

PUBLIC UTILITIES COMMISSION

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July 20, 2018

GI-2017-02-CVS-39-01C

Mr. Stephen Wassell (swassell@southernco.com)
VP Storage Peaking & Ops
Southern Company
10 Peachtree Place NE, Suite 1000
Atlanta, GA 20209

SUBJECT: SED's closure letter for the General Order (GO) 112-F Inspection of Central Valley Gas Storage

Dear Mr. Wassell:

The Safety and Enforcement Division (SED) of the California Public Utilities Commission conducted a General Order 112-F inspection of Central Valley Gas Storage's (CVS) on February 6 through February 10, 2017. The inspection included a review of the Control Room Management Procedures, Patrolling and Leak Survey, Public Awareness Program and Operator Qualification records for the period of 2013 through 2016.

A summary of the inspection findings documented by the SED, SCG's response to SED's findings, and SED's evaluation of SCG's response for each finding outlined in the "summary of inspection findings".

This letter serves as the official closure of the 2017 GO 112-F inspection of Central Valley Gas Storage.

Thank you for your cooperation in this inspection. If you have any questions, please contact Nathan Sarina at (415) 703-1555 or by email at Nathan.Sarina@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

cc: John Boehme, Manager Regulatory Affairs (jboehme@southernco.com)
Mark Stephens, Manager-Storage Operations Department (mastephe@southernco.com)
Kenneth Bruno, SED
Kelly Dolcini, SED

SUMMARY OF INSPECTION FINDINGS

I. Probable Violations

1. Title 49 CFR §192.631(b)(1) states in part: *“Roles and responsibilities. Each operator must define the roles and responsibilities of a controller during normal, abnormal and emergency operating conditions...A controller’s authority and responsibility to make decisions and take actions during normal operations.”*

During SED’s review of the Control Room Management Plan, Section 300 – Roles and Responsibilities – CVGS does not explicitly define the responsibilities for each controller when both controllers are present at the station. According to CVGS’s schedule this scenario occurs primarily on Wednesdays.

Central Valley Gas Storage Response:

CVGS has added the following instruction to Section 300:

When two or more controllers are scheduled for the same shift only one controller can be logged in at a time. The controller that has been on duty previously will be the primary controller. The controller that is coming on shift will assist the primary controller.

SED’s Conclusion:

SED opted not to impose a fine or penalty at this time since the violations did not create any hazardous conditions for the public or utility employees. SED may opt to review the revisions made to the CRM plan at a future date.

2. Title 49 CFR §192.631(b)(3) states in part: *“Roles and responsibilities. Each operator must define the roles and responsibilities of a controller during normal, abnormal and emergency operating conditions...A controller’s role during an emergency, even if the controller is not the first to detect the emergency, including the controller’s responsibility to take specific actions and to communicate with others:”*

During SED’s discussion with facility personnel it was mentioned that the controller has the authority to call 911 or other local emergency personnel. However, the current version of the written plan does not incorporate that language under Section 300 Roles and Responsibilities, or into a procedure contained within the Control Room Management Plan. CVGS needs to clearly state in its written plan the controller’s authority to call 911 or other local emergency personnel.

Central Valley Gas Storage Response:

CVGS has added authority to call 911 or local emergency personnel to the Roles and Responsibilities in Section 300.

SED’s Conclusion:

SED opted not to impose a fine or penalty at this time since the violations did not create any hazardous conditions for the public or utility employees. SED may opt to review the revisions made to the CRM plan at a future date.

3. Title 49 CFR §192.631(b)(4) states in part: “Roles and responsibilities. Each operator must define the roles and responsibilities of a controller during normal, abnormal and emergency operating conditions...A method of recording controller shift-changes and any hand-over of responsibility between controllers.”

The Control Room Management Plan Section 406 describes the used of the shift hand-off process for normal shift changes and unforeseen circumstances. However, the CRM does not explicitly describe the process used for alternate shift hand-overs and the controller’s responsibilities during unplanned circumstances, such as short breaks, taking fatigue mitigation measures, or when the controller perform routine duties around the facility.

Central Valley Gas Storage Response:

CVGS has added the following instruction to Section 406 page 30:

When plant operators are required to leave the control room to attend to a function within the plant, take a short break, or take a fatigue mitigation measure, monitoring is performed as back up by plant operator(s) at other plants on the same DCS network. The on duty operator (on site) will call the remote operator to monitor the facility during the short absence. If an alarm is generated while the on site operator is away from the control console the remote operator will call the on site operator on the on site operator’s cell phone to respond to the alarm. Also the alarm system generates an audible alarm that is broadcast over the plant intercom system when process variables are exceeded enabling the on site controller / plant operator to know there is an out of range event while out of the control room. The on site controller / plant operator has the capabilities to monitor and make adjustments to the system via operator control stations located in the compressor buildings.

