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FINAL STATEMENT OF REASONS

CALIFORNIA CODE OF REGULATIONS

TITLE 8: Chapter 4, Subchapter 14, Articles 2, 9, and 15, Sections 6505, 6533, 6551 and New Section 6552 of the Petroleum Safety Orders - Drilling and Production; and Chapter 4, Subchapter 15, Articles 2, 16, and 18, Sections 6755, 6845, 6857, and New Section 6858 of the Petroleum Safety Orders - Refining, Transportation and Handling

Petroleum Safety Orders

MODIFICATIONS AND RESPONSE TO COMMENTS RESULTING FROM THE 45-DAY PUBLIC COMMENT PERIOD

There are no modifications to the information contained in the Initial Statement of Reasons except for the following substantive and nonsubstantive modifications that are the result of public comments and/or Board staff evaluation.

Section 6551. Pressure Vessels and Boilers.

Section 6551 contains the standards for pressure vessels and boilers located in petroleum production facilities. Proposed subsection 6551(c)(1) pertains to a written risk-based inspection program, as described in American Petroleum Institute (API) 510-2003 and API 580-2002. The written risk-based inspection program allows the employer to set the pressure vessel inspection interval. Written comments indicate that providing the employer the ability to set the pressure vessel inspection interval to any length of time the program allowed is insufficient. A modification is proposed to limit the pressure vessel inspection interval to 15 years for internal or on-stream inspections and 10 years for external inspections. The revision is necessary to ensure that all pressure vessels are inspected at a maximum interval of 15 years for internal or on-stream inspections and 10 years for external inspections.

Subsections 6551(c)(1)(A thru D) were re-lettered to 6551(c)(1)(A thru C).

Section 6857. Pressure Vessels and Boilers.

Section 6857(c)(2) contains the standards for pressure vessels and boilers located in petroleum production facilities. Proposed subsection (c)(2) pertains to a written risk-based inspection program, as described in API 510-2003 and API 580-2002. The written risk-based inspection program allows the employer to set the pressure vessel inspection interval. Written comments indicate that providing the employer the ability to set the pressure vessel inspection interval to any length of time the program allowed is insufficient. A modification is proposed to limit the pressure vessel inspection interval to 15 years for internal or on-stream inspections and 10 years

for external inspections. The revision is necessary to ensure that all pressure vessels are inspected at a maximum interval of 15 years for internal or on-stream inspections and 10 years for external inspections.

Summary and Response to Oral and Written Comments:

Written and Oral Comments:

Mr. Frank Strasheim, Regional Administrator, Region IX, U.S. Department of Labor by letter dated October 14, 2005

Comment:
Mr. Strasheim submitted a letter to Mr. Keith Umemoto, Executive Officer, California Occupational Safety and Health Standards Board stating that they had completed their review of the proposed standards and found the standards to be at least as effective as the Federal Standard.

Response:
The Board thanks Mr. Frank Strasheim and the U.S. Department of Labor for their comments and participation in the Board's rulemaking process.

Mr. Dennis Bolt, Bay Area Coordinator, Western State Petroleum Association (WSPA), by letter dated July 12, 2005, and oral comment received at the August 18, 2005, Public Hearing in Glendale, California

Comment:
Mr. Bolt represents Western State Petroleum Association (WSPA), the organization that originally petitioned the Board in 1999. He offered support for the proposal because it advances safety in the science of effective operations. He stated that the language in the current standards is outdated and does not reflect state-of-the art safe and effective operations.

Mr. Bolt also stated that Risk-Based Inspection (RBI) variances have been heard by the Board and approved. Board and Division staff have been involved in these variance reviews, helping them to develop the acquired skills and competency to conduct the RBI audits.

Response:
The Board thanks Mr. Bolt and WSPA for their comments and participation in the Board's rulemaking process.

Mr. Sean Johnson, Pressure Equipment Technical Assurance Engineer, Shell Oil Martinez Refinery (also representing the Los Angeles refinery), by letter dated August 4, 2005, and oral comment received at the August 18, 2005, Public Hearing in Glendale, California

Comment:

Mr. Johnson believes that the amendments will improve the methodology for setting inspection intervals on pressure equipment. Shell is a member of WSPA and concurs with Mr. Bolt's comments.

