10. EMERGENCY AND REMEDIAL RESPONSE PLAN
40 CFR 146.94

CLECO DIAMOND VAULT PROJECT

Facility Information

Facility name: DIAMOND VAULT

Facility contact: Sensitive, Confidential, or Privileged Information [redacted]

Well name: CLDV-IW6

Well location: RAPIDES PARISH, LOUISIANA
Sensitive, Confidential, or Privileged Information [redacted]

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10.0 Emergency and Remedial Response Plan

10.1 Introduction (CFR 40 146.94 (a)(b)(c))

This Emergency and Remedial Response Plan (ERRP) describes actions that Cleco Power, LLC will take to address movement of the injection fluid or formation fluid in a manner that may endanger an underground source of drinking water (USDW) during the construction, operation, or post-injection site care periods of injection well CLDV-IW6, in accordance with 40 CFR146.94

If Cleco Power, LLC obtains evidence that the injected carbon dioxide (CO_2) stream and/or associated pressure front may cause an endangerment to a USDW, Cleco Power, LLC will perform the following actions:

1. Cease injection and initiate shutdown plan for the injection well.
2. Take all steps reasonably necessary to identify and characterize any release.
3. Notify the permitting agency/UIC Program Director (UIC Director) of the emergency event within 24 hours.
4. Implement applicable portions of the approved ERRP.

If a non-emergency shutdown of the CO_2 injection system is required, the operator will complete the shutdown in a stepwise approach to prevent over-pressure situations and/or damage to the equipment. Efforts will also be made to maintain the CO_2 in the injection stream in a supercritical phase to prevent special operations during the restart of the system.

CO_2 injection will only resume with the consent of the UIC Director. If Cleco Power, LLC can demonstrate that the injection operation will not endanger USDWs, the UIC Director may allow the resumption of injection prior to remediation.

10.2 Local Resources and Infrastructure

Resources in the vicinity of the Cleco Diamond Vault Project that may be affected as a result of an emergency event at the project site include: USDWs, existing network of shallow groundwater wells, newly drilled wells associated with the Testing and Monitoring program, public traffic on Interstate Highway I49 and Highway 8, Brame Energy Center, and Boise Cascade Engineered Wood Products.

The main body of water at the Cleco site location is Lake Rodemacher. This lake provides cooling water to the power plant, is open to the public, and is managed by Cleco Power, LLC and the Louisiana Department of Wildlife and Fisheries. This lake has a size of 3,070 acres (4.8 mi2) and has an average depth of 9 ft. East of the facility is the distributary Red River which has a watershed that covers 65,590 mi2 and flows southeast until it meets the Mississippi River (Benke and Cushing, 2005). For more information on the hydrogeology at the Cleco site location

refer to section 1.2.7 Hydrologic and Hydrogeologic Information of the Project Narrative (Permit Section 1).

The land within the area of review (AoR) consists primarily of cropland with sparse residential or agricultural buildings. There are no public buildings, such as schools or hospitals in the AoR. Additionally, there are no residential groundwater wells within the AoR.

Resources and infrastructure addressed in this plan are shown in Figure 10-1.

