NOTICE OF PROPOSED MODIFICATION TO

CALIFORNIA CODE OF REGULATIONS

TITLE 8, Division 1, Chapter 4, Subchapter 14, Article 2, Section 6505, Article 46, Section 6651, and Article 35, New Section 6625.1 of the Petroleum Safety Orders, Drilling and Production

Pursuant to Government Code Section 11346.8(c), the Occupational Safety and Health Standards Board (Standards Board) gives notice of the opportunity to submit written comments on the above-named regulations in which modifications are being considered as a result of public comments and/or Board staff consideration.

On November 17, 2011, the Standards Board held a Public Hearing to consider revisions of Title 8, Sections, 6505, 6651 and 6625.1, of the Petroleum Safety Orders. The Standards Board received oral and written comments on the proposed revisions. The proposal has been modified as a result of these comments and Board consideration.

A copy of the revised text with these modifications clearly indicated is attached for your information. In addition, a summary of all oral and written comments regarding the original proposal and staff responses is included.

Pursuant to Government Code Section 11346.8(d), notice is also given of the opportunity to submit comments concerning the addition to the rulemaking file of the following document relied upon:

1) Meeting Minutes, for the April 3, 2012, Advisory Subcommittee Meeting, convened in Sacramento, California
2) Letter dated February 3, 2012, from Annette Hebert, Chief, Mobile Source Operations Division, California Air Resources Board to Marley Hart, Executive Officer, Occupational Safety and Health Standards Board

Copies of these documents are available for review during normal business hours at the Standards Board Office located at the address listed below.

Any written comments on these modifications and documents relied upon must be received by 5:00 p.m. on August 21, 2012, at the Occupational Safety and Health Standards Board, 2520 Venture Oaks Way, Suite 350, Sacramento, California 95833 or submitted by fax to (916) 274-5743 or e-mailed to oshsb@dir.ca.gov. The regulations will be scheduled for adoption at a future business meeting of the Standards Board.
The Standards Board’s rulemaking files on the proposed action are open to public inspection Monday through Friday, from 8:00 a.m. to 4:30 p.m., at the Standards Board’s office.

Inquiries concerning the proposed changes may be directed to the Executive Officer, Marley Hart, at (916) 274-5721.

OCCUPATIONAL SAFETY AND HEALTH
STANDARDS BOARD

Original signed by

Date: August 3, 2012

Marley Hart, Executive Officer
PROPOSED MODIFICATIONS
(Modifications are indicated in double underline wording for new language or double strikethrough for deleted language.)
Amend Section 6505 as follows:

§6505. Definitions.
The following definitions shall apply in the application of these Orders.

Actuation Test. A test performed by triggering the air intake shut-off valve to verify the proper functioning of (1) the control device and (2) the air intake shut-off valve.

Air intake shut-off valve. A device located between the engine air filter and the intake manifold, designed to shut off the diesel engine’s combustion air in the event engine runaway occurs.

Oil Saver. A device used in conjunction with a wire line in an oil or gas well to direct liquids and gases from such wells into desirable outlets.

Open well bore. A well open to the atmosphere during well drilling, work-over, maintenance, repair or abandonment operations.

Pressure Vessel. A container, including cylinders, used for the storage or accumulation of any gas or liquid under pressure and as defined in the Unfired Pressure Vessel Safety Orders with the following exceptions:

(a) Those exceptions defined in Section 451 of the Unfired Pressure Vessel Safety Orders.

(b) Pressure vessels constructed entirely of pipe and fittings conforming to and in service as prescribed in the applicable ANSI code.

(c) High and low pressure gas holder covered by General Order No. 94-B of the Public Utility Commission of the State of California with revised Section 4a, effective November 12, 1970.

This definition is not intended to include boilers as defined in the Boiler and Fired Pressure Vessel Safety Orders, and pressure chambers that are integral parts of such devices as pumps, motors, engines, clothes presses, flatwork ironers, tire molds, etc., where the pressure-containing part is subjected to severe mechanical stresses.
Prime Mover. An engine or motor whose main function is to drive or operate other mechanical equipment.

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Rathole. A hole in the rig floor lined with a casing that projects above the floor into which the kelly and swivel are placed when hoisting operations are in progress.

Remote Control. A wired or wireless equipment control device that operates the diesel engine’s air intake shut-off valve from a distance.

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Rotary Hose. (Kelly Hose). Length or section of hose between the swivel and the top of the standpipe.

Runaway. A condition affecting diesel engines, where the engine overspeeds out of control, as a result of the introduction of airborne flammable gas or vapor via the air intake causing the engine to accelerate to progressively higher and higher revolutions beyond the normal operating range to a point where the engine becomes damaged due to mechanical failure.

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Add New Section 6625.1 as follows:

