

## PUBLIC UTILITIES COMMISSION

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February 2, 2023

GI-2022-10-CVGS-39-07-10-18

Stephen Wassell, VP Storage Peaking & Ops Eng/Ops ([swassell@southernco.com](mailto:swassell@southernco.com))  
10 Peachtree Place NE, Suite 1000,  
Atlanta, GA 20209

SUBJECT: Closure Letter for 2022 General Order 112-F Inspection of Central Valley Gas Storage

Dear Mr. Wassell:

The Safety and Enforcement Division (SED) of the California Public Utilities Commission reviewed Central Valley Gas Storage's (CVGS) response letter dated on January 11, 2023, for the findings identified during the General Order 112-F inspection of CVGS on October 31 – November 04, 2022. The inspection included a review of Operator Qualification Program (OQ), Control Room Management Program (CRM) and the PIPES ACT 2020 Section 114 – Updating Pipeline Operator Inspection and Maintenance Plan (Section 114).

Included is SED's evaluation of CVGS' response taken for identified Areas of Violations and Concerns. This letter serves as the official closure of the 2022 GO 112-F Inspection of CVGS' Operator Qualification Program (OQ), Control Room Management Program (CRM) and the PIPES ACT 2020 Section 114 – Updating Pipeline Operator Inspection and Maintenance Plan (Section 114).

If you have any questions, please contact James Zhang at (415) 603-1310 or by email at [James.Zhang@cpuc.ca.gov](mailto:James.Zhang@cpuc.ca.gov).

Sincerely,

A handwritten signature in blue ink that reads "Dennis Lee".

Dennis Lee, P.E.  
Program and Project Supervisor  
Gas Safety and Reliability Branch  
Safety and Enforcement Division

Enclosure: Post-Inspection Written Findings

cc:

James Hotinger, CVGS ([jhoting@southernco.com](mailto:jhoting@southernco.com))  
Robert Cornell, CVGS ([rcornell@southernco.com](mailto:rcornell@southernco.com))  
Claudia Almengor, SED  
Terence Eng, SED

# Post-Inspection Written Findings

**Dates of Inspection:** 10/31/2022 – 11/04/2022

**Operator:** CENTRAL VALLEY GAS STORAGE, LLC

**Operator ID:** 32603 (primary)

**Inspection Systems:** GT

**Assets (Unit IDs) with results in this report:** Central Valley Gas Storage (86918)

**System Type:** GT

**Inspection Name:** 2022 Central Valley Gas Storage CRM

**Lead Inspector:** James Zhang

**Operator Representative:** Robert Cornell

## Unsatisfactory Results

### CRM, SCADA, and Leak Detection: Supervisory Control and Data Acquisition (CR.SCADA)

Question Title, ID Point-to-Point Verification, CR.SCADA.POINTVERIFY.R

Question 11. Have required point-to-point verifications been performed?

References 192.631(c)(2)

Assets Covered Central Valley Gas Storage (86918 (39))

**Issue Summary** SED reviewed Central Valley Gas Storage (CVGS) records, FORM OM500-05 – SAFETY DEVICE TEST: REPORT FORM and Shift Alarm Comment Report, etc..., and found records prior to 2020 not following point-to-point verification procedure and insufficient to demonstrate the verification process. Therefore, CVGS is in violation of Title 49 Code of Federal Regulations (49 CFR) 192.631(c)(2).

**CVGS Response:** During the period from 2018-2021, no SCADA field equipment was added or moved, SCADA display changes, or changes that affected the safety of the pipeline between 2018 and 2021 that required a Point to Point verification at CVGS.

CVGS used FORM OMS00-0S SAFETYDEVICE TEST:REPORT FORM to demonstrate that a point to point verification was done annually on safety related devices as a means to demonstrate a point to point verification.

**SED Conclusion:** CVGS' response is self-conflicting, and its associated records are still insufficient to demonstrate point-to-point verification, therefore, did not resolve the probable violation.

SED recommends CVGS to review the PHMSA Control Room Management Frequently Asked Questions (FAQs) C.01, C.02, C.03, C.04, C.05 and C.06 for examples of point-to-point verification. SED has reviewed CVGS' response and decided not to impose a fine or penalty at this moment. However, CVGS is responsible to demonstrate through any means to provide adequate procedures or records as required by the code and report any non-compliance when occurred. SED will also verify if adequate recordkeeping is achieved by CVGS when conducting inspections in the future.

Question Title, ID Point-to-Point Verification Extent, CR.SCADA.POINTVERIFYEXTENT.R

Question 13. Do records demonstrate adequate thoroughness of the point-to-point verification?

References 192.631(c)(2)

Assets Covered Central Valley Gas Storage (86918 (39))

Issue Summary SED reviewed CVGS' records, FORM OM500-05 – SAFETY DEVICE TEST: REPORT FORM and Shift Alarm Comment Report, etc..., and found records prior to 2020 not following point-to-point verification procedure and insufficient to demonstrate the thoroughness of the point-to-point verification. Therefore, CVGS is in violation of 49 CFR 192.631(c)(2).