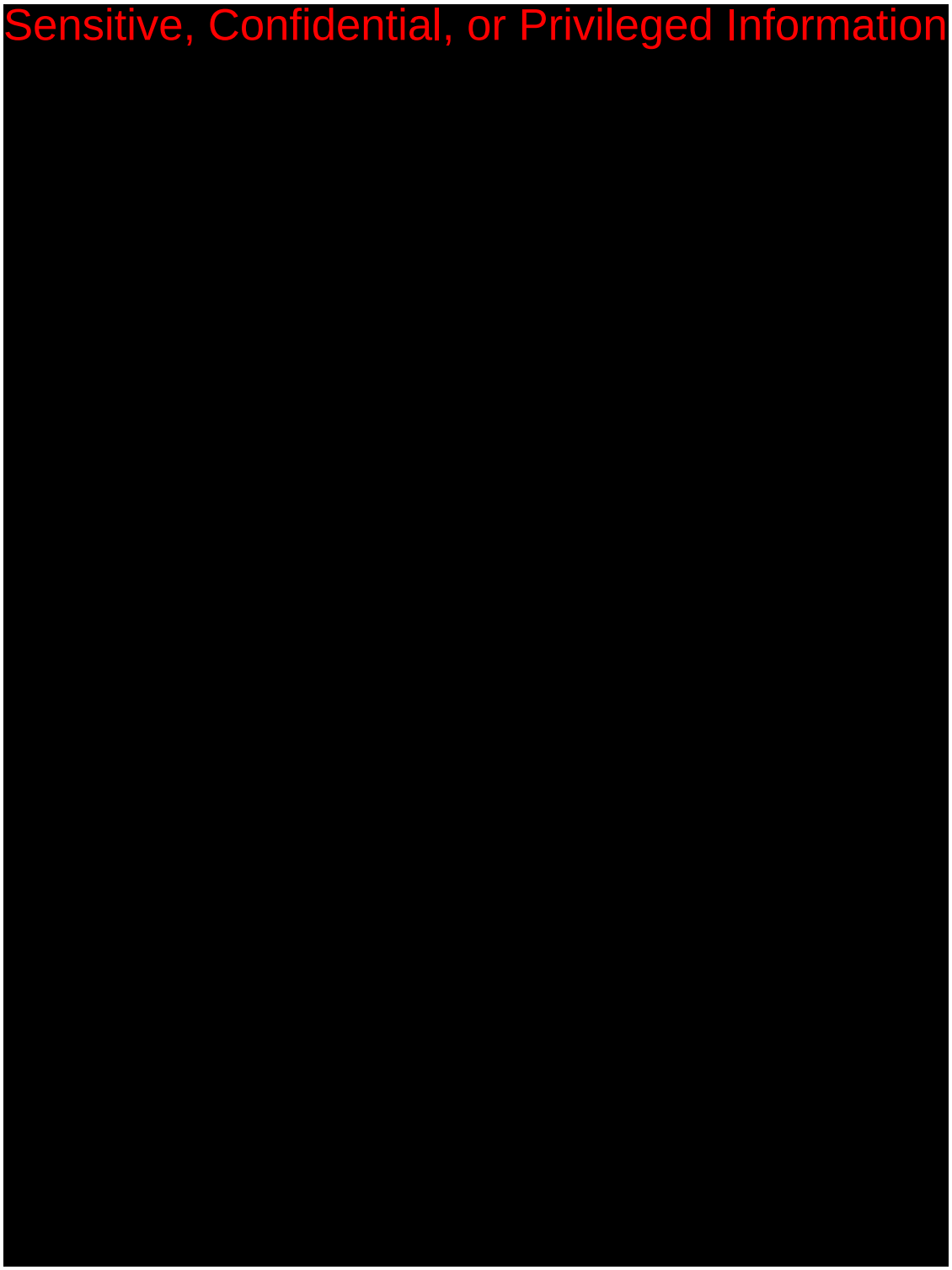


Figure 10-1: Map of Diamond Vault showing six proposed injection wells, site resources and infrastructure.