§6625.1. Diesel Engines Runaway Protection.
(a) In order to prevent diesel engine runaway as defined in Section 6505, no employer shall operate a stationary, vehicular or mobile diesel engine within 50 feet of the open well bore or other source of ignitable gas or vapor, unless the employer diesel engine complies with subsection (b) through (d).
(b) The concentration of the flammable gases or vapors shall be at all times 10 percent or less of the lower explosive limit (LEL). Where concentration of the flammable gases or vapors is found to be greater than 10 percent of the LEL, the diesel engine(s) shall be shut down immediately.
(c) The air shall be continuously monitored at the well bore or at other sources of ignitable gas or vapor with an approved device to determine if a flammable atmosphere exists at concentrations greater than 10 percent of the lower explosive limit (LEL), or
(d) Where the air is not continuously monitored pursuant to subsection (c) diesel engines shall be operated under at least one of the following conditions:
   (1) The diesel engine has an approved automatically actuated air intake shut-off valve that is equipped with a remote control readily accessible from the operator location or the equipment control panel where an operator is present, or
   (2) The diesel engine has an approved manually controlled air intake shut-off valve that is equipped with a remote control readily accessible from the operator location, and the area affecting the safe operation of the diesel engine is monitored for flammable gas or vapor, or
   (3) The diesel engine’s combustion air is provided by a duct that runs from a non-hazardous area to the air intake of the diesel engine, and the duct’s air inlet is located not closer than 50 feet from the open well or other source of flammable gas or vapor, or
   (4) The diesel engine has an approved automatically actuated system for injecting an inert gas into the engine’s cylinders, and the system is equipped with a remote control that is readily accessible from the operator location or the equipment control panel where an operator is present, and the area affecting the safe operation of the diesel engine is monitored for flammable gas or vapor, or
   (5) The employer utilizes another approved method or device, as defined in Section 3206 of the General Industry Safety Orders, that is designed to automatically shut down the diesel engine effectively and stop a diesel engine runaway.
(c) The actuation testing shall be performed as follows:
   (1) Drilling and well servicing rig diesel engines’ air intake shut-off valves shall be actuation tested at least once a week by a qualified person.
   (2) All other diesel engines’ air intake shut-off valves shall be actuation tested at least monthly by a qualified person.
PROPOSED STATE STANDARD,
TITLE 8, DIVISION 1, CHAPTER 4

(3) The actuation testing required under subsections (c)(1) and (c)(2) shall be in accordance with manufacturer’s recommendations, and
(4) A written record of the actuation tests shall be maintained pursuant to Section 3203(b)(1) of the General Industry Safety Orders.
(e) The air intake shut-off valve or emergency shut-off device used to comply with this section shall be maintained and tested in accordance with manufacturer’s recommendations.
(df) Diesel engines experiencing runaway conditions shall be shut down immediately, and not restarted until the area affecting the safe operation of the diesel engine is free of flammable gas or vapor.


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TITLE 8: Division 1, Chapter 4, Subchapter 14
Petroleum Safety Orders – Drilling and Production
Article 46. Liquid Loading and Unloading Facilities and Operations

Amend Section 6651 as follows:

§6651. Loading and Unloading Operations.

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(b) During the loading and unloading of a tank truck or trailer, the truck engine shall be stopped and the cab shall be unoccupied, unless the cargo is moved by means of the truck engine or an auxiliary engine with controls located in the cab, in which case the cab may be occupied by the truck operator.
(c) When a tank truck engine or an auxiliary internal combustion engine is being used to furnish power to transfer a flammable liquid, the vapors that may be liberated by such transfer shall be prevented from reaching the truck or auxiliary engine. If necessary, the vapors shall be piped to a safe location.
(d) In order to prevent diesel engine runaway as defined in Section 6505, a tank truck or vacuum truck diesel engine or an auxiliary diesel engine, being used to furnish power to transfer a flammable liquid shall comply with Sections 6625.1(b) through (d).
(e) During the loading and unloading of a tank truck or trailer, a qualified person shall be at or near the loading or unloading controls.
(f) In loading and unloading of tank cars, tank trucks or trailers, provision shall be made for the safe disposal of the liquids released by overflow or from hose spouts or lines.

SUMMARY AND RESPONSE TO COMMENTS
SUMMARY AND RESPONSE TO WRITTEN AND ORAL COMMENTS

I. Written Comments

Mr. David Y. Shiraishi, MPH, Area Director, United State Department of Labor, Occupational Safety and Health Administration, Oakland Area Office, by letter dated October 6, 2011.

Comment:
Mr. Shiraishi stated that based on Region IX, Federal OSHA’s review of the proposal, it appears to be commensurate with federal standards.

Response:
The Board acknowledges federal OSHA’s findings of being commensurate with federal standards for this issue.

Mr. David Y. Shiraishi, MPH, Area Director, United State Department of Labor, Occupational Safety and Health Administration, Oakland Area Office, by letter dated October 14, 2011.

Comment:
Mr. Shiraishi indicated that federal OSHA withdrew its determination of the proposal appearing to be commensurate with federal standards.

Response:
The Board spoke with Mr. Shiraishi to gain clarity regarding federal OSHA’s determination and was told that he (Mr. Shiraishi) was so directed pending further review of the proposal. Board staff notes that federal OSHA does not have a comparable standard.

Kenny Jordan, Executive Director, Association of Energy Service Companies (AESC), by letter dated November 14, 2011.

Comment No. 1:
Mr. Jordan stated that the cost of compliance would be significant and that the added cost of mandated automatic air intake shutoff valve installation would have to be borne by industry.

Response:
The Board agrees that the proposed requirement for the installation of automatic diesel engine air intake shutoff valves would result in considerable cost impact to California businesses. As a result of this and other concerns, the proposal was amended to also provide effective alternative means to protect employees from hazards associated with diesel engine runaways. Employers choosing to install automatic air intake shut-off valves (AISV) would incur costs to comply with this proposal; however, for those employers relying on alternative means and methods provided in the revised proposal, there would be no added cost associated with compliance.

Comment No. 2:
Mr. Jordan noted that the requirement for testing is unclear.
Response:
The Board notes that the testing requirement in the proposal contained prescriptive elements that could have been misconstrued and would have been contrary to manufacturer’s recommendations. Therefore, these requirements have been modified to mandate testing of AISV to be consistent with manufacturer’s recommendations.

