

# PRODUCTION OPERATIONS

LAST UPDATE MAY, 2008

**Note:** During production inspections, the API RP 14C SAC reference must be verified when a SAC reference is SACed out on a production equipment component. When a SAC alternative device is acceptable, the device(s) on the upstream or downstream component must be tested to ensure adequate protection.

## GENERAL

**P-100 ARE THE PRESSURE-RECORDER CHARTS USED TO DETERMINE THE CURRENT OPERATING PRESSURE RANGES MAINTAINED AT THE LESSEE'S NEAREST OCS FIELD OFFICE?**

**Authority:** 803(b)(1)(iii)  
803(b)(2)(i)  
804(b)

**Enforcement Action:** W

**RATIONALE:**

The pressure-recorder charts are used to document the current operating range for each vessel and flowline on the platform. Once this range is determined, the activation pressure for each PSH and PSL is established by the lessee. This pressure is checked when the operation test of a PSH or PSL is performed.

**INSPECTION PROCEDURE:**

Review operator individual well records, production records, surface pressure records, monthly inspection records maintained by the operator, and pressure recorder charts for each pressure safety device to verify that:

1. Operating pressure ranges to assure maximum safety of operation have been established.
2. Pressure safety device ranges are documented by pressure recorder charts.
  - A. Charts reflect actual pressures recorded under normal operations.
  - B. Charts graduated in psi so that current maximum high and low pressure ranges are established.
  - C. Charts dated and test periods identified.
  - D. Legible.

**IF NONCOMPLIANCE EXISTS:**

Issue a warning (W) INC when charts are not:

1. Available for all pressure safety devices.
2. Current.
3. Legible.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC per facility inspected.

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**P-101 DO ALL SAFETY SHUTDOWN DEVICES, VALVES, AND PRESSURE SENSORS FUNCTION IN A MANUAL RESET MODE?**

**Authority:** 803(b)(3)  
804(b)

**Enforcement Action:** C

**INSPECTION PROCEDURE:**

Verify that each safety device functions in a manual reset mode by performing an actuation test.

**IF NONCOMPLIANCE EXISTS:**

Issue a component shut-in (C) INC for the component protected by the safety device when it will not operate in a manual reset mode.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC per component inspected.

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P-102

**DO END-DEVICES (I.E., SHUTDOWN DEVICES, SHUTDOWN VALVES, SSVs, AND OTHER SHUTDOWN CONTROLS) PERFORM THEIR DESIGNED FUNCTION UPON RECEIVING A SIGNAL (PNEUMATIC OR ELECTRONIC) TRANSMITTED BY A SENSOR THAT HAS DETECTED AN ABNORMAL CONDITION?**

**Authority:** 802(b)  
804(b)

**Enforcement Action:** C

**INSPECTION PROCEDURE:**

1. Verify that each end-device performs its designed function upon receiving a signal from a sensor or sensors that have detected an abnormal condition.
2. Verify that each end device does not exceed 45 seconds to close upon receiving a signal from a sensor or sensors that have detected an abnormal condition in accordance with API RP 14C, Appendix C.2.1.4.

**IF NONCOMPLIANCE EXISTS:**

Issue a component shut-in (C) INC if an end-device (i.e., shutdown device, shutdown valve, SSV, or other shutdown control) fails to perform its designed function upon receiving a signal (pneumatic or electronic) that is transmitted by a sensor that has detected an abnormal condition.

**Note:** Only one INC is to be issued for one end-device that protects more than one component (i.e., suction of multiple pipeline pumps that are protected by one shutdown valve).

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC per component inspected.

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P-103

**IS EACH SURFACE OR SUBSURFACE SAFETY DEVICE, WHICH IS BYPASSED OR BLOCKED OUT OF SERVICE, OUT OF SERVICE DUE TO START-UP, TESTING, OR MAINTENANCE AND IS IT FLAGGED AND MONITORED BY PERSONNEL?**

**Authority:** 803(c)(1)  
804(b)  
1004(c)

**Enforcement Action:** C

**INSPECTION PROCEDURE:**

1. Visually inspect the safety system and identify safety device(s) that are out of service and observe to see if they are flagged and monitored by personnel.
2. Discuss out of service safety devices with the operator to verify that each is out of service only due to start-up, maintenance, or testing.
3. Verify that only a minimum number of safety devices are taken out of service.

**IF NONCOMPLIANCE EXISTS:**

Issue a component shut-in (C) INC for the component protected by the safety device when the safety device is out of service for reasons other than for maintenance, start-up, or testing, and is not flagged or monitored by personnel.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC per device inspected.

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P-105

**IS EACH OPEN-ENDED LINE CONNECTED TO PRODUCING FACILITIES AND WELLS PLUGGED OR BLIND-FLANGED?**

**Authority:** 803(c)(4)  
804(b)

**Enforcement Action:** W/C

**INSPECTION PROCEDURE:**

1. Visually inspect the entire production process system and wells to identify all open-ended lines.
2. Determine the function of each open-ended line by physically tracing the piping as is on the facility and comparing the piping to the flow diagram.

**IF NONCOMPLIANCE EXISTS:**

Issue a warning (W) INC when a line is not intended to be open-ended, is not plugged or blind-flanged, and discharge is not occurring.

Issue a component shut-in (C) INC for the component upstream of the open-ended line when it is not intended to be open-ended, is not plugged or blind-flanged, and discharge is occurring.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC per facility inspected.



P-110

**DOES THE OPERATOR MAINTAIN RECORDS FOR A MINIMUM OF 2 YEARS  
DETAILING DAILY VOLUMES FLARED OR VENTED, OR LIQUID HYDROCARBONS BURNED;  
HOURS FLARED, VENTED, OR BURNED; REASONS FOR FLARING, VENTING, OR BURNING;  
WELLS CONTRIBUTING TO THE FLARING, VENTING, OR BURNING ALONG WITH GAS-OIL  
RATIOS?**

**Authority: 1105(d)  
1105(e)**

**Enforcement Action: W**

**INSPECTION PROCEDURE:**

Verify that operator maintains flaring, venting, and liquid hydrocarbon burning records for a minimum of 2 years which outline volumes of gas flared or vented; hydrocarbons burned; hours flared, vented, or burned; reasons for flaring, venting, or burning; wells contributing to the flaring, venting, or burning along with gas-oil ratios.

**IF NONCOMPLIANCE EXISTS:**

Issue a warning (W) INC for records if:

1. Operator has not maintained gas flaring or venting or liquid hydrocarbon burning records for a minimum of 2 years.
2. Gas flaring or venting of liquid hydrocarbon burning records do not include all information addressed above.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC per facility inspected.

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P-111

**HAS THE OPERATOR VERIFIED THAT OIL-WELL GAS AND/OR GAS-WELL GAS VAPORS  
FLARED OR VENTED FROM STORAGE VESSELS OR OTHER LOW PRESSURE PRODUCTION  
VESSELS ARE SMALL VOLUMES THAT CANNOT BE ECONOMICALLY RECOVERED?**

**Authority: 1105(a)(1)  
1105(a)(2)**

**Enforcement Action: W/C**

**INSPECTION PROCEDURE:**

Review flaring or venting records to determine if oil-well gas and/or gas-well gas has been flared or vented in small volumes from storage vessels or other low pressure production vessels at volumes that could not be economically recovered.

**IF NONCOMPLIANCE EXISTS:**

Issue a warning (W) INC if flaring or venting records verify that flaring or venting in small volumes from storage vessels or other low pressure production vessels has not been determined to be uneconomical to recover. Issue a component shut-in (C) INC upon instructions from the appropriate supervisor.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC per facility inspected.

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## PRODUCTION NOTIFICATION

**P-120**

**HAS THE DISTRICT MANAGER BEEN NOTIFIED, PRIOR TO THE COMMENCEMENT OF PRODUCTION, WHEN A FACILITY IS READY FOR A PREPRODUCTION TEST AND AN INSPECTION OF THE INTEGRATED SAFETY SYSTEM?**

**Authority: 804(a)(12)**

**Enforcement Action: C/S**

**INSPECTION PROCEDURE:**

Verify that the District Manager has been notified that a facility is ready for a preproduction test and an inspection of the integrated safety system, prior to commencement of production from that well.

**IF NONCOMPLIANCE EXISTS:**

Issue one component shut-in (C) INC for the integrated safety system or newly installed equipment if the District Manager has not been notified by the lessee as required.

Issue one facility shut-in (S) INC for the facility if the District Manager has not been notified by the lessee that the facility is ready for a preproduction test.

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**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC per facility inspected.

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## FIRE WATER SYSTEM

P-130

**IS AN APPROVED FIREWATER SYSTEM, CONSISTING OF RIGID PIPE WITH FIRE-HOSE STATIONS OR FIXED FIREWATER MONITORS, OR IS AN OPERABLE CHEMICAL SYSTEM, APPROVED BY THE DISTRICT MANAGER, INSTALLED TO PROVIDE PROTECTION IN ALL AREAS WHERE PRODUCTION-HANDLING EQUIPMENT IS LOCATED?**

**Authority:** 803(b)(8)

**Enforcement Action:** S

803(b)(8)(i)

803(b)(8)(iii)

804(b)

**DEFINITION:**

**Production-handling equipment** - Wellheads, separators, scrubbers, treaters, compressors, pipeline pumps, generators, skimmers, and heaters.

**INSPECTION PROCEDURE:**

1. Firewater system

A. Visually inspect areas where production-handling equipment is located to verify that firewater systems of rigid pipe and hose stations are installed per the District Manager's approval.

B. Request that operator initiate actuation test of all fire water systems and pumps on facility.

**Note:** As a minimum, the firewater pump should be sized to deliver 180 gpm (11.36 ccs). The firewater system should deliver water at the pressure recommended by the nozzle manufacturer, or at least 75 psi (5.17 bar) when two hose streams are flowing.

2. Chemical system - Visually inspect the area where production-handling equipment is located to verify that chemical systems are installed per the District Manager's approval.

**Note:** A chemical system shall not be approved in lieu of a firewater system in an enclosed well bay area.

**IF NONCOMPLIANCE EXISTS:**

Issue a facility shut-in (S) INC if:

1. The firewater system does not operate as required.

2. The firewater system is not of rigid pipe with hose stations installed in areas where production-handling equipment is located.

3. The chemical system does not operate as required.

4. The chemical system is not as approved.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC per facility inspected.

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P-131

**IS A FIXED WATER SPRAY SYSTEM INSTALLED IN ENCLOSED WELL-BAY AREAS WHERE HYDROCARBON VAPORS MAY ACCUMULATE?**

**Authority:** 803(b)(8)(i)

**Enforcement Action:** S

804(b)

**DEFINITION:**

**Enclosed well-bay** - Any well-bay area with four equivalent sides of the six sided area closed-in.

**INSPECTION PROCEDURE:**

1. Inspect each well-bay area to determine if it is enclosed.

2. Visually inspect the well-bay area to determine that fixed fire-water piping and spray nozzles are installed.

3. Start the fire water pump and test the system for operation.

**IF NONCOMPLIANCE EXISTS:**

Issue a facility shut-in (S) INC if any component of the fire-water system fails to operate or is not installed.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC per well bay inspected.

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P-132

**IS FUEL OR POWER FOR FIREWATER PUMP DRIVERS AVAILABLE FOR AT LEAST 30 MINUTES OF RUN TIME DURING A PLATFORM SHUT-IN?**

**Authority:** 803(b)(8)(ii)  
804(b)

**Enforcement Action:**

S

**INSPECTION PROCEDURE:**

**1. Diesel powered firewater pump**

Conduct an operational test to verify 30-minute run time when the operator cannot verify by records the 30-minute run time.

**2. Natural gas powered firewater pump**

Actuation of the emergency shutdown system or the fire loop system effects shutdown of all wells and production processes. Continued operation of the natural gas powered fire-fighting systems necessitates utilizing the trapped volume sufficient to provide the 30-minutes run time. Conducted an operational test to verify the 30-minute run time when the operator cannot verify by records the 30-minute run time.

**3. Electric power firewater pump(s)**

Verify available power source and activate the pump to assure proper operation.

- A. Electric generating stations located on the facility shall permit continued operation for 30-minute run time.
- B. Electric generating stations located on facilities other than the one being inspected shall permit continued operation for 30-minute run time although the platform is shut in.

**IF NONCOMPLIANCE EXISTS:**

Issue a facility shut-in (S) INC if no provisions exist for continued operations of fire-water system for 30-minute run time.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC per pump driver inspected.

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P-133

**IS A DIAGRAM OF THE FIREFIGHTING SYSTEM SHOWING THE LOCATION OF ALL FIREFIGHTING EQUIPMENT POSTED IN A PROMINENT PLACE ON THE FACILITY?**

**Authority:** 803(b)(8)(iv)  
804(b)

**Enforcement Action:** W

**INSPECTION PROCEDURE:**

Verify that a diagram of the firefighting system showing the location of all firefighting equipment is posted in a prominent place on the facility.

**Note:** Diagrams for single- and multi-well satellite structures, and for unmanned structures that are not equipped with enclosures, must be maintained in the Field Quarters Building in a prominent location.

**IF NONCOMPLIANCE EXISTS:**

Issue a warning (W) INC if a diagram showing all of the firefighting equipment is not posted in a prominent place on the facility being inspected.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC per facility inspected.

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## GAS-DETECTION SYSTEM

P-150

**ARE CONTINUOUSLY MONITORING GAS-DETECTION SYSTEMS INSTALLED IN ALL INADEQUATELY VENTILATED, ENCLOSED CLASSIFIED AREAS, AND SIGNAL AN ALARM AT NO GREATER THAN 25 PERCENT LEL, INITIATING A SHUT-IN SEQUENCE (MANUAL-RESET TYPE) WHEN LEVELS REACH NO MORE THAN 60 PERCENT LEL?**

**Authority:** 803(b)(9)(i)  
803(b)(9)(ii)  
804(b)

**Enforcement Action:** W/C

**DEFINITION:**

**Adequate ventilation** - A change of air volume each 5 minutes or 1 cubic foot of air-volume flow per minute per square foot of solid floor area, whichever is greater.

**Enclosed area** - Any area confined on more than four of its six possible sides by walls, floors, or ceilings more restrictive to air flow than grating or fixed open louvers and of sufficient size to allow entry of personnel.

**Classified area** - Identified in Appendix 21.

**INSPECTION PROCEDURE:**

1. Identify the inadequately ventilated classified areas.
2. Visually inspect each identified area to verify that it is equipped with at least one gas sensor.
3. Inspect each gas-detection system to verify that it has an automatic backup power source and is capable of continuous monitoring.
4. Verify that combustible gas-detection systems related to the higher gas concentration levels are of the manual-reset type.
5. Verify that combustible gas-detection systems perform their designated function in accordance with API RP 14C.

**Note:** As referenced in API RP 14C, LEL gas-detection systems will be required to sound an audible alarm at 25 percent LEL, and initiate shut-in of gas source SDV's at 60 percent LEL.

**IF NONCOMPLIANCE EXISTS:**

Issue a warning (W) INC when a gas sensor is omitted and shut-in action would result in discontinued operation of emergency electric generating stations and firefighting system.

Issue a component shut-in (C) INC for the components protected by the gas monitoring equipment when:

1. An inadequately ventilated, enclosed classified area is not equipped with a gas sensor or is not capable of continuous monitoring.
2. The combustible gas-detection systems related to the higher gas concentration levels automatically reset after reaching 60 percent LEL or fail to sound an alarm at 25 percent and/or initiate a shut-in at 60 percent LEL.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC per facility inspected.