When the on site operator is back at the control console the operator will call the remote operator(s) to inform them that the remote monitoring event is finished. The remote monitoring operations will be noted in the operator’s daily log at both locations.

SED’s Conclusion:

SED opted not to impose a fine or penalty at this time since the violations did not create any hazardous conditions for the public or utility employees. SED may opt to review the revisions made to the CRM plan at a future date.

4. Title 49 CFR §192.631(c)(2) states in part: “Provide adequate information. Each operator must provide its controllers with the information, tools, processes and procedures necessary for the controllers to carry out the roles and responsibilities the operator has defined by performing each of the following:...Conduct a point-to-point verification between SCADA displays and related field equipment when field equipment is added or moved and when other changes that affect pipeline safety are made to field equipment or SCADA displays;”
 - a. The Control Room Management Plan does not define safety related points as they pertain to Central Valley Gas Storage’s SCADA system. Additionally the “Point-to-Point Verification Procedure” document refers to the Alarm Management Plan for the definition of a safety related point, but the Alarm Management Plan does not contain the definition.

Central Valley Gas Storage Response:

Southern Company Gas has developed a new Alarm Management Plan (“AMP”) for CVGS, which is attached. (See Attachment 1.) The new AMP includes the following Safety Related Alarm definition:

Safety-Related Alarm	<p>A safety related alarm is defined as an alarm that has a Human or Environmental impact severity of III, IV, or V (see Table for definitions of the impact severities).</p> <p>An alarm that specifically indicates that equipment or processes are outside the pipeline operator’s defined safety-related parameters. Federal regulations 49 CFR 192 specify certain requirements around safety related alarms. It is therefore desirable for each pipeline operator to identify and document any safety related alarms along with the criteria for that identification.</p> <p>Regulations 49 CFR 192 require that safety related alarms are accurate, be reviewed, and support safe pipeline operations.</p>
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SED’s Conclusion:

SED reviewed CVGS’s response and acknowledges that the revision was made. SED opted not to impose a fine or penalty at this time since the violations did not create any hazardous conditions for the public or utility employees.

5. Title 49 CFR §192.631(c)(3) states in part: “Provide adequate information. Each operator must provide its controllers with the information, tools, processes and procedures necessary for the controllers to carry out the roles and responsibilities the operator has defined by performing each of the following:… Test and verify an internal communication plan to provide adequate means for manual operation of the pipeline safety, at least once each calendar year, but at intervals not to exceed 15 months.”
- a. The internal communication plan does not address scenarios under which the control room must be evacuated.
 - b. The internal communication plan does not provide information describing the failure state of SCADA controlled facilities if there is event such as a power loss, etc. Additionally, there is no test procedure that verifies the state or mode of remote facilities during a SCADA failure.

Central Valley Gas Storage Response:

CVGS has added/modified the Internal Communication Plan to include items on page 26 in the Control Room Management Plan as follows:

- *In the event the control room must be evacuated during an emergency the controller/ plant operator will trip the ESD system and report to the assigned safe muster area. The controller / plant operator will notify the operations supervisor and implement the Emergency Response Plan. Examples for a Control Room evacuation may include but are not limited to:*
 - *Control Center Fire*
 - *Facility Emergency*

- *Earthquake*
- *Civil Unrest*
- *Weather Emergency*

Additionally, CVGS has added/modified items to the Internal Communication Plan on page 24 and page 26 in the Control Room Management Plan as follows:

- Page 24 - *Upon loss of communications between any one site, multiple sites or controller a system alarm is generated and stored as an event along with the date and time.*
- Page 26 - *The test may be conducted on a section of the system or the entire system by safely disabling communications between sites to generate an alarm. The test shall ensure the equipment is working properly as designed, alarms are received at the proper location, and that employees are familiar with how communications shall be conducted.*

SED's Conclusion:

SED reviewed CVGS's response and acknowledges that the revision was made. SED opted not to impose a fine or penalty at this time since the violations did not create any hazardous conditions for the public or utility employees.

6. Title 49 CFR §192.631(d)(4) states in part: "Fatigue mitigation. Each operator must implement the following methods to reduce the risk associated with the controller fatigue that could inhibit a controller's ability to carry out the roles and responsibilities the operator has defined...Establish a maximum limit on controller HOS, which may provide for an emergency deviation from the maximum limit if necessary for the safe operation of a pipeline facility."

