the department either an amended area of review and corrective action plan or demonstrate to the department's satisfaction that an amended plan is not necessary. Amended plans are subject to department approval. Approved amendments to the plan shall be incorporated into the permit and may be subject to permit modification requirements provided by administrative rules.

(d) All modeling inputs and data used to support reevaluations shall be retained for at least ten years.

D. Setbacks. No Class VI injection wellhead shall be located within five hundred feet of the following:

(1) Inhabited dwellings not owned by the storage operator or any owner in interest bound by a contract with the storage operator that allows for location of a Class VI injection well within five hundred feet of an inhabited dwelling.

(2) Schools.

(3) Healthcare facilities.

(4) Class VI injection operations shall not adversely affect any Class I waste plume existing at the time of permitting.

E. The geologic sequestration of carbon dioxide is not permitted in solution-mined salt caverns under these provisions.

§1121.25. Well construction and completion

A. Owners or operators of Class VI wells shall demonstrate to the satisfaction of the department that Class VI wells are constructed and completed in accordance with the provisions of this Section.

B. Injection well construction requirements.

(1) All phases of Class VI well construction shall be supervised by a person knowledgeable and experienced in practical drilling engineering and familiar with the special conditions and requirements of injection well construction.

(2) All materials and equipment used in the construction of the well and related appurtenances shall be designed and manufactured to exceed the operating requirements of the specific project, including flow induced vibrations.

(3) The owner or operator shall ensure that all wells are constructed and completed to:

(a) Prevent the movement of fluids into or between underground sources of drinking water or into any unauthorized zones.

(b) Allow the use of appropriate testing devices and workover tools.

(c) Allow for continuous monitoring of the annulus space between the injection tubing and long string casing.

(4) Materials used in the construction of each Class VI well shall have sufficient structural strength and be designed for the life of the geologic sequestration project. All well materials shall also be compatible with fluids with which the materials may be expected to come into contact and shall meet or exceed industry standards which are developed for such materials and accepted by the department.

(5) Casing and cementing of Class VI wells.

(a) The surface casing of any Class VI well shall extend into a confining bed below the base of the deepest formation containing an underground source of drinking water. No exceptions or variances may be granted regarding the surface casing setting depth.

(b) The casing shall be cemented with a sufficient volume of cement to circulate cement from the casing shoe to the surface. A copy of the cementing company's job summary or cementing tickets indicating returns to the surface shall be submitted as part of the pre-operating requirements. The department may approve alternative methods of cementing in cases where the cement cannot be circulated.

(c) At least one long string casing, using a sufficient number of centralizers, shall be utilized in the well. If the casing is to be perforated for injection, then the approved casing shall extend through the base of the injection zone. If an approved alternate construction method is used, such as the setting of a screen, the casing shall be set to the top of the injection interval.

(d) Cement and cement additives shall be compatible with the carbon dioxide stream and formation fluids and of sufficient quality and quantity to maintain integrity over the design life of the geologic sequestration project.

(e) The integrity and location of the cement shall be verified using technology capable of evaluating cement quality radially and identifying the location of channels to ensure that underground sources of drinking water are not endangered.

(f) In order to allow the department to evaluate casing and cementing requirements, the owner or operator shall provide, at a minimum, the following information:

(i) Depth to the injection zone.

(ii) Injection pressure, external pressure, internal pressure, and axial loading.

(iii) Hole size.

(iv) Size and grade of all casing strings.

(v) Corrosiveness of the carbon dioxide stream and formation fluids.

(vi) Down-hole temperatures.

(vii) Lithology of injection and confining zones.

(viii) Type or grade of cement and cement additives including slurry weight and yield.

(ix) Quantity, chemical composition, and temperature of the carbon dioxide stream.

(x) Any additional information requested by the department.

(6) Casing and casing seat tests. The owner or operator shall monitor and record the tests using a surface readout pressure gauge and a chart or a digital recorder. All instruments shall be calibrated properly and in good working order. If there is a failure of the required tests, the owner or operator shall take necessary corrective action to obtain a passing test.

(a) After cementing each casing, but before drilling out the respective casing shoe, all casings shall be hydrostatically pressure tested to verify casing integrity and the absence of leaks. Casing test pressures shall never exceed the rated burst or collapse pressures of the respective casings.

(b) The casing seat and cement of any intermediate and injection casings shall be hydrostatically pressure tested after drilling out the casing shoe. Casing seat test pressures shall never exceed the known or calculated fracture gradient of the appropriate subsurface formation.

(7) Tubing and packer. Injection into a Class VI well shall be through tubing with a packer set at a depth opposite an interval of cemented casing at a location approved by the secretary. In order for the department to determine and specify requirements for the tubing and packer, the owner or operator shall submit the following information:

(a) Depth of setting.

(b) Characteristics of the carbon dioxide stream and formation fluids.

(c) Maximum proposed injection pressure.

(d) Maximum proposed annular pressure.

(e) Proposed injection rate and volume or mass of the carbon dioxide stream.

(f) Size of tubing and casing.

(g) Tubing tensile, burst, and collapse strengths.

(h) Any other information required by the department.

C. Logging, sampling, and testing prior to injection well operation.

(1) During the drilling and construction of a Class VI well, appropriate logs, surveys, and tests, as determined by the department, shall be run to determine or verify the depth, thickness, porosity, permeability, and lithology of all relevant geologic formations and the salinity of formation fluids to ensure conformance with injection well construction requirements and to establish accurate baseline data against which future measurements may be compared. The well operator shall submit to the department a descriptive report prepared by a knowledgeable log analyst that includes an interpretation of the results of such logs and tests.

(2) The owner or operator shall take whole cores or sidewall cores of the injection zone and confining system and formation fluid samples from the injection zone and shall submit to the department a detailed report prepared by a log analyst that includes well logs and well log analyses, core analyses, and formation fluid sample information. The department may accept information on cores from nearby wells if the owner or operator can demonstrate that core retrieval is not possible and that such cores are representative of conditions at the well. The department may require the owner or operator to core other formations in the borehole.

(3) The owner or operator shall record the fluid temperature, pH, conductivity, reservoir pressure, and static fluid level of the injection zone.

(4) At a minimum, the owner or operator shall determine or calculate the following information concerning the injection and confining zones:

(a) Fracture pressure.

(b) Other physical and chemical characteristics of the injection and confining zones.

(c) Physical and chemical characteristics of the formation fluids in the injection zone.

(5) Upon completion, but before operating, the owner or operator shall conduct the following tests to verify hydrogeologic characteristics of the injection zone:

(a) A pressure fall-off test.

(b) A pump test or injectivity tests.

(6) The owner or operator shall notify the department at least seventy-two hours before conducting any wireline logs, well tests, or reservoir tests.

§1121.26. Pre-operation approval

A. The owner or operator shall not operate a Class VI well without first obtaining final approval from the department.

B. The owner or operator shall submit the following information to the department for consideration of final approval:

(1) The final area of review based on modeling, using data obtained during logging and testing of the well and subsurface formations as required by this Section and applicable department rules.

(2) Any relevant updates to information submitted in the permit application regarding the geologic structure and hydrogeologic properties of the proposed storage site and overlying formations, based on data obtained during logging and testing of the well and subsurface formations.

(3) Information on the compatibility of the carbon dioxide stream with all of the following:

(a) Fluids in the injection zone.

(b) Minerals in both the injection and the confining zones, based on the results of the formation testing program.

(c) The materials used to construct the well.

(4) The results of the formation testing program required for the permit application.

(5) Final injection well construction procedures that meet all applicable requirements.

(6) The status of corrective action on wells in the area of review.

(7) All available data from the required logging and testing program.

(8) A demonstration of mechanical integrity.

(9) Any updates to the following submissions that are necessary to address new information collected during the required logging and testing of the well and the formation:

(a) The proposed area of review and corrective action plan.

(b) The testing and monitoring plan.

(c) The injection well plugging plan.

(d) The post-injection site care and site closure plan.

(e) The emergency and remedial response plan.

(f) The alternative post-injection site care timeframe demonstration.

(10) Any additional information requested by the department.

§1121.27. Injection well operating requirements

A. Owners or operators shall be responsible for ensuring that injection pressure does not initiate fractures in confining zones or cause the movement of injection or formation fluids that endanger an underground source of drinking water.

(1) In order to ensure that injection does not initiate new fractures or propagate existing fractures in the injection zone, the injection well shall be operated so that injection-induced pressure in injection zones does not exceed ninety percent of the fracture pressure of the injection zone except during stimulation.

(2) All stimulation programs shall be included in the permit application and, if approved by the department, incorporated into the permit.

B. Injection between the outermost casing protecting an underground source of drinking water and the wellbore is prohibited.

C. The owner or operator shall fill the annulus between the tubing and the long string casing with a non-corrosive fluid or a fluid containing a corrosion inhibitor approved by the department.

D. The owner or operator shall maintain a tubing-casing annulus pressure that exceeds the operating injection pressure, unless authorized by the department to prevent harming the integrity of the well or endangering an underground source of drinking water. A request to operate the well at a reduced annulus pressure shall be in writing and approved by the department.

E. The owner or operator shall maintain mechanical integrity of the injection well at all times, except during authorized workovers, well maintenance, or well remedial work.

F. Continuous recording devices shall be installed, used, and maintained in proper working order for each well.

(1) The devices shall take digital recordings.

(2) The devices shall be weatherproof or housed in weatherproof enclosures if located in areas exposed to climatic conditions.