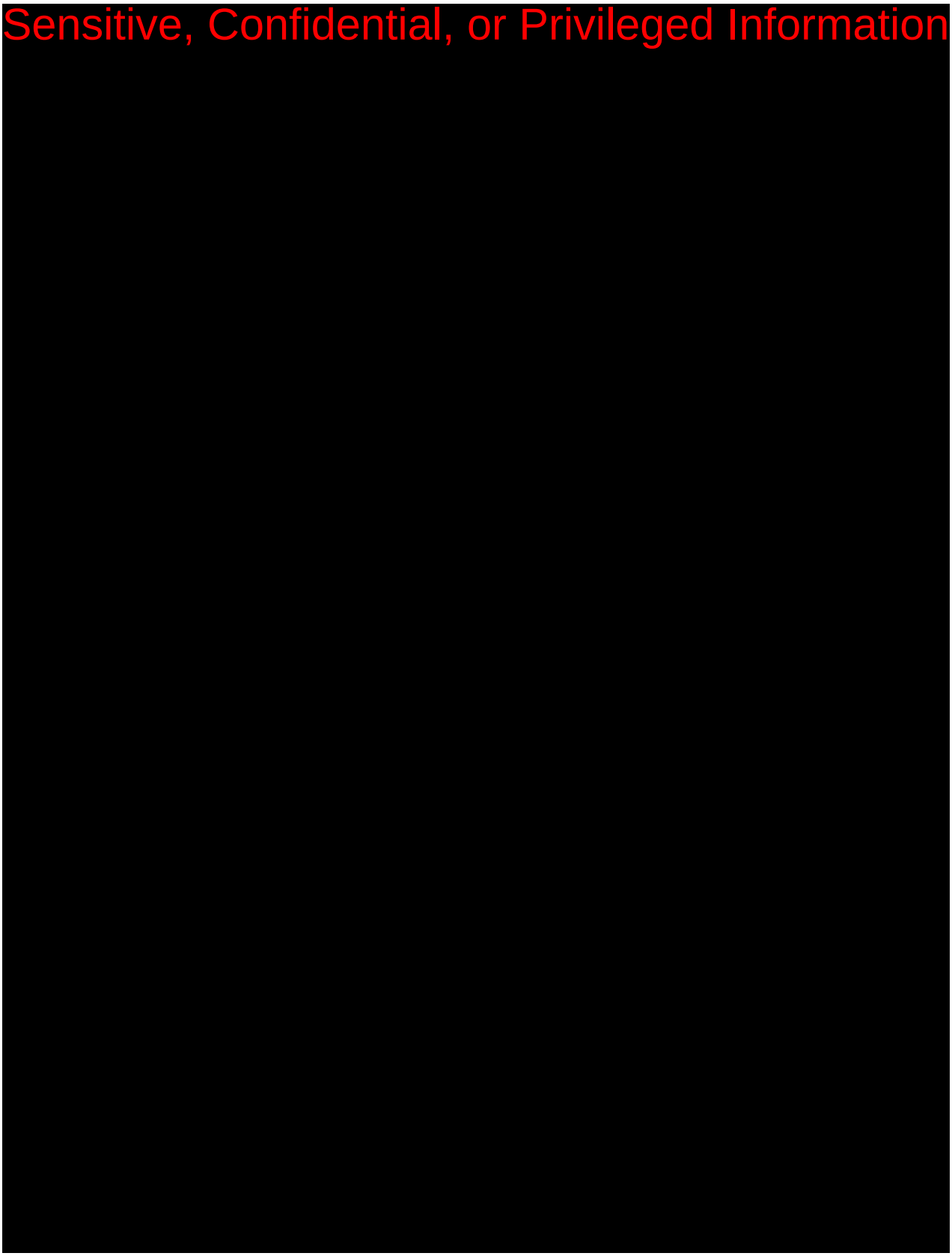


Figure 10-2: Map of proposed injection well CLDV-IW6

10.3 Potential Risk Scenarios

The following events related to the Cleco Diamond Vault Project could potentially result in an emergency response:

1. Injection well or deep monitoring well integrity failure.
2. Injection well monitoring equipment failure (e.g., shut-off valve or pressure gauge, etc.).
3. A natural disaster (e.g., earthquake, tornado, lightning strike).
4. Fluid (e.g., brine) leakage to a USDW.
5. CO_2 leakage to USDW or land surface.
6. Induced seismic event.

Response actions will depend on the severity of the event(s) triggering an emergency response and are categorized below in Table 10-1.

In addition to the potential risk scenarios listed above a project risk assessment has been undertaken. A summary of this exercise is shown in Appendix A which describes the main risks identified for this project.

Emergency Condition	Definition
Major emergency	Event poses immediate substantial risk to human health, USDWs, other resources, or infrastructure. Emergency actions involving local authorities (evacuation or isolation of areas) should be initiated.
Serious emergency	Event poses potential serious (or significant) near-term risk to human health, resources, or infrastructure if conditions worsen, or no response actions taken.
Minor emergency	Event poses no immediate risk to human health, resources, or infrastructure.

Table 10-1: Degrees of risk for emergency events.

10.4 Emergency Identification and Response Actions

Steps to identify and characterize an emergency event will be dependent on the specific issue identified and the severity of the event. Each of the potential risk scenarios identified in the previous section are detailed below.

10.4.1 Well Integrity Failure

Integrity loss of the injection well and/or the deep monitoring well may endanger USDWs. Automatic shutdown devices will be activated if the following events occur:

- Wellhead (injection) pressure exceeds the maximum operating pressure specified in the permit.
- Annulus pressure indicates a loss of external or internal well containment.
- Mechanical integrity test (MIT) results identify a loss of mechanical integrity.

Response actions for the situations listed above are detailed below in Table 10-2.

Emergency Condition	Response Action and Notification Procedures
All	1. Notify the Cleco Power, VP Generation Operations 2. Notify the UIC Director within 24 hours of the emergency event, per 40 CFR 146.91(c). 3. After an initial assessment, the VP Generation Operations will notify other Project Management and Operational Personnel. 4. Determine the severity of the event, based on the information available, within 24 hours of notification.
Major or Serious	1. Initiate shutdown plan. a. Shut in well (close flow valve). Prior to closing the flow valve, notify plant personnel to direct CO_2 from the Scrubbers to the auxiliary maintenance well. b. Check wind direction. c. Mark an exclusion zone around the affected area/well to limit access to authorized personnel only. d. Notify plant safety personnel that well has been shut down. e. Vent excess CO_2 from surface lines and well, as necessary to reduce pressures and clear lines. f. Notify local authorities and plant personnel, as necessary. g. If evacuation plan must be implemented, notify all surrounding businesses and offices, and local authorities. h. Monitor the well conditions (i.e., pressures, temperatures, and annulus pressure) to determine potential causes and the extent of any failure, as well as any additional steps in the emergency procedure. 2. Evaluate whether any leaks to groundwater or surface water occurred. 3. If contamination of groundwater or surface water is detected, identify, and implement appropriate remedial actions (in consultation with the UIC Program Director).
Minor	1. Conduct assessment to determine whether there has been a loss of mechanical integrity. 2. If there has been a loss of mechanical integrity, initiate shutdown plan. 3. For shutdown plan, implement the following: a. Shut in well (close flow valve). Prior to closing the flow valve, notify plant personnel to direct CO_2 from the Scrubbers to the auxiliary maintenance well.. b. Vent excess CO_2 from surface lines and well, as necessary to reduce pressures and clear lines. c. Mark an exclusion zone around the affected well to limit access to well to authorized personnel only. d. Notify plant safety personnel that well has been shut down. e. Monitor the well conditions (i.e., pressures, temperatures, and annulus pressure) to determine potential causes and the extent of any failure. f. Identify and, if necessary, implement appropriate remedial actions in consultation with the UIC Program Director.