P-153

**IS A FUEL-GAS ODORANT OR AN AUTOMATIC GAS-DETECTION AND ALARM SYSTEM INSTALLED IN ENCLOSED, CONTINUOUSLY MANNED AREAS OF THE FACILITY WHICH ARE PROVIDED WITH FUEL GAS?**

**Authority:** 803(b)(9)(iii)  
804(b)

**Enforcement Action:** W/C

**DEFINITION:**

**Enclosed area** - Any area confined on more than four of its six possible sides by walls, floors, or ceilings more restrictive to air flow than grating or fixed open louvers and of sufficient size to allow entry of personnel.

**INSPECTION PROCEDURE:**

Verify that each enclosed, continuously manned area that is provided with fuel gas is protected by either a fuel gas odorant or an automatic gas-detection and alarm system.

**IF NONCOMPLIANCE EXISTS:**

Issue a warning (W) INC when a shut-in action would result in discontinued operation of emergency electric generating stations or firefighting systems.

Issue a component shut-in (C) INC for the source of the fuel gas when an enclosed, continuously manned area that receives fuel gas without an odorant is not equipped with an automatic gas-detection and alarm system.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC per each facility inspected.

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P-154

**IS EACH GAS-DETECTION SYSTEM INSTALLED IN ACCORDANCE WITH API RP 14C, API RP 14G, AND API RP 14F?**

**Authority:** 803(b)(9)(v)  
804(b)

**Enforcement Action:** C

**INSPECTION PROCEDURE:**

Inspect to verify that each gas-detection system is installed in accordance with API RP 14C, API RP 14G, and API RP 14F which require that:

1. Each combustible gas-detection control unit be installed outside the monitored area.
2. Each compressor building have a minimum of two sensors installed.
3. A gas-detection system capable of monitoring more than one area identifies the source of the warning signal.

**IF NONCOMPLIANCE EXISTS:**

Issue a component shut-in (C) INC for the component protected by the gas-detection system when the system is not installed as required.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each system inspected.

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P-155

**IS EACH COMBUSTIBLE GAS-DETECTION SYSTEM CALIBRATED AT LEAST ONCE EVERY 3 MONTHS?**

**Authority:** 804(a)(b)(9)

**Enforcement Action:** W/C

**INSPECTION PROCEDURE:**

Review operator records to verify that each gas-detection system has been calibrated at least once within the last 3 months.

**IF NONCOMPLIANCE EXISTS:**

Issue a warning (W) INC when a review of records does not verify that each gas-detection system has been calibrated at the required interval.

Issue a component shut-in (C) INC for the component(s) protected by the gas-detection system when the system has not been calibrated within the required interval.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each system inspected.

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## FIRE-DETECTION SYSTEM

P-170

**ARE FIRE (FLAME, HEAT, OR SMOKE) SENSORS OF THE CONTINUOUS MONITORING TYPE AND EQUIPPED WITH A MANUAL RESET INSTALLED IN ALL ENCLOSED CLASSIFIED AREAS?**

**Authority:** 803(b)(9)(i)  
803(b)(9)(ii)  
804(b)

**Enforcement Action:** W/C

**DEFINITION:**

**Enclosed area** - Any area confined on more than four of its six possible sides by walls, floors, or ceilings more restrictive to air flow than grating or fixed open louvers and of sufficient size to allow entry of personnel.

**Classified area** - Identified in Appendix 21.

**INSPECTION PROCEDURE:**

1. Identify the enclosed classified areas.
2. Visually inspect each identified area to verify that it is equipped with at least one fire sensor.
3. Inspect each fire-detection system to verify that it has a backup power source.
4. Inspect to verify that the fire-detection system is a manual-reset type (non-automatic).

**Note:** When a UV system is used, it must provide complete coverage of the area.

**IF NONCOMPLIANCE EXISTS:**

Issue a warning (W) INC when a fire sensor is omitted and shut-in action would result in discontinued operation of emergency electric generating stations and firefighting system.

Issue a component shut-in (C) INC for:

1. The area when the enclosed classified area is not equipped with a fire sensor.
2. The components protected by the fire monitoring equipment when the fire-detection system does not have a backup power source.
3. The component(s) protected by the system when the fire-detection system automatically resets after sounding alarm.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC per each facility inspected.

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P-173

**IS EACH FIRE-DETECTION SYSTEM INSTALLED IN ACCORDANCE WITH API RP 14C, API RP 14G, AND API RP 14F?**

**Authority:** 803(b)(9)(v)

**Enforcement Action:** C

**INSPECTION PROCEDURE:**

Inspect to verify that each fire-detection system is installed in accordance with API RP 14C, API RP 14G, and API RP 14F, which require that:

1. Buildings in which personnel regularly or occasionally sleep be equipped with smoke and/or thermal detectors.
2. Rooms containing a heat source such as hot water heater, clothes dryer, kitchen range, oven, space heater, etc., be equipped with smoke and/or thermal detectors.
3. When smoke detectors are used, sensors be placed in individual sleeping rooms or spaced in corridors.
4. Smoke or thermal detectors be installed near each heat source.
5. Audible/visual fire alarm signals be distinctive from any other signal on the platform.

**IF NONCOMPLIANCE EXISTS:**

Issue a component shut-in (C) INC for the component protected by the fire-detection system when the system is not installed as required.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each system inspected.

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**P-175 DOES ACTIVATION OF THE FIRE LOOP SYSTEM OR OTHER FIRE DETECTION SYSTEMS, OR AUTOMATIC DETECTION OF AN ABNORMAL CONDITION, INITIATE SURFACE AND SUBSURFACE SHUT-IN?**

**Authority: 801(i)**

**Enforcement Action: C/S**

**803(b)(9)(v)**

**INSPECTION PROCEDURE:**

Initiate a test of the fire loop system in accordance with Appendix 10.

**Note:** Consideration should be given to avoid total platform shut-in, as well as those wells which have a history of problems returning to flow after extended periods of being shut-in.

**IF NONCOMPLIANCE EXISTS:**

Issue a component shut-in (C) INC when a well or component fails to close within 45 seconds.

Issue a facility shut-in (S) INC when the fire loop system or other fire detection system fails to initiate surface and subsurface shut-in.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC per facility inspected.

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**P-176 IS EACH FIRE-DETECTION SYSTEM TESTED FOR OPERATION AND RE-CALIBRATED AT LEAST ONCE EVERY 3 MONTHS?**

**Authority: 804(a)(b)(9)**

**Enforcement Action: W/C**

**INSPECTION PROCEDURE:**

Review operator records to verify that each fire-detection system has been tested and re-calibrated within the last 3 months.

**IF NONCOMPLIANCE EXISTS:**

Issue a warning (W) INC when a review of records does not verify that each fire-detection system has been tested and re-calibrated at the required interval, but the fire-detection system has been tested in the last 3 months

Issue a component shut-in (C) INC for the activity protected by the fire-detection system when:

1. Review of records does not verify that each fire-detection system has been tested and re-calibrated at the required interval, and the fire-detection system has not been tested in the last 3 months.
2. The system cannot be re-calibrated.
3. The system cannot be re-calibrated.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC per each system inspected.

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**P-177 ARE OPEN FLAME OR DEVICES OPERATING AT TEMPERATURES WHICH COULD IGNITE A METHANE-AIR MIXTURE NOT USED FOR TESTING?**

**Authority: 804(a)(9)**

**Enforcement Action: C**

**INSPECTION PROCEDURE:**

1. Review with operator the method used to test each fire-detection system.

2. Inspect device used in test for presence of open flame or temperature that exceeds 1100EF.

**IF NONCOMPLIANCE EXISTS:**

Issue a component shut-in (C) INC for the activity protected by each fire-detection system when the testing device uses an open flame or exceeds 1100EF.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC per facility inspected.



P-203

**IS A TSE LOCATED WHERE SPECIFIED BY TABLE C1 OF API RP 14C FOR ATMOSPHERIC VESSELS?**

**Authority:** 802(b)  
804(b)

**Enforcement Action:** C

**INSPECTION PROCEDURE:**

1. Verify that there is one fusible plug above each process inlet.
2. Verify that there is one fusible plug above each process outlet.
3. Verify that there is one fusible plug above each hatch.

**IF NONCOMPLIANCE EXISTS:**

Issue a component shut-in (C) INC if each atmospheric vessel is not equipped with required TSE.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each vessel inspected.

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P-204

**IS A TSE LOCATED WHERE SPECIFIED BY TABLE C1 OF API RP 14C FOR FIRED VESSELS AND EXHAUST HEATED COMPONENTS?**

**Authority:** 802(b)  
804(b)

**Enforcement Action:** C

**INSPECTION PROCEDURE:**

1. Vertical vessel
  - A. Verify that there is at least one fusible plug on each vessel.
  - B. Verify that there is one fusible plug for each 12 inches of OD to a maximum of five.
  - C. Verify that there is one fusible plug outside each flame arrester on fired components.
2. Horizontal vessel (less than or equal to 48-inch OD)
  - A. Verify that there are at least two fusible plugs on each vessel.
  - B. Verify that there is one fusible plug for each 5 feet of length.
  - C. Verify that there is one fusible plug outside each flame arrester on fired components.
3. Horizontal vessel (greater than 48-inch OD)
  - A. Verify that there are at least four fusible plugs on each vessel.
  - B. Verify that there are two fusible plugs for each 5 feet of length in two parallel rows.
  - C. Verify that there is one fusible plug outside each flame arrester on fired components.

**IF NONCOMPLIANCE EXISTS:**

Issue a component shut-in (C) INC if each fired vessel and exhaust heated component is not equipped with required TSE.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each vessel inspected.

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P-205

**IS A TSE LOCATED WHERE SPECIFIED BY TABLE C1 OF API RP 14C FOR HEAT EXCHANGERS?**

**Authority:** 802(b)  
804(b)

**Enforcement Action:** C

**INSPECTION PROCEDURE:**

Verify that there is one fusible plug over each end of each heat exchanger.

**IF NONCOMPLIANCE EXISTS:**

Issue a component shut-in (C) INC if each heat exchanger is not equipped with required TSE.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each heat exchanger inspected.

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## ESD SYSTEM

**P-231 IS AN OPERABLE ESD STATION LOCATED AT EACH HELICOPTER DECK?**

**Authority:** 803(b)(4)  
804(b)

**Enforcement Action:** S

**INSPECTION PROCEDURE:**

1. Verify that there is an ESD station at each helicopter deck.
2. Verify operation of ESD station by testing in accordance with Appendix 10.

**IF NONCOMPLIANCE EXISTS:**

Issue a facility shut-in (S) INC when an ESD station:

1. Does not exist at the required location.
2. Does not operate properly.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each location inspected.

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**P-232 IS AN OPERABLE ESD STATION LOCATED AT EACH EXIT STAIRWAY LANDING AT EACH DECK LEVEL?**

**Authority:** 803(b)(4)  
804(b)

**Enforcement Action:** S

**INSPECTION PROCEDURE:**

1. Verify that there is an ESD station at each exit stairway landing at each deck level.
2. Verify operation of ESD station by testing in accordance with Appendix 10.

**IF NONCOMPLIANCE EXISTS:**

Issue a facility shut-in (S) INC when an ESD station:

1. Does not exist at the required location.
2. Does not operate properly.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each location inspected.

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**P-233 IS AN OPERABLE ESD STATION LOCATED AT EACH BOAT LANDING?**

**Authority:** 803(b)(4)  
804(b)

**Enforcement Action:** S

**INSPECTION PROCEDURE:**

1. Verify that there is an ESD station at each boat landing.
2. Verify operation of ESD station by testing in accordance with Appendix 10.

**Note:** Only ESD stations at the boat landing may utilize a loop of breakable synthetic tubing in lieu of a valve.

**IF NONCOMPLIANCE EXISTS:**

Issue a facility shut-in (S) INC when an ESD station:

1. Does not exist at the required location.
2. Does not operate properly.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each location inspected.

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P-234	<b>IS AN OPERABLE ESD STATION LOCATED AT THE CENTER OR EACH END OF A BRIDGE CONNECTING TWO PLATFORMS?</b>
	<b>Authority: 803(b)(4)</b> <b>804(b)</b>
	<b>Enforcement Action: S</b>
	<b>INSPECTION PROCEDURE:</b>
	1. Verify that there is an ESD station at the center or each end of a bridge connecting two platforms.
	2. Verify operation of ESD station by testing in accordance with Appendix 10.
	<b>IF NONCOMPLIANCE EXISTS:</b>
	Issue a facility shut-in (S) INC when an ESD station:
	1. Does not exist at the required location.
	2. Does not operate properly.
	<b>INSPECTION COUNT/ INC COUNT:</b>
	Enter one item checked/ issue one INC for each location inspected.
P-235	<b>IS AN OPERABLE ESD STATION LOCATED AT EACH EMERGENCY EVACUATION STATION?</b>
	<b>Authority: 803(b)(4)</b> <b>804(b)</b>
	<b>Enforcement Action: S</b>
	<b>INSPECTION PROCEDURE:</b>
	1. Verify that there is an ESD station at each emergency evacuation station.
	2. Verify operation of ESD station by testing in accordance with Appendix 10.
	<b>IF NONCOMPLIANCE EXISTS:</b>
	Issue a facility shut-in (S) INC when an ESD station:
	1. Does not exist at the required location.
	2. Does not operate properly.
	<b>INSPECTION COUNT/ INC COUNT:</b>
	Enter one item checked/ issue one INC for each location inspected.
P-237	<b>IS AN OPERABLE ESD STATION LOCATED NEAR THE MAIN EXITS OF LIVING QUARTERS?</b>
	<b>Authority: 803(b)(4)</b> <b>804(b)</b>
	<b>Enforcement Action: S</b>
	<b>Note:</b> Main exit is defined as the exits from the quarters to the main deck.
	<b>INSPECTION PROCEDURE:</b>
	1. Verify that there is an ESD station near the main exits of all living quarters.
	2. Verify operation of ESD station by testing in accordance with Appendix 10.
	<b>IF NONCOMPLIANCE EXISTS:</b>
	Issue a facility shut-in (S) INC when an ESD station:
	1. Does not exist at the required location.
	2. Does not operate properly.
	<b>INSPECTION COUNT/ INC COUNT:</b>
	Enter one item checked/ issue one INC for each location inspected.
P-238	<b>IS A SCHEMATIC OF THE ESD SYSTEM MAINTAINED ON THE FACILITY OR AT THE LESSEE'S NEAREST OCS FIELD OFFICE?</b>
	<b>Authority: 803(b)(4)(iii)</b> <b>804(b)</b>
	<b>Enforcement Action: W</b>
	<b>INSPECTION PROCEDURE:</b>
	Verify that a schematic of the ESD system which indicates the control function of all safety devices is maintained on the facility or at the lessee's field office nearest the facility
	<b>IF NONCOMPLIANCE EXISTS:</b>
	Issue a warning (W) INC if a schematic of the ESD system is not maintained on the facility or at the lessee's nearest field office.
	<b>INSPECTION COUNT/ INC COUNT:</b>
	Enter one item checked/ issue one INC for each facility inspected.

P-239

**IS THE ESD SYSTEM EQUIPPED WITH MANUALLY OPERATED, QUICK-OPENING, AND NON-RESTRICTED VALVES?**

**Authority: 803(b)(4)(i)  
804(b)**

**Enforcement Action: S**

**DEFINITION:**

**ESD System** - A system of manual stations which, when activated, initiates platform shutdown with the exception of fire fighting system.

**Manually Operated** - A mechanical lever or an electrical button used to operate the ESD system.

**Quick Opening Valve** - A ball valve or a solenoid valve as compared to a rising stem valve.

**INSPECTION PROCEDURE:**

1. Avoid platform shut-in when testing ESD stations. Operate ESD valve and observe how appropriate relays operate.
2. The ESD valve should operate freely.
3. Inspect to verify that all ESD stations are equipped with manually operated, quick opening and non-restricted valves.