CVGS Response: CVGS uses FORM OMS00-05 SAFETYDEVICE TEST:REPORT FORM to demonstrate that a point to point verification was done annually on safety related devices as a means to demonstrate a point to point verification. The same form has been used since the inception of the facility. It contains the as found settings and the as left settings to demonstrate the adequacy of the equipment's operation pursuant to the requirements of the procedure. Copies of the 2017 and 2018 records are attached to this response.

SED Conclusion: CVGS' response and its associated records are still insufficient to demonstrate adequate thoroughness of the point-to-point verification, therefore, did not resolve the probable violation. SED recommends CVGS to review the PHMSA Control Room Management Frequently Asked Questions (FAQs) C.01, C.02, C.03, C.04, C.05 and C.06 for examples of point-to-point verification. SED has reviewed CVGS' response and decided not to impose a fine or penalty at this moment. However, CVGS is responsible to demonstrate through any means to provide adequate procedures or records as required by the code and report any non-compliance when occurred. SED will also verify if adequate recordkeeping is achieved by CVGS when conducting inspections in the future.

Question Title, ID Internal Communication Plan, CR.SCADA.COMMPLAN.R

Question 18. Has the internal communication plan been tested and verified for manual operation of the pipeline safely at least once each calendar year but at intervals not exceeding 15 months?

References 192.631(c)(3)

Assets Covered Central Valley Gas Storage (86918 (39))

Issue Summary CVGS could not provide records of internal communication plan test and verification (per CRM Plan 404 - internal communication plan) for manual operation of the pipeline safely at least once each calendar year but at interval not exceeding 15 months. Therefore, CVGS is in violation of 49 CFR 192.631(c)(3).

CVGS Response: The records demonstrating this requirement are attached.

SED Conclusion: CVGS' response and its associated records are still insufficient to demonstrate the internal communication plan test and verification (per CRM Plan 404 - internal communication plan) for manual operation of the pipeline safely at least once each calendar year but at interval not exceeding 15 months, therefore, did not resolve the probable violation. SED recommends CVGS to review the PHMSA Control Room Management Frequently Asked Questions (FAQs) C.07 and C.14 regarding to internal communication plan. SED has reviewed CVGS' response and decided not to impose a fine or penalty at this moment. However, CVGS is responsible to demonstrate through any means to provide adequate procedures or records as required by the code and report any non-compliance when

occurred. SED will also verify if adequate recordkeeping is achieved by CVGS when conducting inspections in the future.

Question Title, ID Backup SCADA Development, CR.SCADA.BACKUPSCADADEV.P

Question 20. Has the use of the backup SCADA system for development work been defined?

References 192.631(c)(4)

Assets Covered Central Valley Gas Storage (86918 (39))

Issue Summary SED reviewed CVGS CRM Plan 405 - Backup SCADA System and found it inadequate, since the use of backup SCADA system for development work has not been defined. Therefore, CVGS is in violation of 49 CFR 192.631(c)(4).

CVGS Response: Title 49 §192.631 (c) (4) simply states "[t]est any backup SCADA systems at least once each calendar year, but at intervals not to exceed 15 months." This regulation has no reference to its use in development work, only an annual testing requirement.

SED Conclusion: SED has reviewed CVGS' response and accepted the corrective actions.

Question Title, ID Backup SCADA Verification, CR.SCADA.BACKUPSCADAVERIFY.P

Question 23. Is testing required to verify adequate processes are in place for decision-making and internal communications to successfully implement a transition from primary SCADA to backup SCADA, and back to primary SCADA?

References 192.631(c)(4)

Assets Covered Central Valley Gas Storage (86918 (39))

Issue Summary SED reviewed CVGS CRM Plan 405 – Backup SCADA System and found it inadequate, since there are no processes in place for decision-making and internal communications to successfully implement a transition from primary SCADA to backup SCADA, and back to primary SCADA. Therefore, CVGS is in violation of 49 CFR 192.631(c)(4).

CVGS Response: From the SCADA Technician's Procedure Manual: 1. "Midstream Backup SCADA Test 1. Notify the Operator that you are going to perform a Backup Server Test by failing over to the Backup Server."

CVGS has updated CRM Plan 405 to address decision making and internal communication. The revised procedure is attached.

SED Conclusion: SED has reviewed CVGS' response and accepted the corrective actions.

Question Title, ID Backup SCADA Transfer, CR.SCADA.BACKUPSCADATRANSFER.P

Question 26. Do processes adequately address and test the logistics of transferring control to a backup control room?

References 192.631(c)(4)

Assets Covered Central Valley Gas Storage (86918 (39))

Issue Summary SED reviewed CVGS CRM Plan 405 – Backup SCADA System and found it inadequate, since there are no processes in place to address and test the logistics of transferring control to a backup control room. Therefore, CVGS is in violation of 49 CFR 192.631(c)(4).