Comment No. 3:
Mr. Jordan expressed concern that the original petitioner in this case is an employee of a company that stands to benefit financially from this new regulation.

Response:
The Board notes that conflict of interest issues are also of concern to the Board. The Board feels that the transparency of the rulemaking process, where the public and the affected stakeholders are made aware of the fact that the Petitioner’s employer is a manufacturer of the devices and where the public and the affected stakeholders are given the opportunity to participate in the shaping of the proposal per the Administrative Procedures Act remedy any such concerns.

Comment No. 4:
Mr. Jordan noted other effective methods to mitigate the occurrence of a runaway engine, including monitoring, best practices on location, and the use of risk based assessments and programs implemented under a continuing and effective accident prevention program currently required by Title 8. He stated that the American Petroleum Institute (API) has provided significant guidance on this issue to industry and supports alternative approaches to the control of runaway diesel engines.

Mr. Jordan included passages authored by Jack Gerard of the API where he stated that diesel operations are safely operated in hazardous environments through implementation of company safety management systems and compliance with all applicable government and industry standards. Mr. Gerard stated that the oil and natural gas industry is already highly regulated through process safety management standards and the Environmental Protection Agency Risk Management Plan and other local jurisdiction laws. API, ASME and others play a significant role in controlling site hazards. Mr. Gerard added that it is more prudent to allow industry to use a performance-based risk-based approach that allows the facility to evaluate their hazards and identify the best tools to mitigate the hazard. Mr. Gerard identified five tools that could be used to control the runaway diesel engine hazard which include but are not limited to: traffic and site personnel access limitations, idling prohibitions and positioning vehicles upwind of vapor source and prohibiting diesel engine operations during alarm conditions. Mr. Gerard emphasized the importance of not reacting to a release after it has occurred but to take steps to prevent the release from a source in the first place, and for the industry’s site operations to focus on those sources with the greatest chance for a hazardous release. Consequently, Mr. Gerard and the API conclude that the mandatory use of diesel overrun devices is not necessary, and will result in little or no reduction for a vapor cloud explosion. Mr. Gerard also stated that as the various API standards such as RP 2210, RP 2001 and RP 54 come up for regular review the use of automatically operating diesel overrun devices can be considered for use and mentioned in these standards by the API Safety committee.
Response:
The Board concurs with Mr. Gerard’s comments to the extent that use of a performance-based, risk-based approach to control potential vapor sources on a given oil and gas well site appears to be the best approach to mitigating the overrun hazard described by Mr. Bhalla in his petition. This coupled with existing state and federal standards, some of which are administered and enforced by various local jurisdictions, ensures the hazard of uncontrolled vapor source ignition at oil and gas well sites will be controlled.

Therefore, alternative means and methods have been added, including continuous air monitoring to determine if a flammable atmosphere exists and lowering the flammable gas or vapor concentrations from “greater than 20%,” pursuant to Section 6521(b), to “greater than 10%” of the lower explosive limit in locations within 50 feet from the well bore or other sources of flammable gas or vapor where diesel engines cannot be operated. The Board believes that the revised proposal provides employers with alternative administrative and engineering controls that effectively protect their employees from hazards associated with runaway diesel engines. The Petitioner is encouraged to present his device for consideration by the appropriate NFPA, API and ASME committees for consideration.

Comment No. 5:
AESC proposes additional discussions for input and conclusions that would involve stakeholders directly impacted by these rules and regulations.

Response:
The Board agrees that continued dialog between stakeholders via the advisory committee process would be advisable. Therefore, Board staff convened an advisory subcommittee on April 3, 2012, which resulted in proposed modifications.

The Board thanks Mr. Jordan, for his comments and participation in Board’s rulemaking process.

Doug Van Allen, Sr. HS&E Supervisor, Baker Hughes Inc. (BHI) / Pressure Pumping, by letter dated November 16, 2011.

Comment No. 1:
Installing the emergency shutdowns on mobile and highway vehicles causes great concern to BHI. Engine over-revving could trip the automatic AISV and shut down the vehicles while in traffic and create a traffic hazard that could cause serious accidents. Such over-revving could be caused by such common occurrences as the driver shifting and missing a gear or while using the engine as speed control when descending a long grade.

Response:
Board staff research indicates that unintentionally activated AISV are not an inherent shortcoming of this type of device, but instead, indicates a problem with calibration or control module failure. However, when this occurs, the vehicle would still continue to travel down the road as power to the engine is disrupted, allowing the vehicle operator to coast to a stop along the roadside. Board staff does not believe this comment warrants a change to the proposal.
Comment No. 2:
The driver could lose control of his vehicle, while moving, due to the loss of his power steering and/or power brakes should the automatic AISV inadvertently shut down the diesel engine of the on-road vehicle.

Response:
The Board notes that the sudden loss of power steering would result in loss of control of the vehicle thus subjecting the operator and the public to danger. However, as noted in the response to Comment No. 1, unintentionally activated diesel engine’s AISV is not an inherent shortcoming of this type of device but instead indicates a problem with calibration or control module failure. Board staff found no evidence of such failures in diesel powered automotive vehicles now commonly equipped with AISV. Board staff does not believe this comment warrants a change to the proposal.

Comment No. 3:
The proposal could conflict with current California Air Resources Board (CARB) regulations. CARB may not permit after-market additions to on-road vehicles because of the AISV interference with mandated smog checks and CARB mandated diesel particulate trap on the exhaust system.