Mr. Johnson also commented that the current Petroleum Safety Orders references the 1992 Edition of API 510, which does not use methodology that calculates the probability of failures, consequences of failure or the employees' risk. The proposed rulemaking uses the 1998 Edition of API 510 and allows a more thorough analysis of process conditions to evaluate the risk to employees. The proposed rulemaking requires that qualified inspectors, process engineers, corrosion specialists, and metallurgists be involved in operating and maintaining pressure equipment. His organization learned that approximately 20 percent of the equipment in a process unit carries about 80 percent of the risk. RBI allows employers to focus their attention on the equipment that carry the highest risk. He also stated that the state oversight of their RBI program would be an important factor.

Dialogue between Board Member Harrison and Mr. Johnson:
Board Member Harrison asked Mr. Johnson if there were any reports or data conducted on RBI's. Mr. Johnson responded that he was one of the leaders on the RBI implementation process at the Shell Refinery. Mr. Johnson stated that it was during their analysis of the hydro-cracker unit, which operates at high pressure and temperature, that they confirmed that 20 percent of the equipment in a process unit carries about 80 percent of the risk.

Response:
The Board thanks Mr. Johnson and Shell Oil for their comments and participation in the Board's rulemaking process.

Mr. Jim McVay, Tesoro Plant, Martinez, California by oral comment at the August 18, 2005, Public Hearing in Glendale, California

Comment:
Mr. McVay stated that his company supports the proposed rulemaking and the implementation of the RBI strategies. He stated that RBI has been in use for over a decade. His company conducted a pilot program using RBI on about 26% of the refinery assets (approximately 2000 equipment items), taking 3 months of inspection department time and about $500,000. The resulting risk reduction and refocus of inspection efforts were exciting to his company.

Response:
The Board thanks Mr. McVay and Tesoro for their comments and participation in the Board's rulemaking process.

Mr. Ben Sloan, Chevron Products, by oral comment at the August 18, 2005, Public Hearing in Glendale, California

Comment:

Mr. Sloan stated that he has over thirty years of inspection experience. He said that the current method of requiring the inspector to determine when inspection is required is a difficult task. He said that RBI provides a background of technical resources to make this determination. He said that it is a misconception that there will be fewer inspections due to RBI. There is more detail in the inspection and inspectors are involved in the process. He said that the proposed rulemaking is a well thought out process and that Chevron strongly supports it.

Response:
The Board thanks Mr. Sloan and Chevron Products for their comments and participation in the Board's rulemaking process.

Ms. Carla Fritz, representing Clyde Trombettas, Cal/OSHA Compliance in Concord read a letter into the record at the August 18, 2005, Public Hearing in Glendale, California

Comment:
Mr. Trombettas stated in his letter that he is the District Manager of the Division's Northern California Process Safety Management Concord Office. He stated that his office enforces the standards in Title 8, Section 5189, Process Safety Management and the Petroleum Safety Orders. Mr. Trombettas began participation in the advisory committee effective November 13, 2003, and was responsible for taking the minutes of these meetings. He initially had some concerns with the inclusion of API 510, 579, and 580, but after months of discussion, industry addressed each of his concerns with the three API standards. Mr. Trombettas stated that his office can support the proposed changes to the Petroleum Safety Orders but felt that the United Steel Workers (formerly PACE) has raised some issues and concerns about the proposed changes. Mr. Trombettas stated that he encourages the Board to hear and consider these concerns and comments prior to approving these changes.

Response:
Mr. Trombettas participated in various telephonic and email conversations with union, management, and Division representatives. Mr. Trombettas has stated that he now supports the modifications to the proposed standard and feels that the new modifications address his and the union's concerns.

The Board thanks Ms. Fritz and Mr. Trombettas for their comments and participation in the Board's rulemaking process.