CVGS Response: CVGS does not have a backup control room, instead, this procedure is to test the transfer from SCADA to backup SCADA to ensure the adequacy of the transfer of control. The Midstream Backup SCADA Test steps 1-7 found in its procedures addresses the logistics of testing the backup SCADA transfer. In response to this, CVGS has updated CRM Plan 405

for test logistics for the local control room to test primary SCADA to backup SCADA transfer. A copy of the revised procedure is attached.

SED Conclusion: SED has reviewed CVGS' response and accepted the corrective actions.

Question Title, ID Backup SCADA Return to Primary, CR.SCADA.BACKUPSCADARETURN.P

Question 27. Do procedures adequately address and test the logistics of returning operations back to the primary control room?

References 192.631(c)(4)

Assets Covered Central Valley Gas Storage (86918 (39))

Issue Summary SED reviewed CVGS CRM Plan 405 – Backup SCADA System and found it inadequate, since there are no processes in place to address and test the logistics of returning operations back to the primary control room. Therefore, CVGS is in violation of 49 CFR 192.631(c)(4).

CVGS Response: CVGS does not have a backup control room, therefore there is no need to test the logistics of returning operations; instead, Midstream runs two mirrored SCADA servers, a primary server and backup server simultaneously. Since the servers are mirrored and operating simultaneously, the test doesn't include a failure back to the old primary server. As the servers are mirrored, Midstream switches between servers to ensure appropriate operation. CVGS has updated CRM 405 to address returning operations back to the primary SCADA server. A copy of the revised procedure is attached.

SED Conclusion: SED has reviewed CVGS' response and accepted the corrective actions.

## **CRM, SCADA, and Leak Detection: Fatigue Management (CR.CRMFM)**

Question Title, ID Scheduled Shift Length, CR.CRMFM.SHIFTLENGTH.R

Question 5. Is the scheduled shift length less than or equal to 12 hours (not including shift hand-over) or is there a documented technical basis to show that shift lengths and schedule rotations are adequate to provide controllers off-duty time sufficient to achieve 8 hours of continuous sleep?

References 192.631(d)(1)

Assets Covered Central Valley Gas Storage (86918 (39))

Issue Summary SED reviewed CVGS' records for shift schedule, but CVGS could not provide records of shift schedule prior to 2021. Therefore, CVGS is in violation of 49 CFR 192.631(d)(1).

CVGS Response: During the inspection, CVGS provided a copy of the operator's schedule from June 2020 to current. Control Room procedure 501 Shift Lengths and Rotation, states, in part " ... for shift schedules on 12-hour shifts ... all shift rotations shall provide off duty time sufficient for 8 hours of continuous sleep." This procedure has been in place since the inception of the facility. However, the operators schedule form was initiated in June of 2020. Prior to this time, management continually reviewed the employees' timesheets to ensure compliance with Procedure 501. Copies of timesheets prior to 2020 are attached.

SED Conclusion: CVGS could not provide any records for shift schedule prior to 2020 and acknowledged so during the inspection. CVGS' response and its associated records are still insufficient to demonstrate compliance prior to 2020. The dates were written over numerous times on the Copies of timesheets provided. SED has reviewed CVGS' response and decided not to impose a fine or penalty at this moment. However, CVGS is responsible to demonstrate through any means to provide adequate procedures or records as required by the code and

report any non-compliance when occurred. SED will also verify if adequate recordkeeping is achieved by CVGS when conducting inspections in the future.

Question Title, ID Establishing Shift Length, CR.CRMFM.SHIFTLENGHTIME.R

Question 6. Does the operator factor in all time the individual is working for the company when establishing shift lengths and schedule rotations or is there a documented technical basis to show that shift lengths and schedule rotations are adequate to provide controllers off-duty time sufficient to achieve 8 hours of continuous sleep?

References 192.631(d)(1)

Assets Covered Central Valley Gas Storage (86918 (39))

Issue Summary SED reviewed CVGS' records for shift schedule, but CVGS could not provide records of shift schedule prior to 2021. Therefore, CVGS is in violation of 49 CFR 192.631(d)(1).

CVGS Response: See response to Question 5 above.

SED Conclusion: See SED's conclusion to Question 5 above.

Question Title, ID Scheduled Time Off Between Shifts, CR.CRMFM.SCHEDULEDTIMEOFF.R

Question 7. Are all scheduled periods of time off at least one hour longer than 8 hours plus commute time or is there a documented technical basis to show that shift lengths and schedule rotations are adequate to provide controllers off-duty time sufficient to achieve 8 hours of continuous sleep?

References 192.631(d)(1)

Assets Covered Central Valley Gas Storage (86918 (39))

Issue Summary SED reviewed CVGS' records for shift schedule, but CVGS could not provide records of shift schedule prior to 2021. Therefore, CVGS is in violation of 49 CFR 192.631(d)(1).

CVGS Response: See response to Question 5 above.

SED Conclusion: See SED's conclusion to Question 5 above.