Response:
Board staff reviewed Vehicle Code Sections 27156, 38390 and 38391, which contains the California anti-tampering law. Board staff notes that these Vehicle Code sections require the after-market parts manufacturer to submit an application for exemption and the necessary documentation to CARB before any add-on part can be sold in California to show that its device does not alter engine emissions. Board staff contacted CARB to determine the applicability of this section to the proposed AISV on diesel engines. CARB responded by stating that CARB had not issued any exemptions for AISV, nor had any applications for exemption for AISV been received by CARB. However, based on a review of currently available AISV, CARB ruled that there is no anticipated adverse effect on emissions resulting from their installation on diesel engines. CARB stated that it will not require manufacturers to request exemption for AISV installed on diesel vehicles and engines operated in proximity of open head wells per the proposed regulation, provided that they are not activated during normal operating conditions of the vehicles and engines upon which they are installed or operated on vehicles operating on California highways that impact emission control efficiency. Therefore, Board staff feels the CARB ruling addresses Mr. Van Allen’s concerns regarding the proposal conflicting with CARB regulations.

Comment No. 4:
The proposed AISV testing requirement may cause both engine damage and damage to the rubber boots that connect the AISV to the engine’s air-intake manifold because of the excessive negative pressure created by shutting the air-intake off while the diesel engine undergoes dynamic testing (placing a vacuum on the air intake side of the engine). This causes engine oil to be pulled into the combustion chamber past the piston rings, valve seals, blower seals and turbo seals. Mr. Van Allen notes that new CARB approved engines must be equipped with exhaust particulate traps and the Petitioner’s device could cause these traps to plug up thus voiding their warranty.
Response:
Board staff agrees with Mr. Van Allen that dynamic testing of the AISV, in some cases, could cause damage to the diesel engine and other vehicular systems. In reviewing the AISV testing protocols recommended by the different manufacturers, Board staff found that the recommendations ranged from conducting the test while the diesel engines operate at a reduced runaway speed to recommending static testing only. Therefore, the testing requirements have been modified to require testing of AISV consistent with manufacturer’s recommendations. This should help to ensure that the particulate trap systems mandated by CARB will not be damaged and the warranty voided.

Comment No. 5:
The proposal would have significant economic impact on business because of the cost of installation of the newly mandated automatic AISV and encouraged the Board to review the proposal further and provide a more accurate cost analysis.

Response:
The Board understands Mr. Van Allen’s concern and agrees that compliance with the requirement for the installation of automatic diesel engine AISV on all diesel engines within 50 feet of the well bore or other source of flammable gas or vapor would result in considerable cost impact to California businesses. As a result of these concerns and the fact that other effective means to control diesel engines are available, the proposal was amended to include alternative means to control diesel engine runaway that have a proven track record of effectively protecting employees.

The Board thanks Mr. Van Allen for his comments and participation in the Board’s rulemaking process.

Jogen Bhalla, Vice President, AMOT, by letter dated November 7, 2011.

Comment No. 1:
Mr. Bhalla stated that a 50-foot safety zone surrounding the well bore or other source of ignition as required by diesel engine runaway protection in subsections 6625.1(a) and (b) is not consistent with the 100 feet safety zone required in the API standards and therefore does not meet federal OSHA standards. Mr. Bhalla stated that the proposed 50 foot zone is not based on scientific findings and violates API RP 54 and the API RP 500 standards and will not prevent diesel engine runaway disasters.

Response:
The API standards referenced in this discussion do not contain a requirement for a 100-foot safety zone for the operation of diesel engines. The API Recommended Practice for Occupational Safety for Oil and Gas Well Drilling and Servicing Operations, API Recommended Practice 54 Third Edition, August 1999, Reaffirmed, March 2007, requires a 100 foot safety distance for rig generators upwind of the wellhead (Section 9.14.2). Section 9.15.3 requires the use of spark arrestors for all internal combustion engines located within 100 feet of the well bore and does not address automatic ASIV. Section 9.15 addresses internal combustion engines and addresses emergency shut-down devices for diesel engines but with no safety distance specified. Board staff notes that Title 8, Section 6554 in the Petroleum Safety Orders regulating well sites requires emergency stop devices on all stationary internal combustion engines driving air or gas
compressors, and Section 6625 mandates for all diesel engines that power drilling and well servicing machinery be equipped with emergency stop devices. Both Sections 6554 and 6625 mandate manually operated shut off valves for the diesel engines irrespective of distance to wells or sources of ignition.

Comment No. 2:
Mr. Bhalla questioned what the scientific basis was for the proposed 50 foot zone.

Response:
The proposed 50-foot safety zone was developed by staff based on stakeholder discussions and a review of Canadian drilling and production standards which mandate varying distances for the safety zone, ranging from 33 feet to 80 feet. British Columbia recently abandoned similar prescriptive standards and adopted a more performance based approach using Class 1 Division 2 or higher hazardous location classification as the determinant for diesel engine runaway controls. Additionally, Board staff reviewed all available empirical data in national and California accident reports to determine a necessity for a 100 or 50-foot safety zone and noted that all accidents related to diesel engine operations at well sites occurred within the immediate vicinity of the well bore, well within 50 feet from the well bore. Board staff concluded that, based on all the evidence, the 50-foot safety zone would provide effective protection from diesel engine runaways. The Board, therefore, made no modifications to the proposal as the result of this comment.

Comment No. 3:
Mr. Bhalla questioned what the possible incremental cost savings to industry would be by changing the safety zone from 100 feet to 50 feet, and if these costs are negligible, why expose workers to the hazards of diesel runaways by reducing the regulated area size?