Table 10-2: Response actions to an emergency associated with well integrity failure.

10.4.2 Injection Well Monitoring Equipment Failure

The failure of monitoring equipment for wellhead pressure, temperature, and/or annulus pressure may indicate a problem with the injection well that could endanger USDWs. Most equipment failures can be rapidly addressed by replacing the failed pieces of equipment and are likely minor emergencies. However, if the situation cannot be quickly addressed, system shutdown may be required.

The response actions to an emergency associated with well equipment failure is detailed below in Table 10-3.

Emergency Condition	Response Action and Notification Procedures
All	1. Notify the Cleco Power, VP Generation Operations 2. Notify the UIC Director within 24 hours of the emergency event, per 40 CFR 146.91(c). 3. After an initial assessment, the VP Generation Operations will notify other Project Management and Operational Personnel. 4. Determine the severity of the event, based on the information available, within 24 hours of notification.
Major or Serious	1. Initiate shutdown plan. a. Shut in well (close flow valve). Prior to closing the flow valve, notify plant personnel to direct CO_2 from the Scrubbers to the auxiliary maintenance well. b. Vent excess CO_2 from surface lines and well, as necessary to reduce pressures and clear lines. c. Mark an exclusion zone around the affected well to limit access to well. d. Notify local authorities and plant personnel, as necessary. e. Monitor the well conditions (i.e., pressures, temperatures, and annulus pressure) to determine additional steps in the emergency procedure. 2. Identify and, if necessary, implement appropriate remedial actions (in consultation with the UIC Program Director).
Minor	1. Conduct assessment to determine whether there has been a loss of mechanical integrity. 2. If there has been a loss of mechanical integrity, initiate shutdown plan. 3. For shutdown plan, implement the following: a. Shut in well (close flow valve). Prior to closing the flow valve, notify plant personnel to direct CO_2 from the Scrubbers to the auxiliary maintenance well.. b. Vent excess CO_2 from surface lines and well, as necessary to reduce pressures and clear lines. c. Reset or repair automatic shutdown devices, if necessary. d. Monitor the well conditions (i.e., pressures, temperatures, and annulus pressure) to determine potential causes and the extent of any failure. 4. Repair or replace monitoring equipment that failed. 5. Identify and, if necessary, implement appropriate remedial actions in consultation with the UIC Program Director.

Table 10-3: Response actions to an emergency associated with well equipment failure.

10.4.3 Potential Brine or CO_2 Leakage to USDW

Elevated concentrations of indicator parameter(s) in groundwater sample(s) from groundwater wells or increased pressures in the above confining zone (ACZ) wells may indicate fluid (brine) or CO_2 leakage into a USDW.

The response actions to an emergency associated with potential brine or CO_2 leakage to a USDW is detailed below in Table 10-4.

Emergency Condition	Response Action and Notification Procedures
All	1. Notify the Cleco Power, VP Generation Operations 2. Notify the UIC Director within 24 hours of the emergency event, per 40 CFR 146.91(c). 3. After an initial assessment, the VP Generation Operations will notify other Project Management and Operational Personnel. 4. Determine the severity of the event, based on the information available, within 24 hours of notification. 5. For all cases of confirmed migration of non-native fluid or CO_2 above the confining zone: a. Initiate shutdown plan. i. Shut in well (close flow valve). Prior to closing the flow valve, notify plant personnel to direct CO_2 from the Scrubbers to the auxiliary maintenance well. ii. Vent excess CO_2 from surface lines and well, as necessary to reduce pressures and clear lines. iii. Mark an exclusion zone around the affected well to limit access to affected area. iv. Notify local authorities and plant personnel, as necessary. v. Monitor the well conditions (i.e., pressures, temperatures, geochemical parameter, temperature data, etc.) to determine additional steps in the emergency procedure. b. Collect confirmation sample(s) of groundwater and analyze for indicator parameters. See Table 7-6 of the Testing and Monitoring Plan. 6. If the leakage of non-native fluid or CO_2 is confirmed, develop (in consultation with the UIC Program Director) a case-specific plan with various methods to address any unacceptable impacts to the affected USDW while achieving certain goals. The goals and proposed methods are as follows: a. Install additional groundwater monitoring points near the affected groundwater well(s) to delineate the extent of impact. b. Remediate the affected USDW to mitigate any unsafe conditions through the installation of: i. A system to intercept and extract non-native fluid or CO_2; or ii. A pump-and-treat type system to aerate the water contaminated with CO_2 to purge the CO_2 from the water. c. Arrange for an alternate potable water supply if the USDW was being utilized as a drinking water source and has exceeded drinking water standards by CO_2 or brine infiltration. d. Continue groundwater remediation and monitoring on a frequent basis (frequency to be determined by Cleco Power, LLC and the UIC Director) until unacceptable adverse USDW impact has been addressed.