## **CRM, SCADA, and Leak Detection: Alarm Management (CR.CRMAM)**

Question Title, ID Alarm Point Verification, CR.CRMAM.ALARMVERIFY.R

Question 8. Do records verify that monthly reviews and analysis of alarm points have been performed?

References 192.631(e)(2)

Assets Covered Central Valley Gas Storage (86918 (39))

Issue Summary CVGS could not provide records of monthly reviews or analysis of alarm points. Therefore, CVGS is in violation of 49 CFR 192.631(e)(2).

CVGS Response: These records were provided during the inspection and are also attached to this response.

SED Conclusion: CVGS could not provide any records of monthly reviews or analysis of alarm points, and CVGS acknowledged so during the inspection. CVGS' response and its associated records are still insufficient to demonstrate compliance, therefore, did not resolve the probable violation. SED has reviewed CVGS' response and decided not to impose a fine or penalty at this moment. However, CVGS is responsible to demonstrate through any means to provide

adequate procedures or records as required by the code and report any non-compliance when occurred. SED will also verify if adequate recordkeeping is achieved by CVGS when conducting inspections in the future.

Question Title, ID Measuring Work Load, CR.CRMAM.WORKLOAD.P

Question 14. Does the CRM program have a means of identifying and measuring the work load (content and volume of general activity) being directed to an individual controller?

References 192.631(e)(5)

Assets Covered Central Valley Gas Storage (86918 (39))

Issue Summary SED reviewed CVGS CRM Plan, Section 604 Activity Review and found it inadequate, since there is no process of identifying and measuring the workload (content and volume of general activity) being directed to an individual controller. Therefore, CVGS is in violation of 49 CFR 192.631(e)(5).

CVGS Response: As a result of the inspection, CVGS has updated its procedure CRM 604. A copy of this revised procedure is attached.

SED Conclusion: SED has reviewed CVGS' response and accepted the corrective actions.

Question Title, ID Monitoring Work Load, CR.CRMAM.WORKLOADMONITORING.P

Question 15. Is the process of monitoring and analyzing general activity comprehensive?

References 192.631(e)(5)

Assets Covered Central Valley Gas Storage (86918 (39))

Issue Summary SED reviewed CVGS CRM Plan, Section 604 Activity Review and found it inadequate, since there is no process of identifying and measuring the workload (content and volume of general activity) being directed to an individual controller. Therefore, CVGS is in violation of 49 CFR 192.631(e)(5).

CVGS Response: As a result of the inspection, CVGS has updated its procedure CRM 604. A copy of this revised procedure is attached.

SED Conclusion: SED has reviewed CVGS' response and accepted the corrective actions.

Question Title, ID Alarm Deficiency Resolution, CR.CRMAM.DEFICIENCIES.P

Question 18. Is there a process to address how deficiencies found in implementing 192.631(e)(1) through 192.631(e)(5) will be resolved?

References 192.631(e)(6)

Assets Covered Central Valley Gas Storage (86918 (39))

Issue Summary SED reviewed CVGS CRM Plan, Section 605 Alarm Management Plan Deficiencies and found it inadequate, since there is no process to address how deficiencies found in implementing 49 CFR 192.631(e)(1) through 49 CFR 192.631(e)(5) will be resolved. Therefore, CVGS is in violation of 49 CFR 192.631(e)(6).

CVGS Response: As a result of the inspection, CVGS has updated its procedure CRM 605. A copy of this revised procedure is attached.

SED Conclusion: SED has reviewed CVGS' response and accepted the corrective actions.

Question Title, ID Alarm Management Deficiencies, CR.CRMAM.DEFICIENCIES.R

Question 19. Do records indicate deficiencies found in implementing 192.631(e)(1) through 192.631(e)(5) have been resolved?

References 192.631(e)(6)

Assets Covered Central Valley Gas Storage (86918 (39))

Issue Summary CVGS could not provide records of indicating deficiencies found in implementing 192.631(e)(1) through 192.631(e)(5) have been resolved, for example, the monthly review or analysis of alarm points. Therefore, CVGS is in violation of 49 CFR 192.631(e)(6).

CVGS Response: Copies of the Alarm Review records are attached.

SED Conclusion: CVGS could not provide any records of monthly reviews or analysis of alarm points, and CVGS acknowledged so during the inspection. CVGS' response and its associated records are still insufficient to demonstrate compliance, therefore, did not resolve the probable violation. SED has reviewed CVGS' response and decided not to impose a fine or penalty at this moment. However, CVGS is responsible to demonstrate through any means to provide adequate procedures or records as required by the code and report any non-compliance when occurred. SED will also verify if adequate recordkeeping is achieved by CVGS when conducting inspections in the future.

## **CRM, SCADA, and Leak Detection: Change Management (CR.CRMCMGT)**

Question Title, ID Coordination of Field Changes, CR.CRMCMGT.FIELDCHANGES.R

Question 6. Do records indicate field personnel and SCADA support personnel contacted the control room when making field changes (for example, moving a valve) that affect control room operations?