CVGS's Control Room Management Plan Section 501 lists a minimum time off of 34 hours, if the maximum hours of service (HOS) limit is reached. This needs to be corrected to reflect a minimum time off of at least 35 hours, unless AGL can provide technical justification for reducing the 35-hour minimum time off as prescribed in PHMSA FAQ D07.

Central Valley Gas Storage Response:

CVGS has modified its Control Room Management Plan in section 501 to correct the 34 hours to 35 hours:

All shift rotations shall provide off duty time sufficient for 8 hours of continuous sleep by the controller/plant operator between shifts. Hours of service should be limited to 65 hours in any normal consecutive shift work schedule. If this recommended limit is reached, a minimum period of 35 hours of no work should be provided. For shift schedules on 12-hour shifts, the number of consecutive hours under normal circumstances should not exceed 14. For shift schedules on 8-hour shifts, the number of consecutive hours under normal circumstances...

SED's Conclusion:

SED opted not to impose a fine or penalty at this time since the violations did not create any hazardous conditions for the public or utility employees. SED may opt to review the revisions made to the CRM plan at a future date.

7. Title 49 CFR §192.631(e) states in part: “Alarm management. Each operator using a SCADA system must have a written alarm management plan to provide for effective controller response to alarms.”

Central Valley Gas Storage uses the Honeywell system as one of the tools used to track alarm content and volume. With the Honeywell system non-operative, it limits Central Valley Gas Storage’s ability to perform analysis on the content and volume of the alarms controllers are receiving over the course of the year. Since the Honeywell system is an integral part of managing Central Valley Gas Storage’s SCADA system under its Alarm Management Plan, its loss affects the quantity of data that Central Valley Gas Storage can examine, limiting their ability to analyze the effectiveness of its plan to provide for effective controller response to alarms.

Central Valley Gas Storage Response:

As a continuation of recent upgrades to its systems, CVGS plans to migrate the Alarm Management system to Honeywell’s latest Alarms Management system, called Dynamo.

To ensure CVGS will not have any connectivity issues associated with the Alarms Management system CVGS will be installing a server locally at the facility running the Dynamo application. CVGS is currently waiting for Honeywell to respond with a quote and a project timeline, but expects to have the new system in place by the end of the year or early 2018.

To further strengthen CVGS’ process, for any day the Honeywell system is inoperative, the CVGS operator will conduct a manual alarm count, documenting alarms that occurred. The daily alarm documentation will be reviewed at least weekly by the CVGS Operations Manager.

SED’s Conclusion:

SED opted not to impose a fine or penalty at this time since the violations did not create any hazardous conditions for the public or utility employees. SED may opt to review the corrective actions at a future date.

8. Title 49 CFR §192.631(e)(3) states in part: “Alarm management. Each operator using a SCADA system must have a written alarm management plan to provide for effective controller response to alarms. An operator’s plan must include provisions to:...(3) Verify the correct safety-related alarm set-point values and alarm descriptions at least once each calendar year, but at intervals not to exceed 15 months.”
- a. During SED’s interview of the field technician, it was stated that point-to-point verification is done simultaneously with JISH; however this is not documented in the written plan. Central Valley Gas Storage’s Control Room Management Plan did not have a procedure or process that explicitly describes how a point to point verification is performed.
 - b. SED’s review records found that only the hi-hi settings are recorded during point to point verification. All alarm settings used to inform the controller for effective response must be documented during a point to point verification.

Central Valley Gas Storage Response:

CVGS has added Appendix E to its Alarm Management Plan, which specifies the following procedure:

Point To Point Verification Procedure

1. APPLICABILITY

1.1. When specific changes are made to the field-based equipment, a point-to-point verification of all of the impacted safety-related points must be completed prior to relying on those points for facilities operation. The specific field changes that are in scope include:

- *Adding a new RTU, PLC*
- *Migrating existing equipment to a different make/model of RTU, PLC*
- *Adding or changing safety-critical pressure monitoring equipment*
- *Adding or changing safety-critical remote control equipment*
- *Adding or changing gas and fire detection equipment*
- *Adding or changing hazardous atmosphere detection equipment*
- *Adding or changing emergency shutdown (ESD) equipment*
- *Adding or changing a SCADA display*

1.2. The definition of “Safety-Related Points” can be found in the Alarm Management Plan.

2. TESTING REQUIREMENTS

2.1. The following shall be verified during the point-to-point verification:

- *Physical location of device*
- *Data value or status*
- *Alarm settings (Hi & Hi-Hi or Lo & Lo-Lo)*
- *Confirmation of test signals to the local and remote control rooms*

2.2. The point-to-point verification process is accomplished by working with a Technician at the remote site.

2.2.1. Signals being verified are generated at the site and tracked to the correct graphic component on the appropriate SCADA screen(s).