(3) The devices shall monitor all of the following:

(a) Surface injection and bottom-hole pressure.

(b) Flow rate, volume or mass, and temperature of the carbon dioxide stream.

(c) Tubing-casing annulus pressure and annulus fluid volume.

(d) Any other data specified by the department.

G. Alarms and automatic shutdown systems designed to actuate on exceedance of a predetermined monitored condition shall be installed and maintained in proper working order.

(1) All alarms shall be integrated with an automatic shutdown system.

(2) All emergency shutdown systems shall be fail-safe. The operator shall function-test all critical systems of control and safety at least once every six months. This includes testing of alarms, test tripping of emergency shutdown valves to ensure their closure times are within design specifications, and ensuring the integrity of all electrical, pneumatic, and hydraulic circuits. Test dates and results shall be documented and be available for inspection by an agent of the department.

(3) If a shutdown is triggered or a loss of mechanical integrity is discovered, the owner or operator shall immediately investigate and identify as expeditiously as possible the cause of the shutoff.

(4) If the well is found to be lacking mechanical integrity or monitored well parameters indicate that the well may be lacking mechanical integrity, the owner or operator shall do all of the following:

(a) Immediately cease injection.

(b) Take all steps reasonably necessary to determine whether there may have been a release of the injected carbon dioxide stream or formation fluids into any unauthorized zone.

(c) Notify the department within twenty-four hours.

(d) Restore and demonstrate mechanical integrity to the satisfaction of the department prior to resuming injection.

(e) Notify the department when injection can be expected to resume.

H. Wellhead identification and protection.

(1) A protective barrier shall be installed and maintained around the wellheads, piping, and above-ground structures that may be vulnerable to physical or accidental damage by mobile equipment or trespassers.

(2) An identifying sign shall be placed at the wellhead of each injection well and shall include, at a minimum, the operator's name, well name and number, well serial number, section-township-range, and any other information required by the department. The sign shall be of durable construction with all lettering kept in a legible condition.

I. No well workovers, including remedial work, well maintenance or repair, well or injection formation stimulation, well plug and abandonment or temporary abandonment, any other test of the injection well conducted by the permittee, or well work of any kind, shall be done without prior written authorization from the department.

J. Pressure gauges that show pressure on the injection tubing and tubing-casing annulus shall be installed at each wellhead. All gauges shall be properly calibrated and be maintained in good working order.

§1121.28. Emergency and remedial response; ground water contamination

A. Emergency and remedial response plan. As part of the permit application, the owner or operator shall provide the department with an emergency and remedial response plan that describes actions the owner or operator must take to address movement of the injection or formation fluids that may cause an endangerment to an underground source of drinking water during construction, operation, and post-injection site care periods. The requirement to maintain and implement an approved plan is directly enforceable regardless of whether the requirement is a condition of the permit.

(1) The owner or operator shall review the emergency and remedial response plan at least once every five years. Based on this review, the owner or operator shall submit an amended emergency and remedial response plan or demonstrate to the department that no amendment is needed. Any amendments to the emergency and remedial response plan are subject to approval by the department. Any approved amendments shall be incorporated into the permit and subject to the permit modification requirements where deemed appropriate by the department. Amended plans or demonstrations shall be submitted to the department as follows:

(a) Within one year of an area of review reevaluation.

(b) Following any significant changes to the facility.

(c) When required by the department.

(2) The emergency and remedial response plan shall provide for continuing training programs for operating and maintenance personnel regarding potential hazards, risk scenarios, and response activities.

(3) Prior to the commencement of injection, the owner or operator shall provide a copy of the approved emergency and remedial response plan to the local governing authority for each parish within the area of review for dissemination to the

office of homeland security, local emergency preparedness committee, or other emergency preparedness or response agencies.

B.(1) If the owner or operator obtains evidence that the injected carbon dioxide stream or associated pressure front may cause endangerment, the owner or operator shall do all of the following:

(a) Immediately cease injection.

(b) Take all steps reasonably necessary to identify and characterize any release.

(c) Notify the department within twenty-four hours.

(d) Implement the emergency and remedial response plan approved by the department.

(2) Injection prior to remediation may only resume if the owner or operator demonstrates to the satisfaction of the department that the injection operation will not endanger underground sources of drinking water.

C. The owner or operator shall conduct at least one tabletop exercise for each storage facility prior to the commencement of injection to simulate emergency scenarios and responses thereto in coordination with the appropriate emergency preparedness and response agencies.

D. Ground water contamination.

(1) Prohibition of movement of fluid into underground sources of drinking water.

(a) No authorization by permit or rule shall allow the movement of fluid containing any contaminant into underground sources of drinking water if the presence of that contaminant may cause a violation of any primary federal or state drinking water regulations or sanitary codes or may otherwise adversely affect the health of persons. The applicant for a permit shall have the burden of showing that the requirements of this Section are met.

(b) If water quality monitoring indicates the movement of any contaminant into an underground source of drinking water, the secretary shall prescribe such

additional requirements for construction, corrective action, operation, monitoring, or reporting, including closure of the injection well, as are necessary to prevent such movement.

(c) The secretary may take emergency action upon receipt of information that a contaminant which is present in or likely to enter a public water system or underground source of drinking water may present an imminent and substantial endangerment to the health or safety of the public.

(2) Remediation.

(a) The storage operator shall have in place prior to injection operations a remediation plan for ground water contamination. The plan shall include procedures the operator will employ to remediate contamination caused by a loss of containment from its storage facility to return an underground source of drinking water to its previous condition.

(b) Upon request of a public water system within the area of review, the storage operator shall cause routine sampling and testing of the water supply for the public water system to be performed by a third party at the operator's expense. The results of any testing performed pursuant to this Subparagraph shall be provided to the public water system and to the department.

(c) If ground water monitoring indicates that a source of drinking water has been rendered unsafe to drink or to use for agricultural purposes due to contamination caused by a loss of containment from a storage facility, the storage operator shall immediately execute the ground water remediation plan. The operator shall provide an alternative supply of potable drinking water within twenty-four hours and an alternative supply of water that is safe for other uses within thirty days. The supplies of both potable water and water that is safe for other uses shall continue until additional monitoring by the storage operator shows that the source of drinking water is safe for drinking and other uses and such results are confirmed by independent testing performed by the department.

§1121.29. Testing and monitoring

A. Testing and monitoring plan. The owner or operator of a Class VI well shall prepare, maintain, and comply with a testing and monitoring plan approved by the department to verify that the geologic sequestration project is operating as permitted and is not endangering underground sources of drinking water. The requirement to maintain and implement an approved plan is directly enforceable regardless of whether the requirement is a condition of the permit. The testing and monitoring plan shall be included with the permit application and shall include a description of how the owner or operator will meet the testing and monitoring requirements, including accessing sites for all necessary monitoring and testing during the life of the project.

B. Testing and monitoring associated with geologic sequestration projects shall include, at a minimum, the following:

(1) Analysis of the carbon dioxide stream with sufficient frequency to yield data representative of its chemical and physical characteristics.

(2) Installation and use of continuous recording devices to monitor injection pressure, rate, and volume; the pressure on the tubing-casing annulus; and the annulus fluid volume added. The department may waive this requirement during approved well workovers.

(3) Corrosion monitoring of the well materials for loss of mass, thickness, cracking, pitting, and other signs of corrosion, which shall be performed on a quarterly basis to ensure that the well components meet the minimum standards for material strength and performance by any of the following methods:

(a) Analyzing coupons of the well construction materials placed in contact with the carbon dioxide stream.

(b) Routing the carbon dioxide stream through a loop constructed with the material used in the well and inspecting the materials in the loop.

(c) Using an alternative method approved by the department.

(4) Quarterly monitoring of the ground water quality and geochemical changes above the confining zone that may be a result of carbon dioxide movement through the confining zone or additional identified zones, including:

(a) The location and number of monitoring wells based on specific information about the geologic sequestration project, including injection rate and volume, geology, the presence of artificial penetrations, and other factors.

(b) The monitoring frequency and spatial distribution of monitoring wells based on baseline geochemical data that has been collected as required in the permit application and on any modeling results in the required area of review evaluation.

(5) A demonstration of external mechanical integrity as required pursuant to this Part at least once every twelve months until the injection well is permanently plugged and abandoned and, if required by the department, a casing inspection log pursuant to requirements of this Part at a frequency established in the testing and monitoring plan.

(6) A pressure fall-off test at least once every five years, unless more frequent testing is required by the department based on site-specific information.

(7) Direct and indirect testing and monitoring to track the extent of the carbon dioxide plume and the presence or absence of elevated pressure using direct and indirect methods. The department may determine that indirect methods are not appropriate based on site-specific geology.

(8) The department may require surface air monitoring and soil gas monitoring to detect movement of carbon dioxide that could endanger an underground source of drinking water as appropriate under federal regulations.

(9) Any additional monitoring required by the department as necessary to support, upgrade, and improve computational modeling of the required area of review evaluation and to determine compliance with well completion and site reassessment requirements.

(10) The owner or operator shall periodically review the testing and monitoring plan to incorporate monitoring and operational data collected and the

most recent area of review reevaluation. In no case shall the owner or operator review the testing and monitoring plan less often than once every five years. Based on this review, the owner or operator shall submit an amended testing and monitoring plan or demonstrate to the department that no amendment to the testing and monitoring plan is needed. Any amendments to the testing and monitoring plan are subject to approval by the department. Any approved amendments shall be incorporated into the permit and subject to the permit modification requirements where deemed appropriate by the department. Amended plans or demonstrations shall be submitted to the department as follows:

(a) Within one year of an area of review reevaluation.