**IF NONCOMPLIANCE EXISTS:**

Issue a facility shut-in (S) INC if:

1. The ESD valve cannot be manually operated.
2. The ESD valves are not quick-opening.
3. The ESD actuation does not initiate platform shut-in.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each system inspected.

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P-240

**DOES THE SSV CLOSE WITHIN 45 SECONDS AFTER AUTOMATIC DETECTION OF AN ABNORMAL CONDITION OR ACTIVATION OF THE ESD?**

**Authority: 803(b)(4)(ii)  
804(b)**

**Enforcement Action: C/S**

**INSPECTION PROCEDURE:**

1. Initiate a test of the ESD system by operating a selected ESD station (see Appendix 10).
  - A. Select wells or components to be shut-in and isolate all non-selected wells and components.
  - B. Time closure from the time the ESD valve is actuated to full closure of wells and components.
  - C. Check all selected wells and components to assure that actuation has been achieved.
2. Initiate a shut-in by creating an abnormal condition (e.g., activating a sensor).
  - A. Select wells and components to be shut-in and have the operator isolate all non-selected wells and components.
  - B. Time closure from the time the ESD valve is actuated to full closure of wells and components.
  - C. Check all selected wells and components to ensure that actuation has been achieved.

**Note:** Consideration should be given to avoid total platform shut-in, as well as those wells which have a history of problems returning to flow after extended periods of being shut-in.

**IF NONCOMPLIANCE EXISTS:**

Issue a component shut-in (C) INC when a well or component fails to close within 45 seconds.

Issue a facility shut-in (S) INC when the ESD fails to initiate surface and subsurface shut-in.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each component inspected.

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P-241

**DOES THE SCSSV CLOSE WITHIN 2 MINUTES AFTER THE ESD OR FIRE DETECTION SYSTEM SHUT-IN SIGNAL HAS CLOSED THE SSV?**

**Authority:** 801(i)

**Enforcement Action:** C/S

803(b)(4)(ii)

804(b)

**INSPECTION PROCEDURE:**

In conjunction with the test of the SSV (PINC's P-240 & P-175), monitor the applied hydraulic control pressure to the selected SCSSV to verify SCSSV closure within 2 minutes after full closure of the SSV.

1. Select wells to be shut-in and have the operator isolate all non-selected wells.
2. Time closure from the time the SSV reaches full closure to bleed down of hydraulic control pressure for the SCSSV.
3. Check all selected wells to assure that actuation has been achieved.

**IF NONCOMPLIANCE EXISTS:**

Issue a component shut-in (C) INC for each selected SCSSV that fails to activate within 2 minutes after activation of the SSV.

Issue a facility shut-in (S) INC when the SCSSV's fail to initiate subsurface shut-in.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each SCSSV inspected.

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P-242

**IS EACH ESD SYSTEM TESTED FOR OPERATION AT LEAST ONCE EACH MONTH, BUT AT NO TIME SHALL MORE THAN 6 WEEKS ELAPSE BETWEEN TESTS?**

**Authority:** 804(a)(10) (11)

**Enforcement Action:** W/C

804(b)

**INSPECTION PROCEDURE:**

Review operator records to verify that each ESD system has been tested each month, that no more than 6 weeks have elapsed between tests.

**IF NONCOMPLIANCE EXISTS:**

Issue a warning (W) INC when a review of records does not verify that the ESD has been tested at the required interval, but the ESD has been tested in the last 6 weeks.

Issue a component shut-in (C) INC for the component(s) that would be shut-in by the ESD when a review of records does not verify that the ESD has been tested at the required interval and the ESD has not been tested in the last 6 weeks.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each system inspected.

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P-243

**IS EACH ESD SYSTEM TEST CONDUCTED BY ALTERNATING ESD STATIONS MONTHLY TO CLOSE AT LEAST ONE WELLHEAD SSV AND VERIFY SURFACE-CONTROLLED SSSV CLOSURE FOR THAT WELL AS INDICATED BY CONTROL CIRCUITRY ACTUATION?**

**Authority:** 804(a)(b)(10) (11)

**Enforcement Action:** W/S

**Note:** The boat landing ESD loop of synthetic tubing shall be considered a station when utilized in lieu of a valve

or electric switch in accordance with API RP 14 C, Appendix C.1.1.2. (h).

**INSPECTION PROCEDURE:**

1. Review operators records to verify that:
  - A. The ESD test is conducted by alternating ESD stations monthly.
  - B. The ESD test results in the closure of at least one wellhead SSV and associated SCSSV.
2. Select one ESD station for testing and conduct a test of that station by activating the station to initiate shut-in of at least one well. Verify closure of SSV by observing valve stem. Verify closure of SCSSV by observing control circuitry actuation.

**IF NONCOMPLIANCE EXISTS:**

Issue a warning (W) INC if the operator records do not verify that the ESD test:

1. Is conducted by alternating ESD stations monthly.
  2. Actuated closure of at least one wellhead SSV.
  3. Actuated closure of a surface-controlled SSV of at least one well is indicated by control circuitry actuation.
- Issue a facility shut-in (S) INC when the ESD test does not initiate SSV shut-in or indicated SCSSV shut-in.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each system inspected.

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## SUBSURFACE SAFETY DEVICES

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P-260

**ARE ALL TUBING INSTALLATIONS OPEN TO A HYDROCARBON-BEARING ZONE WHICH IS CAPABLE OF NATURAL FLOW EQUIPPED WITH AN SSSV?**

**Authority:** 801(c)  
804(b)

**Enforcement Action:** C

**DEFINITION:**

**Open to hydrocarbon-bearing zones** - Any well with open perforations in a hydrocarbon-bearing zone regardless of tubing-packer configuration.

**INSPECTION PROCEDURE:**

Review operator individual well records to verify installation of an SSSV in all wells open to a hydrocarbon-bearing zone which is capable of natural flow.

**Note:** An SSSV is permitted if it meets one of the following criteria and is approved by the District Manager:

1. Well was not previously equipped with SSSV but will be so equipped when the tubing is first removed and reinstalled.
2. The SSSV is installed in a well completed from a single-well or multi-well satellite caisson or sea floor completion.
4. The SSSV is installed in a well with a SSSV that has become inoperable and cannot be repaired without removal and reinstallation of the tubing.

**IF NONCOMPLIANCE EXISTS:**

Issue a component shut-in (C) INC when records do not confirm that all wells open to a hydrocarbon-bearing zone which are capable of natural flow are equipped with an SSSV.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each tubing installation inspected.

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P-261

**ARE NEW COMPLETIONS (PERFORATED BUT NOT PLACED ON PRODUCTION) AND COMPLETIONS SHUT-IN FOR A PERIOD OF MORE THAN 6 MONTHS EQUIPPED WITH EITHER (1) A PUMP-THROUGH TYPE TUBING PLUG; (2) A SURFACE-CONTROLLED SSSV WITH THE SURFACE CONTROL RENDERED INOPERATIVE; OR (3) AN INJECTION VALVE CAPABLE OF PREVENTING BACK FLOW?**

**Authority:** 801(f)  
804(b)

**Enforcement Action:** W

**DEFINITION:**

**Shut-in completion** - Completion open to hydrocarbon-bearing zones, shut-in at the surface and no attempt to produce the well within the past 6 months is documented.

**Rendered inoperative** - Hydraulic control line must be completely disconnected and plugged from the control valve on the wellhead flange and hydraulic control pressure bled off the SCSSV.

**INSPECTION PROCEDURE:**

1. Review operator individual well records and production reports to verify that a tubing plug, a SCSSV used as a tubing plug, or an injection valve is installed in each well that is shut-in for 6 months or longer.
2. Inspect all wells equipped with a pump-through type SCSSV tubing plug to ensure that:
  - A. The SCSSV hydraulic control line is disconnected from the needle valve on the wellhead flange;
  - B. Hydraulic control pressure has been bled off the SCSSV.

**IF NONCOMPLIANCE EXISTS:**

Issue a warning (W) INC when records do not confirm that all wells shut-in for 6 months or longer are equipped with a pump-through tubing plug, an SSSV that is rendered inoperable, or an injection valve.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each plugged well inspected.

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P-262

**IS A SURFACE-CONTROLLED SSSV OR AN INJECTION VALVE CAPABLE OF PREVENTING BACK FLOW INSTALLED IN EACH INJECTION WELL?**

**Authority:** 801(g)  
804(b)

**Enforcement Action:** C

**INSPECTION PROCEDURE:**

Review the individual well record to determine if the injection well is equipped with an injection valve or a SCSSV.

**IF NONCOMPLIANCE EXISTS:**

Issue a component shut-in (C) INC when the records confirm that an injection well is without an injection valve or SCSSV.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each injection well inspected.

P-263

**IS A SUBSURFACE SAFETY DEVICE INSTALLED AT A DEPTH OF 100 FEET OR MORE BELOW THE SEA FLOOR WITHIN 2 DAYS AFTER PRODUCTION IS ESTABLISHED?**

**Authority:** 801(e)(1)  
804(b)

**Enforcement Action:** W/C

**DEFINITION:**

**Production** - Established when produced fluid or gas are sent to sales.

**INSPECTION PROCEDURE:**

Review operator individual well files to verify installation of a subsurface safety device, plug or injection valve in all wells open to hydrocarbon bearing zones at a set depth of at least 100 feet below ocean floor within 2 days of production being established.

**IF NONCOMPLIANCE EXISTS:**

Issue a warning (W) INC when records indicate that a well open to hydrocarbon-bearing zones was equipped with a subsurface safety device, plug, or injection valve set at least 100 feet below the ocean floor more than 2 days after production being established.

Issue a component shut-in (C) INC when records do not confirm that all wells open to hydrocarbon-bearing zones for more than 2 days after production was established are equipped with a subsurface safety device, plug, or injection valve set at least 100 feet below the ocean floor.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each subsurface safety valve inspected.

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P-264

**IF THE SSSV IS REMOVED AND THE ZONE IS OPEN TO FLOW, IS FLOWING NECESSARY FOR THE OPERATION BEING CONDUCTED?**

**Authority:** 801(e)(3)

**Enforcement Action:** W/C

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804(b)

**DEFINITION:**

**Open-to-Flow Well** - A well open to a hydrocarbon-bearing zone.

**Necessary for the operation being conducted** - Natural flow or artificial lift necessary for operations (i.e., flowing pressure survey, cleaning-up high sand cut well, cutting paraffin, cleaning out tubing with coil tubing, pipe, etc.).

**INSPECTION PROCEDURE:**

1. Review individual well records to determine if the operator continued to produce the well after the SSSV had been removed.

2. Determine if producing the well was necessary for the operation being conducted.

**IF NONCOMPLIANCE EXISTS:**

Issue a warning (W) INC when records do not confirm that producing the well with the SSSV removed was necessary for the operation being conducted and the SSSV has been reinstalled.

Issue a component shut-in (C) INC when records do not confirm that producing the well with the SSSV removed was necessary for the operation being conducted and the SSSV has not been reinstalled.

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**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each flowing well not equipped with an SSSV inspected.

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P-265

**IS A PERSON IN THE IMMEDIATE VICINITY OF THE WELL IF THE MASTER VALVE IS OPEN AND THE SUBSURFACE SAFETY DEVICE IS NOT INSTALLED?**

**Authority:** 801(e)(2)  
801(h)(2)  
801(h)(3)

**Enforcement Action:** C

**DEFINITION:**

**Immediate vicinity** - In the same well bay

**INSPECTION PROCEDURE:**

1. Review operator records to identify all wells that are not equipped with an SSSV to document:
  - A. All wells not so equipped and the reason why the SSSV is removed.
  - B. Producing status.
2. Inspect all wells not equipped with an SSSV to verify that a person is in the immediate vicinity of the well when the master valve is open and the subsurface safety device is not installed.

**IF NONCOMPLIANCE EXISTS:**

Issue a component shut-in (C) INC when the SSSV is removed and the well is not attended by a person in the immediate vicinity of the wellhead.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC per well bay inspected.

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P-267

**ARE ALL TUBING INSTALLATIONS IN WHICH A WIRELINE OR PUMPDOWN-RETRIEVABLE SUBSURFACE SAFETY DEVICE IS INSTALLED EQUIPPED WITH A LANDING NIPPLE WITH FLOW COUPLINGS OR OTHER PROTECTIVE EQUIPMENT ABOVE AND BELOW TO PROVIDE FOR THE SETTING OF THE SSSV?**

**Authority:** 801(i)  
804(b)

**Enforcement Action:** C

**INSPECTION PROCEDURE:**

1. Review operator individual well records to verify that each tubing installation is equipped with a landing nipple to provide for the setting of the SSSV and flow couplings above and below.
2. Review operator individual well records to verify that each SSSV is installed in a landing nipple or that those SSSV's not installed in a landing nipple have a departure to be tubing well set.

**IF NONCOMPLIANCE EXISTS:**

Issue a component shut-in (C) INC when:

1. The tubing installation is not equipped with a landing nipple and flow couplings.
2. The SSSV is not installed in a landing nipple and a departure has not been approved.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each tubing installation inspected.

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P-268

**DOES EACH SURFACE-CONTROLLED AND SUBSURFACE-CONTROLLED SSSV AND SAFETY VALVE LOCK AND LANDING NIPPLE CONFORM TO THE CERTIFICATION REQUIREMENTS IN 30 CFR 250.806?**

**Authority:** 801(b)  
804(b)

**Enforcement Action:** C

**INSPECTION PROCEDURE:**

1. Inspect individual well file to determine if the SSSV and any associated landing nipple and lock are either on the approved list for the lease or certified as meeting the requirements of an MMS approved quality program (e.g., ANSI/ASME SPPE-1 or API SPEC Q1).
2. Inspect individual well file to determine if a noncertified SSSV, landing nipple, or lock installed prior to April 1, 1998, was in the inventory prior to April 1, 1988, and was included in the list of noncertified SPPE submitted to MMS prior to August 29, 1988.
3. Inspect individual well file to determine if a noncertified SSSV, landing nipple, or lock has been installed or required offsite repair, remanufacture, or hot work on or after April 1, 1998.

**NONCOMPLIANCE EXISTS:**

Issue a component shut-in (C) INC for each SSSV, landing nipple, or lock if:

1. It is neither on the approved list for the lease nor certified as meeting the requirements of an MMS approved quality program (e.g., ANSI/ASME SPPE-1 or API SPEC Q1).
2. It is not certified and has been installed or required offsite repair, remanufacture, or hot work on or after April 1, 1998.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each system inspected.

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**P-269**

**WHEN THE SUBSURFACE SAFETY DEVICE HAS BEEN REMOVED FOR 15 DAYS OR MORE, HAS MMS APPROVAL BEEN GIVEN?**

**Authority:** 801(h)(1)  
804(b)

**Enforcement Action:** W/C

**INSPECTION PROCEDURE:**

Review operator individual well record to determine if the SSSV has been removed for more than 15 days from a completion in a hydrocarbon-bearing zone.

**IF NONCOMPLIANCE EXISTS:**

Issue a warning (W) INC if records confirm that the SSSV has been removed from the completion for more than 15 days without approval and has been reinstalled.

Issue a component shut-in (C) INC if records confirm that the SSSV has been removed from the completion for more than 15 days without approval and is still removed.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each subsurface safety device inspected.