References 192.631(f)(2)

Assets Covered Central Valley Gas Storage (86918 (39))

Issue Summary SED reviewed CVGS Management of Change (MOC) records and found records that were insufficient to demonstrate if efforts were coordinated with the control room. Therefore, CVGS is in violation of 49 CFR 192.631(f)(2).

CVGS Response: Controllers keep a daily log of events, including information related to field activities. Subsequent to this inspection, CVGS is in the process of developing a process to ensure documentation of field efforts and coordination with the control room are adequately documented.

SED Conclusion: SED recommends CVGS to review the PHMSA Control Room Management Frequently Asked Questions (FAQs) F.01, F.02 and F.03 regarding to change management. SED has reviewed CVGS' response and decided not to impose a fine or penalty at this moment. However, CVGS is responsible to demonstrate through any means to provide adequate procedures or records as required by the code and report any non-compliance when occurred. SED will also verify if adequate recordkeeping is achieved by CVGS when conducting inspections in the future.

## **CRM, SCADA, and Leak Detection: Operating Experience (CR.CRMEXP)**

Question Title, ID Lessons Learned, CR.CRMEXP.LESSONSLEARNED.P



Question 3. Does the program require training on lessons learned from a broad range of events (reportable incidents/accidents, near misses, leaks, operational and maintenance errors, etc.), even though the control room may not have been at fault?

References 192.631(g)(2) (192.631(b)(5))

Assets Covered Central Valley Gas Storage (86918 (39))

Issue Summary 49 CFR 192.631(g)(2) states, "Include lessons learned from the operator's experience in the training program required by this section."

SED reviewed Central Valley Gas Storage's (CVGS) Control Room Management (CRM) Plan and found that CVGS did not include lessons learned from a broad range of events. According to CVGS, they performed lesson learned training on various events such as abnormal operation. However, the current CRM plan appears to focus only on incident and no other experience. Therefore, CVGS is in violation of 49 CFR 192.631(g)(2).

SED recommends CVGS to review the PHMSA Control Room Management Frequently Asked Questions (FAQs) G.01, G.02, G.03, and G.04 (listed below) for examples of events that could be included in training on lesson learned.

**G.01 In regard to incorporating lessons learned into an operator's control room management plan after reviewing reportable incidents/accidents to determine any deficiencies related to field equipment, what are some examples of field equipment that an operator must consider in relation to control room management?**

Some examples of deficiencies (which are not meant to be all inclusive) in field equipment that could affect control room operations include: (i) instrumentation that is out of calibration that results in a false alarm or inaccurate display of operational parameters such as pressure or flow, (ii) valve limit switches that provide incorrect valve status, (iii) inappropriate setting for relief equipment compared to alarm set-points, and (iv) the discovery of a manual mainline valve previously unknown to the controllers.

[§§ 192.631(g)(1)(ii) and 195.446(g)(1)(ii)] Original: 6/17/2011

**G.02 Does "[i]nclude lessons learned from the operator's experience in the training program required by this section" apply to reportable accidents/incidents only?**

No. This requirement applies to reportable accidents/incidents as well as other experience such as near misses, non-reportable events such as small leaks, audit findings, and any other source of operating experience that could better inform and better train controllers to safely control the pipeline and recognize and correctly respond to abnormal, unusual, or emergency conditions.

[§§ 192.631(g)(2) and 195.446(g)(2)] Original: 6/17/2011

**G.03 Does "[i]nclude lessons learned from the operator's experience in the training program required by this section" apply only to accidents/incidents/events in which the controller caused or contributed to the event?**

No. This requirement applies to all accidents, incidents, events, and circumstances that could better inform and better train controllers to safely control the pipeline and recognize and correctly respond to abnormal, unusual, or emergency conditions. Certainly, events in which controllers caused or contributed to the event are important to preclude recurrence of controller mistakes. However, proper controller reaction is an important aspect in precluding recurrence of other types of incidents as well.

[§§ 192.631 (g)(2) and 195.446(g)(2)] Original: 01/16/2018

**G.04 Does "[i]nclude lessons learned from the operator's experience in the training program required by this section" apply to accidents/incidents/events in which an authorized individual directed or superseded the specific technical actions of the controller?**

Yes. This requirement applies to all accidents, incidents, events, and circumstances; whether the controller's specific technical actions were directed or superseded by others.

[§§ 192.631(g)(2) and 195.446(g)(2)] Original: 01/16/2018

CVGS Response: As a result of the inspection, CVGS has updated its procedure CRM 802. A copy of this revised procedure is attached.

SED Conclusion: SED has reviewed CVGS' response and accepted the corrective actions.

## **CRM, SCADA, and Leak Detection: Training (CR.CRMTRAIN)**

Question Title, ID Control Room Team Training - Personnel, CR.CRMTRAIN.TEAMTRAINPERSONNEL.P

Question 14. Do processes establish who, regardless of location, operationally collaborates with control room personnel?

