

PROPOSED RULE AMENDMENTS

EPA: Should ‘director’ needs a capital ‘D’

EPA: there are many instances, our regs have “the owner or operator” but State only use “the operator”

EPA does not feel that you need to specifically reference the EPA EJ tool in place of the census data. The EJ tool is periodically revised and can instead be referenced in the MOA as an additional evaluation tool to assist in forming a plan for EJ on project sites and while doing program implementation.

§5.204(a)(6) *Notice to certain communities. The applicant shall identify whether any portions of the AOR encompass an Environmental Justice (EJ) or Limited English-Speaking Household community using the most recent U.S. Census Bureau American Community Survey data. If the AOR includes an EJ or Limited English-Speaking Household community, the applicant shall conduct enhanced public outreach activities to these communities. Efforts to include EJ and Limited English-Speaking Household communities in public involvement activities in such cases shall include:*

(A) *published meeting notice in English and the identified language (e.g., Spanish);*

(B) *comment forms posted on the applicant's webpage and available at public meeting in English and the alternate language;*

(C) *interpretation services accommodated upon request;*

(D) *English translation of any comments made during any comment period in the alternate language; and*

(E) *to the extent possible, public meeting venues near public transportation.*

EPA: 295. This provision is missing from the state rule. TX rule revision needed 144.52(b)(2) For a State issued permit, an applicable requirement is a State statutory or regulatory requirement which takes effect prior to final administrative disposition of the permit. For State and EPA administered programs, an applicable requirement is also any requirement which takes effect prior to the modification or revocation and reissuance of a permit, to the extent allowed in §144.39.

EPA: 296. This provision is missing from the state rule. TX rule revision needed New or reissued permits, and to the extent allowed under §144.39 modified or revoked and reissued permits, shall incorporate each of the applicable requirements referenced in §144.52.

§5.102 DEFINITIONS

83. State requirement is less specific than CFR-does not reference the various phases of CO2 and refers to anthropogenic CO2 only. May have potential to make the rules less stringent. Revise to state rule applies to any CO2 that is injected in any phase. TX rule revision needed §144.3 Definitions

§144.3(83) *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.

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§5.102 Definitions. The following terms, when used in Subchapter B of this chapter, shall have the following meanings, unless the context clearly indicates otherwise.

(1) No change.

(2) Anthropogenic carbon dioxide (CO₂)--

(A) CO₂ that **has been captured from, or** would otherwise have been released into the atmosphere that has been:

(i) separated from any other fluid stream; or

(ii) captured from an emissions source, including:

(I) an advanced clean energy project as defined by Health and Safety Code, §382.003, or another type of electric generation facility; or

(II) an industrial source of emissions; and

(iii) any incidental associated substance derived from the source material for, or from the process of capturing, CO₂ described by clause (i) of this subparagraph; and

(iv) any substance added to CO₂ described by clause (i) of this subparagraph to enable or improve the process of injecting the CO₂; and

(B) does not include naturally occurring CO₂ that is produced, acquired, recaptured, recycled, and reinjected as part of enhanced recovery operations.

(3) Anthropogenic CO₂ injection well--An injection well used to inject or transmit **gaseous, liquid, or supercritical** anthropogenic CO₂ into a reservoir.

(4) – (9) No change.

(10) Class VI well--Any well used to inject anthropogenic CO₂ specifically for the purpose of the long-term containment of a gaseous, liquid, or supercritical CO₂ in subsurface geologic formations.

(11) – (26) No change

(27) Geologic storage—The long-term containment of **gaseous, liquid, or supercritical** anthropogenic CO₂ in subsurface geologic formations.

§5.203 APPLICATION REQUIREMENTS

169. State rule is less specific as to the types of relevant permits to list. TX rule revision needed. Maybe replace “relevant” with “required”. (#169, 174-183)

40 CFR §144.31 Application for a permit; authorization by permit. Applicants for Class VI permits shall follow the criteria provided in § 146.82.....

174. §144.31(e)(6) A listing of all permits or construction approvals received or applied for under any of the following programs:

175. §144.31(e)(6)(i) Hazardous Waste Management program under RCRA.

176. §144.31(e)(6)(ii) UIC program under SDWA.

177. §144.31(e)(6)(iii) NPDES program under CWA.

178. §144.31(e)(6)(iv) Prevention of Significant Deterioration (PSD) program under the Clean Air Act.

179. §144.31(e)(6)(v) Nonattainment program under the Clean Air Act.

180. §144.31(e)(6)(vi) NESHAPS preconstruction approval under the Clean Air Act.

181. §144.31(e)(6)(vii) Ocean dumping permits under the Marine Protection Research and Sanctuaries Act.

182. §144.31(e)(6)(viii) Dredge and fill permits under section 404 of CWA.

183. §144.31(e)(6)(ix) Other relevant environmental permits, including State permits.

190. See Texas Notes. The state rule does not describe federal signatories. It may be appropriate to describe in the program description whether federally owned Class VI wells are prohibited in the state or who would be required to sign the permit application. In theory a DOE funded project could apply for a permit. TX rule revision needed

§144.32(a)(3)(i) The chief executive officer of the agency, or

191. State rule does not describe federal signatories. In theory, a DOE-funded project could apply for a permit. TX rule revision needed to describe whether federally owned Class VI wells are prohibited or who would be required to sign the permit application.

§ 144.32 Signatories to permit applications and reports.

§144.32(a)(3)(ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency.

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§5.203. Application Requirements.

(a) General.

(1) Form and filing; signatories; certification.....

(B) Signatories to permit applications. An applicant must ensure that the application is executed by a party having knowledge of the facts entered on the form and included in the required attachments. All permit applications shall be signed as specified in this subparagraph:

(i) – (ii) No change.

(iii) For a municipality, State, Federal, or other public agency, the permit application shall be signed by either a principal executive officer or ranking elected official. **For purposes of this section, a principal executive officer of a Federal agency includes the chief executive officer of the agency, or a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency.**

(2) General information.

(A) – (B) No change.

(C) The application must include a listing of all **required** [~~relevant~~] permits or construction approvals for the facility received or applied for under federal or state environmental programs;

(D) No change.

(E) The application must indicate whether the geologic storage project is located on Indian lands.

(F) The application must include a list of contacts for those States, Tribes, and Territories any portion of which is identified to be within the AOR of the geologic storage project based on the map showing the injection well and the AOR.

361. Texas does not require that the map show deep stratigraphic boreholes, and only requires it show the location of suspected faults expressed at the surface (however, information about all faults must be provided, per §5.203(c)(2)(C)). Modify §5.203(b)(2)(A) to include deep stratigraphic boreholes.

§146.82(a)(2) A map showing the injection well for which a permit is sought and the applicable area of review consistent with §146.84. Within the AOR, the map must show the number or name, and location of all injection wells, producing wells, abandoned wells, plugged wells or dry holes, deep stratigraphic boreholes, State- or EPA-approved subsurface cleanup sites, surface bodies of water, springs, mines (surface and subsurface), quarries, water wells, other pertinent surface features including structures intended for human occupancy, State, Tribal, and Territory boundaries, and roads. The map should also show faults, if known or suspected. Only information of public record is required to be included on this map;

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§5.203(b) Surface map and information. Only information of public record is required to be included on this map.

(1) The applicant must file with the director a surface map delineating the proposed location of any injection wells and the boundary of the GS facility for which a permit is sought and the applicable AOR.

(2) The applicant must show within the AOR on the map the number or name and the location of:

(A) all known artificial penetrations through the confining zone, including stratigraphic boreholes, injection wells, producing wells, inactive wells, plugged wells, or dry holes;

422. The state requirement does not specify that determination of compatibility with penetrations and CO₂ is required. This is less stringent than the CFR. TX rule revision needed.

§146.84(c)(3) 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 USDWs, including use of materials compatible with the carbon dioxide stream.

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§5.203(d)(1)(C) Corrective action. The applicant must demonstrate whether each of the wells on the table of penetrations has or has not been plugged and whether each of the underground mines (if any) on the table of penetrations has or has not been closed in a manner that prevents the movement of injected fluids or displaced formation fluids that may endanger USDWs or allow the injected fluids or formation fluids to escape the permitted injection zone, including use of materials compatible with the carbon dioxide stream.

412. The state requirement should refer to 5.206(g) (AOR and corrective action), not to 5.206(f)(mechanical integrity). The state requirement does not mention a five-year frequency for AoR reevaluations. This is less stringent than the CFR. Agree that §5.206(g) refers to a reevaluation schedule; however §5.206(f), which is referenced in §5.203(d)(2)(B)(i) is about MIT. Thus, a minor rule edit is needed. 146.84(b)(2)(i)

424. The state rule does not specify a minimum AoR reevaluation frequency. Agree that §5.206(g) refers to a reevaluation schedule; however §5.206(f), which is referenced in 5.203(d)(2)(B)(i) is about MIT. Thus, a minor rule edit is needed. 146.84(e)

§146.84 AOR and corrective action.

(b) The operator must prepare, maintain, and comply with a plan to delineate the AOR for a proposed geologic storage project, periodically reevaluate the delineation, and perform corrective action that meets the requirements of this section and is acceptable to the Director. The requirement to maintain and implement an approved plan is directly enforceable regardless of whether the requirement is a condition of the permit. As a part of the permit application, the operator must submit an AOR and corrective action plan that includes the following information:

(1) The method for delineating the AOR that meets the requirements of paragraph (c), including the model to be used, assumptions that will be made, and the site characterization data on which the model will be based;

(2) A description of:

(i) The minimum fixed frequency, not to exceed 5 years, at which the operator proposes to reevaluate the AOR;

(ii) The monitoring and operational conditions that would warrant a reevaluation of the AOR prior to the next scheduled reevaluation as determined by the minimum fixed frequency established in paragraph (b)(2)(i).