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**P-270**

**WHEN THE SUBSURFACE SAFETY DEVICE HAS BEEN REMOVED, IS THE WELL IDENTIFIED BY A SIGN ON THE WELLHEAD STATING THAT THE SUBSURFACE SAFETY DEVICE HAS BEEN REMOVED?**

**Authority:** 801(h)(2)  
804(b)

**Enforcement Action:** C

**INSPECTION PROCEDURE:**

1. Review operator individual well records to identify all wells that are not equipped with an SSSV.
2. Inspect all wells that are not equipped with an SSSV to assure that each well not so equipped is clearly identified as such by a sign at the wellhead.

**IF NONCOMPLIANCE EXISTS:**

Issue a component shut-in (C) INC when the SSSV is removed and the well is not clearly identified as such by a sign at the wellhead.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each safety device inspected.

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**P-271**

**WHEN THE SUBSURFACE SAFETY DEVICE HAS BEEN REMOVED FOR ROUTINE OPERATIONS ON A SATELLITE STRUCTURE, IS THE WELL ATTENDED?**

**Authority:** 801(h)(3)  
804(b)

**Enforcement Action:** C

**DEFINITION:**

**Attended** - Either on the satellite structure or on a work boat moored to the satellite structure.

**INSPECTION PROCEDURE:**

1. Review operator records to identify all satellite wells that are not equipped with an SSSV.
2. Inspect all satellite wells not equipped with an SSSV to assure that the well is attended.

**IF NONCOMPLIANCE EXISTS:**

Issue a component shut-in (C) INC when the SSSV is removed and the well is not attended.

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**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each well inspected.

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## SUBSURFACE SAFETY DEVICE TESTING

P-280

**IS EACH SCSSV INSTALLED IN A WELL TESTED WHEN INSTALLED OR REINSTALLED AND AT INTERVALS NOT EXCEEDING 6 MONTHS AND REMOVED, REPAIRED AND REINSTALLED, OR REPLACED, IF IT DOES NOT OPERATE PROPERLY?**

**Authority:** 804(a)(b)(1)(i)

**Enforcement Action:** W/C

**INSPECTION PROCEDURE:**

**Note:** It is recommended that the established leakage rates, of 15 cubic feet of gas and 400 cubic centimeters per minute of oil for subsea wells and 5 cubic feet of gas and 200 cubic centimeters of oil for surface wells, be utilized.

1. Review operator records to verify that each SCSSV is tested when installed or reinstalled and at intervals not exceeding 6 months and removed, repaired and reinstalled, or replaced, if it does not operate properly.
2. A sample of the active wells on a multi-well platform may be selected for testing in accordance with API RP 14 B.

**Note:** Should the holding integrity of the valve be in question, the operator shall be advised that the valve must be tested either in accordance with API RP 14B, Appendix G, or as approved by the District Manager.

**IF NONCOMPLIANCE EXISTS:**

Issue a warning (W) INC when a review of records does not verify that the SCSSV has been tested at the required interval, but the SCSSV has been tested in the last 6 months.

Issue a component shut-in (C) INC for the well when:

1. A review of records does not verify that the SCSSV has been tested at the required interval and the SCSSV has not been tested in the last 6 months.
2. A sample SCSSV has a leakage rate higher than the maximum allowable as prescribed in API RP 14 B, Appendix G.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each SCSSV installation inspected.

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P-281

**IS EACH SSCSV INSTALLED IN A WELL REMOVED, INSPECTED, AND REPAIRED OR ADJUSTED, AND REINSTALLED OR REPLACED AS NECESSARY AT INTERVALS NOT EXCEEDING 6 MONTHS FOR THOSE VALVES NOT INSTALLED IN A LANDING NIPPLE AND 12 MONTHS FOR THOSE VALVES INSTALLED IN A LANDING NIPPLE?**

**Authority:** 804(a)(b)(1)(ii)

**Enforcement Action:** W/C

**DEFINITION:**

**Landing nipple** - An integral part of the tubing string designed to accept the latching mechanism of the SSCSV.

**INSPECTION PROCEDURE:**

Verify that each SSCSV not in a landing nipple has been removed, inspected, repaired, and replaced not exceeding 6 months and not exceeding 12 months for each SSCSV installed in a landing nipple.

**IF NONCOMPLIANCE EXISTS:**

Issue a warning (W) INC when a review of the records does not verify that the SSCSV not installed in a landing nipple has been removed, inspected, and repaired or adjusted, and reinstalled or replaced not exceeding each 6 months or, if installed in a landing nipple, not exceeding each 12 months.

Issue a component shut-in (C) INC if each SSCSV:

1. Not installed in a landing nipple has not been removed, inspected, repaired, and replaced not exceeding each 6 months.
2. Installed in a landing nipple has not been removed, inspected, repaired, and replaced not exceeding each 12 months.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each SSCSV not in a landing nipple inspected.

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P-283

**IS EACH TUBING PLUG INSTALLED IN A WELL INSPECTED FOR LEAKAGE AT INTERVALS NOT EXCEEDING 6 MONTHS AND REMOVED, REPAIRED AND REINSTALLED, OR REPLACED, IF IT LEAKS?**

**Authority:** 804(a)(b)(1)(iii)

**Enforcement Action:** W

**INSPECTION PROCEDURE:**

1. Review operator records to verify that each tubing plug is tested for leakage at intervals not exceeding 6 months and removed, repaired and reinstalled, or replaced, if it leaks.
2. A sample of the active wells on a multi-well platform may be selected for testing in accordance with Appendix 9.

**IF NONCOMPLIANCE EXISTS:**

Issue a warning (W) INC when:

1. A review of records does not verify that the tubing plug has been tested at the required interval.
2. A sample tubing plug has a leakage rate higher than the maximum allowable.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each tubing plug installation inspected.

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P-284

**IS EACH INJECTION VALVE INSTALLED IN A WELL INSPECTED FOR LEAKAGE AT INTERVALS NOT EXCEEDING 6 MONTHS AND REMOVED, REPAIRED AND REINSTALLED, OR REPLACED, IF IT LEAKS?**

**Authority:** 804(a)(b)(1)(iv)

**Enforcement Action:** W

**INSPECTION PROCEDURE:**

1. Review operator records to verify that each injection valve is tested for leakage at intervals not exceeding 6 months and removed, repaired and reinstalled, or replaced, if it leaks.
2. A sample of the active wells on a multi-well platform may be selected for testing in accordance with Appendix 9.

**IF NONCOMPLIANCE EXISTS:**

Issue a warning (W) INC when:

1. A review of records does not verify that the injection valve has been tested at the required interval.
2. A sample injection valve has a leakage rate higher than the maximum allowable.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each injection valve installation inspected.

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## SURFACE SAFETY DEVICE TESTING

**P-300**

**IS EACH PUMP FOR A FIREWATER SYSTEM INSPECTED AND TESTED FOR OPERATION WEEKLY AND REPAIRED OR REPLACED IF FOUND DEFECTIVE?**

**Authority:** 804(a)(b)(8)

**Enforcement Action:** W/S

**INSPECTION PROCEDURE:**

Review operator records to verify that each pump for a firewater system has been tested weekly and that it was repaired or replaced if found defective. Deviation from these requirements must be approved by the appropriate District Manager.

**IF NONCOMPLIANCE EXISTS:**

Issue a warning (W) INC if a review of records does not verify that the pump has been tested at the required interval, but the pump has been tested in the last week.

Issue a facility shut-in (S) INC if a review of records does not verify that the pump has been tested at the required interval and the pump has not been tested in the last week.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each pump inspected.

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**P-301**

**IS EACH PSH TESTED FOR OPERATION AT LEAST ONCE EACH MONTH, WITH NO MORE THAN 6 WEEKS ELAPSING BETWEEN TESTS?**

**Authority:** 804(a)(b)(3)(i)

**Enforcement Action:** W/C

**INSPECTION PROCEDURE:**

Review operator records to verify that each PSH has been tested each month, that no more than 6 weeks have elapsed between tests.

**IF NONCOMPLIANCE EXISTS:**

Issue a warning (W) INC when a review of records does not verify that the PSH has been tested at the required interval, but the PSH has been tested in the last 6 weeks.

Issue a component shut-in (C) INC for the component protected by the PSH when a review of records does not verify that the PSH has been tested at the required interval and the PSH has not been tested in the last 6 weeks.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC per facility inspected.

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**P-302**

**IS EACH PSL TESTED FOR OPERATION AT LEAST ONCE EACH MONTH, WITH NO MORE THAN 6 WEEKS ELAPSING BETWEEN TESTS, AND REPAIRED OR REPLACED IF FOUND DEFECTIVE?**

**Authority:** 804(a)(b)(3)(i)

**Enforcement Action:** W/C

**INSPECTION PROCEDURE:**

Review operator records to verify that each PSL has been tested each month and that no more than 6 weeks have elapsed between tests.

**IF NONCOMPLIANCE EXISTS:**

Issue a warning (W) INC when a review of records does not verify that the PSL has been tested at the required interval, but the PSL has been tested in the last 6 weeks.

Issue a component shut-in (C) INC for the component protected by the PSL when a review of records does not verify that the PSL has been tested at the required interval and the PSL has not been tested in the last 6 weeks.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC per facility inspected.

---

P-303

**IS EACH LSH TESTED FOR OPERATION AT LEAST ONCE EACH MONTH, WITH NO MORE THAN 6 WEEKS ELAPSING BETWEEN TESTS?**

**Authority:** 804(a)(b)(3)(ii)

**Enforcement Action:** W/C

**INSPECTION PROCEDURE:**

Review operator records to verify that each LSH has been tested each month and that no more than 6 weeks have elapsed between tests.

**IF NONCOMPLIANCE EXISTS:**

Issue a warning (W) INC when a review of records does not verify that the LSH has been tested at the required interval, but the LSH has been tested in the last 6 weeks.

Issue a component shut-in (C) INC for the component protected by the LSH when a review of records does not verify that the LSH has been tested at the required interval and the LSH has not been tested in the last 6 weeks.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC per facility inspected.

---

P-304

**IS EACH LSL TESTED FOR OPERATION AT LEAST ONCE EACH MONTH, WITH NO MORE THAN 6 WEEKS ELAPSING BETWEEN TESTS?**

**Authority:** 804(a) (b) (3)(ii)

**Enforcement Action:** W/C

**INSPECTION PROCEDURE:**

Review operator records to verify that each LSL has been tested each month and that no more than 6 weeks have elapsed between tests.

**IF NONCOMPLIANCE EXISTS:**

Issue a warning (W) INC when a review of records does not verify that the LSL has been tested at the required interval, but the LSL has been tested in the last 6 weeks.

Issue a component shut-in (C) INC for the component protected by the LSL when a review of records does not verify that the LSL has been tested at the required interval and the LSL has not been tested in the last 6 weeks.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC per facility inspected.

---

P-305

**IS EACH AUTOMATIC INLET SDV AND EACH LIQUID DISCHARGE SDV TESTED FOR OPERATION AT LEAST ONCE EACH MONTH, WITH NO MORE THAN 6 WEEKS ELAPSING BETWEEN TESTS?**

**Authority:** 804(a)(b)(3)(iii) (iv)

**Enforcement Action:** W/C

**INSPECTION PROCEDURE:**

Review operator records to verify that each automatic inlet SDV and each liquid discharge SDV has been tested each month and that no more than 6 weeks have elapsed between tests.

**IF NONCOMPLIANCE EXISTS:**

Issue a warning (W) INC when a review of records does not verify that the SDV has been tested at the required interval, but the SDV has been tested in the last 6 weeks.

Issue a component shut-in (C) INC for the component protected by the SDV when a review of records does not verify that the SDV has been tested at the required interval and the SDV has not been tested in the last 6 weeks.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC per facility inspected.

---

P-307

**IS EACH SSV/USV TESTED FOR OPERATION AT LEAST ONCE EACH MONTH, WITH NO MORE THAN 6 WEEKS ELAPSING BETWEEN TESTS, AND REPAIRED OR REPLACED IF FOUND DEFECTIVE?**

**Authority: 804(a)(b)(5)**

**Enforcement Action: W/C**

**INSPECTION PROCEDURE:**

Review operator records to verify that each SSV/USV has been tested each month, and that no more than 6 weeks have elapsed between tests, and that it was repaired or replaced if found defective.

**IF NONCOMPLIANCE EXISTS:**

Issue a warning (W) INC when a review of records does not verify that the SSV/USV has been tested at the required interval, but the SSV/USV has been tested in the last 6 weeks.

Issue a component shut-in (C) INC when a review of records does not verify that the SSV/USV has been tested at the required interval and the SSV/USV has not been tested in the last 6 weeks.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC per facility inspected.

---

P-308

**IS EACH FLOWLINE FSV TESTED FOR OPERATION AT LEAST ONCE EACH MONTH, WITH NO MORE THAN 6 WEEKS ELAPSING BETWEEN TESTS, AND REPAIRED OR REPLACED IF FOUND DEFECTIVE?**

**Authority: 804(a)(b)(6)**

**Enforcement Action: W/C**

**INSPECTION PROCEDURE:**

Review operator records to verify that each flowline FSV has been tested each month, and that no more than 6 weeks have elapsed between tests, and that it was repaired or replaced if found defective.

**IF NONCOMPLIANCE EXISTS:**

Issue a warning (W) INC when a review of records does not verify that the FSV has been tested at the required interval, but the FSV has been tested in the last 6 weeks. Issue a component shut-in (C) INC for the component protected by the FSV when a review of records does not verify that the FSV has been tested at the required interval and the FSV has not been tested in the last 6 weeks.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC per facility inspected.

---

P-309

**IS EACH TSH ON COMPRESSOR INSTALLATIONS TESTED FOR OPERATION AT LEAST ONCE EVERY 6 MONTHS AND REPAIRED OR REPLACED IF FOUND DEFECTIVE?**

**Authority: 804(a)(b)(7)**

**Enforcement Action: W/C**

**INSPECTION PROCEDURE:**

Review operator records to verify that each TSH on compressor installations has been tested every 6 months and that it was repaired or replaced if found defective.

**IF NONCOMPLIANCE EXISTS:**

Issue a warning (W) INC when a review of records does not verify that the TSH has been tested at the required interval, but the TSH has been tested in the last 6 months.

Issue a component shut-in (C) INC for the compressor installation when a review of records does not verify that the TSH has been tested at the required interval and the TSH has not been tested in the last 6 months.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC per facility inspected.

---

P-310

**IS EACH TSH ON NON-COMPRESSOR INSTALLATIONS TESTED FOR OPERATION AT LEAST ONCE EVERY 12 MONTHS AND REPAIRED OR REPLACED IF FOUND DEFECTIVE?**

**Authority: 804(a)(b)(10)**

**Enforcement Action: W/C**

**INSPECTION PROCEDURE:**

Review operator records to verify that each TSH on non-compressor installations has been tested every 12 months and that it was repaired or replaced if found defective.

**IF NONCOMPLIANCE EXISTS:**

Issue a warning (W) INC when a review of records does not verify that the TSH has been tested at the required interval, but the TSH has been tested in the last 12 months.

Issue a component shut-in (C) INC for the component protected by the TSH when a review of records does not verify that the TSH has been tested at the required interval and the TSH has not been tested in the last 12 months.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC per facility inspected..

---

P-311

**IS EACH BSL TESTED FOR OPERATION AT LEAST ONCE EVERY 12 MONTHS AND REPAIRED OR REPLACED IF FOUND DEFECTIVE?**

**Authority:** 804(a)(b)(10)

**Enforcement Action:** W/C

**INSPECTION PROCEDURE:**

Review operator records to verify that each BSL has been tested every 12 months and that it was repaired or replaced if found defective.

**IF NONCOMPLIANCE EXISTS:**

Issue a warning (W) INC when a review of records does not verify that the BSL has been tested at the required interval, but the BSL has been tested in the last 12 months.