Table 10-4: Response actions to an emergency associated with potential Brine or CO2 leakage to a USDW.

10.4.4 Natural Disaster

Well problems (integrity loss, leakage, or malfunction) may arise because of a natural disaster affecting the normal operation of the injection well. An earthquake may disturb surface and/or subsurface facilities and weather-related disasters (e.g., tornado or lightning strike) may affect surface facilities. The Cleco Diamond Vault facility lies outside the Federal Emergency Management Agency Adverse Effects (FEMA AE) Zone for floodplains.

The response actions to an emergency associated with a natural disaster are detailed below in Table 10-5.

Emergency Condition	Response Action and Notification Procedures
All	1. Notify the Cleco Power, VP Generation Operations 2. Notify the UIC Director within 24 hours of the emergency event, per 40 CFR 146.91(c). 3. After an initial assessment, the VP Generation Operations will notify other Project Management and Operational Personnel. 4. Determine the severity of the event, based on the information available, within 24 hours of notification.
Major or Serious	1. Initiate shutdown plan. a. Confirm no leakage from the CO_2 injection system. b. Shut in well (close flow valve). Prior to closing the flow valve, notify plant personnel to direct CO_2 from the Scrubbers to the auxiliary maintenance well. c. Vent excess CO_2 from surface lines and well, as necessary to reduce pressures and clear lines. d. Mark an exclusion zone around the affected well to limit access. e. Notify local authorities and plant personnel, as necessary. f. Determine if any leaks to groundwater or surface water occurred. g. Monitor the well conditions (i.e., pressures, temperatures, etc.) to determine additional steps in the emergency procedure. 2. If contamination or endangerment is detected, identify, and implement appropriate remedial actions (in consultation with the UIC Program Director).
Minor	1. Conduct assessment to determine whether there has been a loss of mechanical integrity. 2. If there has been a loss of mechanical integrity, initiate shutdown plan. For shutdown plan, implement the following: i. Shut in well (close flow valve). Prior to closing the flow valve, notify plant personnel to direct CO_2 from the Scrubbers to the atmosphere. ii. Vent excess CO_2 from surface lines and well, as necessary to reduce pressures and clear lines. iii. Monitor the well conditions (i.e., pressures, temperatures, and annulus pressure) to determine potential causes and the extent of any failure. 3. Identify and, if necessary, implement appropriate remedial actions in consultation with the UIC Program Director.

Table 10-5: Response actions to an emergency associated with a natural disaster.

10.4.5 Induced Seismic Event

The Cleco Diamond Vault Project is in a seismically stable region. To monitor the AoR for any potential seismic activity, a network of surface seismological stations will be deployed to continuously record background seismic activity. The number of required stations will be determined based on a site-specific modeling exercise incorporating the AoR and the seismic event magnitudes to be monitored. Baseline microseismic data will be acquired for six months prior to the start of injection operations. Triggered seismic event data will be processed to provide seismic moment magnitude and precise location and depth information on a real-time basis and reported daily should any occur.

Based on the periodic analysis of the monitoring data, observed level of seismic activity, and local reporting of felt events, the site will be assigned an operating state based on the protocol described in Table 10-6. The operating state is determined using threshold criteria which correspond to the site's potential risk and level of seismic activity. The operating state provides operating personnel information about the potential risk of further seismic activity and guides them through a series of response actions.

Operating State	Threshold Condition	Response Action
Green	Seismic events less than or equal to M1.5	1. Continue normal operation within permitted levels.
Yellow	Five (5) or more seismic events within a 30-day period having a magnitude greater than M1.5 but less than or equal to M2.0	1. Continue normal operation within permitted levels. 2. Within 24 hours of the fifth event, notify the UIC Director of the operating status of the well.
Orange	Seismic event greater than M1.5 and local observation or felt report Seismic event greater than M2.0 and no felt report	1. Continue normal operation within permitted levels. 2. Within 24 hours of the incident, notify the UIC Director, of the operating status of the well. 3. Review seismic and operational data. 4. Report findings to the UIC Director and issue corrective actions.
Magenta	Seismic event greater than M2.0 and local observation or report	1. Initiate rate reduction plan. 2. Within 24 hours of the incident, notify the UIC Director of the operating status of the well. 3. Communicate with facility personnel and local authorities to initiate evacuation plans, as necessary. 4. Monitor well pressure, temperature, and annulus pressure to verify well status and determine the cause and extent of any failure; identify and implement appropriate remedial actions (in consultation with the UIC Director). 5. Determine if leaks to ground water or surface water occurred. 6. If USDW contamination is detected, notify the UIC Director within 24 hours of the determination. 7. Review seismic and operational data. 8. Report findings to the UIC Director and issue corrective actions.
Red	Seismic event greater than M2.0, and local observation or report, and local report and confirmation of damage Seismic event >M3.5	1. Initiate shutdown plan. 2. Within 24 hours of the incident, notify the UIC Director of the operating status of the well. 3. Communicate with facility personnel and local authorities to initiate evacuation plans, as necessary. 4. Monitor well pressure, temperature, and annulus pressure to verify well status and determine the cause and extent of any failure; identify and implement appropriate remedial actions (in consultation with the UIC Director). 5. Determine if leaks to ground water or surface water occurred. 6. If USDW contamination is detected, notify the UIC Director within 24 hours of the determination. 7. Review seismic and operational data. 8. Report findings to the UIC Director and issue corrective actions.