Response:
The Board did not justify the size of the safety zone on the basis of cost to industry, but on its ability to prevent accidents associated with diesel engine runaways from occurring. Where Board staff could not find reported diesel engine runaway accidents outside the immediate vicinity of the well bores, a necessity could not be shown to require a safety zone greater than 50-foot.

Comment No. 4:
Mr. Bhalla stated that the complexity of compliance with a requirement for a 100-foot safety zone and the inclusion of mobile and vehicular diesel powered equipment as the result of the larger 100-foot safety zone would provide greater safety.

Response:
Board staff agrees with Mr. Bhalla that compliance with a requirement for a 100-foot safety zone might be less complex; however, the necessity for a safety zone greater than 50-foot could not be shown.

The Board thanks Mr. Bhalla for his comment and participation in the Board’s rulemaking process.

James Thomas, Administrative & Regulatory Affairs Manager, Nabors Well Services Co. (NWSC), by letter dated November 9, 2011.
Comment No. 1:
Board staff did not provide any unique accident data for California, but proposed modification to the open well bore activities using refinery data from accidents from other states or other countries. Mr. Thomas suggested that the Board staff review the accidents in California at oil and gas well operations to better understand the exposure of runaway diesel engines in California and, if necessary, develop safety standards that reduce the exposures associated with oil and gas well operations.

Response:
The Board disagrees with Mr. Thomas’ statement that Board staff did not provide unique accident data for California. The Board notes that the accident data reviewed by the Advisory Committee and Board staff included all reported California accident data. Board notes that staff routinely use national accident data to establish accident trends; however, it relies on California accident data to determine and support the necessity of a rulemaking. The Board directed staff to convene an advisory committee to determine whether a consensus could be reached as to the necessity of the proposal. On April 3, 2012, the advisory subcommittee could reach no consensus on the necessity for the proposal. However, all present agreed that well site safety could be enhanced by a requirement for continuous air monitoring for flammable gas or vapor at the well bore and a requirement that would mandate the shutdown of all operations when flammable gas or vapor concentration is detected above 10% LEL.

Comment No. 2:
Mandating the use of automatic AISV for diesel engines to address the hazards associated with runaways is not necessary. Mr. Thomas recognized that when flammable vapors are released from an open well bore the diesel engine could experience an uncontrolled runaway event. However, Mr. Thomas believed the best way to minimize the risk is to mitigate the release of gas at the source.

Response:
The Board agrees with Mr. Thomas that source control through administrative methods currently practiced with such elements as 1) continuous monitoring, 2) shutdown procedures and controls, and 3) evacuation protocols are effective where correctly implemented. The Board feels that the amended proposal, that includes administrative controls and engineering controls, provides the industry with alternative means to comply with the proposed standards.

Comment No. 3:
NWSC recommends modifying the proposal to allow for the use of a gas monitor that would detect natural gas release from the well bore well below the LEL as an alternative to the proposed requirement for an automatic AISV. Mr. Thomas clarified that, should a release occur, the monitor would record the reading and sound the alarm that would provide early warning for the crews on location to actuate the AISV to shutoff all diesel engines and evacuate the well site. Mr. Thomas stated that the employers could thereby continue using the automatic AISV that are already required in Title 8.

Response:
The Board agrees with Mr. Thomas. The Board has modified the proposal to address the use of combustible/flammable gas/vapor technology. (See Response to Mr. Thomas’ Comment No. 2)
Comment No. 4:
Mr. Thomas expressed concern over the requirement for wired remote controls for AISV and stated that the wires could get cut or broken.

Response:
The Board notes that the definition for remote control includes controls that are hardwired in place on diesel powered equipment or rigs at locations other than on the AISV, and that such wired controls would meet the requirement for a remote control in Section 6625.1. The Board notes that the remote controls required on automatic AISV are designed to override the automatic control, and activate the AISV before automatic actuation occurs. Additionally, the Board does not envision the use of pendant type controls where connecting wires could be damaged, however, in the event such controls are developed and used in the future, the issue of damage control must be addressed by the employer.

Comment No. 5:
Mr. Thomas expressed concern about the requirement for wireless remote controls for AISV and stated that the wireless control could interfere with other nearby wireless AISV. He also expressed concern for controlling different ASIV systems wirelessly, and use of terms within the proposal that mandate use of an approved or certified ASIV device.

Response:
The Board feels that the effectiveness and reliability of AISV raised by Mr. Thomas are addressed by the requirements in Section 6625.1(c)(1) of the proposal, for use of approved AISV, as defined in Section 3206 of the General Industry Safety Orders (GISO). Wireless system frequencies can be selected to avert the possibility of remote controls at one location affecting a diesel engine at another location. It will be the responsibility of the employer to ensure that, regardless of whether there are AISV being used coming from different manufacturers, the wireless remote system will be effective with the AISV component. It is also worth repeating that Section 6625.1(c)(4) allows the employer to use a method or system of his/her own choosing that will perform in a manner to ensure the hazard of diesel overrun is controlled. The term “approved” as used in the modified proposal is already defined in Section 3206 of the GISO, as stated above. The term “certified” is not found in the proposal. Based on the existing Title 8 definition for approved, the Board believes a verification program for the use of AISV is unnecessary. It is up to the discretion of the Division to decide whether they wish to develop a convenient list of approved AISV devices or not.

Comment No. 6.
Mr. Thomas noted that the proposal requires a weekly test of the AISV by a qualified person and suggested that the testing be performed by site crews. He also asked what are the qualifications of a “qualified person” and will that person have to be specially trained. Mr. Thomas asked if the actuation test will be required for AISV not operated within 50 feet of the well bore.