(iii) How monitoring and operational data (e.g., injection rate and pressure) will be used to inform an AOR reevaluation; and

(iv) How corrective action will be conducted to meet the requirements of paragraph (d), including what corrective action will be performed prior to injection and what, if any, portions of the AOR will have corrective action addressed on a phased basis and how the phasing will be determined; how corrective action will be adjusted if there are changes in the AOR; and how site access will be guaranteed for future corrective action.

(e) At the minimum fixed frequency, not to exceed 5 years, as specified in the AOR and corrective action plan, or when monitoring and operational conditions warrant, operators must:

(1) Reevaluate the AOR in the same manner specified in paragraph (c)(1);

(2) Identify all wells in the reevaluated AOR that require corrective action in the same manner specified in paragraph (c);

(3) Perform corrective action on wells requiring corrective action in the reevaluated AOR in the same manner specified in paragraph (d); **and**

(4) Submit an amended AOR and corrective action plan or demonstrate to the Director through monitoring data and modeling results that no amendment to the AOR and corrective action plan is needed. Any amendments to the AOR and corrective action plan must be approved by the Director, must be incorporated into the permit, and are subject to the permit modification requirements at [§ 144.39](#) or [§ 144.41 of this chapter](#), as appropriate.

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§5.203(d) AOR and corrective action. This subsection describes the standards for the information regarding the delineation of the AOR, the identification of penetrations, and corrective action that an applicant must include in an application.

(1) Initial delineation of the AOR and initial corrective action. The applicant must delineate the AOR, identify all wells that require corrective action, and perform corrective action on those wells. Corrective action may be phased.

(A) Delineation of AOR. No change.

(B) Identification and table of penetrations. No change.

(C) Corrective action. No change.

(2) AOR and corrective action plan. As part of an application, the applicant must submit an AOR and corrective action plan that includes the following information:

(A) the method for delineating the AOR, including the model to be used, assumptions that will be made, and the site characterization data on which the model will be based;

(B) for the AOR, a description of:

(i) the minimum **fixed** frequency, **not to exceed five (5) years**, [~~subject to the annual certification pursuant to §5.206(f) of this title (relating to Permit Standards)~~] at which the applicant proposes to re-evaluate the AOR during the life of the geologic storage facility;

(ii) how monitoring and operational data will be used to re-evaluate the AOR; and

(iii) the monitoring and operational conditions that would warrant a re-evaluation of the AOR prior to the next scheduled re-evaluation; and

(C) a corrective action plan that describes:

§5.206(g) AOR and corrective action. [~~Notwithstanding the requirement in §5.203(d)(2)(B)(i) of this title to perform a re-evaluation of the AOR, at] At the **minimum** frequency – **not to exceed five (5) years** - specified in the **approved** AOR and corrective action plan or permit, **or** [~~the operator of a geologic storage facility also must conduct the following~~] whenever warranted by a material change in the monitoring and/or operational data or in the evaluation of the monitoring and operational data by the operator, **the operator of a geologic storage facility also must conduct the following**:~~

(1) **perform** a re-evaluation of the AOR by performing all of the actions specified in §5.203(d)(1)(A) - (C) to delineate the AOR and identify all wells that require corrective action;

(2) identify all wells in the re-evaluated AOR that require corrective action;

(3) perform corrective action on wells requiring corrective action in the re-evaluated AOR in the same manner specified in §5.203(d)(1)(C); **[and]**

EPA: Please note that our reg has “and” (see above)

(4) submit an amended AOR and corrective action plan or demonstrate to the director through monitoring data and modeling results that no change to the AOR and corrective action plan is needed. **Any amendments to the AOR and**

corrective action plan must be approved by the director, must be incorporated into the permit, and are subject to the permit modification requirements at §5.202, as appropriate; and

(5) retain all modeling inputs and data used to support AOR reevaluations for at least ten (10) years.

429. The provision cited by the state is for the initial permit application and does not account for revisions of the Emergency and Remedial Response Plan or financial responsibility that address changes to the AoR. The stringency concern about revisions to FR and E&RR plans remains. TX rule revision needed.

§146.84(f)

§146.84(f) (f) The emergency and remedial response plan (as required by § 146.94) and the demonstration of financial responsibility must account for the AOR delineated as specified in paragraph (c)(1) or the most recently evaluated AOR delineated under paragraph (c) of this section, regardless of whether or not corrective action in the AOR is phased.

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§5.206(h) Emergency, mitigation, and remedial response.

(1) Plan. The operator must maintain and comply with the approved emergency and remedial response plan required by §5.203(l) of this title. The operator must update the plan in accordance with §5.207(a)(2)(D)(vi) of this title (relating to Reporting and Record-Keeping). The operator must make copies of the plan available at the storage facility and at the company headquarters. The emergency and remedial response plan and the demonstration of financial responsibility must account for the AOR delineated as specified in §5.203(d)(1)(A) - (C) or the most recently evaluated AOR delineated under subsection (g) of this section, regardless of whether or not corrective action in the AOR is phased.

(2) – (4) No change.

488. Axial loading is not included as a consideration in the state requirement. Rule revision needed.

§146.86(b)(1)(ii) Injection pressure, external pressure, internal pressure, and axial loading;

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§5.203(e)(2)(D) proposed injection rate (intermittent or continuous), maximum proposed surface injection pressure, external pressure, internal pressure, axial loading, and maximum proposed volume and/or mass of the CO₂ stream to be injected;

497. The provision that the long string casing must isolate the injection zone “using cement and/or other isolation techniques” may render this provision less stringent than the CFR. TX rule revision needed. A liner is not necessarily the same as long string casing which typically begins the wellhead. The liner can be hung much deeper in the wellbore and the federal rules call for at least one long string casing cemented all the way to the surface.

§146.86(b)(3) At least one long string casing, using a sufficient number of centralizers, must extend to the injection zone and must be cemented by circulating cement to the surface in one or more stages.

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§5.203(e)(1)(B)(v) At least one long string casing, using a sufficient number of centralizers, must extend from the surface to the injection zone and must be cemented by circulating cement to the surface in one or more stages. The long string casing must isolate the injection zone and other intervals as necessary for the protection of USDWs and to ensure confinement of the injected and formation fluids to the permitted injection zone using cement and/or other isolation techniques. If the long string casing does not extend through the injection zone, another well string or liner must be cemented through the injection zone (for example, a chrome liner).

378. State requires a stimulation program “as applicable;” this may mean that some applicants would not submit a stimulation plan, which is less stringent than the CFR and would not provide for a stimulation plan in the permit. The state requirement does not require a description of stimulation fluids. TX rule revision needed.

§146.82(a)(9) Proposed stimulation program, a description of stimulation fluids to be used and a determination that stimulation will not interfere with containment;

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§5.203(e)(4) Well stimulation plan. The applicant must submit ~~[-, as applicable,]~~ a description of the proposed well stimulation program, **including a description of the stimulation fluids,** and a determination that well stimulation will not compromise containment.

525. The state requirement does not describe the content of the logging report (which is less stringent than the CFR) or accept cores from other formations. TX rule revision needed.

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

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§5.203(f)(3)(B) The operator must **take [submit analyses of]** whole cores or sidewall cores representative of the injection zone and confining zone and formation fluid samples from the injection zone. **The operator must submit to the director a detailed report prepared by a log analyst that includes: well log analyses (including well logs), core analyses, and formation fluid sample information. The director may accept data from cores and formation fluid samples from nearby wells or other data if the operator can demonstrate to the director that such data are representative of conditions at the proposed injection well. The director may require the operator to core other formations in the borehole.**

564. State rule requires semi-annual corrosion monitoring (rather than quarterly monitoring) and annual reporting (instead of semi-annual reporting). This is less stringent than the CFR.

§146.90(c) Corrosion monitoring of the well materials for loss of mass, thickness, cracking, pitting, and other signs of corrosion, which must be performed on a quarterly basis to ensure that the well components meet the minimum standards for material strength and performance set forth in §146.86(b), by:

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§5.203(j) Plan for monitoring, sampling, and testing after initiation of operation.

(2) The plan must include the following:

(A) the analysis of the CO₂ stream prior to injection with sufficient frequency to yield data representative of its chemical and physical characteristics;

(B) the installation and use of continuous recording devices to monitor injection pressure, rate, temperature, and volume and/or mass, and the pressure on the annulus between the tubing and the long string casing, except during workovers;

(C) after initiation of injection, the performance on a **quarterly [semi-annual]** basis of corrosion monitoring of the well materials for loss of mass, thickness, cracking, pitting, and other signs of corrosion to ensure that the well components meet the minimum standards for material strength and performance set forth in subsection (e)(1)(A) of this section. The operator must report the results of such monitoring **semi-annually [annually]**. Corrosion monitoring may be accomplished by:....

613. See Texas notes. Program description should describe the record retention process if it is not included in the regulations. TX rule revision needed.

§146.91(f)(3) Monitoring data collected pursuant to §146.90(b) through (i) shall be retained for 10 years after it is collected.

614. See Texas notes. Program description should describe the record retention process if it is not included in the regulations. TX rule revision needed.

§146.91(f)(4) 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 collected pursuant to requirements at §§146.93(f) and (h) shall be retained for 10 years following site closure.

615. See Texas notes. Program description should describe the record retention process if it is not included in the regulations. TX rule revision needed.