Issue a component shut-in (C) INC for the component protected by the BSL when a review of records does not verify that the BSL has been tested at the required interval and the BSL has not been tested in the last 12 months.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC per facility inspected.

---

P-312

**IS EACH FSL TESTED FOR OPERATION AT LEAST ONCE EVERY 12 MONTHS AND REPAIRED OR REPLACED IF FOUND DEFECTIVE?**

**Authority:** 804(a)(b)(10)

**Enforcement Action:** W/C

**INSPECTION PROCEDURE:**

Review operator records to verify that each FSL has been tested every 12 months and that it was repaired or replaced if found defective.

**IF NONCOMPLIANCE EXISTS:**

Issue a warning (W) INC when a review of records does not verify that the FSL has been tested at the required interval, but the FSL has been tested in the last 12 months.

Issue a component shut-in (C) INC for the component protected by the FSL when a review of records does not verify that the FSL has been tested at the required interval and the FSL has not been tested in the last 12 months.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC per facility inspected.

---

P-313

**IS EACH PSV TESTED FOR OPERATION AT LEAST ONCE EVERY 12 MONTHS AND REPAIRED OR REPLACED IF FOUND DEFECTIVE?**

**Authority:** 804(a)(b)(2)

**Enforcement Action:** W/C

**INSPECTION PROCEDURE:**

Review operator records to verify that each PSV has been tested every 12 months and that it was repaired or replaced if found defective.

**IF NONCOMPLIANCE EXISTS:**

Issue a warning (W) INC when a review of records does not verify that the PSV has been tested at the required interval, but the PSV has been tested in the last 12 months.

Issue a component shut-in (C) INC for the component protected by the PSV when a review of records does not verify that the PSV has been tested at the required interval and the PSV has not been tested in the last 12 months.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC per facility inspected.

---

P-314

**IS EACH ELECTRONIC PSH TESTED FOR OPERATION EVERY 3 MONTHS, WITH NO MORE THAN 120 DAYS ELAPSING BETWEEN TESTS?**

**Authority:** 804(a)(b)(4)(ii)(i)

**Enforcement Action:** W/C

**INSPECTION PROCEDURE:**

Review operator records to verify that each electronic PSH has been tested every 3 months, but no more than 120 days have elapsed between tests.

**IF NONCOMPLIANCE EXISTS:**

Issue a warning (W) INC when a review of records does not verify that the PSH has been tested at the required interval, but the PSH has been tested in the last 120 days.

Issue a component shut-in (C) INC for the component protected by the PSH when a review of records does not verify that the PSH has been tested at the required interval and the PSH has not been tested in the last 120 days.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC per facility inspected.

---

P-315

**IS EACH ELECTRONIC PSL TESTED FOR OPERATION EVERY 3 MONTHS, WITH NO MORE THAN 120 DAYS ELAPSING BETWEEN TESTS.**

**Authority:** 804(a)(b)(4)(ii)(i)

**Enforcement Action:** W/C

**INSPECTION PROCEDURE:**

Review operator records to verify that each electronic PSL has been tested every 3 months, but no more than 120 days have elapsed between tests.

**IF NONCOMPLIANCE EXISTS:**

Issue a warning (W) INC when a review of records does not verify that the electronic PSL has been tested at the required interval, but the PSL has been tested in the last 120 days.

Issue a component shut-in (C) INC for the component protected by the PSL when a review of records does not verify that the PSL has been tested at the required interval and the PSL has not been tested in the last 120 days.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC per facility inspected.

---

P-316

**IS EACH ELECTRONIC LSH TESTED FOR OPERATION EVERY 3 MONTHS, WITH NO MORE THAN 120 DAYS ELAPSING BETWEEN TESTS?**

**Authority:** 804(a)(b)(4)(ii)(i)

**Enforcement Action:** W/C

**INSPECTION PROCEDURE:**

Review operator records to verify that each electronic LSH has been tested every 3 months, but no more than 120 days have elapsed between tests.

**IF NONCOMPLIANCE EXISTS:**

Issue a warning (W) INC when a review of records does not verify that the electronic LSH has been tested at the required interval, but the LSH has been tested in the last 120 days.

Issue a component shut-in (C) INC for the component protected by the LSH when a review of records does not verify that the LSH has been tested at the required interval and the LSH has not been tested in the last 120 days.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC per facility inspected.

---

P-317

**IS EACH ELECTRONIC LSL TESTED FOR OPERATION EVERY 3 MONTHS, WITH NO MORE THAN 120 DAYS ELAPSING BETWEEN TESTS?**

**Authority:** 804(a)(b)(4)(ii)(i)

**Enforcement Action:** W/C

**INSPECTION PROCEDURE:**

Review operator records to verify that each electronic LSL has been tested every 3 months, but no more than 120 days have elapsed between tests.

**IF NONCOMPLIANCE EXISTS:**

Issue a warning (W) INC when a review of records does not verify that the electronic LSL has been tested at the required interval, but the LSL has been tested in the last 120 days.

Issue a component shut-in (C) INC for the component protected by the LSL when a review of records does not verify that the LSL has been tested at the required interval and the LSL has not been tested in the last 120 days.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC per facility inspected.

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## RECORDS

P-320

**DOES THE LESSEE MAINTAIN RECORDS FOR A PERIOD OF 2 YEARS AT THE LESSEE'S NEAREST OCS FIELD OFFICE FOR EACH SUBSURFACE AND SURFACE SAFETY DEVICE INSTALLED?**

**Authority: 804(b)**

**Enforcement Action: W**

**INSPECTION PROCEDURE:**

1. Review operator records to verify that the records for each safety device are available and maintained in the field office nearest the facility for a minimum period of 2 years and that the records contain all of the required information.

**Note:** Nearest field office may be across area boundary lines or in some cases onshore. Measures to assure that records are available shall be initiated by the MMS inspector and responsible operator.

2. Verify that the records show the present status and history of each device including dates and details of installation, removal, inspection, testing, repairing, adjustments, and reinstallation.

**IF NONCOMPLIANCE EXISTS:**

Issue a warning (W) INC when operator records:

1. Are not available and maintained in the nearest field office for 2 years.
2. Do not contain all of the required information.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC per facility inspected.

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## NON-PIPELINE PUMPS

P-340

### IS EACH NON-PIPELINE PUMP EQUIPPED WITH A PSH?

Authority: 802(b)  
804(b)

Enforcement Action: C

#### DEFINITION:

**Pipeline pump** - Primary pump which transfers produced liquid hydrocarbon from the process system to sales or to pipelines commingled for sales.

**Non-pipeline pump** - Pump which transfers produced liquid hydrocarbons and chemicals within the production process system or from containment systems to the process system.

#### INSPECTION PROCEDURE:

1. Verify that each pump is protected by PSH sensor:
  - A. Located on the pump discharge piping upstream of the FSV or any block valve.
  - B. Installed to sense pressure throughout the pump discharge piping.
  - C. Installed on all pump discharge piping to shut off inflow and shut down the pump.
2. Verify that the PSH set and trip pressure test tolerance is in accordance with API RP 14 C, Appendix D.3.2.

#### IF NONCOMPLIANCE EXISTS:

Issue a component shut-in (C) INC if:

1. Pump is not equipped with a PSH sensor.
2. PSH sensor is not located properly.

#### INSPECTION COUNT/ INC COUNT:

Enter one item checked/ issue one INC for each non pipeline pump inspected.

---

P-341

### IS EACH NON-PIPELINE PUMP EQUIPPED WITH A PSL?

Authority: 802(b)  
804(b)

Enforcement Action: C

#### INSPECTION PROCEDURE:

1. Verify that each pump is protected by PSL sensor:
  - A. Located on the pump discharge piping upstream of the FSV or any block valve.
  - B. Installed to sense pressure throughout the pump discharge piping.
2. Verify that the PSL set and trip pressure test tolerance is in accordance with API RP 14C, Appendix D.3.2..

#### IF NONCOMPLIANCE EXISTS:

Issue a component shut-in (C) INC if:

1. Pump is not equipped with a PSL sensor.
2. PSL sensor is not located properly.

#### INSPECTION COUNT/ INC COUNT:

Enter one item checked/ issue one INC for each non pipeline pump inspected.

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P-342

**IS EACH NON-PIPELINE PUMP EQUIPPED WITH A PSV?**

**Authority:** 802(b)  
804(b)

**Enforcement Action:** C

**DEFINITION:**

**Pipeline pump** - Primary pump which transfers produced liquid hydrocarbon from the process system to sales or to pipelines commingled for sales.

**Non-pipeline pump** - Pump which transfers produced liquid hydrocarbons and chemicals within the production process system or from containment systems to the process system.

**INSPECTION PROCEDURE:**

Verify that each pump is protected by a PSV:

1. Located on the pump discharge piping upstream of any block valve.
2. Located to sense pressure throughout the pump discharge piping.
3. Located so that the PSV cannot be isolated except while testing.
4. Can be tested in accordance with Appendix 4.

**Note:** API Test tolerance does apply.

**IF NONCOMPLIANCE EXISTS:**

Issue a component shut-in (C) INC if:

1. Pump is not equipped with a PSV.
2. PSV is not located as required.
3. PSV is not operable.
4. PSV is isolated.
5. PSV does not test within the specified tolerance.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each non pipeline pump inspected.

P-343

**IS EACH NON-PIPELINE PUMP EQUIPPED WITH A FSV?**

**Authority:** 802(b)  
804(b)

**Enforcement Action:** C

**INSPECTION PROCEDURE:**

Verify that each pump is protected by FSV located in the pump discharge piping so that the entire line is protected from back flow.

**IF NONCOMPLIANCE EXISTS:**

Issue a component shut-in (C) INC when:

1. Pump is not equipped with a FSV.
2. The FSV is not located properly.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each non pipeline pump inspected.

---

P-344

**EACH GLYCOL POWERED GLYCOL PUMP EQUIPPED WITH A SDV?**

**Authority:** 802(b)  
804(b)

**Enforcement Action:** C

**INSPECTION PROCEDURE:**

Verify that each glycol powered glycol pump is protected by SDV located in the pump suction line as near the glycol contactor as possible.

**IF NONCOMPLIANCE EXISTS:**

Issue a component shut-in (C) INC when:

1. Pump suction line is not equipped with an SDV.
2. The SDV is not located properly.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each glycol powered pump inspected.

---

## GAS LIFT AND INJECTION LINES

**P-361**                    **IS EACH WELLHEAD INJECTION LINE AND GAS LIFT LINE EQUIPPED WITH A PSH?**

**Authority:** 802(b)  
804(b)

**Enforcement Action:** C

**INSPECTION PROCEDURE:**

1. Verify that each wellhead injection line and gas lift line is protected by PSH sensor:
  - A. Located upstream of the FSV.
  - B. Located on top of horizontal run or in a vertical run.
  - C. Installed to sense pressure throughout the line.
2. Verify that the PSH set and trip pressure test tolerance is in accordance with API RP 14C, Appendix D.3.2.

**IF NONCOMPLIANCE EXISTS:**

Issue a component shut-in (C) INC if:

1. Line is not equipped with a PSH sensor.
2. PSH sensor is not located properly.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each line inspected.

---

**P-362**                    **IS EACH WELLHEAD INJECTION LINE AND GAS LIFT LINE EQUIPPED WITH A PSL?**

**Authority:** 802(b)  
804(b)

**Enforcement Action:** C

**INSPECTION PROCEDURE:**

1. Verify that each wellhead injection line and gas lift line is protected by PSL sensor:
  - A. Located upstream of the FSV.
  - B. Located on top of horizontal run or in a vertical run.
  - C. Installed to sense pressure throughout the line.
2. Verify that the PSL set and trip pressure test tolerance is in accordance with API RP 14 C, Appendix D.3.2.

**IF NONCOMPLIANCE EXISTS:**

Issue a component shut-in (C) INC if:

1. Line is not equipped with a PSL sensor.
2. PSL sensor is not located properly.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each line inspected.

---

**P-364**                    **IS EACH WELLHEAD INJECTION LINE AND GAS LIFT LINE EQUIPPED WITH A FSV?**

**Authority:** 802(b)  
804(b)  
1004(b)(7)

**Enforcement Action:** C

**INSPECTION PROCEDURE:**

Verify that each wellhead injection line and gas lift line is protected by FSV located so that the entire line is protected from back flow.

**IF NONCOMPLIANCE EXISTS:**

Issue a component shut-in (C) INC when:

1. Line is not equipped with a FSV.
2. The FSV is not located properly.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each line inspected.

---

## HEADERS

P-380

**IS EACH HEADER EQUIPPED WITH A PSH?**

**Authority:** 802(b)  
804(b)

**Enforcement Action:** C

**INSPECTION PROCEDURE:**

1. Verify that each header is protected by PSH sensor:
  - A. Located on the header upstream of any block valve.
  - B. Installed to sense pressure throughout the header.
2. Verify that the PSH set and trip pressure test tolerance is in accordance with API RP 14 C, Appendix D.3.2.

**IF NONCOMPLIANCE EXISTS:**

Issue a component shut-in (C) INC if:

1. Header is not equipped with a PSH sensor.
2. PSH sensor is not located properly.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each header inspected.

---

P-381

**IS EACH HEADER EQUIPPED WITH A PSL?**

**Authority:** 802(b)  
804(b)

**Enforcement Action:** C

**INSPECTION PROCEDURE:**

1. Verify that each header is protected by PSL sensor:
  - A. Located on the header upstream of any block valve.
  - B. Installed to sense pressure throughout the header.
2. Verify that the PSL trip and set pressure test tolerance is in accordance with API RP 14 C, Appendix D.3.2.

**IF NONCOMPLIANCE EXISTS:**

Issue a component shut-in (C) INC if:

1. Header is not equipped with a PSL sensor.
2. PSL sensor is not located properly.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each header inspected.

---

## WELLHEAD AND FLOWLINES

P-402

**IS THE PSH ON EACH FLOWLINE SEGMENT SET NO HIGHER THAN 15 PERCENT OR 5 PSI, WHICHEVER IS GREATER, ABOVE THE HIGHEST PRESSURE IN THE OPERATING RANGE AND BELOW THE SITP OR THE GAS-LIFT SUPPLY PRESSURE?**

**Authority:** 803(b)(2)(i)  
804(b)

**Enforcement Action:** C

**INSPECTION PROCEDURE:**

1. Inspect each flowline segment to verify that it is equipped with a PSH sensor in accordance with API RP 14C.
2. Conduct actuation test of each PSH sensor in accordance with Appendix 1 and document activation pressure.
3. Verify that PSH is set no higher than 15 percent or 5 psi, whichever is greater, above the highest pressure in the operating range and below the maximum shut-in wellhead tubing pressure or the gas-lift supply pressure.

**Note:** The API test tolerance does apply.

**IF NONCOMPLIANCE EXISTS:**

Issue a component shut-in (C) INC when:

1. Flowline segment is not equipped with a PSH sensor.
2. The PSH sensor does not activate as required.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each segment inspected.

---

P-404

**IS THE PSL ON EACH FLOWLINE SEGMENT SET NO LOWER THAN 15 PERCENT OR 5 PSI, WHICHEVER IS GREATER, BELOW THE LOWEST PRESSURE IN THE OPERATING RANGE?**

**Authority:** 803(b)(2)(i)  
804(b)

**Enforcement Action:** C

**INSPECTION PROCEDURE:**

1. Inspect each flowline segment to verify that it is equipped with a PSL sensor in accordance with API RP 14C.
2. Conduct actuation test of each PSL sensor in accordance with Appendix 1 and document activation pressure.
3. Verify that the PSL is set no lower than 15 percent or 5 psi, whichever is greater, below the lowest pressure in the operating range.