References 192.631(h)(6)

Assets Covered Central Valley Gas Storage (86918 (39))

Issue Summary 49 CFR 192.631(h)(6) states that:

"Control room team training and exercises that include both controllers and other individuals, defined by the operator, who would reasonably be expected to operationally collaborate with controllers (control room personnel) during normal, abnormal or emergency situations. Operators must comply with the team training requirements under this paragraph by no later than January 23, 2018."

SED reviewed CVGS's Control Room Management Plan and did not find any procedures or records on the Control Room Team Training requirement that became effective on January 23, 2018, per 49 CFR 192.631(h)(6). Therefore, CVGS is in violation of 49 CFR 192.631(h)(6).

SED recommends CVGS to update its Control Room Management Plan to include the Control Room Team Training requirement and reference to its Annual Emergency Response Tabletop Exercises if the exercises will be used to fulfill the Control Room Team Training requirement. SED also recommends CVGS to review the PHMSA Control Room Management Frequently Asked Questions (FAQs) H.05, H.06, H.07, H.08, H.09, and J.06 (listed below) to ensure its current Annual Emergency Response Tabletop Exercises can address all of the applicable elements in the FAQs. If the Annual Emergency Response Tabletop Exercises does not address all the applicable elements in the FAQs, SED recommends CVGS to develop a new Control Room Team Training exercise or make modification to the current Annual Emergency Response Tabletop Exercises.

### **H.05 Who is required to participate in control room team training and exercises?**

Individuals who usually provide key information or decision-making input to controllers or otherwise influence operational control decisions during normal, abnormal, or emergency situations are required to participate in control room team training and exercises. This includes individuals with authority to direct or supersede the specific technical actions of a controller and individuals that interact with controllers remotely or face-to-face inside the control room. Operators should review ADB 2014-02 and NTSB report PAR-12/01 when identifying individuals to include in control room team training.

[§§ 192.631(h)(6) and 195.446(h)(6)] Original: 01/16/2018

#### **H.06 What skills should be included in control room team training and exercises?**

Training and exercises must provide individuals, and the team as a whole, with the skills necessary to address conditions that could occur in any operational mode (normal, abnormal, or emergency conditions). Important skills include, but are not limited to, teamwork, communication, situational awareness, decision-making, leadership, professionalism, understanding roles and responsibilities (including how company leadership and executive management are involved in operational decisions), recognition and appropriate responses to emergencies, resolution of data discrepancies, error diagnostics, error management, relevant procedures, and problem solving.

The training should specifically address scenarios when roles change, such as when an individual with authority to direct or supersede the specific technical actions of a controller assumes operational control of the pipeline, if the operator has designated such individuals.

[§§ 192.631(h)(6) and 195.446(h)(6)] Original: 01/16/2018

#### **H.07 How should the training and exercises be conducted?**

Operators have flexibility regarding the means used to deliver the training. However, the effectiveness of training should be evaluated, documented and considered when preparing future training and exercises. Operators may include computer-based (CBT) training, but since the focus is on personnel interaction and teamwork, CBT alone would not be considered sufficient. Classroom training is appropriate, but classroom training alone, without an exercise, would not be considered sufficient. On-the-job (OJT) training alone is not adequate to fulfill team training expectations.

Exercises should present realistic scenarios and situations sufficiently complex to challenge the team's collective decision-making skills. Exercises should include lessons learned from the operator's actual events and should consider applicable events that have occurred at other oil and gas industry facilities.

Unless amended to include team training requirements, emergency procedure training or Oil Pollution Act drills alone are likely not sufficient to account for adequate team training and exercises.

[§§ 192.631(h)(6) and 195.446(h)(6)] Original: 01/16/2018

#### **H.08 When must team training and exercises be completed and how frequently must subsequent team training exercises be conducted?**

Operators must establish its team training program, including the objectives and content of both the training and exercises, no later than January 23, 2018. Those individuals identified as of January 23, 2018, are expected to have been trained no later than January 23, 2019. The team training program and associated written procedures must address the timely training of new or changing staff that assume roles requiring team training after January 23, 2018, due to circumstances such as newly hired employees, new or changing job assignments, or other reasons. The operator's written procedures should state the frequency of recurrence for full team training.

Operators are reminded that interim team activities such as team discussions of event scenarios, post-operational team critiques of recent abnormal operating conditions or incidents, team what-if analysis exercises, etc. that occur between full team training intervals can enhance pipeline safety. A change in training content would not necessarily require previously trained individuals to be re-trained on the changes until the next recurrence of full team training.

[§§ 192.631(h)(6) and 195.446(h)(6)] Original: 01/16/2018

#### **H.09 Does every team training exercise have to include a controller?**

At least one fully qualified controller must participate in all exercises and scenario practice. However, traditional classroom training on team concepts and soft skills could be accomplished without specific controller participation.