(b) Following any significant changes to the facility.

(c) When required by the department.

(11) A quality assurance and surveillance plan for all testing and monitoring requirements.

C. Monitoring and records.

(1) Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.

(2) The permittee shall retain records of all monitoring information, including the following:

(a) Calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by the permit, and records of all data used to complete the application for this permit, for a period of at least three years from the date of the sample, measurement, report, or application. This period may be extended by the department at any time.

(b) The nature and composition of all injected fluids until three years after the completion of any plugging and abandonment procedures. The department may require the owner or operator to deliver the records to the department at the conclusion of the retention period.

(3) Records of monitoring information shall include:

(a) The date, exact place, and time of sampling or measurements.

(b) The individuals who performed the sampling or measurements.

(c) The dates analyses were performed.

(d) The individuals who performed the analyses.

(e) The analytical techniques or methods used.

(f) The results of such analyses.

§1121.30. Mechanical integrity; monitoring

A. A Class VI well has mechanical integrity if both of the following apply:

(1) There is no significant leak in the casing, tubing, or packer.

(2) There is no significant fluid movement into an underground source of drinking water through channels adjacent to the injection wellbore.

B. To evaluate the absence of significant leaks, owners or operators shall do all of the following:

(1) Perform an annulus pressure test at the following times:

(a) After initial well construction or conversion as part of the pre-operating requirements.

(b) At least once every twelve months, witnessed by an agent of the department.

(c) After performing any well remedial work that involves unseating the tubing or packer.

(2) Continuously monitor injection pressure, rate, and injected volumes; pressure on the annulus between tubing and long-string casing; and annulus fluid volume.

C. To determine the absence of significant fluid movement, the owner or operator shall use one of the following methods at least once every twelve months:

(1) An approved tracer-type survey.

(2) A temperature or noise log.

D. If required by the department, run a casing inspection log at a frequency specified in the testing and monitoring plan to determine the presence or absence of corrosion in the long-string casing.

E. The department may require other tests to evaluate well mechanical integrity and may allow the use of a test other than those provided in this Subsection with written approval from the United States Environmental Protection Agency. To obtain approval for the use of a new mechanical integrity test, the owner or operator must submit a written request to the department with details of the proposed test and all technical data supporting its use.

F. In conducting and evaluating the tests provided for in this Subsection, the owner or operator and the department shall apply methods and standards generally accepted in the industry. When the owner or operator reports the results of mechanical integrity tests to the department, a description of the test and the methods used shall be included. The department shall review monitoring and other test data submitted since the previous evaluation.

G. The department may require additional or alternative tests if the mechanical integrity test results presented do not adequately demonstrate that there is no significant leak in the casing, tubing, or packer or that there is no significant movement of fluid into an underground source of drinking water resulting from the injection activity.

§1121.31. Reporting; records retention

A. The owner or operator shall provide, at a minimum, the following reports to the department for each permitted Class VI well:

(1) Quarterly reports containing the following information:

(a) Any changes to the physical, chemical, and other relevant characteristics of the carbon dioxide stream from the proposed operating data.

(b) Monthly average, maximum, and minimum values for injection pressure, flow rate and volume, and annular pressure.

(c) A description of any event that exceeds operating parameters for annulus pressure or injection pressure specified in the permit.

(d) A description of any event which triggers a required shut-off device and the response taken.

(e) The monthly volume or mass of the carbon dioxide stream injected over the reporting period and the volume injected cumulatively over the life of the project.

(f) Monthly annulus fluid volumes gained or lost.

(g) The results of monitoring prescribed under R.S. 30:1121.29.

(2) Report, within thirty days or as otherwise specified by the permit, the results of the following:

(a) Periodic tests of mechanical integrity.

(b) Any well workover.

(c) Any other test of the injection well conducted by the permittee as required by the department.

(3)(a) Report within twenty-four hours all of the following:

(i) Any evidence that the injected carbon dioxide stream or associated pressure front may cause an endangerment to an underground source of drinking water.

(ii) Any noncompliance with a permit condition or malfunction of the injection system which may cause fluid migration into or between underground sources of drinking water.

(iii) Any triggering of a shut-off system.

(iv) Any failure to maintain mechanical integrity.

(v) Any release of carbon dioxide to the atmosphere or biosphere, surface air, soil gas, or other monitoring technologies, if required by the department.

(b) Reports required by this Subparagraph shall, at a minimum, include the following information:

(i) The precise location of the incident.

(ii) A description of the incident, including its cause, when possible.

(iii) Potential risks to public health, water sources, and land stability.

(iv) Immediate mitigation steps taken in response.

(v) A timeline for corrective action.

(c) Any report required by this Subparagraph shall also be disclosed by the operator to the following persons and entities:

(i) All emergency response teams, local law enforcement, and local governing officials within the affected area.

(ii) The general public through an official press release.

(d) The department shall publish all reports required by this Subparagraph on its website.

B. Owners or operators shall notify the department in writing in advance of doing any well work or formation testing.

C. Owners or operators of Class VI wells, or applicants for Class VI well permits, shall submit all required submittals, reports, and notifications required as prescribed by department and United States Environmental Protection Agency rules.

D. Records shall be retained by the owner or operator as provided in this Subsection.

(1) The following records shall be retained throughout the life of the geologic sequestration project and for at least ten years after site closure:

(a) All data collected for Class VI permit applications.

(b) Data on the nature and composition of all injected fluids collected.

(d) Monitoring data required to be collected.

(e) Well plugging reports; post-injection site care data including, if appropriate, data and information used to develop the demonstration of the alternative post-injection site care timeframe; and the site closure report required.

(2) Raw operating data from required continuous recording devices shall be retained in digital format for at least ten years after collection.

(3) The department may require the owner or operator to retain any records required under this Subpart for longer than ten years after site closure.

(4) The department may require the owner or operator to deliver the records to the department at any time prior to or at the conclusion of the retention period.

E. Failure to comply with the requirements of this Section or with any reporting or recordkeeping required by the department pursuant to administrative rules shall subject the storage operator to the remedies authorized by R.S. 30:1106.

§1121.32. Plugging and abandonment

A. A Class VI permit shall include conditions that meet the requirements of this Section. For purposes of this Section, temporary or intermittent cessation of injection operations is not abandonment.

B. Before well plugging, the owner or operator shall flush each Class VI well with a buffer fluid, determine bottomhole reservoir pressure, and perform a final external mechanical integrity test.

C. Well plugging plan. The owner or operator of a Class VI well shall prepare, maintain, and comply with a well plugging plan approved by the department. The required contents of the well plugging plan shall be prescribed by the department. The requirement to maintain and implement an approved plan is directly enforceable regardless of whether the requirement is a condition of the permit. The well plugging plan shall be submitted as part of the permit application and shall be designed in a way that will prevent the movement of fluids into or between underground sources of drinking water or outside the injection zone.

D. Notice of intent to plug. The owner or operator shall provide notice to the department of the intent to plug a well, in a form prescribed by the department, and receive written approval from the department before beginning well plugging operations. The form shall contain information on the procedures to be used in the field to plug and abandon the well.

E. Well closure report.

(1) The owner or operator shall submit a closure report to the department within thirty days after well plugging and abandonment. The report shall be certified

as accurate by the owner or operator and by the person charged with overseeing the closure operation, if other than the owner or operator.

(2) The report shall contain the following information:

(a) Detailed procedures of the closure operation. Where actual closure differed from the approved plan, the report shall include a written statement specifying the differences between the previous plan and the actual closure.

(b) All state regulatory reporting forms relating to the closure activity.

(c) Any information pertinent to the closure activity, including schematics, tests, or monitoring data.

(d) Any additional information required by the department.

§1121.33. Post-injection site care; site closure; post-closure

A. Post-injection site care and site closure plan.

(1) The owner or operator of a Class VI well shall prepare, maintain, and comply with a plan for post-injection site care and site closure that meets the requirements of this Section and is approved by the department. The requirement to maintain and implement an approved plan is directly enforceable regardless of whether the requirement is a condition of the permit. The owner or operator shall submit the post-injection site care and site closure plan as a part of the permit application. Required contents of the plan shall be prescribed by the department.

(2) Upon cessation of injection, owners or operators of Class VI wells shall either submit an amended post-injection site care and site closure plan or demonstrate to the department through monitoring data and modeling results that no amendment to the plan is needed. Any amendments to the plan are subject to approval by the department. Approved amendments shall be incorporated into the permit and may be subject to permit modification, as required by rules promulgated by the department.

(3) At any time during the life of the geologic sequestration project, the owner or operator may modify and resubmit the post-injection site care and site closure plan for department approval.

B. Cessation of injection. The owner or operator shall monitor the site following the cessation of injection to show the position of the carbon dioxide plume and pressure front and to demonstrate that underground sources of drinking water are not being endangered. Notwithstanding the approved timeline, monitoring shall continue until the geologic sequestration project no longer poses an endangerment to underground sources of drinking water and the demonstration under this Section is submitted and approved by the department.

(1) Following the cessation of injection, the owner or operator shall continue to conduct monitoring as specified in the department-approved post-injection site care and site closure plan for at least fifty years or for the duration of an alternative timeframe approved by the department pursuant to this Section.