Mr. John Aller, President, Capstone Engineering, by letter dated August 12, 2005, and oral comment received at the August 18, 2005, Public Hearing in Glendale, California

Comment:
Mr. Aller stated that he supports the proposed rulemaking. He stated that he has 20 years of experience in inspection and asset management for an operating company. His last 10 years have been as a consultant helping to develop RBI inspection technology and he has conducted over 1000 risk based inspection studies. This indicates that companies experience real value by being able to better manage the risk. Mr. Aller stated that there have been numerous studies in the

industry that demonstrate that more than half of the risk in a refinery is associated with the potential failure in the piping systems. To understand where risks lay in the piping is an enormous opportunity to improve the safety and readiness of a refinery.

Response:
The Board thanks Mr. Aller and Capstone Engineering for their comments and participation in the Board's rulemaking process.

Mr. Greg Alvarado, Equity Engineering Group, Inc. by oral comment at the August 23, 2005, Public Hearing in Glendale California

Comment:
Mr. Alvarado was a part of the API committee that developed API 580 and his company is also the trainer for API and RBI. He stated that RBI is being accepted internationally. Mr. Alvarado does not consider RBIs a cost saving measure. RBI is a structured process that helps employers do a better job of identifying potential damage to mechanisms and understanding how process conditions can affect the failure of equipment. He stated that he strongly supports the proposed changes.

Response:
The intent of an RBI is to allow companies to focus their resources on those pressure vessels that pose the highest risk and consequence of failure and redirect those resources from those pressure vessels that pose little or no risk or consequence of failure.

The Board thanks Mr. Alvarado and Equity Engineering Group, Inc., for their comments and participation in the Board's rulemaking process.

Mr. Steve Sullivan, United Steel Workers, representative of PACE by letter dated August 23, 2005, and by oral comment at the August 18, 2005, Public Hearing in Glendale, California

Comment #1:
Mr. Sullivan stated that PACE does not support the proposed changes. However, they are willing to work on a compromise. They see some value in the proposed standards and have no problem with the administrative housecleaning changes. Mr. Sullivan supports Chapter 14, Section 6533, which requires a piping inspection program for drilling and production by qualified people.

Mr. Sullivan's concern is the inspection of pressure vessels, primarily the intervals between inspections. As proposed in Sections 6551(c)(1) and 6857(c)(2), a company's RBI program could be created in a manner that a pressure vessel would never have an inspection performed if the pressure vessel was deemed to have an extremely low risk and consequence of failure. Mr. Sullivan provided an example of a pressure vessel installed at the same time a 25-year old employee is hired. This employee could have a 35-year career and the pressure vessel might never be inspected due to its RBI analysis.

Response:

Contact was made with Mr. Sullivan and all other advisory committee members following the August 18, 2005, Public Hearing. A consensus was reached to establish a fixed time interval for inspections of pressure vessels through the use of RBI. Sections 6551(c)(1) and 6857(c)(2) were revised to use identical language. The new language reads as follows (proposed modifications are underlined):

> *(2) A written risk-based inspection program, as described in API 510-2003 and API 580-2002, may be used to increase the internal <u>or on-stream</u> inspection limits required by API 510-2003 Section 6.4 <u>to a maximum of 15 years</u>, or the external inspection interval described by API 510-2003, Section 6.3 <u>to a maximum of 10 years</u>, provided it is reviewed and accepted by the Division before the program is implemented, and every three years thereafter. Any revisions made to the accepted risk-based inspection program must also be submitted, reviewed, and accepted by the Division.*

Existing Sections 6551 and 6857 reference the 1992 Edition of API 510 for the establishment of inspection intervals. The current maximum interval for an internal or on-stream inspection is 10 years and for an external inspection is 5 years. The revisions to the proposed rulemaking would increase all types of inspections by 5 years for those companies that establish an acceptable RBI program while requiring companies that forego the use of RBI to continue to inspect their pressure vessels at the API 510 limits of 10 and 5 years.

<u>Comment #2:</u>
Mr. Sullivan stated that the union has respect and confidence in those in the reliability or inspection departments who perform the actual inspections, but is not confident that the findings or recommendations are being given due consideration and action when processed by management. He stated that economic factors influence decisions about whether or not to shut down a process unit for repairs. Mr. Sullivan stated the United Steel Workers (USW) would be able to accept a degree of RBI if it included enforceable Risk-Based Action (RBA). Mr. Sullivan stated the only way to enforce RBI is under process safety management (PSM), so that is the only enforcement action that can be taken against an employer. Mr. Sullivan is not familiar with API RP 580 and has not been shown anything that industry requires action based upon any certain thresholds except in the case of failure.