Table 10-6: Induced seismicity protocol for seismic events located with an epicenter within the AoR.

10.5 Response Personnel and Equipment

Site personnel, project personnel, and local authorities will be relied upon to implement this ERRP.

The current emergency contact list can be found in the most recent Spill Prevention, Control, and Countermeasure (SPCC) document controlled by Cleco Power, LLC. An example of this contact list is found in Appendix 10.B.

Cleco Power, LLC will provide the current emergency contact list to the UIC Director.

Equipment needed in the event of an emergency and remedial response will vary, depending on the triggering emergency event. Response actions (cessation of injection, well shut-in, and evacuation) will generally not require specialized equipment to implement. Where specialized equipment (such as a drilling rig or logging equipment) is required, Cleco Power, LLC shall be responsible for its procurement.

10.6 Emergency Communications Plan

Cleco Power, LLC will communicate to the public about any event that requires an emergency response to ensure that the public understands what happened and whether there are any environmental or safety implications, in consultation with the UIC Director. The amount of information, timing, and communications method(s) will be appropriate to the event, its severity, whether any impacts to drinking water or other environmental resources occurred, any impacts to the surrounding community, and their awareness of the event.

Cleco Power, LLC will describe what happened, any impacts to the environment or other local resources, how the event was investigated, what responses were taken, and the status of the response. For responses that occur over the long-term (e.g., ongoing cleanups), Cleco Power, LLC will provide periodic updates on the progress of the response action(s).

Cleco Power, LLC will also communicate with entities who may need to be informed about or act in response to the event, including local water systems, CO_2 source(s) and pipeline operators, landowners, and Regional Response Teams (as part of the National Response Team).

Emergency situations related to the injection project and described in this EERP will be managed by the Cleco Power, LLC communication team. All media communications with the public through either interview, press releases, website postings, or other.

The individual to be designated by Cleco Power, LLC will be the first contact during an emergency event. This individual will contact the crisis communication team as appropriate.

Individuals assigned the emergency response communications duties should have availability 24-hours a day in the event of an emergency.

10.7 Plan Review (40 CFR 146.94 (d))

This ERRP shall be reviewed:

- At least once every five-years following its approval by the permitting agency.
- Within one-year of an AoR re-evaluation.
- Within six-months following any significant changes to the injection process or the injection facility, or an emergency event; or
- As required by the permitting agency.

If the review indicates that no amendments to the ERRP are necessary, Cleco Power, LLC will provide the permitting agency with the documentation supporting the "no amendment necessary" determination.