[§§ 192.631(h)(6) and 195.446(h)(6)] Original: 01/16/2018

#### **J.06 What documentation is required for team training and exercises?**

The operator must document and retain records of training and exercises that demonstrate compliance with the requirements of §§ 192.631(h)(6) and 195.446(h)(6). This includes documentation such as attendance list, course title, date, duration, content of training including, effectiveness evaluation results, and any exercise critiques and feedback from attendees. Operators may incorporate team training into their general training program to facilitate training management, including documentation aspects of team training.

[§§ 192.631(j)(1) and 195.446(j)(1), 192.631(j)(2) and 195.446(j)(2)] Original: 01/16/2018

CVGS Response: As a result of the inspection, CVGS has updated its procedure CRM 902. A copy of this revised procedure is attached.

SED Conclusion: SED has reviewed CVGS' response and accepted the corrective actions.

Question Title, ID Control Room Team Training - Frequency, CR.CRMTRAIN.TEAMTRAINFREQ.P

Question 15. Do processes define the frequency of new and recurring team training?

References 192.631(h)(6)

Assets Covered Central Valley Gas Storage (86918 (39))

Issue Summary SED reviewed CVGS's Control Room Management Plan and did not find any procedures or records on the Control Room Team Training requirement that became effective on January 23, 2018, per 49 CFR 192.631(h)(6). Therefore, CVGS is in violation of 49 CFR 192.631(h)(6).

CVGS Response: As a result of the inspection, CVGS has updated its procedure CRM 902. A copy of this revised procedure is attached.

SED Conclusion: SED has reviewed CVGS' response and accepted the corrective actions.

Question Title, ID Control Room Team Training - Completeness, CR.CRMTRAIN.TEAMTRAINCOMPLETE.P

Question 16. Do processes address all operational modes and operational collaboration/control?

References 192.631(h)(6)

Assets Covered Central Valley Gas Storage (86918 (39))

Issue Summary SED reviewed CVGS's Control Room Management Plan and did not find any procedures or records on the Control Room Team Training requirement that became effective on January 23, 2018, per 49 CFR 192.631(h)(6). Therefore, CVGS is in violation of 49 CFR 192.631(h)(6).

CVGS Response: As a result of the inspection, CVGS has updated its procedure CRM 902. A copy of this revised procedure is attached.

SED Conclusion: SED has reviewed CVGS' response and accepted the corrective actions.

Question Title, ID Control Room Team Training - Operational Experience, CR.CRMTRAIN.TEAMTRAINEXPERIENCE.P

Question 17. Do processes include incorporation of lessons learned from actual historical events and other oil-gas industry events?

References 192.631(h)(6)

Assets Covered Central Valley Gas Storage (86918 (39))

Issue Summary SED reviewed CVGS's Control Room Management Plan and did not find any procedures or records on the Control Room Team Training requirement that became effective on January 23, 2018, per 49 CFR 192.631(h)(6). Therefore, CVGS is in violation of 49 CFR 192.631(h)(6).

CVGS Response: As a result of the inspection, CVGS has updated its procedure CRM 902 to include lessons learned from actual historical events and oil and gas industry events. A copy of this revised procedure is attached.

SED Conclusion: SED has reviewed CVGS' response and accepted the corrective actions.

Question Title, ID Control Room Team Training - Exercises, CR.CRMTRAIN.TEAMTRAINEXERCISE.R

Question 18. Do records indicate that training exercises were adequate and involved at least one qualified controller?

References 192.631(h)(6)

Assets Covered Central Valley Gas Storage (86918 (39))

Issue Summary SED reviewed CVGS's Control Room Management Plan and did not find any procedures or records on the Control Room Team Training requirement that became effective on January 23, 2018, per 49 CFR 192.631(h)(6). Therefore, CVGS is in violation of 49 CFR 192.631(h)(6).

CVGS Response: All training at CVGS is team training. CVGS has updated its procedure CRM 902 to include team training. A copy of this revised procedure is attached.

SED Conclusion: SED has reviewed CVGS' response and accepted the corrective actions.

Question Title, ID Control Room Team Training - Identified Individuals, CR.CRMTRAIN.TEAMTRAINIDENTINDIVIDUAL.R

Question 20. Do records demonstrate that individuals identified as of January 23, 2018 received team training by January 23, 2019?

References 192.631(h)(6)

Assets Covered Central Valley Gas Storage (86918 (39))

Issue Summary SED reviewed CVGS's Control Room Management Plan and did not find any procedures or records on the Control Room Team Training requirement that became effective on January 23, 2018, per 49 CFR 192.631(h)(6). Therefore, CVGS is in violation of 49 CFR 192.631(h)(6).

CVGS Response: All training at CVGS is team training. CVGS has updated its procedure CRM 902 to include team training. A copy of this revised procedure is attached.

SED Conclusion: SED has reviewed CVGS' response and accepted the corrective actions.

## **CRM, SCADA, and Leak Detection: Compliance Validation and Deviations (CR.CRMCOMP)**

Question Title, ID CRM Records, CR.CRMCOMP.RECORDS.R

Question 5. Are records sufficient to demonstrate compliance with the CRM rule?