(2) If the owner or operator can demonstrate to the satisfaction of the department before fifty years or prior to the end of the approved alternative timeframe, based on monitoring and other site-specific data, that the geologic sequestration project no longer poses an endangerment to underground sources of drinking water, the department may approve an amendment to the post-injection site care and site closure plan to reduce the frequency of monitoring or authorize site closure before the end of the fifty-year period or prior to the end of the approved alternative timeframe, where the owner or operator has substantial evidence that the geologic sequestration project no longer poses a risk of endangerment to underground sources of drinking water.

(3) Prior to authorization for site closure, the owner or operator shall submit to the department for review and approval a demonstration, based on monitoring and other site-specific data, that no additional monitoring is needed to ensure that the geologic sequestration project does not pose an endangerment to underground sources of drinking water.

(4) If the demonstration cannot be made at the end of the fifty-year period or at the end of the approved alternative timeframe, or if the department does not approve the demonstration, the owner or operator shall submit to the department a

plan to continue post-injection site care until a demonstration can be made and approved.

(5) Demonstration of alternative post-injection site care timeframe. The department may approve, in consultation with the United States Environmental Protection Agency, an alternative post-injection site care timeframe other than the fifty-year default, if an owner or operator can demonstrate during the permitting process that an alternative post-injection site care timeframe is appropriate and ensures non-endangerment of underground sources of drinking water. The demonstration shall be based on significant, site-specific data and information, including all data and information collected pursuant to the requirements for permit applications, siting, and the area of review and corrective action plan, and shall contain substantial evidence that the geologic sequestration project will no longer pose a risk of endangerment to underground sources of drinking water at the end of the alternative post-injection site care timeframe. Requirements for this demonstration shall be prescribed by the department.

C. Site closure.

(1) Notice of intent for site closure. The owner or operator shall notify the department in writing at least one hundred twenty days before site closure. At this time, if any changes have been made to the original post-injection site care and site closure plan, the owner or operator shall also provide the revised plan. The department may allow for a shorter notice period.

(2) After the department has authorized site closure, the owner or operator shall plug all monitoring wells in a manner which will not allow movement of injection or formation fluids that endangers an underground source of drinking water.

(3) The owner or operator shall submit a site closure report in a form prescribed by the department within ninety days after site closure and this report shall be retained by the owner or operator for at least ten years.

(4) Each owner or operator of a Class VI injection well shall record a notation on the deed to the facility property or any other document that is normally

examined during title search that will in perpetuity provide any potential purchaser of the property the following information:

(a) The fact that land has been used to sequester carbon dioxide.

(b) The name of the state agency, local authority, or tribe with which the survey plat was filed, as well as the address of the United States Environmental Protection Agency regional office to which it was submitted.

(c) The volume of fluid injected, the injection zone or zones into which it was injected, and the period over which injection occurred.

(5) The owner or operator shall retain for at least ten years following site closure records collected during the post-injection site care period. The owner or operator shall deliver the records to the department at the conclusion of the retention period and the records shall thereafter be retained in a form and manner and at a location designated by the secretary.

D. Certificate of completion. The department shall not issue a certificate of completion pursuant to R.S. 30:1107 unless the operator has sufficient financial surety with the department to adequately close the facility, plug all existing wells, and provide for post-injection site care and site closure.

SUBPART B. PIPELINE SAFETY REQUIREMENTS

§1121.41. General

A. No person may transport carbon dioxide through a pipe that is constructed of material other than steel unless the person has notified the department and PHMSA in writing of their intent to transport carbon dioxide and the material used in construction of the pipeline. Transportation of carbon dioxide shall be prohibited if it is determined by the department and the administrator that the transportation of carbon dioxide in the manner proposed would be unduly hazardous.

B. No person may transport carbon dioxide unless it is chemically compatible with the pipeline, all pipeline components, and any other commodity that it may come into contact with while in the pipeline.

§1121.42. Conversion of pipeline to service carbon dioxide

A. A steel pipeline previously used for purposes other than transporting carbon dioxide may only qualify for conversion to such use if the operator shows to the satisfaction of the department that conversion may be accomplished safely based on historical data, testing, inspections, repairs, alterations, and any other data or action deemed necessary or appropriate by the department to ensure safe conversion.

B. The department shall prescribe the manner by which an operator must come into compliance with corrosion control requirements.

C. Each operator shall retain for the life of the pipeline a record of all investigations, tests, repairs, replacements, alterations, or other data required by the department.

§1121.43. Reporting of accidents and safety-related conditions

A. Any notification required by this Section shall be provided in a manner prescribed by the department or PHMSA.

B. Accident reporting.

(1) An accident report is required for each failure in a pipeline system subject to this Subpart in which there is a release of carbon dioxide resulting in any of the following:

(a) Explosion or fire not intentionally set by the operator.

(b) A release of carbon dioxide above thresholds provided by rule.

(c) The death of any person.

(d) Personal injury or bodily harm to any person that necessitates medical treatment or hospitalization or that results in loss of consciousness, the necessity to carry a person from the scene, or disability which prevents the discharge of normal duties or the pursuit of normal duties beyond the day of the accident.

(e) Property damage above thresholds provided by rule.

(f) Any potential danger to human beings or animals from the escaped material.

(2) Telephonic notice shall be made at the earliest practicable moment following discovery, but no later than one hour after confirmed discovery, of a release resulting in any condition provided for in Subsection B of this Section or a release that meets either of the following:

(a) Results in pollution of any stream, river, lake, reservoir, or other similar body of water that violated applicable water quality standards, caused a discoloration of the surface of the water or adjoining shoreline, or deposited a sludge or emulsion beneath the surface of the water or upon adjoining shorelines.

(b) In the judgment of the operator, is significant even though it does not meet the criteria of any other Paragraph of this Section.

(3) Within forty-eight hours after the confirmed discovery of an accident, an operator shall revise or confirm its initial telephonic notice with a revised estimate of the amount of product released, location of the failure, time of the failure, a revised estimate of the number of fatalities and injuries, and all other significant facts that are known by the operator that are relevant to the cause of the accident or extent of the damages. If there are no changes or revisions to the initial report, the operator shall confirm the estimates in its initial report.

C. Reporting safety-related conditions.

(1) Except as provided in Paragraph (2) of this Subsection, each operator shall report in a manner prescribed by the department the existence of any of the following safety-related conditions:

(a) General corrosion that has reduced the wall thickness to less than that required for the maximum operating pressure and localized corrosion pitting that may result in leakage.

(b) Unintended movement or abnormal loading of a pipeline by environmental causes, such as an earthquake, landslide, or flood, that impairs its serviceability.

(c) Any material defect or physical damage that impairs the serviceability of a pipeline.

(d) Any malfunction or operating error that causes the pressure of a pipeline to rise above one hundred ten percent of its maximum operating pressure.

(e) A leak in a pipeline that constitutes an emergency.

(f) Any safety-related condition that could lead to an imminent hazard and causes, either directly or indirectly by remedial action of the operator, for purposes other than abandonment, a twenty percent or more reduction in operating pressure or shutdown of operation of a pipeline.

(2) A report is not required under this Subsection for any safety-related condition that:

(a) Exists on a pipeline that is more than two hundred twenty yards from any building intended for human occupancy or outdoor place of assembly and is not within the right-of-way of an active railroad, paved road, street, or highway.

(b) Occurs offshore.

(c) Is required to be reported under Subsection B of this Section or results in such an accident before the deadline for filing the safety-related condition report.

(d) Is a condition other than corrosion which is corrected by repair or replacement in accordance with applicable safety standards before the deadline for filing the safety-related condition report.

D. If the department investigates an accident, the operator involved shall make all records and information that in any way pertain to the accident available to the department and shall afford all reasonable assistance in the investigation of the accident.

§1121.44. Design and construction

A. The following conditions shall be provided for in the design of a pipeline system:

(1) Material for components of the system shall be chosen for the temperature environment in which the components will be used so that the pipeline will maintain its structural integrity and components of pipelines that are subject to low temperatures during normal operation because of rapid pressure reduction or

during the initial fill of the line shall be made of materials that are suitable for those low temperatures.

(2) Variations in the pressure between two or more connected components and external pressure that will be exerted on the pipe.

(3) Anticipated external loads, expansion and flexibility, and localized stresses from supports.

(4) Analysis of potential propagating fractures and mitigation of the effects of fracture propagation.

B. Any pipe installed in the pipeline system shall, at a minimum, comply with the following:

(1) The pipe shall be made of steel of the carbon, low alloy-high strength, or alloy type that is able to withstand the internal pressures and external loads and pressures anticipated for the pipeline system.

(2) The pipe shall be made in accordance with a written pipe specification that sets forth the chemical requirements for the pipe steel and mechanical tests for the pipe to provide pipe suitable for the use intended.

C. Fittings shall be suitable for carbon dioxide transport, be at least as strong as the pipe to which it is attached, and be free of any defects that may reduce the strength of the fitting.

D. Unless provided otherwise by the department, each new pipeline and each main line section of a pipeline where the line pipe, valve, fitting, or other line component is replaced shall be designed and constructed to accommodate the passage of instrumented internal inspection devices in accordance with accepted industry standards.

E. Carbon dioxide may not be relieved into the atmosphere of a building or other confined space where hazardous levels may accumulate above the human exposure level set by the United States Department of Labor, Occupational Safety and Health Administration unless the appropriate respiratory protection is provided.