§146.91(f)(5) The Director has authority to require the owner or operator to retain any records required in this subpart for longer than 10 years after site closure.

430. The state rule includes the following about §5.207 in its preamble: “The Commission proposes to amend current subsection (c), redesignated as subsection (e), to clarify that the operator must retain records, including modeling inputs and data to support area of review calculations and integrity test results, for at least 10 years, rather than five years, consistent with federal regulations at 40 CFR §146.84(g), relating to area of review and corrective action.” However, neither the text of §5.207(e) nor other provisions of the rule contain requirement to retain modeling inputs for 10 years. Need to add a recordkeeping requirement to Texas rule.

§146.84(g) All modeling inputs and data used to support AOR reevaluations under paragraph (e) of this section shall be retained for 10 years.

§146.91(f)

(3) Monitoring data collected pursuant to §146.90(b) through (i) (testing and monitoring plan) shall be retained for 10 years after it is collected.

(4) 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 collected pursuant to requirements at §§146.93(f) and (h) shall be retained for 10 years following site closure.

(5) The Director has authority to require the operator to retain any records required in this subpart for longer than 10 years after site closure.

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§5.203(j) Plan for monitoring, sampling, and testing after initiation of operation.

(1) The applicant must submit a monitoring, sampling, and testing plan for verifying that the geologic storage facility is operating as permitted and that the injected fluids are confined to the injection zone.

(2) The plan must include the following:

(A) the analysis of the CO₂ stream prior to injection with sufficient frequency to yield data representative of its chemical and physical characteristics;

(B) the installation and use of continuous recording devices to monitor injection pressure, rate, temperature, and volume and/or mass, and the pressure on the annulus between the tubing and the long string casing, except during workovers;

(C) after initiation of injection, the performance on a semi-annual basis of corrosion monitoring of the well materials for loss of mass, thickness, cracking, pitting, and other signs of corrosion to ensure that the well components meet the minimum standards for material strength and performance set forth in subsection (e)(1)(A) of this section. The operator must report the results of such monitoring annually. Corrosion monitoring may be accomplished by:

(i) analyzing coupons of the well construction materials in contact with the CO₂ stream;

(ii) routing the CO₂ stream through a loop constructed with the materials used in the well and inspecting the materials in the loop; or

(iii) using an alternative method, materials, or time period approved by the director;

(D) monitoring of geochemical and geophysical changes, including:

(i) periodic sampling of the fluid temperature, pH, conductivity, reservoir pressure and static fluid level of the injection zone and monitoring for pressure changes, and for changes in geochemistry, in a permeable and porous formation near to and above the top confining zone;

(ii) periodic monitoring of the quality and geochemistry of a USDW within the AOR and the formation fluid in a permeable and porous formation near to and above the top confining zone to detect any movement of the injected CO₂ through the confining zone into that monitored formation;

(iii) the location and number of monitoring wells justified on the basis of the AOR, injection rate and volume, geology, and the presence of artificial penetrations and other factors specific to the geologic storage facility; and

(iv) the monitoring frequency and spatial distribution of monitoring wells based on baseline geochemical data collected under subsection (c)(2) of this section and any modeling results in the AOR evaluation;

(E) tracking the extent of the CO₂ plume and the position of the pressure front by using indirect, geophysical techniques, which may include seismic, electrical, gravity, or electromagnetic surveys and/or down-hole CO₂ detection tools;

(F) A demonstration of external mechanical integrity pursuant to _____ at least once per year until the injection well is plugged; and, if required by the Director, a casing inspection log pursuant to requirements at a frequency established in the testing and monitoring plan;

(G) A pressure fall-off test at least once every five years unless more frequent testing is required by the director based on site-specific information; and

(H) [~~(G)~~] additional monitoring as the director may determine to be necessary to support, upgrade, and improve computational modeling of the AOR evaluation and to determine compliance with the requirements that the injection activity not allow the movement of fluid containing any contaminant into USDWs and that the injected fluid remain within the permitted interval.

§5.207(e) Record retention.

(1) The operator must retain all **testing and monitoring data collected pursuant to the plans required under _____, including wellhead pressure records, metering records, and integrity test results, and modeling inputs and data used to support AOR calculations** for at least 10 years **after it is collected**.

(2) **The operator must retain well plugging reports, post-injection storage facility care data, including, if appropriate, data and information used to develop the demonstration of the alternative post-injection facility care timeframe, and the closure report for 10 years following storage facility closure.**

(3) The operator must retain all documentation of good faith claim to necessary and sufficient property rights to operate the geologic storage facility until the director issues the final certificate of closure in accordance with §5.206(k)(7).

(4) **The Director has authority to require the operator to retain any records required in this subpart for longer than 10 years after storage facility closure.**

§5.204 NOTICE OF PERMIT ACTIONS AND PUBLIC COMMENT PERIOD

61-64. No requirements for preparing a response to comments document. TX rule revision needed.

§ 124.17 Response to comments.

61. §124.17(a)

62. §124.17(a)(1)

63. §124.17(a)(2)

64. §124.17(c)

§124.17 Response to comments.

(a) At the time that any final permit decision is issued under [§ 124.15](#), the Director shall issue a response to comments. States are only required to issue a response to comments when a final permit is issued. This response shall:

(1) Specify which provisions, if any, of the draft permit have been changed in the final permit decision, and the reasons for the change; and

(2) Briefly describe and respond to all significant comments on the draft permit raised during the public comment period, or during any hearing.

(c) The response to comments shall be available to the public.

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§5.204. Notice of Permit Actions and Public Comment Period.

(b) Public comment and hearing requirements.

(1) – (4) No change.

(5) Upon making a final permit decision, the director shall issue a response to comments. This response shall specify which provisions, if any, of the draft permit have been changed in the final permit decision, and the reasons for the change, and shall briefly describe and respond to all significant comments on the draft permit raised during the public comment period or during any hearing. The Commission shall post the response to comments on the Commission's internet website.

389 and 391. State does not require a list of these contacts. TX rule revision needed to describe how other States or Tribes would be informed of a project if the AoR crossed into their jurisdiction.

389. §146.82(a)(20) A list of contacts, submitted to the Director, for those States, Tribes, and Territories identified to be within the AOR of the Class VI project based on information provided in paragraph (a)(2) of this section; and

391. §146.82(b) The Director shall notify, in writing, any States, Tribes, or Territories within the AOR of the Class VI project based on information provided in paragraphs (a)(2) and (a)(20) of this section of the permit application and pursuant to the requirements at §14 5.23(f)(13).

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§5.204. Notice of Permit Actions and Public Comment Period.

(a) Notice requirements.

(1) – (2) No change

(3) Methods of notification. The commission shall give notice by the following methods:

(A) Individual notice. Notice of a draft permit or a public hearing shall be given by mailing a copy of the notice to the following persons:

(i) – (x) No change

(xi) **any States, Tribes, or Territories any portion of which is within the AOR of the Class VI**

project;

(xii) persons on the mailing list developed by RRC, including those who request in writing to be on the list and by soliciting participants in public hearings in that area for their interest in being included on area mailing lists; and

(xiii) [~~(xii)~~] any other class of persons that the director determines should receive notice of the application.

§5.205 FEES, FINANCIAL RESPONSIBIITY AND FINANCIAL ASSURANCE

442. Per the change to §5.205(c)(2)(C)(i) on row 445, plugging costs are no longer explicitly excluded from the dollar amount of financial assurance. A more explicit inclusion of requirements to include financial responsibility for plugging is recommended. TX rule revision needed.

§146.85(a)(2)(ii) Injection well plugging (that meets the requirements of §146.92)

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§5.205(c) Financial assurance.

(1) Injection and monitoring wells. The operator must comply with the requirements of §3.78 for all monitoring wells that penetrate the usable quality water and this subsection for all injection wells.

(2) Geologic storage facility.

(A) The applicant must include in an application for a GS facility permit:

(i) a written estimate of the highest likely dollar amount necessary to perform PISC monitoring and closure of the facility, **including plugging of all injection wells**, that shows all assumptions and calculations used to develop the estimate;

(ii) a copy of the form of the bond or letter of credit that will be filed with RRC; and

(iii) information concerning the issuer of the bond or LOC including the issuer's name and address and evidence of authority to issue bonds or letters of credit in Texas.

(B) A geologic storage facility shall not receive CO₂ until a bond or letter of credit in an amount approved by the director under this subsection and meeting the requirements of this subsection as to form and issuer has been filed with and approved by the director.

(C) The determination of the amount of financial assurance for a geologic storage facility is subject to the following requirements:

(i) The director must approve the dollar amount of the financial assurance. The amount of financial assurance required to be filed under this subsection must be equal to or greater than the maximum amount necessary to perform corrective action, emergency response, and remedial action, PISC monitoring and site care, and closure of the geologic storage facility, **including plugging injection wells**, at any time during the permit term in accordance with all applicable state laws, commission rules and orders, and the permit;

(ii) – (iii) No change.

446-450. State rule does not explicitly require cancellation provisions (but does require continuation/renewal). This is less stringent than the CFR. The State rule does not explicitly reference all phases of the geologic sequestration project. TX rule revision needed so that the proposed financial responsibility demonstrations would consider all phases, i.e., including PISC. §146.85(a)(4)

447. §146.85(a)(4)(i)

448. §146.85(a)(4)(i)(A)

449. §146.85(a)(4)(i)(B)

450. §146.85(a)(4)(i)(C)

§146.85(a)(4) The qualifying financial responsibility instrument(s) must comprise protective conditions of coverage.