<u>Response:</u>
Certainly management response to safety is always a concern, but one must consider that RBI is another tool for company personnel to use to perform their inspection duties. It is even reasonable to expect that an inspector armed with a detailed analysis of need for a pressure vessel inspection will be better prepared to convince management to perform the inspection (or to shut the vessel down, if necessary). Also, Title 8 Section 5189, Process Safety Management of Acutely Hazardous Materials, particularly subsection (j), Mechanical Integrity, requires that management maintain and operate pressure vessels in a safe manner, with serious penalties and repercussions if ignored. RBI is linked to this section, as it is a method of maintaining mechanical integrity.
<u>Comment #3:</u>

Mr. Sullivan stated a concern with the statement "that plant shutdowns carry inherent risks." He felt that the statement is accurate but misleading. He stated that the greatest risk occurs during emergency shutdowns as opposed to pre-planned shutdowns. Mr. Sullivan also objected to the statement that most failures occur during start-ups and shutdowns. He stated that most accidents occur mid-run.

Response:
There is risk in all phases of refinery operations. The intent of RBI is to minimize and understand these risks. Superior inspection planning that results from the use of RBI should reduce problems due to equipment failure while on-stream, while also reducing the numbers of start-ups and shutdowns that would occur. The recent accident in Texas City, Texas, BP Refinery occurred during start-up and resulted in 15 deaths and numerous injuries and is an example of the increased employee exposure during start-up and shutdown.

Comment #4
Mr. Sullivan stated that the USW disagrees with Section 6845, which allows industry to adhere to one national standard rather than have a separate inspection program for California. California is unique when it comes to the Petroleum Safety Orders and they are being unnecessarily weakened in some areas. Mr. Sullivan stated that it is effective standards and effective enforcement that keep industry and the workers in the safest position.

Response:
The current editions of API 510 and 580 are industry standards that have been in use since 1999. California has been using previous edition of API 510 since 1994. The proposed rulemaking includes many restrictions upon an employer's use of RBI, such as the involvement of company inspection, maintenance, and engineering staff; acceptance of the RBI in writing by the refinery manager; a limit on the inspection intervals; and acceptance of a company's RBI program, along with any revisions at a 3-year interval by Division staff. These additional restrictions are unique to California and will help to ensure that companies adhere to requirements of Title 8. There will be no reduction or limiting of the level of enforcement by the Division.

Comment #5:
Mr. Sullivan stated that the union was not represented at the five advisory committee meetings except for the last two and that the process was only brought to their attention near the end.

Response:
A PACE and a Boilermaker union representative were invited to attend all five advisory committee meetings. Emails were distributed to these union representatives, along with all other committee members, prior to each meeting stating the time and date of that meeting with a date set two months in advance for the next meeting. These emails included the agenda for the upcoming meeting, the notes from the previous meeting, and the current proposed revised standard language. PACE sent a representative to the last two meetings.

Comment #6:
Mr. Sullivan asked what level of participation or input the Division had in the development of API's Recommended Practices which industry is proposing be adopted by reference. USW was not contacted for input.

Response:
The API documents proposed for adoption conform to the American National Standard Institute (ANSI) process. Any ANSI document must provide for the participation of all affected parties either through involvement in the committee process or through the public comment process. It is not unlike California's rulemaking process. While no one from the Division was involved with promulgating these API documents, other individuals representing governmental jurisdictions were. There is nothing to prevent any union member from participating in the creation of the API documents.

Comment #7:
Mr. Sullivan expressed concern about the Division's review of the inspection program. He stated that the review is only going to be as good as the individual inspector's expertise. He questioned whether the Division has the ability to develop guidelines for the essential elements of what needs to be covered. He stated that RBIs are only as effective as the local management.

Response:
The Division has and will continue to receive training concerning the requirements of establishing a sound, risk-based inspection-auditing program. Only those individuals that have been properly trained will perform these audits.