F. Sensing devices.

(1) Each operator shall install sensing devices necessary to monitor the operation of components used in transporting carbon dioxide to detect malfunction which could cause a hazardous condition if permitted to continue.

(2) Buildings in which potentially hazardous quantities of carbon dioxide may exist shall be continuously monitored by carbon dioxide sensing devices set to activate audible and visual alarms in the building and at the control center.

G. Control systems for components on carbon dioxide pipelines shall have a fail-safe design unless it is impractical under good engineering practices. A safe condition shall be maintained until personnel take appropriate action to either reactivate the component served or to prevent a hazard from occurring.

H. Electrical control systems, means of communication, emergency lighting, and firefighting systems shall have at least two sources of power which function so that failure of one source does not affect the capability of the other source. Where auxiliary generators are used as a second source of electrical power, they shall be located apart or protected from components so they are usable during a controllable emergency and the fuel supply shall be protected from hazards.

I. Each pipeline system shall be constructed in accordance with comprehensive written specifications or standards that are consistent with the requirements of this Subpart.

J. The installation of pipe or pipeline systems shall be inspected to ensure compliance with this Subpart.

(1) Any operator personnel used to perform the inspection shall be trained and qualified in the phase of construction to be inspected. An operator shall not use operator personnel to perform a required inspection if the operator personnel performed the construction task requiring inspection.

(2) No pipe or other component may be installed in a pipeline system unless it has been visually inspected at the site of installation to ensure that it is not damaged in a manner that could impair its strength or reduce its serviceability.

K. Pipeline location.

(1) A pipeline right-of-way shall be selected to avoid, as far as practicable, areas containing private dwellings, industrial buildings, and places of public assembly.

(2) No pipeline may be located within fifty feet of any private dwelling, industrial building, or place of public assembly in which persons work, congregate, or assemble, unless it is provided with at least twelve inches of cover in addition to the cover prescribed by rule.

L. Pressure testing.

(1) No operator may operate a pipeline unless it has been pressure tested without leakage. In addition, no operator may return to service a segment of pipeline that has been replaced, relocated, or otherwise changed until it has been pressure tested without leakage.

(2) Pipelines transporting carbon dioxide shall be hydrostatically tested without leakage.

(3) All pipe and attached fittings, including components, shall be pressure tested unless otherwise permitted by the department.

(4) Water shall be used as the test medium unless another medium is approved by the department.

(5) The operator shall make a record of each pressure test required by this Section and the record of the latest test shall be retained as long as the pipeline is in use.

M. Shut-off valves.

(1) For newly constructed and entirely replaced onshore carbon dioxide pipeline segments with diameters of six inches or greater that could affect high-consequence areas or are located in high consequence areas, an operator shall install or use existing rupture-mitigation valves or alternative equivalent technologies.

(2) The installation and use of rupture-mitigation valves and alternative equivalents shall be governed by department rules which provide for, at a minimum, the following:

(a) Maximum spacing between valves.

(b) Shut-off segments and shut-off segment valve spacing.

(c) Laterals extending from shut-off segments.

(d) Crossovers connections.

(e) The use of manual valves.

(f) Valve capabilities, such as rupture identification and valve shut-off time, shut-off capability, valve monitoring and operational capabilities, monitoring of valve shut-off response status, and flow modeling for automatic shut-off valves.

(3) Operators shall maintain each valve that is necessary for the safe operation of its pipeline systems in good working order at all times. Required maintenance includes but is not limited to the following measures:

(a) At least twice each calendar year, but at intervals not exceeding seven and one half months, operators shall inspect and partially operate each mainline valve to determine whether it is functioning properly.

(b) Provide protection for each valve from unauthorized operation and from vandalism.

§1121.45. Operation and maintenance

A. No operator may operate or maintain its pipeline systems at a level of safety lower than the that required by this Section.

B. An operator shall make all repairs on its pipeline system according to the following integrity management requirements:

(1) Whenever an operator discovers any condition that could adversely affect the safe operation of its pipeline system, it shall correct the condition within a reasonable time. However, if the condition is of such a nature that it presents an immediate hazard to persons or property, the operator may not operate the affected part of the system until it has corrected the unsafe condition.

(2) When an operator discovers a condition on a pipeline that could affect high-consequence areas or are located in high consequence areas, the operator shall correct the condition as prescribed by R.S. 30:1121.49 and department rules regarding pipeline integrity management.

(3) An operator shall consider the risk to people, property, and the environment in prioritizing the correction of any conditions provided for under this Paragraph.

C. Maps and records.

(1) Each operator shall maintain current maps and records of its pipeline systems that include at least the following:

(a) The location and identification of pipeline facilities.

(b) All crossings of public roads, railroads, rivers, buried utilities, and foreign pipelines.

(c) The maximum operating pressure of each pipeline.

(d) The diameter, grade, type, and nominal wall thickness of all pipe.

(2) Each operator shall maintain for at least three years daily operating records that indicate the discharge pressure at each pump station and any emergency or abnormal operation to which the procedures under R.S. 30:1121.46 apply.

(3) Each operator shall maintain the following records for the periods specified:

(a) The date, location, and description of each repair made to pipe shall be retained for the useful life of the pipe.

(b) The date, location, and description of each repair made to parts of the pipeline system other than pipe shall be retained for at least one year.

(c) A record of each inspection and test required by this Subpart and department rules shall be retained for at least two years or until the next inspection or test is performed, whichever is longer.

D. Communications. Each operator shall have a communication system to provide for the transmission of information needed for the safe operation of its pipeline system which shall include, at a minimum, the following:

(1) Monitoring operational data as required by R.S. 30:1121.46.

(2) Receiving notices from operator personnel, the public, and public authorities of abnormal or emergency conditions and sending this information to appropriate personnel or government agencies for corrective action.

(3) Conducting two-way vocal communication between a control center and the scene of abnormal operations and emergencies.

(4) Providing communication with fire, police, and other appropriate public officials during emergency conditions, including a natural disaster.

E. Line markers and signs.

(1) Unless the department provides otherwise, each operator shall place and maintain line markers over each buried pipeline in accordance with the following:

(a) Markers shall be located at each public road crossing, at each railroad crossing, and in sufficient number along the remainder of each buried line so that its location is accurately known.

(b) The markers shall state at least the following on a background of sharply contrasting color:

(i) The word "warning", "caution", or "danger" followed by the words "carbon dioxide pipeline", all of which shall be in letters at least one inch high with an approximate stroke of one quarter of an inch.

(ii) The name of the operator and a telephone number including the area code where the operator can be reached at all times.

(2) Each operator shall provide line marking at locations where the line is above ground in areas that are accessible to the public.

(3) Each operator shall maintain signs visible to the public around each pumping station. Each sign shall contain the name of the operator and a telephone number, including the area code, where the operator can be reached at all times.

F. Each operator shall, at intervals not exceeding three weeks but at least twenty-six times each calendar year, inspect the surface conditions on or adjacent to each pipeline right-of-way and crossing under navigable waters. Methods of inspection include walking, driving, flying, or other appropriate means of traversing the right-of-way.

G. Inspections of pipelines in areas affected by extreme weather and natural disasters.

(1) Following an extreme weather event or natural disaster that has the likelihood of damaging infrastructure by the scouring or movement of the soil surrounding the pipeline, an operator shall inspect all potentially affected pipeline facilities to detect conditions that could adversely affect the safe operation of that pipeline.

(2) An operator shall consider the nature of the event and the physical characteristics, operating conditions, location, and prior history of the affected pipeline in determining the appropriate method for performing the initial inspection to determine the extent of any damage and the need for the additional assessments required under Paragraph (1) of this Subsection.

(3) Inspections shall commence within seventy-two hours after the cessation of the event. In the event that the operator is unable to commence the inspection due to the unavailability of personnel or equipment, the operator shall notify the appropriate PHMSA Region Director and the department's pipeline division for intrastate facilities as soon as practicable.

(4) An operator shall take prompt and appropriate remedial action to ensure the safe operation of a pipeline based on the information obtained as a result of performing the inspection.

H. Each operator shall maintain adequate firefighting equipment at each pump station which shall be maintained in proper operating condition at all times, plainly marked so that its identity as firefighting equipment is clear, located so that it is easily accessible during a fire.

I. Each operator shall provide protection for each pumping station and other exposed facility from vandalism and unauthorized entry.

J. Each operator of a buried pipeline shall develop and carry out a written program to prevent damage to that pipeline from excavation activities, which may be accomplished through participation in a public service program.

§1121.46. Procedural manual for operations, maintenance, and emergencies.

A. Each operator shall prepare and follow for each pipeline system a manual of written procedures for conducting normal operations and maintenance activities and handling abnormal operations and emergencies. This manual shall be reviewed at least one each calendar year and at intervals of not more than fifteen months and appropriate changes made as necessary to ensure that the manual is effective.

B. The manual shall be prepared before initial operations of a pipeline system commence and appropriate parts shall be kept at locations where operations and maintenance activities are conducted.

C. The administrator or the department may, after notice and opportunity for hearing, require the operator to amend its plans and procedures as necessary to provide a reasonable level of safety.

D. Maintenance and normal operations. The manual required by this Section shall include procedures for the following to provide safety during maintenance and normal operations:

(1) Making construction records, maps, and operating history available as necessary for safe operation and maintenance.

(2) Gathering data needed for reporting accidents in a timely and effective manner.

(3) Operating, maintaining, and repairing the pipeline system in accordance with the provisions of this Subpart.