(i) Protective conditions of coverage must include at a minimum cancellation, renewal, and continuation provisions, specifications on when the provider becomes liable following a notice of cancellation if there is a failure to renew with a new qualifying financial instrument, and requirements for the provider to meet a minimum rating, minimum capitalization, and ability to pass the bond rating when applicable.

(A) **Cancellation** —for purposes of this part, an owner or operator must provide that their financial mechanism may not cancel, terminate or fail to renew except for failure to pay such financial instrument. If there is a failure to pay the financial instrument, the financial institution may elect to cancel, terminate, or fail to renew the instrument by sending notice by certified mail to the owner or operator and the Director. The cancellation must not be final for 120 days after receipt of cancellation notice. The owner or operator must provide an alternate financial responsibility demonstration within 60 days of notice of cancellation, and if an alternate financial

responsibility demonstration is not acceptable (or possible), any funds from the instrument being cancelled must be released within 60 days of notification by the Director.

(B) **Renewal**—for purposes of this part, owners or operators must renew all financial instruments, if an instrument expires, for the entire term of the geologic sequestration project. The instrument may be automatically renewed as long as the owner or operator has the option of renewal at the face amount of the expiring instrument. The automatic renewal of the instrument must, at a minimum, provide the holder with the option of renewal at the face amount of the expiring financial instrument.

(C) Cancellation, termination, or failure to renew may not occur and the financial instrument will remain in full force and effect in the event that on or before the date of expiration: The Director deems the facility abandoned; or the permit is terminated or revoked or a new permit is denied; or closure is ordered by the Director or a U.S. district court or other court of competent jurisdiction; or the owner or operator is named as debtor in a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code; or the amount due is paid.

§146.85(5)(i) The Director shall consider and approve the financial responsibility demonstration for all the phases of the geologic sequestration project prior to issue a Class VI permit (§146.82).

PROPOSED AMENDMENT

§5.205(c) Financial assurance. **The director shall consider and approve the financial responsibility demonstration for all the phases of the geologic sequestration project, including the post-injection storage facility care and closure phase and the plugging phase, prior to issuance of a geologic storage injection well permit.**

(1) No change.

(2) Geologic storage facility.

(A) The applicant must include in an application for a geologic storage facility permit:

(i) a written estimate of the highest likely dollar amount necessary to perform PISC monitoring and closure of the facility that shows all assumptions and calculations used to develop the estimate;

(ii) a copy of the form of the bond or letter of credit that will be filed with the Commission; and

(iii) information concerning the issuer of the bond or letter of credit including the issuer's name and address and evidence of authority to issue bonds or letters of credit in Texas.

(B) A geologic storage facility shall not receive CO₂ until a bond or letter of credit in an amount approved by the director under this subsection and meeting the requirements of this subsection as to form and issuer has been filed with and approved by the director.

(C) The determination of the amount of financial assurance for a geologic storage facility is subject to the following requirements:

(i) The director must approve the dollar amount of the financial assurance. The amount of financial assurance required to be filed under this subsection must be equal to or greater than the maximum amount necessary to perform corrective action, emergency response, and remedial action, PISC monitoring and site care, and closure, **including plugging of all injections wells**, of the geologic storage facility at any time during the permit term in accordance with all applicable state laws, RRC rules and orders, and the permit;

(ii) – (iii) No change.

(D) Bonds and letters of credit filed in satisfaction of the financial assurance requirements for a geologic storage facility must comply with the following standards as to issuer and form.

(i) The issuer of any geologic storage facility bond filed in satisfaction of the requirements of this subsection must be a corporate surety authorized to do business in Texas. The form of bond filed under this subsection must provide that the bond be renewed and continued in effect until the conditions of the bond have been met or its release is authorized by the director.

(ii) Any letter of credit filed in satisfaction of the requirements of this subsection must be issued by and drawn on a bank authorized under state or federal law to operate in Texas. The letter of credit must be an irrevocable, standby letter of credit subject to the requirements of Texas Business and Commerce Code, §§5.101 - 5.118. The LOC must provide that it will be renewed and continued in effect until the conditions of the letter of credit have been met or its release is authorized by the director.

(iii) The qualifying financial responsibility instrument(s) must comprise protective conditions of coverage. Protective conditions of coverage must include at a minimum cancellation, renewal, and continuation provisions, specifications on when the provider becomes liable following a notice of cancellation if there is a failure to renew with a new qualifying financial instrument, and requirements for the provider to meet a minimum rating, minimum capitalization, and ability to pass the bond rating when applicable.

(A) Cancellation. An operator must provide that their financial mechanism may not cancel, terminate or fail to renew except for failure to pay such financial instrument. If there is a failure to pay the

financial instrument, the financial institution may elect to cancel, terminate, or fail to renew the instrument by sending notice by certified mail to the operator and the director. The cancellation must not be final for 120 days after receipt of cancellation notice. The operator must provide an alternate financial responsibility demonstration within 60 days of notice of cancellation, and if an alternate financial responsibility demonstration is not acceptable (or possible), any funds from the instrument being cancelled must be released within 60 days of notification by the director.

(B) *Renewal.* For purposes of this part, operators must renew all financial instruments, if an instrument expires, for the entire term of the geologic storage project. The instrument may be automatically renewed as long as the operator has the option of renewal at the face amount of the expiring instrument. The automatic renewal of the instrument must, at a minimum, provide the holder with the option of renewal at the face amount of the expiring financial instrument.

(C) *Cancellation, termination, or failure to renew may not occur and the financial instrument will remain in full force and effect in the event that on or before the date of expiration: The director deems the facility abandoned; or the permit is terminated or revoked or a new permit is denied; or closure is ordered by the director or a U.S. district court or other court of competent jurisdiction; or the operator is named as debtor in a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code; or the amount due is paid.*

(E) The operator of a geologic storage facility must provide to the director annual written updates of the cost estimate to increase or decrease the cost estimate to account for any changes to the AOR and corrective action plan, the emergency response and remedial action plan, the injection well plugging plan, and the PISC and closure plan. The operator must provide to the director upon request an adjustment of the cost estimate if the director has reason to believe that the original demonstration is no longer adequate to cover the cost of injection well plugging and PISC and closure.

(3) The director may consider allowing the phasing in of financial assurance for only corrective action based on project-specific factors.

(4) The director may approve a reduction in the amount of financial assurance required for post-injection monitoring and/or corrective action based on project-specific monitoring results.

453. TX rule needs to specify that the operator must maintain financial responsibility regardless of the status of the Director's review of the update. Rule revision needed.

§146.85(a)(5)(ii) The owner or operator must provide any updated information related to their financial responsibility instrument(s) on an annual basis and if there are any changes, the Director must evaluate, within a reasonable time, the financial responsibility demonstration to confirm that the instrument(s) used remain adequate for use. The operator must maintain financial responsibility requirements regardless of the status of the Director's review of the financial responsibility demonstration.

468. The rule indicates that financial instruments must be in place until release is authorized by the director; however, other than site closure, no specific events are described. TX rule revision needed to include 'Texas will not release operators from any financial responsibility until site closure is authorized.'

§146.85(b)(2)(i)

469. TX rule revision needed to include 'Texas will not release operators from any financial responsibility until site closure is authorized.' §146.85(b)(2)(ii)

471. State requirement is not specific as to the activities for which cost estimates are required (i.e., corrective action, emergency and remedial response, and well plugging are missing). EPA comment refers to separate estimates for each activity that financial responsibility must cover. §146.85(c)(1)

473. State rule does not distinguish between increases and decreases, nor adjusting for inflation or require approval by the Director. TX rule revision needed. §146.85(c)(3)

474. Cost estimate TX rule revision needed. §146.85(c)(4)

479. State requirement for an adjustment of the cost estimate is similar; however the state does not identify a deadline. TX rule revision needed. §146.85(e)

§146.85(b) The requirement to maintain adequate financial responsibility and resources is directly enforceable regardless of whether the requirement is a condition of the permit.

(1) The operator must maintain financial responsibility and resources until:

(i) The Director receives and approves the completed PISC and site closure plan; and

(ii) The Director approves site closure.

(2) The operator may be released from a financial instrument in the following circumstances:

(i) The operator has completed the phase of the geologic sequestration project for which the financial instrument was required and has fulfilled all its financial obligations as determined by the Director, including obtaining financial responsibility for the next phase of the GS project, if required; or

(ii) The operator has submitted a replacement financial instrument and received written approval from the Director accepting the new financial instrument and releasing the owner or operator from the previous financial instrument.
(c) The operator must have a detailed written estimate, in current dollars, of the cost of performing corrective action on wells in the AoR, plugging the injection well(s), PISC and site closure, and emergency and remedial response.

(1) The cost estimate must be performed for each phase separately and must be based on the costs to the regulatory agency of hiring a third party to perform the required activities. A third party is a party who is not within the corporate structure of the operator.

(2) During the active life of the geologic sequestration project, the operator must adjust the cost estimate for inflation within 60 days prior to the anniversary date of the establishment of the financial instrument(s) used to comply with paragraph (a) of this section and provide this adjustment to the Director. The operator must also provide to the Director written updates of adjustments to the cost estimate within 60 days of any amendments to the AoR and corrective action plan, the injection well plugging plan, the PISC and site closure plan, and the emergency and remedial response plan.

(3) The Director must approve any decrease or increase to the initial cost estimate. During the active life of the GS project, the operator must revise the cost estimate no later than 60 days after the Director has approved the request to modify the AoR and corrective action plan, the injection well plugging plan, the PISC and site closure plan, and the emergency and response plan, if the change in the plan increases the cost. If the change to the plans decreases the cost,...