2.2.2. In the case of verification of controls, the command is issued from the appropriate SCADA screen(s) and the command is confirmed to reach the appropriate equipment at the remote site.

2.2.3. The Technician may have to intercept the command in the case of an operating facility.

2.2.4. Alarms that are related to the testing may be temporarily disabled for the duration of the test provided the Operations manager give their approval.

3. DOCUMENTATION

3.1. Maintain records demonstrating the following minimum information:

- *Date of testing*
- *Personnel performing testing*
- *Reason for testing*
- *Points verified*
- *Record all alarm set points related to the alarm (Hi & HiHi or Lo & LoLo)*

- *Record that the alarm is being received at local and remote control rooms*
- *Adjustments / follow-up, as necessary*

3.2. *Maintain records for a minimum of 5 years.*

SED's Conclusion:

SED reviewed CVGS's response and acknowledges that the revision was made. SED opted not to impose a fine or penalty at this time since the violations did not create any hazardous conditions for the public or utility employees.

9. Title 49 CFR §192.631(e)(5) states in part: "Alarm management. Each operator using a SCADA system must have a written alarm management plan to provide for effective controller response to alarms. An operator's plan must include provisions to:...Address deficiencies identified through the implementation of paragraphs (e)(1) through (e)(5)."

During SED's review of the Alarm Management Plan, there is no procedure in place that clearly describes how Central Valley Gas Storage addresses and prioritizes any deficiencies identified in their alarm management.

Central Valley Gas Storage Response:

CVGS has added Section 6.2 to its Alarm Management Plan:

6.2 ALARM SYSTEM REVIEW

The alarm system should be reviewed once per calendar year not to exceed 15 months to evaluate consequences of changes in areas such as regulatory requirements, alarm technology, or this management plan. The Director of Storage and Peaking Operations will determine the timing of such reviews. The local manager shall be responsible for investigating and resolving any deficiencies. Any deficiencies found will trigger a re-rationalization of the affected alarm classes and/or modification to the alarm management plan, as appropriate.

SED's Conclusion:

SED reviewed CVGS's response and acknowledges that the revision was made. SED opted not to impose a fine or penalty at this time since the violations did not create any hazardous conditions for the public or utility employees.

II. Areas of Concern/Observations/Recommendations

1. CVGS's Control Room Management Plan does not explicitly require for the procedures to be reviewed and updated at intervals not exceeding 15 months, but at least once each calendar year. This language is not incorporated into the Control Room Management Plan, although SED's review of records showed that reviews are being done annually.

Central Valley Gas Storage Response:

CVGS added the following language to Section 101 of the Control Room Management Plan:

CRM procedures will be reviewed once per calendar year, but not to exceed 15 months.

SED's Conclusion:

SED reviewed CVGS's response and the revised language to Section 101. SED may opt to review the revisions made to the CRM plan at a future date.

2. In examining the Paradyne emergency responder events for 2015 and 2016, SED observed that there were no attendees from the counties within Central Valley Gas' geographical boundaries. Central Valley Gas appeared to have better attendance when events are conducted in closer proximity to their facilities. SED recommends that Central Valley Gas Storage review the effectiveness of Paradyne's emergency responder events.

Central Valley Gas Storage Response:

CVGS conducted a meeting in May, 2017 at its facilities for local emergency responders. Attached is a sign in sheet for the meeting. (See Attachment 2.)

CVGS has been working with Paradyne to conduct a meeting in Colusa County in 2018. CVGS will continue with the local meeting held in May at the CVGS facility.

SED's Conclusion:

SED reviewed CVGS's response and acknowledges that CVGS has conducted a local meeting with its first responders to address SED's concern.

3. Under Section 502 of AGL's Control Room Management Procedure it states, "Each controller/plant operator shall complete at least one training session per calendar year..." SED recommends that the refresher for fatigue education should require at least one training session per calendar year, but not to exceed 15 months.

Central Valley Gas Storage Response:

CVGS agrees with the recommendation and has modified Section 502 to address it as follows:

As part of this CRM, the Company has developed programs to educate control room staff and their supervisors in fatigue mitigation strategies and how off-duty activities contribute to fatigue as well as training controllers / plant operators and supervisors to recognize the effects of fatigue. Each controller/plant operator shall complete at least one training session per calendar year, but not to exceed 15 months, covering topics...

SED's Conclusion:

SED reviewed CVGS's response and the revised language to Section 502. SED may opt to review the revisions made to the CRM plan at a future date.