Response:
The definition of “qualified person” is contained in Section 6505 of the Petroleum Safety Orders-Drilling and Production and states explicitly what those qualifications are. The Board agrees with Mr. Thomas’ suggestion to place the test responsibility in the hands of site crews provided they are qualified per the Section 6505 definition to handle this responsibility competently. The
proposal requires AISV to be maintained and tested in accordance with the manufacturer’s recommendations; therefore the employer must ensure that the qualified person is competent in the manufacturer’s test protocol and follows it accordingly. As far as an actuation test for vehicles operated outside the 50 foot safety zone, the short response would be generally not but that will largely depend on site specific operations, the nature of those operations and whether diesel equipment using those devices might be operated within the safety zone in which case they would need to be tested.

Comment No. 7:
Mr. Thomas expressed concern about the requirement for AISV possibly interfering with smog test and DMV inspection requirements in California.

Response:
CARB reviewed the AISV and their application and ruled that there is no anticipated adverse effect on emissions resulting from their installation on diesel engines. Additionally, CARB stated that it will not require manufacturers to request exemptions for AISV installed on diesel vehicles and engines to comply with the anti temper regulations of concern to Mr. Thomas. Therefore, the Board feels that no modification of the proposal is warranted. (See Board’s response to Mr. Van Allen’s Comment No. 3.) Board staff is not aware of any DMV related issues with regard to the installation of diesel overrun devices. Diesel overrun technology has been incorporated in the engine design of a few high end luxury import diesel passenger automobiles for a number of years, such as Mercedes Benz, and staff in not aware of any compliance issues with DMV with regard to the use of this technology in passenger automobiles on public right of ways under the jurisdiction of the DMV.

Comment No. 8:
Similar concerns to Mr. Van Allen’s comment, Mr. Thomas stated that the engine over-revving could trip the automatic AISV and shut down the vehicles while in traffic and create a traffic hazard that could cause serious accidents. Mr. Thomas indicated that such over-revving could be caused by such common occurrences as the driver shifting and missing a gear or while using the engine as speed control when descending a long grade.

Response:
Board staff research indicates that unintentionally activated diesel engine’s air-intake shutoff valves are not an inherent shortcoming of this type of device, but instead, indicates a problem with calibration or control module failure. However, when this occurs, the vehicle would still continue to travel down the road as power to the engine is disrupted, allowing the vehicle operator to coast to a stop along the roadside. Board staff does not believe this comment warrants a change to the proposal.

Comment No. 9:
Mr. Thomas recommended that Board staff do a detailed cost analysis and financial impact that the requirement for automatic AISV would have on the industry.

Response:
The Board agrees with Mr. Thomas that the financial impact must be considered. During the April 3, 2012, advisory subcommittee meeting, the cost of installing automatic AISV was presented and discussed and it was concluded that the use of automatic AISV would result in
considerable cost impact to California businesses. As a result of this and other concerns, the proposal was amended to also provide effective alternative means to protect employees from hazards associated with diesel engine runaways. Employers choosing to install automatic air intake shut-off valves would incur costs to comply with this proposal, however, for those employers relying on alternative means and methods provided in the revised proposal there would be no added cost associated with compliance to the revised proposal. Board staff does not believe this comment warrants a change to the proposal.

The Board thanks Mr. Thomas for his comment and participation in the Board’s rulemaking process.

Mr. Victor Esparza, Local 12, Operating Engineers, by letter dated November 17, 2011.

Comment No. 1:
Mr. Esparza stated that he supports the proposal for automatic AISV and feels use of AISV is superior to human activated emergency methods and means since the latter are subject to human error.

Response:
The Board agrees with Mr. Esparza that automatic AISV are effective in preventing diesel engine runaway conditions. However, the Board feels that other effective means are available to control diesel engine runaways that provide employers with reasonable and alternative overspeed controls that provide the necessary flexibility to conduct their operations and provide the necessary worksite safety.

Comment No. 2:
Mr. Esparza recommended the use of ducted combustion air, as proposed in Section 6625.1(b)(3), when stationary diesel engines are used on a long-term basis.

Response No. 2:
The Board agrees with Mr. Esparza that gas and vapor free ducted combustion air would provide effective long-term protection for stationary engines from diesel engine runaways. The Board notes however that the advisory committee considered the use of ducted air and retained the requirement as written to permit the employer discretion and flexibility based on site specific and operational conditions to use ducted combustion air as the employer deems necessary in the protection of well site employees.

The Board thanks Mr. Esparza for his comment and participation in the rulemaking process.

Mr. Rick Latham, Sub-District Director, United Steel Workers by letter dated October 21, 2011.

Comment No. 1:
The industry standard is 100 feet for preventing runaway diesel engine explosions. Dr. Sam Mannan, Texas A and M University, recommends that the proposed standard should not deviate from the 100 foot rule that is specifically required by the API RP 54 and 500 standards.
Response:
The Board notes that, with regard to the API documents and the safety zone distances, a distance requirement is not stated in these documents (see the Board’s response to Mr. Jogen Bhalla’s Comment No.1). The Board therefore made no modifications to the proposal as the result of this comment.

Comment No 2:
Mr. Latham states that diesel engines are a detonation source, as evidenced by the explosion at the BP Texas City and Deepwater Horizon operations. Many variables contribute to an explosion, temperature, topography, type of flammable/combustible material and wind direction. It cannot be assumed that drivers of diesel powered equipment will know enough to perceive the danger signs, environmental conditions and tendencies that might favor an explosion or detonation; therefore some type of fail-safe, automatic device must be present to prevent diesel engine runaways. For these reasons, Mr. Latham suggests the Board go with a 100 foot safety zone rather than a 50 foot safety zone.