(e) The operator must provide an adjustment of the cost estimate to the Director within 60 days of notification by the Director, if the Director determines during the annual evaluation of the qualifying financial responsibility instrument(s) that the most recent demonstration is no longer adequate to cover the cost of corrective action, injection well plugging, post-injection site care and site closure, and emergency and remedial response.

PROPOSED AMENDMENT

§5.205(c) Financial assurance.

(1) Injection and monitoring wells. The operator must comply with the requirements of §3.78 for all monitoring wells that penetrate the usable quality water and this subsection for all injection wells.

(2) Geologic storage facility.

(A) The applicant must include in an application for a geologic storage facility permit:

(i) a written estimate of the highest likely dollar amount necessary to perform PISC monitoring and closure of the facility that shows all assumptions and calculations used to develop the estimate;

(ii) a copy of the form of the bond or letter of credit that will be filed with the commission; and

(iii) information concerning the issuer of the bond or letter of credit including the issuer's name and address and evidence of authority to issue bonds or letters of credit in Texas.

(B) A geologic storage facility shall not receive CO₂ until a bond or letter of credit in an amount approved by the director under this subsection and meeting the requirements of this subsection as to form and issuer has been filed with and approved by the director.

(C) The determination of the amount of financial assurance for a geologic storage facility is subject to the following requirements:

(i) The director must approve the dollar amount of the financial assurance. The amount of financial assurance required to be filed under this subsection must be equal to or greater than the maximum amount necessary to perform corrective action, emergency response, and remedial action, PISC monitoring and site care, and closure of the geologic storage facility, **including plugging**, at any time during the permit term in accordance with all applicable state laws, commission rules and orders, and the permit. **The cost estimate must be performed for each phase separately and must be based on the costs to the regulatory agency of hiring a third party to perform the required activities. A third party is a party who is not within the corporate structure of the owner or operator;**

(ii) – (iii) No change.

(D) No change.

(E) During the active life of the geologic storage project, the operator must adjust the cost estimate for inflation within 60 days prior to the anniversary date of the establishment of the financial instrument(s) used to comply with paragraph (c)(2)(C)(i) of this section and provide this adjustment to the director. The operator must also provide to the director written updates of adjustments to the cost estimate within 60 days of any amendments to the area of review and corrective action plan, the injection well plugging plan, the post-injection storage facility care and closure plan, and the emergency and remedial response plan.

(F) The operator of a geologic storage facility must provide to the director, and the director must approve, annual written updates of the cost estimate to increase or decrease the cost estimate to account for any changes

to the AOR and corrective action plan, the emergency response and remedial action plan, the injection well plugging plan, and the PISC and closure plan. The Director must approve any decrease or increase to the initial cost estimate. **During the active life of the geologic storage project, the operator must revise the cost estimate no later than 60 days after the director has approved the request to modify the AOR and corrective action plan, the injection well plugging plan, the PISC and closure plan, and the emergency and response plan, if the change in the plan increases the cost. If the change to the plans decreases the cost, any withdrawal of funds must be approved by the Director. Any decrease to the value of the financial assurance instrument must first be approved by the Director. The revised cost estimate must be adjusted for inflation as specified at paragraph (c)(2)(E) of this section.** The operator must provide to the director, **within 60 days of notification by the director** ~~[upon request]~~ an adjustment of the cost estimate if the director **determines during the annual evaluation of the qualifying financial responsibility instrument(s) that the most recent** ~~[has reason to believe that the original]~~ demonstration is no longer adequate to cover the cost of **corrective action, injection well plugging and PISC and closure, and emergency and remedial response.**

(G) Whenever the current cost estimate increases to an amount greater than the face amount of a financial instrument currently in use, the operator, within 60 days after the increase, must either cause the face amount to be increased to an amount at least equal to the current cost estimate and submit evidence of such increase to the director, or obtain other financial responsibility instruments to cover the increase. Whenever the current cost estimate decreases, the face amount of the financial assurance instrument may be reduced to the amount of the current cost estimate only after the operator has received written approval from the director.

(H) The requirement to maintain adequate financial responsibility and resources is directly enforceable regardless of whether the requirement is a condition of the permit.

(i) The operator must maintain financial responsibility and resources until:

(I) The director receives and approves the completed post-injection storage facility care and closure plan; and

(II) The director approves storage facility closure.

(ii) The operator may be released from a financial instrument in the following circumstances:

(I) The operator has completed the phase of the geologic storage project for which the financial instrument was required and has fulfilled all its financial obligations as determined by the director, including obtaining financial responsibility for the next phase of the geologic storage project, if required; or

(II) The operator has submitted a replacement financial instrument and received written approval from the director accepting the new financial instrument and releasing the operator from the previous financial instrument.

(3) The director may consider allowing the phasing in of financial assurance for only corrective action based on project-specific factors.

(4) The director may approve a reduction in the amount of financial assurance required for post-injection monitoring and/or corrective action based on project-specific monitoring results.

(5) The operator must maintain financial responsibility requirements regardless of the status of the director's review of the financial responsibility demonstration.

§5.206 PERMIT STANDARDS

243. Texas does not require that all permits include a provision for Permit actions. **OK**

§144.51(f) Permit actions. This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

PROPOSED AMENDMENT

§5.206(a)

(1) Each condition applicable to a permit shall be incorporated into the permit either expressly or by reference. If incorporated by reference, a specific citation to the rules in this subchapter shall be given in the permit. The requirements listed in this section are directly enforceable regardless of whether the requirement is a condition of the permit.

(2) This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

142. State rule does not specifically refer to endangerment as causing a violation of National Primary Drinking Water Regulations or affecting the health of persons. While these have similar meaning to the CFR and likely would not affect stringency, clarification is recommended. **OK.**

§144.12(a) No operator shall construct, operate, maintain, convert, plug, abandon, or conduct any other injection activity in a manner that allows the movement of fluid containing any contaminant into USDWs, if the presence of that contaminant may cause a violation of any primary drinking water regulation under 40 CFR part 142 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 paragraph are met.

PROPOSED AMENDMENT

§5.206(b) General criteria. The director may issue a permit under this subchapter if the applicant demonstrates and the director finds that: ...

(3) the injection of anthropogenic CO₂ will not endanger or injure human health and safety;

(4) **the construction, operation, maintenance, conversion, plugging, abandonment, or conduct of any other injection activity in a manner that allows the movement of fluid containing any contaminant into USDWs, if the presence of that contaminant may cause a violation of any primary drinking water regulation under 40 CFR part 142 or may otherwise adversely affect the health of persons.**

397. Unclear in rule what is included on a “record of the well on the appropriate form showing the current completion.” This could be described in the PD and how it is equivalent to final injection well construction that meets the requirements of §146.86. TX rule revision needed.

§146.82(c)(5) Final injection well construction procedures that meet the requirements of §146.86;

PROPOSED AMENDMENT

§5.206(c) Injection well construction.

(1) Construction of anthropogenic CO₂ injection wells must meet the criteria in §5.203(e) of this title.

(2) Within 30 days after the completion or conversion of an injection well subject to this subchapter, the operator must file with the division a complete record of the well on **commission Form W-2, Oil Well Potential Test, Completion or Recompletion Report and Log** [~~the appropriate form~~] showing the current completion.

<https://www.rrc.texas.gov/media/sdbph42m/w-2-0114.pdf>

142. State rules include specific action items that the operator (not the director) would take in the case of USDW contamination but does not contain an explicit prohibition of fluid movement. TX rule revision needed to describe the state's response to contamination or endangerment events.

§144.12(b) If any water quality monitoring of an USDW indicates the movement of any contaminant into the USDW, except as authorized under part 146, the Director 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.

PROPOSED AMENDMENT

§5.206(h)(3) Action.

(A) If an operator obtains evidence that the injected CO₂ stream and associated pressure front may cause an endangerment to USDWs, the operator must:

- (A) immediately cease injection;
- (B) take all steps reasonably necessary to identify and characterize any release;
- (C) notify the director as soon as practicable but within at least 24 hours; and
- (D) implement the approved emergency and remedial response plan.

(B) If any water quality monitoring of an USDW indicates the movement of any contaminant into the USDW, except as authorized by an aquifer exemption, the director shall prescribe such additional requirements for construction, corrective action, operation, monitoring, or reporting (including plugging of the injection well) as are necessary to prevent such movement.

252-261. State rule does not identify the specific types of records to be kept. TX rule revision needed.

144.51(j)(2) and (3)

252. 144.51(j)(2)

253. 144.51(j)(2)(i)

254. 144.51(j)(2)(ii)

255. 144.51(j)(3)

256. 144.51(j)(3)(i)

257. 144.51(j)(3)(ii)

258. 144.51(j)(3)(iii)

259. 144.51(j)(3)(iv)

260. 144.51(j)(3)(v)

261. 144.51(j)(3)(vi)

§144.51 Conditions applicable to all permits.

(j) Monitoring and records

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

(i) Calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 3 yrs from the date of the sample, measurement, report, or application. This period may be extended by request of the Director at any time; and

(ii) The nature and composition of all injected fluids until three years after the completion of any plugging and abandonment procedures **specified under §144.52(a)(6), or under part 146 subpart G as appropriate.** The Director may require the owner or operator to deliver the records to the Director at the conclusion of the retention period.

(3) Records of monitoring information shall include:

- (i) The date, exact place, and time of sampling or measurements;
- (ii) The individual(s) who performed the sampling or measurements;
- (iii) The date(s) analyses were performed;
- (iv) The individual(s) who performed the analyses;
- (v) The analytical techniques or methods used; and
- (vi) The results of such analyses.