**Note:** API test tolerance does apply.

**IF NONCOMPLIANCE EXISTS:**

Issue a component shut-in (C) INC when:

1. Flowline segment is not equipped with a PSL sensor.
2. The PSL sensor does not activate as required.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each segment inspected

---

P-405

**IF THE MAXIMUM ALLOWABLE WP OF THE FLOWLINE IS LESS THAN THE SITP, IS A PSV, OR ADDITIONAL SSV ACTIVATED BY AN INDEPENDENT PSH, INSTALLED?**

**Authority:** 802(b)

**Enforcement Action:** C

803(b)(2)(ii)(A)

803(b)(2)(ii)(B)

804(b)

**INSPECTION PROCEDURE:**

1. Review operator individual well records, production records and surface pressure records to identify:
  - A. Those wells with a SITP that exceeds the maximum allowable working pressure of flowlines or flowline segments.
  - B. Flowlines equipped with an operable PSV.
  - C. Wells equipped with an additional SSV activated by an independent PSH sensor.
  - D. If adequate volume exist, are flowlines equipped with an additional SSV activated by an independent PSH.
2. Document those wells open to a hydrocarbon bearing zone that exceed the maximum allowable working pressure of flowlines or flowline segments.
3. Conduct an inspection of those flowlines protected by a PSV to verify the presence of the PSV.
4. Conduct an inspection of those flowlines not protected by a PSV to verify the presence of the additional SSV and its independent PSH sensor.

**IF NONCOMPLIANCE EXISTS:**

Issue a component shut-in (C) INC if:

1. Operator records are not available in the nearest field office.
2. Operator records do not identify all wells that have a SITP greater than the maximum allowable working pressure of the flowline.
3. PSV or SSV with an independent PSH sensor is not installed on a flowline when the maximum allowable working pressure is less than SITP.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each flowline inspected

---

P-406

**IS AN OPERABLE FSV INSTALLED IN THE FINAL FLOWLINE SEGMENT?**

**Authority:** 802(b)

**Enforcement Action:** C

804(b)

**DEFINITION:**

**Flowlines** - Transport hydrocarbons from the well head to the first down-stream process component.

**Flowline segment** - Any portion of a flowline that has an assigned operating pressure different from other portions of the same flowline:

1. Initial - Beginning at well head.
2. Intermediate - Segment that experiences a reduction in operating pressure due to choke restrictions.
3. Final - Terminating at the first downstream process component.

**INSPECTION PROCEDURE:**

1. Verify that final flowline segment is protected by FSV located so that the entire segment is protected from back flow.
2. Verify that FSV is operable by testing in accordance with Appendix 5.

**IF NONCOMPLIANCE EXISTS:**

Issue a component shut-in (C) INC when:

1. Final flowline segment is not equipped with a FSV.
2. The FSV is not located properly.
3. The FSV is not operable.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each flowline inspected

---

P-407

**DOES THE WELLHEAD, TREE, AND RELATED EQUIPMENT HAVE A PRESSURE RATING GREATER THAN THE SITP?**

**Authority:** 517(d)  
617(d)  
804(b)

**Enforcement Action:** C

**INSPECTION PROCEDURE:**

Inspect the wellhead, tree, and related equipment to verify that they have a pressure rating greater than the SITP.

**IF NONCOMPLIANCE EXISTS:**

Issue a component shut-in (C) INC when the component does not have a pressure rating greater than the anticipated/actual surface pressure.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each segment inspected

---

P-408

**DOES EACH WELLHEAD SSV OR USV AND ITS ACTUATOR CONFORM TO THE CERTIFICATION REQUIREMENTS IN 30 CFR 250.806?**

**Authority:** 802(c)  
804(b)

**Enforcement Action:** C

**DEFINITION:**

**Re-manufacture** - Any activity involving disassembly, re-assembly, and testing of SSV/USV equipment or any item thereof, with or without the replacement of qualified parts where machining, welding, heat treating, or other manufacturing operation is employed.

**INSPECTION PROCEDURE:**

1. Inspect individual well file to determine if the SSV or USV and its associated actuator are either on the approved list for the lease or certified as meeting the requirements of an MMS approved quality program (e.g., ANSI/ASME SPPE-1 or API SPEC Q1).
2. Inspect individual well file to determine if a noncertified SSV, USV, or actuator installed prior to April 1, 1998, was in the inventory prior to April 1, 1988, and was included in the list of noncertified SPPE submitted to MMS prior to August 29, 1988.
3. Inspect individual well file to determine if a noncertified SSV, USV, or actuator has been installed or required offsite repair, remanufacture, or hot work on or after April 1, 1998.

**IF NONCOMPLIANCE EXISTS:**

Issue a component shut-in (C) INC for each SSV, USV, or actuator if:

1. It is neither on the approved list for the lease nor certified as meeting the requirements of an MMS approved quality program (e.g., ANSI/ASME SPPE-1 or API SPEC Q1).
2. It is not certified and has been installed or required offsite repair, remanufacture, or hot work on or after April 1, 1998.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each completion inspected.

---

P-410

**HAS THE WELLHEAD BEEN EQUIPPED SO THAT ALL ANNULI CAN BE MONITORED FOR SUSTAINED PRESSURE?**

**Authority:** 517(c)  
617(c)  
804(b)

**Enforcement Action:** W

**INSPECTION PROCEDURE:**

Visually inspect the wellhead to verify that each annulus is identified and can be monitored for pressure via gauges or recorders.

**IF NONCOMPLIANCE EXISTS:**

Issue a warning (W) INC if the wellhead is not equipped so that each annulus can be identified and monitored for pressure.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each wellhead inspected.

---

P-411

**IF SUSTAINED CASING PRESSURE IS OBSERVED, HAS THE LESSEE NOTIFIED THE DISTRICT MANAGER?**

**Authority:** 517(c)  
617(c)  
804(b)

**Enforcement Action:** W

**INSPECTION PROCEDURE:**

1. Prior to the inspection, review the files to determine if the District Manager has been notified of sustained casing pressure at the facility to be inspected.
2. Review the operator's records to ascertain whether or not sustained casing pressure was observed in the past.
3. Visually inspect each wellhead annulus to determine if it has unapproved casing pressure and determine if this pressure is sustained.

**IF NONCOMPLIANCE EXISTS:**

Issue a warning (W) INC if the District Manager has not been notified of sustained casing pressure.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each wellhead inspected.

---

P-412

**IS EACH WELLHEAD COMPLETION EQUIPPED WITH A MINIMUM OF ONE MASTER VALVE AND AN OPERABLE SSV OR USV, LOCATED ABOVE THE MASTER VALVE, IN THE VERTICAL RUN OF THE TREE?**

**Authority:** 517(d)  
517(e)  
617(d)  
617(e)  
804(b)

**Enforcement Action:** C

**INSPECTION PROCEDURE:**

1. Visually inspect the wellhead tree to verify that it is equipped with an SSV located above the master valve in the vertical run of the tree.

**Note:** Since a USV is installed underwater, its location is not considered field inspectable.

2. Verify that each SSV or USV is operable by testing in accordance with Appendix 8.

**IF NONCOMPLIANCE EXISTS:**

Issue a component shut-in (C) INC when:

1. The wellhead tree is not equipped with an SSV or USV located above the master valve in the vertical run of the tree.
2. An SSV or USV has any detectable leakage.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each completion inspected.

---

## PRESSURE VESSELS

P-422

### IS EACH PRESSURE VESSEL EQUIPPED WITH AN OPERABLE LSH?

Authority: 802(b)  
804(b)

Enforcement Action: C

#### INSPECTION PROCEDURE:

1. Verify that each pressure vessel is protected by LSH sensor:
  - A. Located to protect vessel from liquid overflow (carryover) and to shut off inflow to the pressure vessel.
  - B. Installed so that test can be conducted by raising and lowering the liquid level across the level-control detector.
2. Verify that LSH is operable by testing in accordance with Appendix 2.

#### IF NONCOMPLIANCE EXISTS:

Issue a component shut-in (C) INC when:

1. Vessel is not equipped with a LSH sensor.
2. The LSH sensor is not located properly.
3. The LSH is not operable.

#### INSPECTION COUNT/ INC COUNT:

Enter one item checked/ issue one INC for each pressure vessel inspected.

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P-423

### IS EACH PRESSURE VESSEL EQUIPPED WITH AN OPERABLE LSL (OIL)?

Authority: 802(b)  
804(b)

Enforcement Action: C

#### INSPECTION PROCEDURE:

1. Verify that each pressure vessel is protected by LSL sensor:
  - A. Located to protect oil liquid outlet from gas blow-by.
  - B. That will cause the shut off of inflow to the pressure vessel or the closure of the liquid outlet.
  - C. Installed so that test can be conducted by raising and lowering the liquid level across the level-control detector.
2. Verify that LSL is operable by testing in accordance with Appendix 2.

#### IF NONCOMPLIANCE EXISTS:

Issue a component shut-in (C) INC when:

1. Vessel is not equipped with a LSL sensor.
2. The LSL sensor is not located properly.
3. The LSL is not operable.

#### INSPECTION COUNT/ INC COUNT:

Enter one item checked/ issue one INC for each pressure vessel inspected.

---

P-424

### IS EACH PRESSURE VESSEL EQUIPPED WITH AN OPERABLE LSL (WATER)?

Authority: 802(b)  
804(b)

Enforcement Action: C

#### INSPECTION PROCEDURE:

1. Verify that each pressure vessel is protected by LSL sensor:
  - A. Located to protect water liquid outlet from oil discharge or gas blow-by.
  - B. That will cause the shut off of inflow to the pressure vessel or the closure of the liquid outlet.
  - C. Installed so test can be conducted by raising and lowering the liquid level across the level-control detector.
2. Verify that LSL is operable by testing in accordance with Appendix 2.

#### IF NONCOMPLIANCE EXISTS:

Issue a component shut-in (C) INC when:

1. Vessel is not equipped with a LSL sensor.
2. The LSL sensor is not located properly.
3. The LSL is not operable.

#### INSPECTION COUNT/ INC COUNT:

Enter one item checked/ issue one INC for each pressure vessel inspected.

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P-426

**IS EACH PRESSURE VESSEL EQUIPPED WITH A FSV (OIL)?**

**Authority:** 802(b)  
804(b)

**Enforcement Action:** C

**INSPECTION PROCEDURE:**

Verify that each pressure vessel is protected by FSV located in the oil discharge piping so that the entire line is protected from back flow.

**IF NONCOMPLIANCE EXISTS:**

Issue a component shut-in (C) INC when:

1. Vessel is not equipped with a FSV.
2. The FSV is not located properly.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each pressure vessel inspected.

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P-427

**IS EACH PRESSURE VESSEL EQUIPPED WITH A FSV (WATER)?**

**Authority:** 802(b)  
804(b)

**Enforcement Action:** C

**INSPECTION PROCEDURE:**

Verify that each pressure vessel is protected by FSV located in the water discharge piping so that the entire line is protected from back flow.

**IF NONCOMPLIANCE EXISTS:**

Issue a component shut-in (C) INC when:

1. Vessel is not equipped with a FSV.
2. The FSV is not located properly.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each pressure vessel inspected.

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P-428

**IS EACH PRESSURE VESSEL EQUIPPED WITH A FSV (GAS)?**

**Authority:** 802(b)  
804(b)

**Enforcement Action:** C

**INSPECTION PROCEDURE:**

Verify that each pressure vessel is protected by FSV located in the gas discharge piping so that the entire line is protected from back flow.

**IF NONCOMPLIANCE EXISTS:**

Issue a component shut-in (C) INC when:

1. Vessel is not equipped with a FSV.
2. The FSV is not located properly.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each pressure vessel inspected.

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P-429

**IS EACH STOP VALVE BETWEEN A PSV AND A PRESSURE VESSEL LOCKED OR SEALED IN THE OPEN POSITION WHEN AN AUTHORIZED PERSON IS NOT STATIONED AT THE PRESSURE VESSEL, AS REQUIRED IN THE ASME BOILER AND PRESSURE VESSEL CODE, SECTION VIII, APPENDIX M?**

**Authority:** 803(b)(1)(i)  
804(b)

**Enforcement Action:** C

**INSPECTION PROCEDURE:**

Verify that, when a stop valve is located between a PSV and a pressure vessel, the stop valve is locked or sealed in the open position unless an authorized person is stationed at the pressure vessel when the stop valve is closed.

**IF NONCOMPLIANCE EXISTS:**

Issue a component shut-in (C) INC if a stop valve between a PSV and a pressure vessel is not locked or sealed in the open position and an authorized person is not stationed at the pressure vessel.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each pressure vessel inspected.

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P-430

**ARE PRESSURED AND FIRED VESSELS CODE STAMPED IN ACCORDANCE WITH THE ASME BOILER AND PRESSURE VESSEL CODE?**

**Authority: 803(b)(1)  
804(b)**

**Enforcement Action: C**

**INSPECTION PROCEDURE:**

Inspect each pressure vessel to verify that it is stamped or has a nameplate permanently attached (adhesives prohibited) with the following information:

1. The ASME Boiler and Pressure Vessel Code symbol (“S”, “M” or “E” for atmospheric pressure boilers, “H” for high pressure boilers, or “U” or “UM” for pressure vessels).
2. Manufacturer’s name.
3. Maximum allowable working pressure when built.
4. Manufacturer’s serial number.
5. Year built.

**Note:**

1. Unstamped vessels may be used only if they were specifically approved by the District Manager prior to August 30, 1988, for continued use.
2. Stamped letters and figures must be at least 5/16 inches high if stamped on the vessel and at least 5/32 inches high if stamped on a nameplate.
3. No obstructions, other than an easily removable marked cover, can interfere with reading of the ASME Code stamping.

**IF NONCOMPLIANCE EXISTS:**

Issue a component shut-in (C) INC when the vessel is not stamped as required.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each pressure vessel inspected.

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P-431

**IS THE PSH ON EACH PRESSURE VESSEL SET NO HIGHER THAN 15 PERCENT OR 5 PSI, WHICHEVER IS GREATER, ABOVE THE HIGHEST PRESSURE IN THE OPERATING RANGE AND AT LEAST 5 PERCENT OR 5 PSI, WHICHEVER IS GREATER, BELOW THE PSV'S ACTIVATION PRESSURE?**

**Authority: 803(b)(1)(iii)  
804(b)**

**Enforcement Action: C**

**INSPECTION PROCEDURE:**

1. Inspect each pressure vessel to verify that it is equipped with a PSH sensor in accordance with API RP 14C.
2. Conduct actuation test of each PSH sensor in accordance with Appendix 1 and document activation pressure.
3. Verify that PSH is set no higher than 15 percent or 5 psi, whichever is greater, above the highest pressure in the operating range and at least 5 percent or 5 psi, whichever is greater, below the PSV's activation pressure.

**Note:** The API test tolerance does apply.

**IF NONCOMPLIANCE EXISTS:**

Issue a component shut-in (C) INC when:

1. Pressure vessel is not equipped with a PSH sensor.
2. The PSH sensor does not activate as required.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each PSH inspected.

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P-433

**IS THE PSL ON EACH PRESSURE VESSEL SET NO LOWER THAN 15 PERCENT OR 5 PSI, WHICHEVER IS GREATER, BELOW THE LOWEST PRESSURE IN THE OPERATING RANGE?**

**Authority:** 803(b)(1)(iii)

**Enforcement Action:** C

**804(b)**

**INSPECTION PROCEDURE:**

1. Inspect each pressure vessel to verify that each is equipped with a PSL sensor in accordance with API RP 14C.
2. Conduct actuation test on pressure vessel PSL sensor in accordance with Appendix 1 and document activation pressure.
3. Verify that PSL is set no lower than 15 percent or 5 psi, whichever is greater, below the lowest pressure in the operating range.