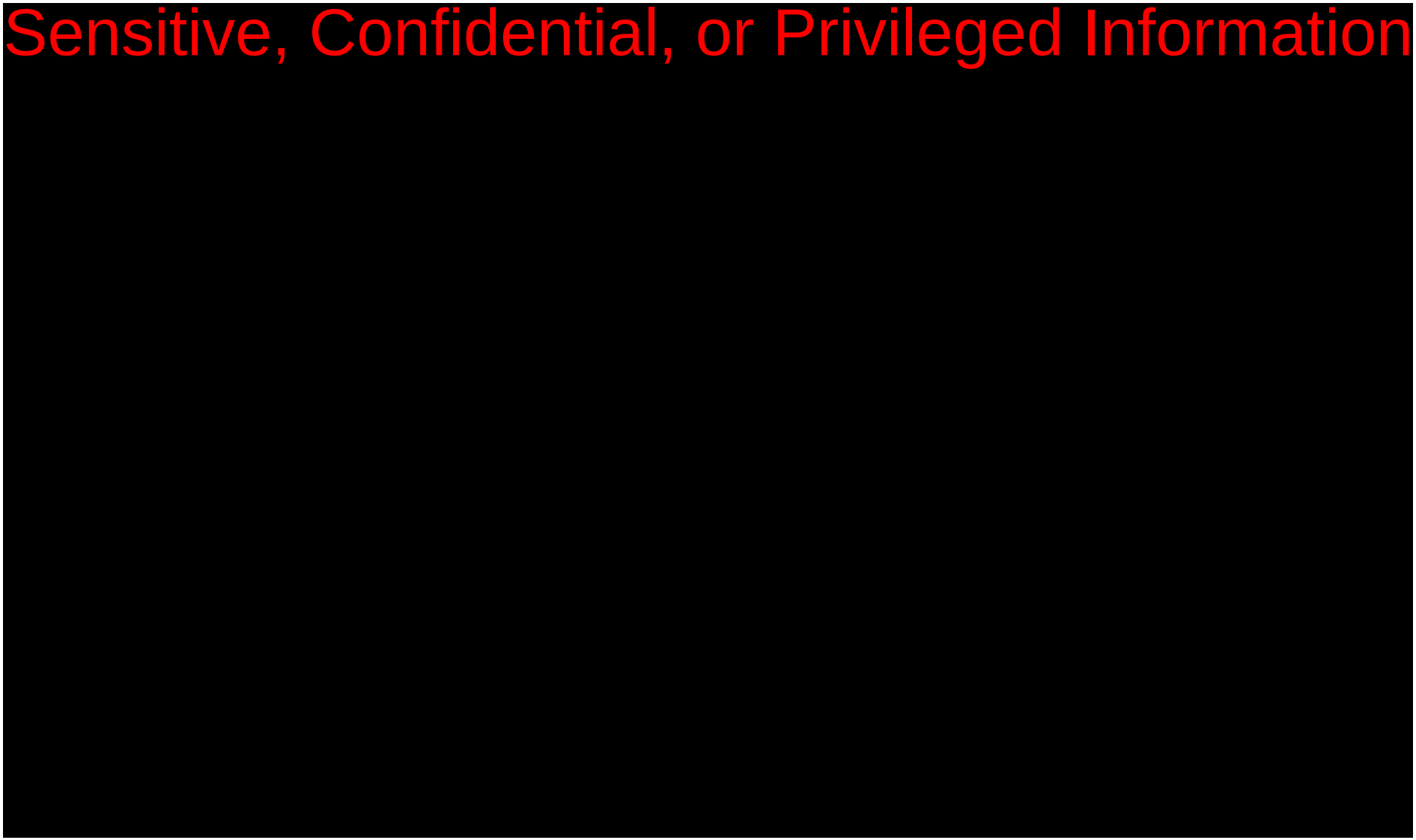
If the review indicates that amendments to the ERRP are necessary, amendments shall be made and submitted to the permitting agency within six-months following an event that initiates the ERRP review procedure.

10.8 Staff Training and Exercise Procedures

Cleco Power, LLC will integrate this ERRP into the project-specific standard operating procedures and training program. Periodic training will be provided, not less than annually, to appropriate personnel. The training plan will document that the personnel have been trained and possess the required skills to perform their relevant emergency response activities described in the ERRP.

Appendix 10.A – FMEA Risk Assessment

A detailed Failure, Mode, Effect, Analysis (FMEA) risk assessment has been completed. Identified risks with a Risk Priority Number (RPN) of greater than 100 are summarized below.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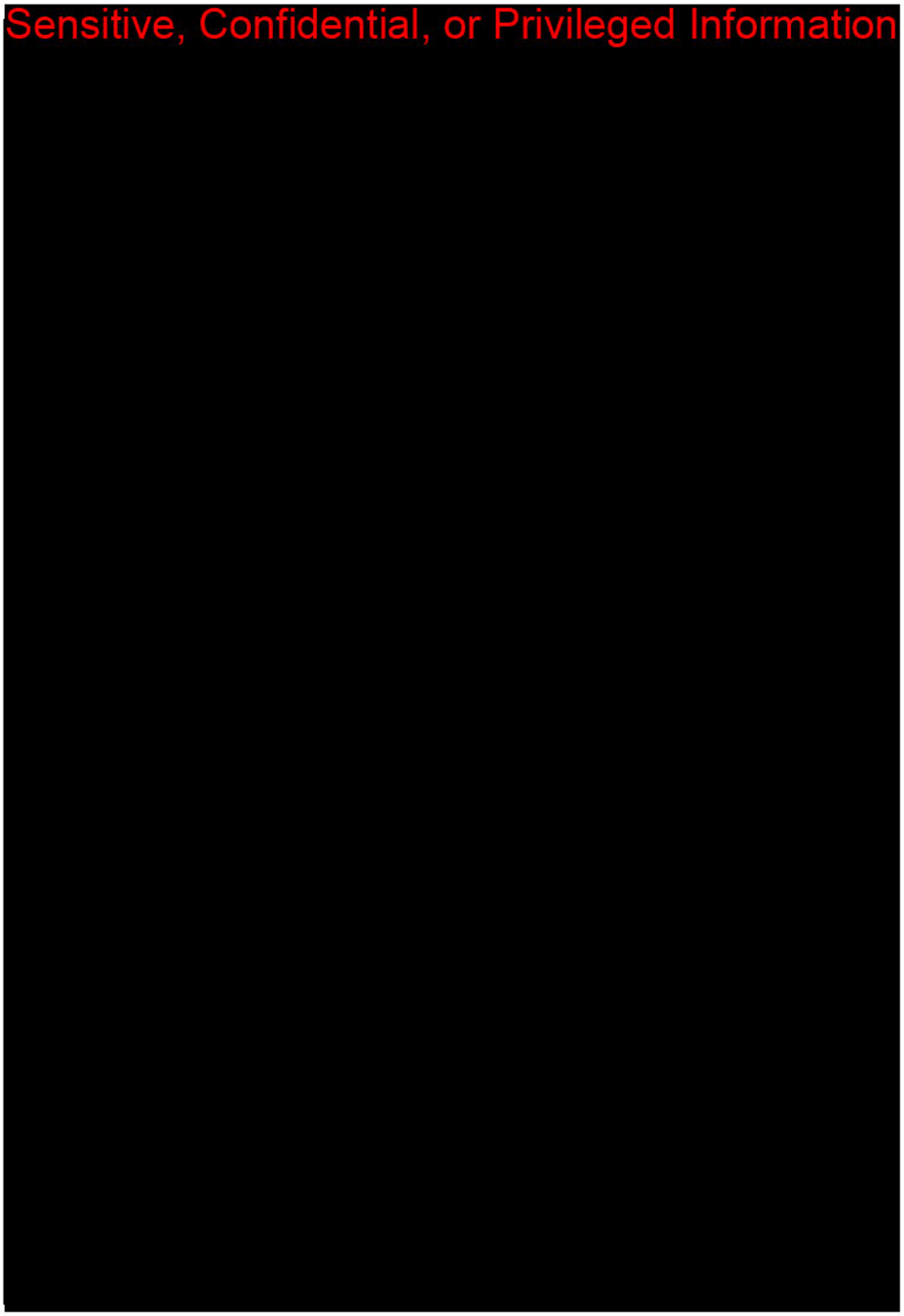
Sensitive, Confidential, or Privileged Information