PROPOSED AMENDMENT

§5.206(m) Retention of records.

(1) 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 this permit, and records of all data used to complete the application for this permit, for a period of at least three (3) years from the date of the sample, measurement, report, or application. This period may be extended by request of the director at any time; and

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

EPA: procedures specified under which State rule? Need a reference here.

(2) Records of monitoring information shall include:

(A) the date, exact place, and time of sampling or measurements;

(B) the individual(s) who performed the sampling or measurements;

(C) the date(s) analyses were performed;

(D) the individual(s) who performed the analyses;

(E) the analytical techniques or methods used; and

(F) the results of such analyses.

(3) The operator must retain for 10 years following storage facility closure records collected during the PISC period. The operator must deliver the records to the director at the conclusion of the retention period, and the records must thereafter be retained at the Austin headquarters of the commission.

658. State provision does not include information from other well classes. While this is a minor difference, since Texas does not provide for a 50 year default timeframe it is recommended that this be included. TX rule revision needed.

§146.93(c)(2)(iv) Predictive models must be calibrated using existing information (e.g., at Class I, Class II, or Class V experimental technology well sites) where sufficient data are available;

§5.203(m)(8)(D) predictive models must be calibrated using existing information where sufficient data are available;

RRC NOTE: "e.g.," means "for example" which does not imply that the specific information listed is required.

392. This is the same provision as for the initial permit application. State rule does not appear to require updates to any permit application/permit elements prior to granting approval to inject. While the state does require pre-operational testing at 5.203(f), it is not clear how the results of the testing would be evaluated and the AoR, permit limits, or project plans updated prior to authorizing injection. This may affect stringency. The state should describe in the rule or program description how this would be ensured. §146.82(c)

401. While the state requires updated plugging plans be submitted prior to injection, it does not specify that the results of the testing be submitted and evaluated to determine if the AoR modeling and plans submitted with the initial permit application are adequate. TX rule revision needed §146.82(c)(9)

§146.82(c) Prior to granting approval for the operation of a Class VI well, the Director shall consider the following information:

(1) The final AOR based on modeling, using data obtained during logging and testing of the well and the formation as required by paragraphs (c)(2), (3), (4), (6), (7), and (10) of this section;

(2) Any relevant updates, based on data obtained during logging and testing of the well and the formation as required by paragraphs (c)(3), (4), (6), (7), and (10) of this section, to the information on the geologic structure and hydrogeologic properties of the proposed storage site and overlying formations, submitted to satisfy the requirements of paragraph (a)(3) of this section;

(4) The results of the formation testing program required at paragraph (a)(8) of this section;

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

(7) All available logging and testing program data on the well required by §146.87;

- (9) Any updates to the proposed AOR and corrective action plan, testing and monitoring plan, injection well plugging plan, PISC and site closure plan, or the emergency and remedial response plan submitted under paragraph (a), which are necessary to address new information collected during logging and testing of the well and the formation as required by all paragraphs of this section, and any updates to the alternative PISC timeframe demonstration submitted under paragraph (a), which are necessary to address new information collected during the logging and testing of the well and the formation as required by all paragraphs of this section; and
- (10) Any other information requested by the Director.

PROPOSED AMENDMENT

§5.206(d) Operating a geologic storage facility.

(1) Operating plan.

(A) The operator must maintain and comply with the approved operating plan.

(B) Prior to granting approval for the operation of a Class VI injection well, the operator shall submit and the director shall consider the following information:

(i) The final AOR based on modeling, using data obtained during logging and testing of the well and the formation as required by (d)(1)(B)(ii), (iii), (iv), (v), (vi), (vii), (viii) and (x) of this subparagraph;

(ii) Any relevant updates, based on data obtained during logging and testing of the well and the formation as required by _____ of this section, to the information on the geologic structure and hydrogeologic properties of the proposed storage site and overlying formations, submitted to satisfy the requirements of (d)(1)(iii), (iv), (v), (vi), (vii), and (x) of this subparagraph;

(iii) Information on the compatibility of the CO₂ stream with fluids in the injection zone(s) and minerals in both the injection and the confining zone(s), based on the results of the formation testing program, and with the materials used to construct the well;

(iv) The results of the formation testing program required at _____ of this section;

(v) Final injection well construction procedures that meet the requirements of _____;

(vi) The status of corrective action on wells in the area of review;

(vii) All available logging and testing program data on the well required by _____;

(viii) A demonstration of mechanical integrity pursuant to _____;

(ix) Any updates to the proposed area of review and corrective action plan, testing and monitoring plan, injection well plugging plan, post-injection storage facility care and closure plan, or the emergency and remedial response plan submitted under _____ of this section, which are necessary to address new information collected during logging and testing of the well and the formation as required by all paragraphs of this section, and any updates to the alternative post-injection storage facility care timeframe demonstration submitted under _____ of this section, which are necessary to address new information collected during the logging and testing of the well and the formation as required by all paragraphs of this section; and

(x) Any other information requested by the director.

(2) Operating criteria. No change.

237. Texas includes many of the provisions of 144.51 (Conditions applicable to all permits) , but only the provisions in §5.206 are required to be a permit condition. It may be appropriate to describe in the PD how Texas will ensure that all permits would have all of these requirements (i.e., elements of other sections). OK – PD (page ?) §144.51

266. May be appropriate to describe in the Program Description how Texas will ensure that all permits would have all of these requirements (i.e., elements of other sections).] OK [page? of PD] §144.51(1)(3) Transfers.

274. Texas includes many of the provisions of 144.51, but only the provisions in §5.206 are required to be a permit condition. Describe in PD how Texas will ensure that all permits would have all of these requirements (i.e., elements of other sections). See row 237. OK [page? of PD] 144.51(m)

275. Texas includes many of the provisions of 144.51, but only the provisions in §5.206 are required to be a permit condition. Describe in PD how Texas will ensure that all permits would have all of these requirements (i.e., elements of other sections). See row 237. OK [page? of PD] 144.51(m)(1)

§144.51 Conditions applicable to all permits. The following conditions apply to all UIC permits. All conditions applicable to all permits shall be incorporated into the permits either expressly or by reference. If incorporated by reference, a specific citation to these regulations (or the corresponding approved State regulations) must be given in the permit.

(1) *Reporting requirements* —

(1) *Planned changes.* The permittee shall give notice to the Director as soon as possible of any planned physical alterations or additions to the permitted facility.

(2) *Anticipated noncompliance.* The permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

(3) *Transfers.* This permit is not transferable to any person except after notice to the Director. The Director may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the Safe Drinking Water Act. (See [§ 144.38](#); in some cases, modification or revocation and reissuance is mandatory.)

(4) *Monitoring reports.* Monitoring results shall be reported at the intervals specified elsewhere in this permit.

(5) *Compliance schedules.* Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 30 days following each schedule date.

(6) *Twenty-four hour reporting.* The permittee shall report any noncompliance which may endanger health or the environment, including:

(i) Any monitoring or other information which indicates that any contaminant may cause an endangerment to a USDW; or

(ii) Any noncompliance with a permit condition or malfunction of the injection system which may cause fluid migration into or between USDWs. Any information shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances. A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause, the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

(7) *Other noncompliance.* The permittee shall report all instances of noncompliance not reported under paragraphs (1)(4), (5), and (6) of this section, at the time monitoring reports are submitted. The reports shall contain the information listed in paragraph (1)(6) of this section.

(8) *Other information.* Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Director, it shall promptly submit such facts or information.

§144.51(m) **Requirements prior to commencing injection.** A new injection well may not commence injection until construction is complete, and

(1) The permittee has submitted notice of completion of construction to the Director; and

(2)

(i) The Director has inspected or otherwise reviewed the new injection well and finds it is in compliance with the conditions of the permit; or

(ii) The permittee has not received notice from the Director of the Director's intent to inspect or otherwise review the new injection well within 13 days of the date of the notice in paragraph (m)(1), in which case prior inspection or review is waived and the permittee may commence injection. The Director shall include in his notice a reasonable time period in which he shall inspect the well.

§5.206(e) Monitoring, sampling, and testing requirements.

(1) The operator of a CO₂ injection well must maintain and comply with the approved monitoring, sampling, and testing plan to verify that the geologic storage facility is operating as permitted and that the injected fluids are confined to the injection zone.

(2) All permits shall include the following requirements:

(A) the proper use, maintenance, and installation of monitoring equipment or methods;

(B) monitoring including type, intervals, and frequency sufficient to yield data that are representative of the monitored activity including, when required, continuous monitoring;

(C) reporting no less frequently than as specified in §5.207 (Reporting and Record-Keeping).

(3) The director may require additional monitoring as necessary to support, upgrade, and improve computational modeling of the AOR evaluation and to determine compliance with the requirement that the injection activity not allow movement of fluid that would endanger USDWs.

(4) The director may require measures and actions designed to minimize and respond to risks associated with potential seismic events, including seismic monitoring.

(5) Monitoring and records.

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

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

(i) Calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the permit application, for a period of at least three (3) years from the date of the sample, measurement, report, or application. This period may be extended by request of the director at any time; and

(ii) The nature and composition of all injected fluids until three (3) years after the completion of any plugging and abandonment of the injection well. The director may require the operator to deliver the records to the Director at the conclusion of the retention period.