Response:
The Board agrees with Mr. Latham that runaway diesel engines can cause catastrophic events leading to serious injury and death. However, in regard to Mr. Latham’s suggestion of a 100 foot safety zone rather than a 50 foot safety zone, the Board notes that all available national and California well site accident data shows that all accidents related to diesel engine operations at well sites occurred within the immediate vicinity of the well bore and well within the proposed safety zone. The Board also notes that the April 3, 2012, subcommittee yielded no additional documentary evidence or basis that would persuade the Board or its staff that further modifications as suggested by Mr. Latham are necessary. Consequently, the Board believes no modification to the proposed 50-foot safety zone is justified.

Comment No 3:
Mr. Latham asked the Board what diesel engines would be left unprotected by the proposed 50-foot safety zone, as opposed to adopting a 100-foot safety zone?

Response:
The Board notes that there are numerous standards that would regulate diesel engines outside the 50-foot safety zone including: 1) GISO Section 3203 requiring the assessment and control of hazards, including those presented by the operation of diesel engines at environments where flammable gasses and vapors may be released; 2) GISO Section 5416(c) prohibiting sources of ignition in any outdoor locations where the concentration of the flammable gases or vapors exceeds or may reasonably be expected to exceed 25 percent of the LEL (this section mandates repeated or continuous monitoring while the source of ignition is present); 3) Title 8, Section 6521(a) requiring air monitoring or testing to determine the presence of a flammable atmosphere before a source of ignition is used in locations where flammable gases or vapors are likely; 4) Section 6521(b) mandating that no source of ignition shall be permitted in an area where the content of flammable vapors or gases is greater than 20 percent LEL; 5) Section 6524 mandating that flammable waste vapors or gases be burned or controlled to prevent hazardous concentrations reaching sources of ignition or otherwise endangering employees; 6) Section 6631 mandating tests for the presence of flammable or toxic vapors or gases to be made with approved devices or apparatus or by chemical analysis, and conducted by qualified persons; 7) Section 6619(b) mandating establishment and implementation of an evacuation plan to ensure the safe
and orderly evacuation of employees in accordance with GISO Section 3220; 8) GISO Section 3511 requiring engines that are not manually throttled to be equipped with an effective governor which will automatically control the speed of the engine under varied loads; 9) Section 6554 requiring emergency stop devices on all stationary internal combustion engines driving air or gas compressors, irrespective of distance to wells or sources of ignition; 10) Section 6625, mandating that all diesel engines that power drilling and well servicing machinery be equipped with emergency stop devices. The controls of the emergency stop devices must be painted red or otherwise made conspicuous and be located at the driller's console. Board staff does not believe this comment warrants a change to the proposal.

Comment No 4:
Mr. Latham questioned what the technical basis was for the proposed 50-foot safety zone.

Response:
The proposed 50-foot safety zone was developed by staff based on stakeholder discussions and a review of Canadian drilling and production standards which mandate varying distances for the safety zone, ranging from 33 feet to 80 feet. British Columbia recently abandoned similar prescriptive standards and adopted a more performance based approach using Class 1 Division 2 or higher hazardous location classification as the determinant for diesel engine runaway controls. Additionally, Board staff reviewed all available empirical data in national and California accident reports and based on that, to determine a necessity for a 100 or 50-foot safety zone, noted that all accidents related to diesel engine operations at well sites occurred within the immediate vicinity of the well bore within 50 feet from the well bore. Board staff concluded that, based on all the evidence, the 50-foot safety zone would provide effective protection from diesel engine runaways. The Board, therefore, made no modifications to the proposal as the result of this comment.

Comment No 5:
Mr. Latham noted that, if cost of changing the safety zone from 100 feet to 50 feet are negligible, why expose the workers to the hazards of diesel runaways by reducing the regulated area size?

Response:
The Board did not justify the size of the safety zone on the basis of cost to industry, but on its ability to prevent accidents associated with diesel engine runaways from occurring. Where Board staff could not find reported diesel engine runaway accidents outside the immediate vicinity of the well bores, a necessity could not be shown to require a safety zone greater than 50-foot. The Board, therefore, made no modifications to the proposal as the result of this comment.

Comment No. 5:
It is our understanding that Cal OSHA must have minimum standards that meet fed OSHA standards, which follow API standards for compliance and citations. Therefore, the 50 foot standard does not meet OSHA standards.

Response:
As stated in the response to Mr. Bhalla’s Comment No. 1, there is no 100 foot requirement in any of the API standards mandating the use of an automatically operating diesel overrun shut off device. There is no federal OSHA standard that specifically requires the use of an AISV at 100 feet unless federal OSHA is enforcing such a requirement under its general duty clause. Even if
that were the case, the California Labor Code only requires California to promulgate standards that are comparable or commensurate with fed OSHA for all occupational safety and health issues that fed OSHA promulgated.

The Board thanks Mr. Latham for his comment and participation in the Board’s rulemaking process.

Fred S. Holmes, President, Holmes Western Oil Corporation, by letter dated November 4, 2011.

Comment:
Mr. Holmes stated that during the 65 years that Western Well Service and Western Drilling was in business, they never “had a diesel engine run on uncontrolled natural gas,” and he believes the diesel air intake automated shut-off device is unnecessary. Additionally, Mr. Holmes stated that he is aware of only one such event in the 1940s on natural gas in Avenal, California.