(4) Determining which pipeline facilities are in areas that would require an immediate response by the operator to prevent hazards to the public, property, or the environment if the facilities fail or malfunction, including determination of segments

in high-consequence areas or that could affect high-consequence areas, rupture-mitigation valves, and emergency flow restricting devices.

(5) Investigating and analyzing pipeline accidents and failures. The following shall be included or incorporated into the manual regarding pipelines accidents and failures:

(a) Procedures for sending the failed pipe, component, or equipment for laboratory testing or examination where appropriate, to determine the causes and contributing factors of the failure and to minimize the possibility of a recurrence.

(b) Lessons learned from a post-failure and accident review.

(c) Post-failure and post-accident analysis of a failure or accident that involves the closure of a rupture-mitigation valve or alternative equivalent technology and all the factors that may have impacted the release volume and the consequences of the release, including but not limited to the following:

(i) Detection, identification, operational response, system shut-off, and emergency-response communications, based on the type and volume of the release or failure event.

(ii) Appropriateness and effectiveness of procedures and pipeline systems, including supervisory control and data acquisition, communications, valve shut-off, and operator personnel.

(iii) Actual response time from identifying a rupture following a notification of potential rupture to initiation of mitigative actions and isolation of the segment and the appropriateness and effectiveness of the mitigative actions taken.

(iv) Location and timeliness of actuation of all rupture-mitigation valves or alternative equivalent technologies.

(v) All other factors the operator deems appropriate.

(d) Post-failure and post-accident summary of a failure or accident that involves the identification of a rupture following a notification of potential rupture or the closure of a rupture-mitigation valve or alternative equivalent technology.

(i) The operator shall complete a summary of the post-failure or post-accident review required by Subparagraph (c) of this Paragraph within ninety days of the failure or accident.

(ii) The operator shall conduct quarterly status reviews until the investigation is completed and a final post-failure or post-accident review is prepared.

(iii) The final post-failure or post-accident summary and all other reviews and analyses produced under the requirements of this Paragraph shall be reviewed, dated, and signed by the operator's appropriate senior executive officer.

(iv) The operator shall retain the final post-failure or post-accident summary, all investigation and analysis documents used to prepare it, and records of lessons learned for the useful life of the pipeline.

(6) Minimizing the potential for hazards and the possibility of recurrence of accidents identified and analyzed under Paragraph (5) of this Subsection.

(7) Starting up and shutting down any part of the pipeline system in a manner designed to ensure operation within the allowable maximum operating pressure, considering the carbon dioxide in transportation, variations in altitude along the pipeline, and pressure monitoring and control devices.

(8) In the case of a pipeline that is not equipped to fail safe, monitoring from an attended location of pipeline pressure during start-up until steady state pressure and flow conditions are reached and during shut-in to assure operation within the allowable maximum operating pressure.

(9) In the case of facilities not equipped to fail safe that are located in high-consequence areas or that could affect high-consequence areas or that control receipt and delivery of the carbon dioxide, detecting abnormal operating conditions by monitoring pressure, temperature, flow or other appropriate operational data and transmitting this data to an attended location.

(10) Abandoning pipeline facilities, including safe disconnection from an operating pipeline system, purging of combustibles, and sealing abandoned facilities left in place to minimize safety and environmental hazards. For each abandoned

offshore pipeline facility or each abandoned onshore pipeline facility that crosses over, under or through commercially navigable waterways the last operator of that facility shall file a report upon abandonment of that facility in accordance with department rules.

(11) Minimizing the likelihood of accidental ignition of vapors in areas near facilities that are located in high-consequence areas or that could affect high-consequence areas, where the potential exists for the presence of flammable liquids or gases.

(12) Establishing and maintaining adequate means of communication with the appropriate public safety answering point, where direct access to a 9-1-1 emergency call center is available from the location of the pipeline, and fire, police, and other public officials.

(a) Operators shall determine the responsibilities, resources, jurisdictional areas, and emergency contact telephone numbers for both local and out-of-area calls of each federal, state, and local government organization that may respond to a pipeline emergency.

(b) Operators shall inform such organizations or appropriate officials about the operator's ability to respond to the pipeline emergency and means of communication during emergencies.

(c) Operators may establish a liaison with the appropriate local emergency coordinating agencies, such as 9-1-1 emergency call centers or parish emergency managers, in lieu of communicating individually with each fire, police, or other public entity.

(13) Periodically reviewing the work done by operator personnel to determine the effectiveness of the procedures used in normal operation and maintenance and taking corrective action where deficiencies are found.

(14) Taking adequate precautions in excavated trenches to protect personnel from the hazards of unsafe accumulations of vapor or gas, and making available

when needed at the excavation, emergency rescue equipment, including a breathing apparatus and, a rescue harness and line.

(15) Implementing applicable control room management procedures required by department rules.

E. Abnormal operation. The manual required by this Section shall include procedures for the following to provide safety when operating design limits have been exceeded:

(1) Responding to, investigating, and correcting the cause of any of the following:

(a) Unintended closure of valves or shutdowns.

(b) Increase or decrease in pressure or flow rate outside normal operating limits.

(c) Loss of communications.

(d) Operation of any safety device.

(e) Any other malfunction of a component, deviation from normal operation, or personnel error which could cause a hazard to persons or property.

(2) Checking variations from normal operation after abnormal operation has ended at sufficient critical locations in the system to determine continued integrity and safe operation.

(3) Correcting variations from normal operation of pressure and flow equipment and controls.

(4) Notifying responsible operator personnel when notice of an abnormal operation is received.

(5) Periodically reviewing the response of operator personnel to determine the effectiveness of the procedures controlling abnormal operation and taking corrective action where deficiencies are found.

F. Emergencies. The manual required by this Section shall include procedures for the following to provide safety when an emergency condition occurs:

(1) Receiving, identifying, and classifying notices of events that need immediate response by the operator or notice to the appropriate public safety answering point, where direct access to a 9-1-1 emergency call center is available from the location of the pipeline, and fire, police, and other appropriate public officials, and communicating this information to appropriate operator personnel for prompt corrective action.

(2) Operators may establish a liaison with the appropriate local emergency coordinating agencies, such as 9-1-1 emergency call centers or parish emergency managers, in lieu of communicating individually with each fire, police, or other public entity.

(3) Prompt and effective response to a notice of each type of emergency, including fire or explosion occurring near or directly involving a pipeline facility, accidental release of carbon dioxide from a pipeline facility, operational failure causing a hazardous condition, and natural disasters affecting pipeline facilities.

(4) Having personnel, equipment, instruments, tools, and material available as needed at the scene of an emergency.

(5) Taking necessary actions, including but not limited to, emergency shutdown, valve shut-off, or pressure reduction, in any section of the operator's pipeline system, to minimize hazards of released carbon dioxide to life, property, or the environment.

(6) Each operator shall also develop written rupture identification procedures to evaluate and identify whether a notification of potential rupture is an actual rupture event or non-rupture event. These procedures shall, at a minimum, specify the sources of information, operational factors, and other criteria that operator personnel use to evaluate a notification of potential rupture.

(7) Control of released carbon dioxide at an accident scene to minimize the hazards, including possible intentional ignition in the cases of flammable highly volatile liquid.

(8) Minimization of public exposure and probability of accidental ignition by assisting with evacuation of residents and with halting traffic on roads and railroads in the affected area, or taking other appropriate action.

(9) Notifying the appropriate public safety answering point and fire, police, and other public officials of carbon dioxide pipeline emergencies to coordinate and share information to determine the location of the release, including both planned responses and actual responses during an emergency, and any additional precautions necessary. The operator shall immediately and directly notify the appropriate public safety answering point or other coordinating agency for the communities and jurisdictions in which the pipeline is located after notification of potential rupture has occurred to coordinate and share information to determine the location of the release.

(10) Providing for a post-accident review of employee activities to determine whether the procedures were effective in each emergency and taking corrective action where deficiencies are found.

(11) Actions required to be taken by a controller during an emergency, in accordance with the operator's emergency plans and department rules.

G. Safety-related condition reports. The manual required by this Section shall include instructions enabling personnel who perform operation and maintenance activities to recognize conditions that may be safety-related conditions that are subject to the reporting requirements of R.S. 30:1121.43 and department rules.

§1121.47. Emergency response training

A. Each operator shall establish and conduct a continuing training program to instruct emergency response personnel to:

(1) Carry out the emergency procedures established pursuant to R.S. 30:1121.46 that relate to their assignments.

(2) Know the characteristics and hazards of the carbon dioxide transported.

(3) Recognize conditions that are likely to cause emergencies, predict the consequences of facility malfunctions or failures and carbon dioxide spills, and take appropriate corrective action.

(4) Take steps necessary to control any accidental release of carbon dioxide and to minimize the potential for fire, explosion, toxicity, or environmental damage.

(5) Learn the potential causes, types, sizes, and consequences of fire and the appropriate use of portable fire extinguishers and other on-site fire control equipment, involving, where feasible, a simulated pipeline emergency condition.

B. At the intervals not exceeding fifteen months, but at least once each calendar year, each operator shall:

(1) Review with personnel their performance in meeting the objectives of the emergency response training program set forth in Subsection A of this Section.

(2) Make appropriate changes to the emergency response training program as necessary to ensure that it is effective.

C. Each operator shall require and verify that its supervisors maintain a thorough knowledge of that portion of the emergency response procedures established in the procedural manual for which they are responsible to ensure compliance.