(C) Records of monitoring information shall include:

(i) The date, exact place, and time of sampling or measurements;

(ii) The individual(s) who performed the sampling or measurements;

(iii) The date(s) analyses were performed;

(iv) The individual(s) who performed the analyses;

(v) The analytical techniques or methods used; and

(vi) The results of such analyses.

(D) Operators of Class VI wells shall retain records as specified in subpart H of part 146, including §§ 146.84(g), 146.91(f), 146.92(d), 146.93(f), and 146.93(h) of this chapter.

(f) Mechanical integrity.

(1) The operator must maintain and comply with the approved mechanical integrity testing plan submitted in accordance with §5.203(j).

(2) **The operator must establish mechanical integrity prior to commencing injection or on a schedule determined by the director. Thereafter, other [Other] than during periods of well workover in which the sealed tubing-casing annulus is of necessity disassembled for maintenance or corrective procedures, the operator must maintain mechanical integrity of the injection well at all times.**

(3) **If the director determines that the injection well lacks mechanical integrity, the director shall give written notice of the director's determination to the operator. Unless the director requires immediate cessation, the operator shall cease injection into the well within 48 hours of receipt of the director's determination. The director may allow plugging of the well pursuant or require the permittee to perform such additional construction, operation, monitoring, reporting and corrective action as is necessary to prevent the movement of fluid into or between USDWs caused by the lack of mechanical integrity. The operator may resume injection upon written notification from the Director that the operator has demonstrated mechanical integrity.**

(4) **The Director may allow the operator of a well which lacks MI pursuant to §146.8(a)(1) to continue or resume injection, if the operator has made a satisfactory demonstration that there is no**

movement of fluid into or between USDWs. [~~The operator must either repair and successfully retest or plug a well that fails a mechanical integrity test.~~]

(5) [(4)] The director may require additional or alternative tests if the results presented by the operator do not demonstrate to the director that there is no significant leak in the casing, tubing, or packer or movement of fluid into or between formations containing USDWs resulting from the injection activity.

(g) AOR and corrective action. No change.

(h) Emergency, mitigation, and remedial response.

(1) Plan. The operator must maintain and comply with the approved emergency and remedial response plan required by §5.203(1). The operator must update the plan in accordance with §5.207(a)(2)(D)(vi) (Reporting and Record-Keeping). The operator must make copies of the plan available at the storage facility and at the company headquarters.

(2) Training. No change.

(3) Action. If an operator obtains evidence that the injected CO₂ stream and associated pressure front may cause an endangerment to USDWs, the operator must:

(A) immediately cease injection;

(B) take all steps reasonably necessary to identify and characterize any release;

(C) notify the director as soon as practicable but within at least 24 hours; and

(D) implement the approved emergency and remedial response plan.

(4) Resumption of injection. The director may allow the operator to resume injection prior to remediation if the operator demonstrates that the injection operation will not endanger USDWs.

(i) RRC witnessing of testing and logging. No change.

(j) Well plugging. No change.

288. The state financial responsibility obligation ends at the end of the PISC. Submission of a plugging report is not mentioned. See 146.93 and row 282. Does this specifically refer to the time at which the Director authorizes storage facility closure. §5.206(k)(5)? TX rule revision needed. §144.52(a)(7)(i)(A)
289. The state rule does not require financial responsibility be maintained until the well is converted. This is less stringent than the CFR. TX rule revision needed. §144.52(a)(7)(i)(B)

§144.52(a)(7)(i)

(A) The well has been plugged and abandoned in accordance with an approved plugging and abandonment plan pursuant to §§144.51(o), 146.10, and 146.92 of this chapter, and submitted a plugging and abandonment report pursuant to §144.51(p); or

(B) The well has been converted in compliance with the requirements of §144.51(n); or

144.51(n) The permittee shall notify the Director at such times as the permit requires before conversion or abandonment of the well.

RRC NOTE: §144.51(p) regarding submission of a plugging report applies to EPA-administered programs. Requirements regarding conversion of wells in the federal regulations deal with conversion of a Class I, Class II or Class V well to a Class VI well. Under these Class VI regulations, financial assurance is required until the Class VI well is plugged.

PROPOSED AMENDMENT

§5.206(k) Post-injection storage facility care and closure.

(1) Post-injection storage facility care and closure plan. No change.

(2) Post-injection storage facility monitoring. No change.

(3) Prior to closure. No change.

(4) Notice of intent for storage facility closure. No change.

(5) Authorization for storage facility closure. No operator may initiate storage facility closure until the director has approved closure of the storage facility in writing. After the director has authorized storage facility closure, the operator must plug all wells in accordance with the approved plan required by §5.203(k) of this title **and submit a plugging and abandonment report required by §**

(6) Storage facility closure report. No change.

(7) Certificate of closure. Upon completion of the requirements in paragraphs (3) - (6) of this subsection, the director will issue a certificate of closure. At that time, the operator is released from the requirement in §5.205(c) of this title to maintain financial assurance.

302. TX rule revision needed since CFR says “shall” and State’s says “may” on setting interim compliance schedules. The State should make that rule change to require permittees to specify a schedule of compliance with interim dates.

§144.53(a)(2)(ii) If the time necessary for completion of any interim requirement is more than 1 year and is not readily divisible into stages for completion, the permit shall specify interim dates for the submission of reports of progress toward completion of the interim requirements and indicate a projected completion date.

203. State rule does specify that the duration of a permit is throughout the PISC period. It also does not describe the 5-year permit review. However, there are provisions for AoR reevaluations. It may be appropriate to describe the equivalency in the PD. TX rule revision needed to specify that the duration of a Class VI permit is throughout the PISC. §144.36

§144.36 Duration of permits. UIC permits for Class VI wells shall be issued for the operating life of the facility and the PISC period. The Director shall review each issued Class ... VI well UIC permit at least once every 5 years to determine whether it should be modified, revoked and reissued, terminated or a minor modification made as provided in §§144.39, 144.40, or 144.41.

271. State requirement on the timing of noncompliance reporting is similar to the CFR but does not describe the content of the report; this is less stringent than the CFR. TX rule revision needed. 144.51(1)(6)(ii)

§144.51 Conditions applicable to all permits

(1)(6)(ii) Any noncompliance with a permit condition or malfunction of the injection system which may cause fluid migration into or between USDWs. Any information shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances. A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause, the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

282. Texas includes many of the provisions of 144.52, but only the provisions in §5.206 are required to be a permit condition. Describe in PD how Texas will ensure that all permits would have all of these requirements (i.e., elements of other sections). OK. [page ? of PD]

PROPOSED AMENDMENT

§5.206(o) Other permit terms and conditions.

(1) Protection of USDWs. In any permit for a geologic storage facility, the director must impose terms and conditions reasonably necessary to protect USDWs. **Permits issued under this subchapter shall be issued for the operating life of the facility and the post-injection storage facility care period. The director shall review each permit at least once every five years to determine whether it should be modified, revoked and reissued, or terminated.** Permits issued under this subchapter continue in effect until revoked, modified, or terminated by RRC. The operator must comply with each requirement set forth in this subchapter as a condition of the permit unless modified by the terms of the permit.

(2) Other conditions. The following conditions shall also be included in any permit issued under this subchapter.

(A) Duty to comply. No change.

(B) Need to halt or reduce activity not a defense. No change.

(C) Duty to mitigate. No change.

(D) Proper operation and maintenance. No change.

(E) Property rights not conveyed. No change.

(F) Activities not authorized. No change.

(G) Coordination with exploration. The permittee of a GS well shall coordinate with any operator planning to drill through the AOR to explore for oil and gas or geothermal resources and take all reasonable steps necessary to minimize any adverse impact on the operator’s ability to drill for and produce oil and gas or geothermal resources from above or below the GS facility.

(H) Duty to provide information. No change.

(I) Inspection and entry. No change.

(J) Schedule of compliance: The permit **shall [may]**, when appropriate, specify a schedule of compliance leading to compliance with all provisions of this subchapter and Chapter 3 of this title. **If the time necessary for completion of any interim requirement is more than one (1) year and is not readily divisible into stages for completion, the permit shall specify interim dates for the submission of reports of progress toward completion of the interim requirements and indicate a projected completion date.**

(i) Any schedule of compliance shall require compliance as soon as possible, and in no case later than three years after the effective date of the permit.

(ii) If the schedule of compliance is for a duration of more than one year from the date of permit issuance, then interim requirements and completion dates (not to exceed one year) must be incorporated into the compliance schedule and permit.

(iii) Progress reports must be submitted no later than 30 days following each interim date and the final date of compliance.

(K) The permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

EPA: OUT OF ORDER????

(N) Signatory requirement. All applications, reports, or information shall be signed and certified.

(O) Reporting requirements.

(i) Planned changes. The permittee shall give notice to the director as soon as possible of any planned physical alterations or additions to the permitted facility.

(ii) Anticipated noncompliance. The permittee shall give advance notice to the director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

(iii) Transfers. This permit is not transferable to any person except after notice to the Director. The Director may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the SDWA. (§144.38; in some cases, modification or revocation and reissuance is mandatory.)

(iv) Monitoring reports. Monitoring results shall be reported at the intervals specified elsewhere in this permit.

(v) Compliance schedules. Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 30 days following each schedule date.

(vi) Twenty-four hour reporting. The permittee shall report any noncompliance which may endanger health or the environment, including:

(I) Any monitoring or other information which indicates that any contaminant may cause an endangerment to a USDW; or

(II) Any noncompliance with a permit condition or malfunction of the injection system which may cause fluid migration into or between USDWs. Any information shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances. A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause, the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

(L) Other information. Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the director, it shall promptly submit such facts or information.