References 192.631(j)(1)

Assets Covered Central Valley Gas Storage (86918 (39))

**Issue Summary** SED found that numerous records were missing or found to be insufficient, such as Shift Change Schedule, Management of Change (MOC), Point-to-Point Verification, Team Training, etc... CVGS shall ensure that all necessary documentation (forms, procedures, checklists, reports, and other records) for compliance with the CRM rule is completed and retained, for at least a period of five years. Therefore, CVGS is in violation of 49 CFR 192.631(j)(1).

**CVGS Response:** CVGS has copies of documentation demonstrating its compliance for a number of years. Over the course of the operation of the facility, documentation has been revised and improved to better demonstrate compliance. A few of the records reviewed by the CPUC had undergone revision over the course of the facility's operation and the requisite documentation had improved. Based upon this inspection, CVGS is reviewing its documentation to ensure adequacy to demonstrate compliance.

**SED Conclusion:** SED has reviewed CVGS' response and decided not to impose a fine or penalty at this moment. However, CVGS is responsible to demonstrate through any means to provide adequate procedures or records as required by the code and report any non-compliance when occurred. SED will also verify if adequate recordkeeping is achieved by CVGS when conducting inspections in the future.

## Concerns

### CRM, SCADA, and Leak Detection: CRM General (CR.CRMGEN)

Question Title, ID Control Room Management, CR.CRMGEN.CRMMGMT.P

Question 2. Are CRM procedures formalized and controlled?

References 192.631(a)(2)

Assets Covered Central Valley Gas Storage (86918 (39))

**Issue Summary** SED reviewed CVGS' CRM Plan and found that the CRM Plan revised on 10/04/2022 did not update mention of the previous disaster recovery site maintained in Houston which is no longer available. SED recommends CVGS to update the CRM Plan.

**CVGS Response:** CVGS has updated the CRM Plan and removed the disaster recovery site maintained in Houston, A copy of this procedure is attached.

**SED Conclusion:** SED has reviewed CVGS' response and accepted the corrective actions.

# CRM, SCADA, and Leak Detection: Fatigue Management (CR.CRMFM)

Question Title, ID Fatigue Risk Reduction, CR.CRMFM.FATIGUERISKS.P

Question 2. Does the fatigue mitigation plan adequately address how the program reduces the risk associated with controller fatigue?

References 192.631(d)

Assets Covered Central Valley Gas Storage (86918 (39))

Issue Summary SED reviewed CVGS' CRM Plan and found the CRM Plan says that the operator "conduct rounds to monitor and take readings on equipment within the plant area" (502 - Fatigue Education, page 32) as a fatigue mitigation method, whereas the CVGS facility does not conduct rounds in practice. SED recommends CVGS to update the CRM Plan.

CVGS Response: CVGS has updated the CRM Plan and removed the language that states operators conduct rounds to take readings on equipment as a fatigue mitigation method. A copy of this procedure is attached.

SED Conclusion: SED has reviewed CVGS' response and accepted the corrective actions.

# CRM, SCADA, and Leak Detection: Training (CR.CRMTRAIN)

Question Title, ID Training Program Review, CR.CRMTRAIN.TRAININGREVIEW.R

Question 4. Have processes been implemented to review the controller training program content to identify potential improvements at least once each calendar year, but at intervals not to exceed 15 months?

References 192.631(h)

Assets Covered Central Valley Gas Storage (86918 (39))

Issue Summary SED recommends CVGS to include names or keep attendance list of the personnel who conduct the annual program review.

CVGS Response: The annual training review form has been amended to include the names of those in attendance. A copy of this procedure is attached.

SED Conclusion: SED has reviewed CVGS' response and accepted the corrective actions.

# Post-Inspection Written Findings

**Dates of Inspection:** 10/31/2022 – 11/04/2022

**Operator:** CENTRAL VALLEY GAS STORAGE, LLC

**Operator ID:** 32603 (primary)

**Inspection Systems:** GT

**Assets (Unit IDs) with results in this report:**

**System Type:** GT

**Inspection Name:** 2022 CVGS OQ

**Lead Inspector:** James Zhang

**Operator Representative:** Robert Cornell

## Unsatisfactory Results

*No Preliminary Findings.*

## Concerns

*No Preliminary Concerns.*



# Post-Inspection Written Findings

**Dates of Inspection:** 10/31/2022 – 11/04/2022

**Operator:** CENTRAL VALLEY GAS STORAGE, LLC

**Operator ID:** 32603 (primary)

**Inspection Systems:** GT

**Assets (Unit IDs) with results in this report:**

**System Type:** GT

**Inspection Name:** 2022 CVGS Section 114

**Lead Inspector:** James Zhang

**Operator Representative:** Robert Cornell

## Unsatisfactory Results

*No Preliminary Findings.*

## Concerns

*No Preliminary Concerns.*