§1121.48. Public awareness

A. Each pipeline operator shall develop and implement a written continuing public education program.

B. The program shall specifically include provisions to educate the public, appropriate government organizations, and persons engaged in excavation related activities regarding the following:

(1) Use of a one-call notification system prior to excavation and other damage prevention activities.

(2) Possible hazards associated with unintended releases from a carbon dioxide pipeline facility.

(3) Physical indications that such a release may have occurred.

(4) Steps that should be taken for public safety in the event of a carbon dioxide pipeline release.

(5) Procedures to report a release.

C. The program shall include activities to advise affected municipalities, school districts, businesses, and residents of pipeline facility locations.

D. The program and the media used shall be as comprehensive as necessary to reach all areas in which the operator transports carbon dioxide.

E. The program shall be conducted in English and in other languages commonly understood by a significant number and concentration of the non-English speaking population in the operator's area.

F. Upon request, operators shall submit their completed programs to PHMSA or, in the case of an intrastate pipeline facility operator, the department.

G. The operator's program documentation and evaluation results shall be available for periodic review by appropriate regulatory agencies.

§1121.49. Pipeline integrity management in high consequence areas

A. This Section applies to each carbon dioxide pipeline that could affect a high consequence area, including any pipeline located in a high consequence area, unless the operator effectively demonstrates by risk assessment that the pipeline could not affect the area.

B. Each operator of a pipeline covered by this Section shall develop and implement a written integrity management program in compliance with department rules. The operator shall include, at minimum, each of the following elements in its written integrity management program:

(1) A process for identifying which pipeline segments could affect a high consequence area.

(2) A baseline assessment plan.

(3) An analysis that integrates all available information about the integrity of the entire pipeline and the consequences of a failure.

(4) Criteria for remedial actions to address integrity issues raised by the assessment methods and information analysis.

(5) A continual process of assessment and evaluation to maintain a pipeline's integrity.

(6) Identification of preventive and mitigative measures to protect the high consequence area.

(7) Methods to measure the program's effectiveness.

(8) A process for review of integrity assessment results and information analysis by a person qualified to evaluate the results and information.

(9) Procedures for providing a copy of the operator's risk analysis or integrity management program to the department upon request.

§1121.50. Qualification of pipeline personnel

A. This Section prescribes the minimum requirements for operator qualification of individuals performing covered tasks on a pipeline facility. For the purposes of this Section, a covered task is any operations or maintenance task required by this Subpart or department rules to be performed on a pipeline facility that affects the operation or integrity of the pipeline.

B. Each operator shall have and follow a written qualification program. The program shall include provisions to:

(1) Identify covered tasks.

(2) Ensure through evaluation that individuals performing covered tasks are qualified.

(3) Allow individuals that are not qualified pursuant to this Section to perform a covered task if directed and observed by an individual that is qualified.

(4) Evaluate an individual if the operator has reason to believe that the individual's performance of a covered task contributed to an accident as defined in this Subpart.

(5) Evaluate an individual if the operator has reason to believe that the individual is no longer qualified to perform a covered task.

(6) Communicate changes that affect covered tasks to individuals performing those covered tasks.

(7) Identify those covered tasks and the intervals at which evaluation of the individual's qualifications is needed.

(8) Provide training, as appropriate, to ensure that individuals performing covered tasks have the necessary knowledge and skills to perform the tasks in a manner that ensures the safe operation of pipeline facilities.

C. Each operator shall maintain records that demonstrate compliance with this Section.

(1) Qualification records shall include the following:

(a) Identification of qualified individuals.

(b) Identification of the covered tasks the individual is qualified to perform.

(c) Date or dates of current qualification.

(d) Qualification methods.

(2) Records supporting an individual's current qualification shall be maintained while the individual is performing the covered task. Records of prior qualification and records of individuals no longer performing covered tasks shall be retained for a period of five years.

D. The written qualification program shall be available for review by the administrator or by the department.

§1121.51. Enforcement

A. Officers, employees, or agents authorized by the secretary, upon presenting proper credentials, are authorized to enter upon, inspect and examine, at reasonable times and in a reasonable manner, the records and properties of persons to the extent that such records and properties are relevant to determining compliance with this Subpart.

B. Inspection may be conducted pursuant to a routine schedule, a complaint received from a member of the public, information obtained from a previous

inspection, report of accident or incident involving facilities, or whenever deemed appropriate by the secretary.

C. If, after inspection, the secretary believes that further information is required to determine compliance or appropriate action, the secretary may request specific information of the person or operator to be answered within ten days of receipt of the request.

D. The secretary may, to the extent necessary to carry out his responsibilities, require reasonable testing of any portion of a facility in connection with a violation or suspected violation.

E. When information obtained from an inspection indicates that a violation has probably occurred, the inspector shall complete a field inspection report about the nature of the violation, citing the specific provisions which have been violated. The field inspection report shall be filed with the secretary for review and further action, if appropriate.

F. The secretary or his agent, after review of the field inspection report, and depending upon the severity of the violation and the exigency of the situation, may issue to the operator a letter of noncompliance or initiate one or more enforcement proceedings prescribed by department rules.

Section 2. R.S. 30:1107.1, 1107.2, 1113, and 1114 are hereby repealed in their entirety.

Section 3. The Louisiana State Law Institute is hereby authorized and directed to alphabetize and renumber the definitions contained in R.S. 30:1103 and to correct any cross-references to the renumbered paragraphs if necessary, consistent with the provisions of this Act.

Section 4. The Louisiana State Law Institute is hereby directed to designate R.S. 30:1101 through 1115 as Part I of Chapter 11 of Subtitle I of Title 30 of the Revised Statutes, entitled "GENERAL PROVISIONS".

DIGEST

The digest printed below was prepared by House Legislative Services. It constitutes no part of the legislative instrument. The keyword, one-liner, abstract, and digest do not constitute part of the law or proof or indicia of legislative intent. [R.S. 1:13(B) and 24:177(E)]

HB 1156 Original 2026 Regular Session Bacala

Abstract: Enacts safety-related requirements for Class VI injection well emergency preparedness and response, permitting, construction, operation, and site closure and for the design, construction, operation, and maintenance of pipelines used to transport carbon dioxide (CO2) for sequestration.

Present law requires the secretary to make at least one of the following findings prior to the use of any reservoir for CO2 storage:

(1) That the reservoir is suitable and feasible for storage. If the reservoir is capable of producing minerals in paying quantities, it can only be found suitable and feasible if all owners agree to storage, all minerals have been produced, or the reservoir has greater value as CO2 storage and 3/4 owners consent.
(2) Use of the reservoir for storage will not contaminate other formations with fresh water or minerals.
(3) The proposed storage will not endanger human life or cause hazardous property conditions.

Proposed law requires that all three of findings under present law are met, rather than just one of them.

Present law provides that any action to drill through a CO2 storage facility must comply with rules issued by the secretary.

Proposed law retains present law and also requires compliance with proposed law in order to drill through a storage facility.

Proposed law provides minimum requirements for Class VI injection wells and pipelines related to safety and provides that proposed law does not limit the secretary's ability to promulgate additional rules or comply with federal law or permits. Further provides that nothing in proposed law requires the dept. or operators to violate or come into noncompliance with other applicable state or federal law or permits.

Present law establishes the Right-to-Know laws which govern unauthorized releases and emergency response to those releases.

Proposed law makes CO2 storage facility and pipeline owners and operators subject to the Right-to-Know laws.

Proposed law requires facility and pipelines owners and operators to coordinate with emergency response agencies prior to operating in order to educate first responders, government agencies, and the public regarding CO2 releases; ensure that at least 1 fire department in each affected parish has equipment and supplies necessary to respond to a release; and to implement an emergency alert system for releases.

STORAGE FACILITY SAFETY REQUIREMENTS

Proposed law prohibits the underground injection of CO2 or the construction of a Class VI well without a permit from the dept.

Proposed law requires that all required submissions include the departmental serial number assigned to the Class VI well associated with the submission and that all geoscientific and engineering work be prepared and signed by licensed professional geoscientists and engineers licensed to practice in the state and in good standing with their professional licensing board.

Proposed law establishes the duties of a Class VI permittee, including the following:

(1) Duty to comply with all permit conditions.
(2) Duty to reapply for continued activity after the expiration of a permit.
(3) Duty to halt or reduce activity to remain in compliance with permit conditions.
(4) Duty to mitigate adverse impacts on the environment.
(5) Duty to properly operate and maintain facilities in compliance with permit conditions.
(6) Duty to allow inspections and entry by the dept.
(7) Duty to establish and maintain mechanical integrity.

Proposed law establishes financial responsibility requirements for all phases of a sequestration project, including maintaining sufficient security to address endangerment to underground sources of drinking water (USDWs), corrective action, plugging, site closure, and emergency and remedial response, and authorizes the dept. to prescribe acceptable forms of financial responsibility and require periodic review of the sufficiency of financial security.

Proposed law establishes siting criteria for Class VI wells, including minimum requirements regarding geologic criteria that the injection zone, point of injection, and confining zones must meet.

Proposed law requires Class VI operators to prepare and comply with area of review and corrective action plans that address the following to the dept.'s satisfaction:

(1) Area of review delineation that must meet certain modeling requirements.
(2) Corrective action for existing wells within the area of review.
(3) Regularly scheduled reevaluation of both the area of review delineation and corrective action.

Present law establishes a 500 foot setback for Class VI wells from inhabited dwellings, schools, and healthcare facilities.