Appendix 10.B – Example of Emergency Contact List from SPCC

This is an example list (version 002-207-002-001NG 2021 Brame SPCC). The current version can be found in the most recent Cleco Power, LLC SPCC.



EXTERNAL		
Quick Look-Up List		
	CONTACT	PHONE
1	**STATE POLICE (Emergency Hotline)**	**225.925.6595 or 877.925.6595**
2	**LDEQ SINGLE POINT OF CONTACT (SPOC)**	**225.342.1234**
3	**NATIONAL RESPONSE CENTER (NRC): [Oil Spills Only]**	**800.424.8802**

CONTACT	PHONE	FAX	ADDRESS / E-MAIL
AGENCIES / DEPARTMENTS			
USEPA Region 6 (Dallas, TX)	214.665.6450 800.342.7745		1445 Ross Avenue (6SF-RO), Dallas, TX 75202-2733
Louisiana Department of Environmental Quality (LDEQ):			
• Single Point of Contact (SPOC)	225.342.1234		
• Non-Emergency	225.763.3908		
• Groundwater Impact			PO Box 4312 Baton Rouge, LA 70821-4312
• Follow-Up Report			PO Box 4312 Baton Rouge, LA 70821-4312
Louisiana Department of Transportation and Development (LDOTD):			
	225.379.1210		
US Coast Guard	504.589.6261		
FIRE / EXPLOSION			
Boyce Fire Department	318.793.2121		
LOCAL EMERGENCY PLANNING COMMITTEES (LEPC)			
Rapides Parish Emergency Planning Committee	318.445.0391		
MEDIA			
KLAX	318.473.0412		
KALB	318.445.6397		
KRRV	318.442.5550		
KZMZ	318.443.2543		
KQID	318.445.1234		
MEDICAL(Hospitals)			
St. Francis Cabrini (Alexandria, LA)	318.487.1122		
Rapides Regional (Alexandria, LA)	318.487.3000		
OFF-SITE CONTRACTORS (Spill/Release Response)			
Oil Mop, Inc.	800.645.6671		
Petron Environmental & Safety	318.445.1456		
Jones Chemical Co. (Chlorine gas)			
• Office	504.536.1171		
• Plant	504.652.5012		

CONTACT	PHONE	FAX	ADDRESS / E-MAIL
Advanced Specialized Carriers Pineville, LA	318.715.1656		
OFF-SITE CONTRACTORS (Disposal)			
Chemical Waste Management, Inc.	318.583.2144		Lake Charles, LA
[solid or hazardous waste]			
Ensco	501.863.7173		El Dorado, Arkansas
[hazardous waste/waste oil]			
USPCI	405.528.8371		Oklahoma City, Oklahoma
[hazardous waste / PCB]			
• Mr. Ken Jackson	same		
• Mr. David Sanchez	same		
Advanced Specialized Carriers Pineville, LA	318.715.1656		
POLICE DEPARTMENTS			
LA State Police			
• 24-Hour Hotline	225.925.6595		
• Troop E	318.487.5911		
Boyce Police Department	318.793.2477		
Rapides Parish Sheriff's Office (Boyce Substation)	911 or 318.793.8157		
MISCELLANEOUS OUTSIDE CONTACTS			
National Weather Service (Slidell, LA)	504.522.7330		