**Note:** API test tolerance does apply.

**IF NONCOMPLIANCE EXISTS:**

Issue a component shut-in (C) INC when:

1. Pressure vessel is not equipped with a PSL sensor.
2. The PSL sensor does not activate as required.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each PSL inspected.

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P-434

**ARE PRESSURE VESSELS MAINTAINED, INSPECTED, RATED, REPAIRED, AND ALTERED IN ACCORDANCE WITH THE APPLICABLE PROVISIONS OF THE AMERICAN PETROLEUM INSTITUTE'S PRESSURE VESSEL INSPECTION CODE: MAINTENANCE INSPECTION, RATING, REPAIR, AND ALTERATION API 510 (EXCEPT SECTIONS 6.5 AND 8.5), EFFECTIVE MARCH 15, 2005?**

**Authority:**198

**Enforcement Action:** W/C

**INSPECTION PROCEDURE:**

Verify through records and visual inspection that all pressure vessels are maintained, inspected, rated, repaired, and altered after March 15,2005 are in accordance with the applicable provisions in API 510 (except sections 6.5 and 8.5).

**IF NONCOMPLIANCE EXIST:**

Issue a warning (W) INC if the Inspection reveals that the operator is not maintaining, inspecting, rating, repairing and altering pressure vessels in accordance API 510 and there is no immediate threat to personnel or the environment.

Issue a component (C) shut in INC if the Inspection reveals that the operator is not maintaining, inspecting, rating, repairing and altering pressure vessels in accordance with API 510 and there is a threat to personnel or the environment.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each pressure vessel inspected.

---

## RELIEF VALVES

P-451

**IS EACH REQUIRED PSV SET AT A PRESSURE NO HIGHER THAN THE  
MAXIMUM-ALLOWABLE WORKING PRESSURE?**

**Authority: 803(b)(1)(i)  
804(b)**

**Enforcement Action: C**

**INSPECTION PROCEDURE:**

1. Inspect the component to verify that it is equipped with a PSV located to sense or relieve pressure from the gas or vapor section of the vessel.
2. Conduct actuation test of PSV in accordance with Appendix 4 and document relief point.
3. Verify that PSV is set no higher than the maximum-allowable working pressure.
4. Verify that the PSV test and set pressure test tolerance is in accordance with API RP 14 C, Appendix D.3.1.
5. Verify that the PSV outlet piping is adequately sized.

**IF NONCOMPLIANCE EXISTS:**

Issue a component shut-in (C) INC if:

1. PSV not installed.
2. PSV does not relieve as required.
3. PSV is not located as required.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each PSV inspected.

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P-452

**IS EACH PSV AND VENT PIPED IN SUCH A WAY AS TO PREVENT FLUID FROM STRIKING  
PERSONNEL OR IGNITION SOURCES?**

**Authority: 803(b)(1)(i)  
803(b)(6)  
804(b)**

**Enforcement Action: C**

**INSPECTION PROCEDURE:**

Visually inspect each PSV and vent discharge to verify that a hazard to personnel or equipment does not exist.

**IF NONCOMPLIANCE EXISTS:**

Issue a component shut-in (C) INC when verification of a hazard to personnel or equipment exists.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each PSV inspected.

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## ATMOSPHERIC VESSELS

**P-470**

**IS EACH ATMOSPHERIC VESSEL EQUIPPED WITH AN OPERABLE LSH?**

**Authority: 802(b)  
804(b)**

**Enforcement Action: C**

**INSPECTION PROCEDURE:**

1. Verify that each atmospheric vessel is protected by LSH sensor:
  - A. Located to protect vessel from liquid overflow (carryover) and to shut off inflow to the vessel.
  - B. Installed so that test can be conducted by raising and lowering the liquid level across the level-control detector.
2. Verify that LSH is operable by testing in accordance with Appendix 2.

**IF NONCOMPLIANCE EXISTS:**

Issue a component shut-in (C) INC when:

1. Vessel is not equipped with a LSH sensor.
2. The LSH sensor is not located properly.
3. The LSH is not operable.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each atmospheric vessel inspected.

---

**P-471**

**IS EACH ATMOSPHERIC VESSEL EQUIPPED WITH AN OPERABLE LSL (WATER)?**

**Authority: 802(b)  
804(b)**

**Enforcement Action: C**

**INSPECTION PROCEDURE:**

1. Verify that each atmospheric vessel is protected by LSL sensor:
  - A. Located to protect water liquid outlet from oil discharge or gas blow-by.
  - B. That will cause the shut off of inflow to the vessel or the closure of the liquid outlet.
  - C. Installed so that test can be conducted by raising and lowering the liquid level across the level-control detector.
2. Verify that LSL is operable by testing in accordance with Appendix 2.

**IF NONCOMPLIANCE EXISTS:**

Issue a component shut-in (C) INC when:

1. Vessel is not equipped with a LSL sensor.
2. The LSL sensor is not located properly.
3. The LSL is not operable.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each atmospheric vessel inspected.

---

**P-472**

**IS EACH ATMOSPHERIC VESSEL EQUIPPED WITH AN OPERABLE LSL (OIL)?**

**Authority: 802(b)  
804(b)**

**Enforcement Action: C**

**INSPECTION PROCEDURE:**

1. Verify that each atmospheric vessel is protected by LSL sensor:
  - A. Located to protect oil liquid outlet from gas blow-by.
  - B. That will cause the shut off of inflow to the vessel or the closure of the liquid outlet.
  - C. Installed so that test can be conducted by raising and lowering the liquid level across the level-control detector.
2. Verify that LSL is operable by testing in accordance with Appendix 2.

**IF NONCOMPLIANCE EXISTS:**

Issue a component shut-in (C) INC when:

1. Vessel is not equipped with a LSL sensor.
2. The LSL sensor is not located properly.
3. The LSL is not operable.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each atmospheric vessel inspected.

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P-474

**IS EACH ATMOSPHERIC VESSEL EQUIPPED WITH AN OPERABLE PSV AND A VENT OR TWO INDEPENDENT VENTS?**

**Authority: 802(b)  
804(b)**

**Enforcement Action: C**

**INSPECTION PROCEDURE:**

1. Verify that each atmospheric vessel is protected from over pressure and under pressure by:
  - A. A vent and PSV, or
  - B. Two independent vents.
2. If PSV is used, verify that it is not isolated except while testing.
3. Verify that each vent and PSV is located on the top (highest practical elevation in the vapor section) of atmospheric vessels.
4. Verify that PSV is operable by testing in accordance with Appendix 4.

**IF NONCOMPLIANCE EXISTS:**

Issue a component shut-in (C) INC when:

1. Vessel is not equipped with two vents or PSV and vent.
2. Vents or PSV are not located properly.
3. The PSV is not operable.
4. The PSV is isolated unless for testing.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each atmospheric vessel inspected.

---

P-475

**IS EACH ATMOSPHERIC VESSEL EQUIPPED WITH AN OPERABLE FLAME ARRESTER ON VENT(S)?**

**Authority: 802(b)  
804(b)**

**Enforcement Action: C**

**INSPECTION PROCEDURE:**

1. Verify that each vent on each atmospheric vessel is equipped with a flame arrester.
2. Verify that flame arrester is operable by testing in accordance with Appendix 17.

**IF NONCOMPLIANCE EXISTS:**

Issue a component shut-in (C) INC when:

1. Vent is not equipped with flame arrester.
2. Flame arrester is not operable.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each atmospheric vessel inspected.

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## FIRED AND HEATED COMPONENTS

P-520

**IS EACH FIRED COMPONENT EQUIPPED WITH AN OPERABLE PSH?**

**Authority:** 802(b)  
804(b)

**Enforcement Action:** C

**INSPECTION PROCEDURE:**

1. Verify that each fired component fuel supply is protected by PSH installed between the last fuel regulator and the fuel control valve.
2. Verify that PSH is operable by testing in accordance with Appendix 1.

**IF NONCOMPLIANCE EXISTS:**

Issue a component shut-in (C) INC when:

1. Fuel supply is not equipped with a PSH sensor.
2. The PSH sensor is not located properly.
3. The PSH is not operable.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each fuel supply PSH inspected.

---

P-521

**IS EACH FIRED COMPONENT EQUIPPED WITH AN OPERABLE SDV?**

**Authority:** 802(b)  
804(b)

**Enforcement Action:** C

**INSPECTION PROCEDURE:**

1. Verify that each fired component fuel supply is protected by SDV installed between the last fuel regulator and the fuel control valve.
2. Verify that SDV is operable by testing in accordance with Appendix 7.

**IF NONCOMPLIANCE EXISTS:**

Issue a component shut-in (C) INC when:

1. Fuel supply is not equipped with a SDV sensor.
2. The SDV sensor is not located properly.
3. The SDV is not operable.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each SDV inspected.

---

P-522

**IS EACH FIRED COMPONENT EQUIPPED WITH AN OPERABLE TSL OR BSL IN THE FIRE CHAMBER?**

**Authority:** 802(b)  
804(b)

**Enforcement Action:** C

**Note:** Excess combustible vapors in the firing chamber, or ignition, could result in an explosion or rupture of the component. The TSL and BSL sensors indicate if the flame of a pilot is sufficient to immediately ignite fuel entering the fire chamber and, if not, will actuate the SDV to shut off the fuel supply.

**INSPECTION PROCEDURE:**

1. Verify that a TSL or a BSL is installed in the fire chamber.
2. Verify that TSL is operable by testing in accordance with Appendix 3.
3. Verify that BSL is operable by testing in accordance with Appendix 6.

**Note:** Special attention should be given to open flame ignition methods used to light forced and natural draft components in classified areas, with "safe and workmanlike" authority enforced accordingly.

**IF NONCOMPLIANCE EXISTS:**

Issue a component shut-in (C) INC when:

1. Component not equipped with TSH or BSL.
2. The TSL or BSL is not located properly.
3. The TSH or BSL is not operable.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each component inspected.

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P-523

**IS EACH FIRED OR EXHAUST HEATED COMPONENT EQUIPPED WITH A TSH IN THE STACK?**

**Authority:** 802(b)  
804(b)

**Enforcement Action:** C

**INSPECTION PROCEDURE:**

1. Verify that each fired and exhaust heated component is protected by TSH in the stack.
2. Verify that TSH is operable by testing in accordance with Appendix 3.

**IF NONCOMPLIANCE EXISTS:**

Issue a component shut-in (C) INC when:

1. Component is not equipped with a TSH.
2. The TSH is not operable.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each component inspected

---

P-524

**IS EACH FIRED OR EXHAUST HEATED COMPONENT EQUIPPED WITH A TSH IN THE MEDIUM OR PROCESS FLUID?**

**Authority:** 802(b)  
804(b)

**Enforcement Action:** C

**INSPECTION PROCEDURE:**

1. Verify that each fired and exhaust heated component is protected by TSH in the medium or process fluid.
2. Verify that TSH is operable by testing in accordance with Appendix 3.

**Note:** A TSH to sense medium or process fluid temperature is not required for an indirect water bath heater in atmospheric service since the maximum temperature is limited by the boiling point of the water bath.

**IF NONCOMPLIANCE EXISTS:**

Issue a component shut-in (C) INC when:

1. Component is not equipped with a TSH.
2. The TSH is not operable.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each component inspected

---

P-525

**IS EACH FIRED OR EXHAUST HEATED COMPONENT EQUIPPED WITH AN LSL IN THE MEDIUM OR PROCESS FLUID?**

**Authority:** 802(b)  
804(b)

**Enforcement Action:** C

**INSPECTION PROCEDURE:**

1. Verify that each fired and exhaust heated component is protected by LSL in the medium or process fluid.
2. Verify that LSL is operable by testing in accordance with Appendix 2.

**IF NONCOMPLIANCE EXISTS:**

Issue a component shut-in (C) INC when:

1. Component is not equipped with a LSL.
2. The LSL is not operable.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each component inspected

---

P-526

**IS EACH NATURAL DRAFT FIRED COMPONENT EQUIPPED WITH AN INTAKE FLAME ARRESTER?**

**Authority: 802(b)  
804(b)**

**Enforcement Action: C**

**RATIONALE:**

To prevent flame emission from the fire chamber through the air intake, a flame arrester is installed in the intake.

**INSPECTION PROCEDURE:**

1. Verify that each air intake has a flame arrester installed.
2. Verify that flame arrester is operable by testing in accordance with Appendix 17.

**IF NONCOMPLIANCE EXISTS:**

Issue a component shut-in (C) INC when:

1. Air intake is not equipped with flame arrester.
2. Flame arrester is not operable.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each component inspected

---

P-527

**IS EACH NATURAL DRAFT FIRED COMPONENT EQUIPPED WITH A STACK ARRESTER?**

**Authority: 802(b)  
804(b)**

**Enforcement Action: C**

**RATIONALE:**

To prevent flame and sparks emission from the exhaust stack, a stack arrester is installed.

**INSPECTION PROCEDURE:**

1. Verify that each stack has a flame arrester installed.
2. Verify that flame arrester is operable by testing in accordance with Appendix 17.

**IF NONCOMPLIANCE EXISTS:**

Issue a component shut-in (C) INC when:

1. Stack is not equipped with flame arrester.
2. Flame arrester is not operable.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each component inspected

---

P-528

**IS EACH FORCED DRAFT FIRED COMPONENT EQUIPPED WITH AN OPERABLE PSL IN THE AIR INTAKE?**

**Authority: 802(b)  
804(b)**

**Enforcement Action: C**

**RATIONALE:**

Primary protection from flame emission through the air intake of a forced draft burner is to maintain normal air flow.

**INSPECTION PROCEDURE:**

1. Verify that each component is protected by PSL sensor installed in each air intake.
2. Verify that PSL is operable by testing in accordance with Appendix 1.
3. Verify that the PSL set and trip pressure test tolerance is in accordance with API RP 14 C, Appendix D.3.2.

**IF NONCOMPLIANCE EXISTS:**

Issue a component shut-in (C) INC if:

1. Component is not equipped with a PSL sensor.
2. PSL is not located properly.
3. PSL is not operable.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each component inspected.

---

P-529

**IS EACH FORCED DRAFT FIRED COMPONENT EQUIPPED WITH AN OPERABLE PSL IN THE FUEL SUPPLY LINE?**

**Authority: 802(b)  
804(b)**

**Enforcement Action: C**

**RATIONALE:**

The PSL shuts off the fuel intake and the blower when the fuel pressure is reduced.

**INSPECTION PROCEDURE:**

1. Verify that each component is protected by PSL sensor installed in each fuel supply line.
2. Verify that PSL is operable by testing in accordance with Appendix 1.
3. Verify that the PSL set and trip pressure test tolerance is in accordance with API RP 14 C, Appendix D.3.2.

**IF NONCOMPLIANCE EXISTS:**

Issue a component shut-in (C) INC if:

1. Component is not equipped with a PSL sensor.
2. PSL is not located properly.
3. PSL is not operable.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each component inspected

---

P-530

**IS EACH FORCED DRAFT FIRED COMPONENT EQUIPPED WITH AN OPERABLE MOTOR STARTER INTERLOCK?**

**Authority: 802(b)  
804(b)**

**Enforcement Action: C**

**RATIONALE:**

A motor starter interlock is installed to ensure the air blower does not operate. This prevents the existence of an explosive air-fuel mixture.

**INSPECTION PROCEDURE:**

1. Verify that the component is protected by a motor starter interlock.
2. Verify that motor starter interlock is operable by testing in accordance with Appendix 16.