Proposed law retains present law.

Proposed law prohibits the siting of CO2 injection in solution-mined sal caverns and in locations that would adversely affect any Class I waste plumes.

Proposed law establishes well construction and completion requirements for the following:

(1) Injection well construction, including supervision, materials and equipment, design, casing and cementing, casing and casing seat tests, and tubing and packers.
(2) Logging, sampling, and testing prior to injection regarding geologic formations, formation fluids, reservoir pressure, and certain characteristics of the injection and confining zones.

Proposed law requires pre-operation approval from the dept. and sets forth the documentation an owner or operator must submit for the dept. to consider prior to approval of injection operations.

Proposed law establishes Class VI injection well operating requirements that address injection and fracture pressure, injection placement, corrosion control, maintaining

mechanical integrity, continuous recordation of pressure and flow data, and alarms and automatic emergency shutoff systems.

Proposed law requires that if mechanical integrity is found to be lacking or if monitoring indicates that there may be a lack of mechanical integrity, an operator must immediately cease injection, determine whether there has been an unauthorized release of CO2, notify the dept. within 24 hours, and restore and demonstrate mechanical integrity to the satisfaction of the dept. before resuming injection operations.

Proposed law requires Class VI operators to maintain protective barriers and signage around wellheads and infrastructure.

Proposed law prohibits well work of any kind without prior written authorization from the dept.

Present law requires Class VI owners and operators to have emergency and remedial response plans that include continuing training programs for operating and maintenance personnel and to provide these plans to local governing authorities. Further requires at least one tabletop exercise with emergency response agencies prior to injection.

Proposed law retains present law and adds the following:

(1) Emergency and remedial response plans must include actions the owner or operator must take to address movement of fluids that may endanger USDWs.
(2) The plans must be reviewed at least once every five years and either amend the plan as necessary with the dept.'s approval or demonstrate to the dept. that no amendment is necessary.
(3) Compliance with these plans is directly enforceable by the dept.

Proposed law provides that if a Class VI owner or operator obtains evidence that the injected CO2 stream or pressure front may endanger a USDW, they must do all of the following:

(1) Immediately cease injection.
(2) Take all steps reasonably necessary to identify and characterize any release.
(3) Notify the department within twenty-four hours.
(4) Implement the emergency and remedial response plan approved by the department.
(5) Obtain dept. approval prior to resuming injection operations after remediation.

Proposed law prohibits the movement of any contaminant into a USDW that would violate federal or state safe drinking water laws and regulations or sanitary codes or that may adversely affect public health.

Proposed law authorizes the secretary to impose additional requirements on an owner or operator of a Class VI well and take emergency action if water quality monitoring indicates the movement of any contaminant into a USDW or public water system.

Proposed law requires Class VI owners and operators to have in place prior to injection a remediation plan for ground water contamination and provides that a public water system may request routine sampling and testing a the public water supply by a third party at the operator's expense.

Proposed law requires a storage operator to immediately implement the ground water remediation plan if monitoring indicates contamination from the storage facility and to provide an alternative supply of potable water until ground water testing by the dept. confirms that it is safe for public use.

Proposed law requires Class VI owners and operators to have testing and monitoring plans approved by the dept. that ensures operations are in compliance with permit conditions. Such

plans are required to include CO2 stream analysis, continuous recording devices, corrosion monitoring, ground water quality monitoring, annual demonstrations of mechanical integrity, pressure fall-off testing, plume tracking, and any additional monitoring required by the dept.

Proposed law establishes requirements for mechanical integrity of Class VI wells and actions operators must take to ensure mechanical integrity and the absence of fluid movement, including annulus pressure testing and continuous monitoring of injection pressure, rate, and volume.

Proposed law provides that the dept. may require casing inspection logs for corrosion monitoring and other tests to evaluate mechanical integrity.

Present law requires certain quarterly reporting, reporting that must be done within 24 hours of specified events, the information these reports must contain, and to whom the reports must be made.

Proposed law retains present law.

Proposed law establishes record retention requirements for application data, injection fluid data, monitoring data, well data, site care data, continuous recording data, and raw operating data.

Proposed law provides that failure to comply with reporting and recordkeeping requirements will subject operators to penalties provided under present law.

Proposed law establishes requirements for plugging and abandonment of Class VI wells, including requirements for well plugging plans, notice of intent to plug, and well closure reports.

Proposed law establishes requirements for post-injection site care and closure, including dept.-approved plans the owner or operator must have in place and implement upon cessation of injection operations. Further requires post-injection monitoring of the plume and pressure front for at least 50 years or an alternative timeline approved by the dept. and provides requirements for approval of an alternative timeline for post-injection monitoring requirements.

Proposed law establishes requirements for site closure, including notice to and approval from the dept., site closure reports, requirements for recordation of certain information in conveyance records, and financial surety requirements that must be met prior to site closure.

CO2 SEQUESTRATION PIPELINE SAFETY REQUIREMENTS

Proposed law prohibits the transportation of CO2 for sequestration through pipelines constructed of any material other than steel, unless an alternative is approved by the dept. and PHMSA, and prohibits CO2 transportation unless it is chemically compatible with all components of the pipeline and any other commodity that the CO2 may come into contact with.

Proposed law establishes requirements for an existing pipeline to qualify for conversion to a CO2 pipeline.

Proposed law establishes requirements for reporting accidents and safety-related conditions, including the following:

(1) Accident reports for certain pipeline system failures that result in a release of CO2, reporting by phone within one hour for certain CO2 releases, and follow-up reporting required within 48 hours.

(2) Conditions that require reporting, including certain corrosion, unintended movement and abnormal loading, material defects and damage, malfunctions and operating errors, leaks, and other conditions that may lead to imminent hazards.

Proposed law establishes requirements for the design and construction of CO2 sequestration pipelines. Design requirements address materials used for system components and accounting for temperature and pressure variations, internal and external pressure and loads, fracture propagation, suitability of pipe fittings, sensing devices, control systems with fail-safes, and backup power sources.

Proposed law prohibits operators from relieving CO2 in confined spaces where hazardous levels may accumulate.

Proposed law requires that installation of pipe and pipeline systems be inspected for compliance with proposed law and provides for who may perform such inspections.

Proposed law establishes criteria for pipeline location, pressure testing, and shut-off valves.

Proposed law provides integrity management requirements for pipeline system repairs that take into account the nature and location of the condition to be repaired.

Proposed law requires operators to maintain current maps and records of its pipelines including their location, crossings, maximum operating pressure, and characteristics of the pipes. Further requires that operators maintain daily operating records and records of repairs and inspections and provides retention periods for such records.

Proposed law requires operators to have communications systems in place for monitoring operational data, notices of emergency conditions, control center communication with the scene of abnormal operations and emergencies, and communicating with emergency responders and public officials during emergencies.

Proposed law establishes requirements for line markers and signs and provides specific criteria for same.

Proposed law requires regularly planned inspection of pipelines and inspections following natural disasters.

Proposed law requires that operators maintain firefighting equipment at pump stations and protect pump stations from unauthorized entry.

Proposed law provides that operators of any buried pipeline must have a program in place to prevent damage from excavation.

Proposed law requires operators to prepare and follow a procedural manual for operations, maintenance, and emergencies.

Proposed law provides that the procedural manual must include the following for maintenance and normal operations:

(1) Accident and failure preparation, mitigation, and response.

(2) Post-failure and accident procedures and lessons learned.

(3) Startup and shutdown procedures.

(4) Detection of abnormal operating conditions.

(5) Periodic review of operations and the manual to ensure effectiveness of procedures.

(6) Protecting personnel from hazards.

(7) Control room management procedures.

Proposed law provides that the procedural manual must also include procedures for abnormal operations, including the following:

(1) Abnormal condition response, investigation, and correction.

(2) Correction of normal operating procedures based on information obtained during abnormal operations.

(3) Notification procedures.

(4) Review of personnel responses to abnormal conditions.

Proposed law provides that the procedural manual must also include procedures for emergency operations, including the following:

(1) Notification and communication procedures.

(2) Emergency liaisons.

(3) Responses to emergency notifications.

(4) The provision of necessary personnel, equipment, and supplies.

(5) Emergency operating procedures.

(6) Written rupture identification procedures.

(7) Control of released CO2.

(8) Minimization of public exposure.

(9) Post-accident review of procedures.

(10) Control room procedures.

(11) Reporting of safety-related conditions.

Proposed law establishes requirements for operators to provide emergency response training programs for emergency response personnel on the procedures and characteristics specific to CO2 releases and requirements for periodic review and modification of this programming.

Proposed law requires operators to develop and implement a written continuing public education program that includes provisions to educate the public, governmental organizations, and people that do excavation work on procedures and possible hazards associated with CO2 releases.

Proposed law establishes additional requirements for safe operation of CO2 pipelines in high-consequence areas, including a written integrity management plan.

Proposed law establishes requirements for pipeline personnel qualifications, training, evaluation, and recordkeeping.

Proposed law authorizes the secretary and department personnel to enter pipeline premises for inspection and examination of records; authorizes the secretary to require testing and the

production of additional information to ensure compliance with applicable laws and regulations; and provides for the documentation of violations, the issuance of letters of noncompliance, and enforcement actions.

(Amends R.S. 30:1104(C)(intro. para.) and (E) and 1104.2(I); Adds R.S. 30:1103(17)-(46) and 1121-1121.51; Repeals R.S. 30:1107.1, 1107.2, 1113, and 1114)