Response:
The Board agrees that, as Mr. Holmes implies, the occurrence of diesel engine runaways is largely controlled by safe practices in the oil and gas well industry; however, where employers are not actively enforcing industry endorsed well site safety rules, the diesel engine runaways have occurred. As a result of these and similar concerns and the fact that other effective means to control diesel engines are available, the proposal was amended to include alternative means to control diesel engine runaway that have a proven track record of effectively protecting employees, including current industry wide safe practices that have shown to be effective in controlling diesel engine runaways.

The Board thanks Mr. Holmes for his comment and participation in the rulemaking process.

II. Oral Comments

Oral comments received at the November 17, 2011, Public Hearing in Sacramento, California.

The following speakers oppose the proposal primarily for the following reasons: (1) there are already administrative controls in place in California to prevent diesel engine runaway explosions; (2) California Air Resources Board (CARB) does not permit any after-market additions to on-road diesel engines-- any such additions will cause the vehicle to fail an emissions test; (3) there is not sufficient accident data in California to justify such a regulation; and (4) the cost of compliance would be significant:

- Doug Van Allen of Baker Hughes
- James Thomas of Nabors Well Services
- Mike George of Key Energy Services
- Jim Zaben of Kings Oil Tools
- Tim Maples of National Oil Well
- George Harmer of General Production Services

The following speakers support the proposal, although they would recommend modifying the 50-foot safety zone to be commensurate with the API recommended 100-foot area regarding spark arrestors:
• Russ Haddadin of AMOT
• Jogen Bhalla of AMOT
• Rick Latham of United Steelworkers (USW)

The following speakers support the proposal because it promotes worker safety:

• Victor Esparza of Operating Engineers Local 12
• David Simmons of USW Local 675

Response:
The Board has provided response to the comments listed above in the summary and response to written comments (See the response to Jogen Bhalla, Rick Latham, Victor Esparza, James Thomas, and Doug Van Allen.).

Mr. Guy Prescott, Standards Board member

Comment:
Mr. Prescott stated that we should pay attention only to California accident data, as we have numerous other controls, both environmental requirements and safety requirements, in place that other states and countries do not have. He urged Board staff to bring forward a stronger statement regarding necessity. There has not been a diesel runaway problem in California with current monitoring and administrative controls in place.

Mr. Prescott also expressed concern that the advisory committee did not reach consensus to go forward with rulemaking. In addition, the cost estimates are wrong; there are going to be costs associated with this proposal. Finally, the proposal has the potential of putting employers in violation of CARB on-road vehicle regulations.

Mr. Prescott advised staff to talk to CARB to determine if these devices are put on on-road vehicles, they will not violate CARB standards, although it appears that they will. It is not fair to put employers in a Catch-22 position. He does not see any reason at this time for the proposal to go forward.

Response:
The record reflects that Board staff, as directed by the Board, convened a subcommittee of key diesel overrun advisory committee members on April 3, 2012, and was not able to gain consensus for mandating the use of automatic AISV or the use of ASIV for any diesel source at 100 feet as recommended by the petitioners and labor representatives. The California accident data acquired by Board staff and reviewed by the advisory committee show three preventable accidents. Board staff concluded that had the employers involved in the accidents complied with existing safety orders they would have prevented the accidents. The subcommittee determined that there would be serious and adverse cost impact created by a mandate to use automatic AISV on all diesel engines at well sites in California. However, all present at the April 3, 2012, subcommittee meeting agreed that well site safety could be enhanced by a requirement for continuous air monitoring for flammable gas or vapor at the well bore and a requirement that would require the shutdown of all operations when flammable gas or vapor concentration is
detected at or above 10% LEL, as an alternative to installing automatic AISV on all diesel engines.

Regarding Mr. Prescott’s comments about CARB, see the response to Mr. Van Allen’s Comment No. 3.

Mr. Bill Jackson, OSH Standards Board member

Comment:
Mr. Jackson agreed with Mr. Prescott. He stated that there has not been a clear demonstration of necessity for the proposal. It appears that the advisory committee was presented with a proposed regulation rather than being asked whether there was a need for a regulation.

Response:
California accident data for the last 21 years (1/1990 to 1/2011) showed three oil and gas well site accidents. It appears to Board staff that, if existing regulations had been fully complied with, these accidents would likely not have occurred. During the April 3, 2012, subcommittee meeting no consensus was reached as to the necessity for the proposal to require automatic AISV on all diesel engines located within 50 feet from the well bore or other source of flammable gas or vapor and whether the safety zone should be 100-foot (petitioner) or 50-foot safety zone (Board staff). However, all present agreed that well site safety could be enhanced by a requirement for continuous air monitoring for flammable gas or vapor at the well bore and a requirement that would require the shutdown of all operations when flammable gas or vapor is detected at or above 10% LEL. Accident data upholds the prudence and necessity for a 50 foot zone and AISV use given that the California accident data indicates that incidents occur within the 50 foot zone distance rather than 100 foot zone. Consequently, a 100 foot distance cannot be upheld based on California accident data. Also, use of the AISV on a mandated basis was vehemently opposed by industry given their outstanding investment and implementation in the performance-based, risk-based methods they use in conjunction with other relevant state, federal and local standards. The industry safety record supported the notion that risk-based performance standards used by the industry as described in the letter from Mr. Gerard have been effective without having to mandate use of Mr. Bhalla’s device.

John MacLeod, OSHSB Chairman

Comment:
Mr. MacLeod inquired about consensus at the advisory committee and stated that it appeared that there was little or no accident data in California related to diesel engine runaways.

Response:
Please see the responses to comments by Mr. Jackson, Mr. Thomas and Mr. Latham.