(M) Other noncompliance. The permittee shall report all instances of noncompliance not reported under subsection (e) of this section, relating to monitoring reports, subsection (o)(2)(J) of this section relating to compliance schedules, and §5.207(a)(2)(A) relating to 24-hour reporting, at the time monitoring reports are submitted. The reports shall contain the following information:

(i) Any monitoring or other information which indicates that any contaminant may cause an endangerment to a USDW; or

(ii) Any noncompliance with a permit condition or malfunction of the injection system which may cause fluid migration into or between USDWs. Any information shall be provided orally within twenty-four (24) hours from the time the permittee becomes aware of the circumstances. A written submission shall also be provided within five (5) days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause, the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

(N) New permits, and to the extent allowed under §5.202 modified or revoked and reissued permits, shall incorporate each of the applicable requirements referenced in this section. An applicable requirement is a State statutory or regulatory requirement that takes effect prior to final administrative disposition of the permit. An applicable requirement is also any requirement that takes effect prior to the modification or revocation and reissuance of a permit, to the extent allowed in §5.202.

(O) In addition to conditions required in all permits the commissioner shall establish conditions in permits as required on a case-by-case basis, to provide for and assure compliance with all applicable requirements of the Safe Drinking Water Act and 40 CFR Parts 144, 145, 146 and 124.

§5.207 REPORTING AND RECORD-KEEPING

611. No requirement to retain data collected to prepare the permit application. This is less stringent than the CFR. TX rule revision needed. §146.91(f)(1)

612. See Texas notes. No concerns for stringency. PD should describe the record retention process if it is not included in the regulations. TX rule revision needed. §146.91(f)(2)

§146.91 Reporting requirements

(f) Records shall be retained by the owner or operator as follows:

(1) All data collected under § 146.82 (Required Class VI permit information) for Class VI permit applications shall be retained throughout the life of the project and for 10 years following site closure.

(2) Data on the nature and composition of all injected fluids collected pursuant to § 146.90(a) shall be retained until 10 years after site closure. The Director may require the owner or operator to deliver the records to the Director at the conclusion of the retention period.

§ 146.90 Testing and monitoring requirements.

....Testing and monitoring associated with GS projects must, at a minimum, include:

(a) Analysis of the CO₂ stream with sufficient frequency to yield data representative of its chemical and physical characteristics;

(3) Monitoring data collected pursuant to § 146.90(b) through (i) shall be retained for 10 years after it is collected.

§ 146.90 Testing and monitoring requirements.

....Testing and monitoring associated with GS projects must, at a minimum, include:

(b) Installation and use, except during well workovers as defined in § 146.88(d), of continuous recording devices to monitor injection pressure, rate, and volume; the pressure on the annulus between the tubing and the long string casing; and the annulus fluid volume added;

(c) Corrosion monitoring of the well materials for loss of mass, thickness, cracking, pitting, and other signs of corrosion, which must be performed on a quarterly basis to ensure that the well components meet the minimum standards for material strength and performance set forth in § 146.86(b), by:

(1) Analyzing coupons of the well construction materials placed in contact with the carbon dioxide stream; or

(2) Routing the CO₂ stream through a loop constructed with the material used in the well and inspecting the materials in the loop; or

(3) Using an alternative method approved by the Director;

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

(1) The location and number of monitoring wells based on specific information about the GS project, including injection rate and volume, geology, the presence of artificial penetrations, and other factors; and

(2) The monitoring frequency and spatial distribution of monitoring wells based on baseline geochemical data that has been collected under § 146.82(a)(6) and on any modeling results in the AoR evaluation required by § 146.84(c).

(e) A demonstration of external mechanical integrity pursuant to § 146.89(c) at least once per year until the injection well is plugged; and, if required by the Director, a casing inspection log pursuant to requirements at § 146.89(d) at a frequency established in the testing and monitoring plan;

(f) A pressure fall-off test at least once every five years unless more frequent testing is required by the Director based on site-specific information;

(g) Testing and monitoring to track the extent of the CO₂ plume and the presence or absence of elevated pressure (e.g., the pressure front) by using:

(1) Direct methods in the injection zone(s); and,

(2) Indirect methods (e.g., seismic, electrical, gravity, or electromagnetic surveys and/or down-hole carbon dioxide detection tools), unless the Director determines, based on [site](#)-specific geology, that such methods are not appropriate;

....

(i) Any additional monitoring, as required by the Director, necessary to support, upgrade, and improve computational modeling of the AoR evaluation required under [§ 146.84\(c\)](#) and to determine compliance with standards under [§ 144.12](#) of this chapter;

(4) Well plugging reports, PISC data, including, if appropriate, data and information used to develop the demonstration of the alternative PISC timeframe, and the site closure report collected pursuant to requirements at [§§ 146.93\(f\)](#) and [\(h\)](#) shall be retained for 10 years following site closure.

146.93 Post-Injection Site Care and Site Closure

(f) The owner or operator must submit a site closure report to the Director within 90 days of site closure, which must thereafter be retained at a location designated by the Director for 10 years. The report must include:

(1) Documentation of appropriate injection and monitoring well plugging as specified in [§ 146.92](#) and [paragraph \(e\)](#) of this section. The operator must provide a copy of a survey plat which has been submitted to the local zoning authority designated by the Director. The plat must indicate the location of the injection well relative to permanently surveyed benchmarks. The owner or operator must also submit a copy of the plat to the RA of the appropriate EPA Regional Office;

(2) Documentation of appropriate notification and information to such State, local and Tribal authorities that have authority over drilling activities to enable such State, local, and Tribal authorities to impose appropriate conditions on subsequent drilling activities that may penetrate the injection and confining zone(s); and

(3) Records reflecting the nature, composition, and volume of the carbon dioxide stream.

(h) The operator must retain for 10 years following site closure, records collected during the PISC period. The operator must deliver the records to the Director at the conclusion of the retention period, and the records must thereafter be retained at a location designated by the Director for that purpose.

(5) The Director has authority to **require the owner or operator** to retain any records required in this subpart for longer than 10 years after site closure.

PROPOSED AMENDMENT

§5.206(m) Retention of records. The operator must retain for 10 years following storage facility closure **records collected to prepare the permit application, data on the nature and composition of all injected fluids, and** records collected during the PISC period. The operator must deliver the records to the director at the conclusion of the retention period, and the records must thereafter be retained at the Austin headquarters of the commission.

§5.207(e) Record retention. The operator shall retain records as follows:

(1) All data collected under §5.203 for Class VI permit applications shall be retained throughout the life of the geologic sequestration project and for 10 years following storage facility closure.

(2) Data on the nature and composition of all injected fluids collected pursuant to §5.203(j)(2)(A) shall be retained until 10 years after storage facility closure. The operator shall deliver the records to the director at the conclusion of the retention period, and the records must thereafter be retained at the Austin headquarters of the Commission.

(3) Monitoring data collected pursuant to §5.203(j) shall be retained for 10 years after it is collected.

(4) Well plugging reports, post-injection storage facility care data, including, data and information used to develop the demonstration of the alternative post-injection storage facility care timeframe, and the closure report collected pursuant to requirements at §5.206(k)(6) and (m) shall be retained for 10 years following storage facility closure.

(5) The operator must retain all wellhead pressure records, metering records, and integrity test results for at least 10 years.

(6) The operator must retain all documentation of good faith claim to necessary and sufficient property rights to operate the geologic storage facility until the director issues the final certificate of closure in accordance with §5.206(k)(7) of this title.

(7) The director has authority to require the operator to retain any records required in this subsection for longer than 10 years after storage facility closure. The director may require the operator to deliver the records to the director at the conclusion of the retention period.

**601. State requirement does not specifically require reporting of noncompliance or malfunction.
§146.91(c)(2)**

§146.91 (Reporting requirements)

(c) Report, within 24 hours:

- (1) Any evidence that the injected CO₂ stream or associated pressure front may cause an endangerment to a USDW;
- (2) Any noncompliance with a permit condition, or malfunction of the injection system, which may cause fluid migration into or between USDWs;
- (3) Any triggering of a shut-off system (*i.e.*, down-hole or at the surface);
- (4) Any failure to maintain mechanical integrity; or
- (5) Pursuant to compliance with the requirement at [§ 146.90\(h\)](#) for surface air/soil gas monitoring or other monitoring technologies, if required by the Director, any release of carbon dioxide to the atmosphere or biosphere.

PROPOSED AMENDMENT

§5.207(a) The operator of a geologic storage facility must provide, at a minimum, the following reports to the director and retain the following information:

(1) Test records. No change.

(2) Operating reports. The operator also must include summary cumulative tables of the information required by the reports listed in this paragraph.

(A) Report within 24 hours. The operator must report **the following** to the **director and the** appropriate district office **orally as soon as practicable, but within 24 hours, following discovery, and in writing within five working days. The written submission shall contain a description of the noncompliance and its cause, the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.**

(i) ~~The [the] discovery of any significant pressure changes or other monitoring data that indicate the presence of leaks in the well or the lack of confinement of the injected gases to the geologic storage reservoir. [Such report must be made orally as soon as practicable, but within 24 hours, following the discovery of the leak, and must be confirmed in writing within five working days].~~

(ii) Any evidence that the injected CO₂ stream or associated pressure front may cause an endangerment to a USDW.

(iii) Any noncompliance with a permit condition, or malfunction of the injection system, which may cause fluid migration into or between USDWs.

(iv) Any triggering of a shut-off system (*i.e.*, down-hole or at the surface).

(v) Any failure to maintain mechanical integrity.

(B) - (D) No change.