**IF NONCOMPLIANCE EXISTS:**

Issue a component shut-in (C) INC when:

1. Component is not equipped with motor starter interlock.
2. Motor starter interlock is not operable.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each component inspected

---

P-531

**IS EACH DIRECT FIRED TUBE-TYPE OR EXHAUST HEATED COMPONENT EQUIPPED WITH AN OPERABLE FSL IN THE MEDIUM OR PROCESS FLUID WHEN IT IS COMBUSTIBLE?**

**Authority: 802(b)  
804(b)**

**Enforcement Action: C**

**RATIONALE:**

Low flow or no flow of media in a closed heat transfer system will cause extreme temperatures and combustion of the media.

**INSPECTION PROCEDURE:**

1. Verify that the FSL is installed in media outlet pipe close to the heater when using combustible media.
2. Verify that FSL is operable by testing in accordance with Appendix 14.

**IF NONCOMPLIANCE EXISTS:**

Issue a component shut-in (C) INC when:

1. Component is not equipped with FSL.
2. The FSL is not located properly.
3. The FSL is not operable.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each component inspected

---

P-532

**IS EACH DIRECT FIRED TUBE-TYPE OR EXHAUST HEATED COMPONENT EQUIPPED WITH AN OPERABLE FSV IN EACH MEDIUM OUTLET PIPING?**

**Authority:** 802(b)  
804(b)

**Enforcement Action:** C

**INSPECTION PROCEDURE:**

Verify that a FSV is installed in each medium outlet piping.

**IF NONCOMPLIANCE EXISTS:**

Issue a component shut-in (C) INC for the component when any medium outlet piping is not equipped with FSV.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each component inspected.

---

P-533

**IS EACH DIRECT FIRED TUBE-TYPE OR EXHAUST HEATED COMPONENT EQUIPPED WITH AN OPERABLE PSV IN EACH MEDIUM PIPING?**

**Authority:** 802(b)  
804(b)

**Enforcement Action:** C

**INSPECTION PROCEDURE:**

1. Inspect the component to verify that it is equipped with a PSV located:
  - A. In each medium outlet piping.
  - B. So that PSV cannot be isolated.
2. Conduct actuation test of PSV in accordance with Appendix 4 and document relief point.
3. Verify that PSV activates no higher than the maximum-allowable working pressure.

**IF NONCOMPLIANCE EXISTS:**

Issue a component shut-in (C) INC when:

1. The PSV not installed.
2. The PSV does not relieve as required.
3. The PSV is not located as required.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each PSV inspected.

---

**STEAM GENERATORS**

P-540

**IS EACH STEAM GENERATOR EQUIPPED WITH AN OPERABLE PSH OR TSH?**

**Authority:** 802(b)  
804(b)

**Enforcement Action:** C

**RATIONALE:**

A TSH is not required on a steam generator protected by a PSH sensor to detect high pressure caused by high temperature.

**Note:** Normally a TSH is not installed.

**INSPECTION PROCEDURE:**

1. Verify that each steam generator is protected by PSH or TSH.
  - A. Located to sense the gas or vapor section of the vessel.
  - B. Installed to sense throughout the vessel.
2. Verify that PSH is operable by testing in accordance with Appendix 1.
3. Verify that TSH is operable by testing in accordance with Appendix 3.
4. Verify that the PSH set and test pressure test tolerance is in accordance with API RP 14 C, Appendix D.3.2.

**IF NONCOMPLIANCE EXISTS:**

Issue a component shut-in (C) INC if:

1. Generator is not equipped with a PSH or TSH.
2. PSH or TSH is not located properly.
3. PSH or TSH is not operable.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each steam generator inspected.

---

P-541

**IS EACH STEAM GENERATOR EQUIPPED WITH AN OPERABLE LSL?**

**Authority:** 803(b)(1)(ii)  
804(b)

**Enforcement Action:** C

**RATIONALE:**

A LSL sensor detects a low level condition which could cause a high temperature.

**INSPECTION PROCEDURE:**

1. Verify that each steam generator is protected by LSL:
  - A. Located to sense the water level in the vessel.
  - B. That activates a fuel supply shut off.
2. Verify that LSL is operable by testing in accordance with Appendix 2.

**IF NONCOMPLIANCE EXISTS:**

Issue a component shut-in (C) INC when:

1. Generator is not equipped with a LSL.
2. The LSL is not located properly.
3. The LSL is not operable.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each steam generator inspected.

P-542

**IS EACH STEAM GENERATOR EQUIPPED WITH AN OPERABLE WATER-FEEDING DEVICE WHICH WILL AUTOMATICALLY CONTROL THE WATER LEVEL IF OPERATING AT MORE THAN 15 PSIG?**

**Authority:** 803(b)(1)(ii)  
804(b)

**Enforcement Action:** C

**INSPECTION PROCEDURE:**

1. Verify that the water-feeding device will automatically control the water level on vessels with a working pressure greater than 15 psig.
2. Verify that water-feeding device is operable by testing in accordance with Appendix 19.

**IF NONCOMPLIANCE EXISTS:**

Issue a component shut-in (C) INC when:

1. Steam generator is not equipped with a water-feeding device.
2. Water-feeding device is not operable.
3. Water-feeding device is not automatic.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each steam generator inspected.

---

**HEAT EXCHANGERS**

P-550

**IS EACH HEAT EXCHANGER (SHELL-TUBE) EQUIPPED WITH TWO OPERABLE PSH'S?**

**Authority:** 802(b)  
804(b)

**Enforcement Action:** C

**INSPECTION PROCEDURE:**

Verify that each heat exchanger is protected by a PSH sensor:

1. Located on the process fluid inlet piping downstream of any block valve.
2. Located on the heat medium outlet piping upstream of any block valve.
3. Installed to sense pressure in each section of the heat exchanger.
4. Verify that the PSH set and trip pressures test tolerance are in accordance with API RP 14C, Appendix D.3.2.

**IF NONCOMPLIANCE EXISTS:**

Issue a component shut-in (C) INC if:

1. Heat exchanger is not equipped with both PSH sensors.
2. PSH sensor is not located properly.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each heat exchanger inspected.

---

**P-551**

**IS EACH HEAT EXCHANGER (SHELL-TUBE) EQUIPPED WITH TWO OPERABLE PSL'S?**

**Authority: 802(b)  
804(b)**

**Enforcement Action: C**

**INSPECTION PROCEDURE:**

1. Verify that each heat exchanger is protected by a PSL sensor:
  - A. Located on the process fluid inlet piping downstream of any block valve.
  - B. Located on the heat medium outlet piping upstream of any block valve.
  - C. Installed to sense pressure in each section of the heat exchanger.
2. Verify that the PSL set and test pressure test tolerance are in accordance with API RP 14 C, Appendix D.3.2.

**IF NONCOMPLIANCE EXISTS:**

Issue a component shut-in (C) INC if:

1. Heat exchanger is not equipped with both PSL sensors.
2. PSL sensor is not located properly.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each heat exchanger inspected.

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## COMPRESSORS

P-562

**IS EACH COMPRESSOR SUCTION AND INTER-STAGE SCRUBBER EQUIPPED WITH AN OPERABLE LSH?**

**Authority:** 803(b)(7)(i)  
804(b)

**Enforcement Action:** C

**INSPECTION PROCEDURE:**

1. Verify that each compressor suction and inter-stage scrubber is protected by LSH sensor:
  - A. Located to protect vessel from liquid overflow (carryover) and to shut off inflow to the pressure vessel.
  - B. Installed so that test can be conducted by raising and lowering the liquid level across the level-control detector.
2. Verify that LSH is operable by testing in accordance with Appendix 2.

**IF NONCOMPLIANCE EXISTS:**

Issue a component shut-in (C) INC when:

1. Compressor suction or inter-stage scrubber is not equipped with a LSH sensor.
2. The LSH sensor is not located properly.
3. The LSH is not operable.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each suction or inter-stage scrubber inspected.

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P-563

**IS EACH COMPRESSOR SUCTION AND INTER-STAGE SCRUBBER EQUIPPED WITH AN OPERABLE LSL?**

**Authority:** 803(b)(7)(i)  
804(b)

**Enforcement Action:** C

**INSPECTION PROCEDURE:**

1. Verify that each compressor suction and inter-stage scrubber is protected by LSL sensor:
  - A. Located to protect vessel from liquid overflow (carryover) and to shut off inflow to the pressure vessel.
  - B. Installed so that test can be conducted by raising and lowering the liquid level across the level-control detector.
2. Verify that LSL is operable by testing in accordance with Appendix 2.

**IF NONCOMPLIANCE EXISTS:**

Issue a component shut-in (C) INC when:

1. Compressor suction or inter-stage scrubber is not equipped with a LSL sensor.
2. The LSL sensor is not located properly.
3. The LSL is not operable.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each suction or inter-stage scrubber inspected

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P-567

**IS EACH FINAL STAGE DISCHARGE EQUIPPED WITH A FSV OUTSIDE OF BUILDING?**

**Authority:** 802(b)  
804(b)

**Enforcement Action:** C

**INSPECTION PROCEDURE:**

Verify that each final stage discharge is protected by FSV located so that the compressor is protected from back flow.

**IF NONCOMPLIANCE EXISTS:**

Issue a component shut-in (C) INC when:

1. Final stage discharge is not equipped with a FSV.
2. The FSV is not located properly.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each compressor inspected

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P-569

**IS EACH FINAL STAGE DISCHARGE EQUIPPED WITH AN AUTOMATIC BDV IF 1000 HP OR GREATER?**

**Authority:** 803(b)(7)(iv)  
804(b)

**Enforcement Action:** C

**INSPECTION PROCEDURE:**

Verify that each final stage discharge on a compressor of 1,000 HP (746 kilowatts) or greater is protected by BDV located on compressor discharge piping.

**IF NONCOMPLIANCE EXISTS:**

Issue a component shut-in (C) INC when:

1. Final stage discharge is not equipped with a BDV.
2. The BDV is not located properly.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each compressor inspected

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P-570

**IS EACH COMPRESSOR DISCHARGE CYLINDER PROTECTED BY A TSH?**

**Authority:** 803(b)(7)(ii)  
804(b)

**Enforcement Action:** C

**INSPECTION PROCEDURE:**

1. Verify that each compressor is protected by TSH located on compressor discharge cylinder, discharge piping, or case.
2. Verify that TSH is operable by testing in accordance with Appendix 3.

**IF NONCOMPLIANCE EXISTS:**

Issue a component shut-in (C) INC when:

1. The TSH is not located as required.
2. The TSH is not operable.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each discharge cylinder inspected

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P-571

**DO THE AUTOMATIC SDV'S INSTALLED IN COMPRESSOR SUCTION AND FUEL GAS PIPING ACTUATED BY THE PSH, PSL, AND LSH INSTALLED ON THE COMPRESSOR SUCTION AND INTER-STAGE SCRUBBERS ALLOW EACH COMPRESSOR UNIT AND ASSOCIATED VESSELS TO BE ISOLATED FROM ALL INPUT SOURCES?**

**Authority:** 803(b)(7)(iii)  
804(b)

**Enforcement Action:** C

**INSPECTION PROCEDURE:**

Verify that the automatic SDV's installed in suction or fuel gas lines can isolate each compressor unit and associated vessels from all input sources.

**IF NONCOMPLIANCE EXISTS:**

Issue a component shut-in (C) INC when SDV's installed in the suction and fuel gas lines can not isolate each compressor unit and associated vessels from all input sources.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each compressor suction and fuel gas line inspected.

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P-572

**IS EACH AUTOMATIC SDV INSTALLED IN COMPRESSOR SUCTION AND FUEL GAS PIPING ALSO ACTUATED BY THE SHUTDOWN OF THE PRIME MOVER?**

**Authority:** 803(b)(7)(iii)

**Enforcement Action:** C

**INSPECTION PROCEDURE:**

Verify each automatic SDV installed in a suction or fuel gas line is actuated by the shutdown of the prime mover.

**IF NONCOMPLIANCE EXISTS:**

Issue a component shut-in (C) INC when SDV installed in the suction and fuel gas line is not actuated by a shutdown of the prime mover.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each SDV inspected

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P-573

**IS GAS-WELL GAS, AFFECTED BY THE CLOSURE OF THE AUTOMATIC SDV ON COMPRESSOR SUCTION, EITHER DIVERTED TO THE PIPELINE OR SHUT-IN AT THE WELLHEAD?**

**Authority:** 803(b)(7)(iii)

**Enforcement Action:** C

804(b)

**INSPECTION PROCEDURE:**

Inspect to verify that gas-well gas affected by the closure of the automatic SDV on compressor suction is:

1. Diverted to the pipeline, or
2. Shut-in at the well head

**IF NONCOMPLIANCE EXISTS:**

Issue a component shut-in (C) INC when gas-well gas affected by the closure of the automatic SDV on compressor suction is not diverted to the pipeline or not shut-in at the wellhead.

**INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each gas well inspected.

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P-574

**IS THE PSH ON EACH COMPRESSOR SUCTION, INTER-STAGE SCRUBBER, AND FINAL STAGE DISCHARGE SET NO HIGHER THAN 15 PERCENT OR 5 PSI, WHICHEVER IS GREATER, ABOVE THE HIGHEST PRESSURE IN THE OPERATING RANGE AND AT LEAST 5 PERCENT OR 5 PSI, WHICHEVER IS GREATER, BELOW THE PSV'S ACTIVATION PRESSURE?**

**Authority:** 803(b)(1)(iii)

**Enforcement Action:** C

804(b)

**INSPECTION PROCEDURE:**

1. Inspect each compressor suction, inter-stage scrubber, and final stage discharge to verify that each is equipped with a PSH sensor.
2. Conduct actuation test on compressor suction, inter-stage scrubber, and final stage discharge PSH sensor in accordance with Appendix 1 and document activation pressure.
3. Verify that PSH is set no higher than 15 percent or 5 psi, whichever is greater, above the highest pressure in the operating range and at least 5 percent or 5 psi, whichever is greater, below the PSV's activation pressure.

**Note:**

1. The PSH and PSV shall be located upstream of the cooler to prevent over pressure from a blockage or freezing problem.
2. The API test tolerance does apply.

**IF NONCOMPLIANCE EXISTS:**

Issue a component shut-in (C) INC when:

1. Compressor suction, inter-stage scrubber, or final stage discharge are not equipped with a PSH sensor.
2. The PSH sensor does not activate as required.

**INSPECTION FORM: INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each PSH inspected.

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P-576

**IS THE PSL ON EACH COMPRESSOR SUCTION, INTER-STAGE SCRUBBER, AND FINAL STAGE DISCHARGE SET NO LOWER THAN 15 PERCENT OR 5 PSI, WHICHEVER IS GREATER, BELOW THE LOWEST PRESSURE IN THE OPERATING RANGE?**

**Authority: 803(b)(1)(iii)**

**Enforcement Action: C**

**804(b)**

**INSPECTION PROCEDURE:**

1. Inspect each compressor suction, inter-stage scrubber, and final stage discharge to verify that each is equipped with a PSL sensor.
2. Conduct actuation test on compressor suction, inter-stage scrubber, and final stage discharge PSL sensor in accordance with Appendix 1 and document activation pressure.
3. Verify that PSL is set no lower than 15 percent or 5 psi, whichever is greater, below the lowest pressure in the operating range.

**Note:** The API test tolerance does apply.

**IF NONCOMPLIANCE EXISTS:**

Issue a component shut-in (C) INC when:

1. Compressor suction, inter-stage scrubber, and final stage discharge is not equipped with a PSL sensor.
2. The PSL sensor does not activate as required.

**INSPECTION FORM: INSPECTION COUNT/ INC COUNT:**

Enter one item checked/ issue one INC for each PSL inspected.

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