Comment #8:
Mr. Sullivan stated that he objected to lengthening the inspection intervals of boilers and unfired pressure vessels.

Response:
The proposed rulemaking requires that boilers and unfired pressure vessels that require state issued permits to operate be inspected in the fixed intervals required by the appropriate sections in Title 8.

Comment #9:
Mr. Sullivan also objected to RBIs, and asked if they have been tested anywhere else in the country with a testing period of about 36 months so there can be a comparative analysis of what RBIs have provided and what the previous traditional methods of inspection have done.

Response:
Risk-based inspection utilizes a system of determining the underlying risk to a pressure vessel from numerous degradation mechanisms. These degradation mechanisms are specific for the type of operating service the pressure vessel is exposed to and are what can cause the pressure vessel to deteriorate. The degradation mechanisms have been studied for many years and are incorporated into the RBI analysis. API 510 has allowed the use of RBI since 1999 and it has

been utilized in other states. There is currently no published comparative analysis of RBI and traditional methods, but the concepts contained in an RBI program can be considered a consolidation of the historical knowledge of the petroleum industry.

Comment #10:
Mr. Sullivan stated that the union is concerned about the multiple references to these changes reducing operating costs for regulated companies. He continued by stating that there are always going to be worker safety standards which will increase operating costs for the companies and that these costs are passed along to consumers.

Response:
Part of the rulemaking process is to provide the fiscal impact of the proposed rule changes. The submission of the Economic and Fiscal Impact Statement is the primary source of the information Mr. Sullivan refers to. The Initial Statement of Reasons contained fiscal data from the Economic and Fiscal Impact Statement.

Dialogue between Board Member Murray and Mr. Sullivan:
Board Member Murray asked if Mr. Sullivan's concerns were addressed in the advisory committee meeting. Mr. Sullivan stated that PACE attended the last two meetings and their concerns were contradictory to industry goals, which were to extend RBIs for a long period. He did not know if anyone would actually use the 40-year interval inspection period, but it was one of the examples.

Response:
Mr. Sullivan's concerns were discussed during the last two advisory committee meetings. It was the committee chair's understanding at the conclusion of the last meeting that his issues were resolved. It was only shortly before the August 18, 2005, Public Hearing that the committee chair was made aware of any unresolved concerns.

Dialogue between the Board Members and Mr. Cook:
The Board members agreed that they would like to see this proposal go back to an advisory committee.

Response:
Contact was made with Mr. Sullivan, Mr. Bolt, Mr. Sloan, and Mr. Johnson following the August 18, 2005, Public Hearing. All members of the advisory committee have been sent an email copy of the proposed revisions. The issues raised during the Public Hearing were also discussed during the two Chevron Variance hearings attended by Board Members Art Murray, Steve Rank, and John MacLeod. A consensus was reached to establish a fixed time interval for inspections of pressure vessels through the use of RBI. It was determined by the advisory committee members that another meeting was unnecessary.

Mr. Steve Kohan, APTECH Engineering by oral comment at the August 18, 2005, Public Hearing in Glendale, California

Comment:
Mr. Kohan stated that APTECH Engineering supports the proposal, particularly RBI. He said that the idea is not to inspect more, but inspect smarter and that the API methods provide the smarter method. He said that an implemented program would improve plant safety and mechanical integrity and decrease the risks involved in continued plant operations. RBI improves planning of plant turnarounds and decreases the down time which results in savings in associated labor and other costs. He said that RBI programs permit owners to make informed and documented defensible decisions concerning inspections.

Response:
The Board thanks Mr. Kohan for his comments and participation in the Board's rulemaking process.

MODIFICATIONS AND RESPONSE TO COMMENTS RESULTING FROM THE 15-DAY NOTICE OF PROPOSED MODIFICATIONS

No further modifications to the information contained in the Initial Statement of Reasons are proposed as a result of the 15-day Notice of Proposed Modifications mailed on March 23, 2006.

ADDITIONAL DOCUMENTS RELIED UPON

None.

ADDITIONAL DOCUMENTS INCORPORATED BY REFERENCE

None.

DETERMINATION OF MANDATE

These standards do not impose a mandate on local agencies or school districts as indicated in the Initial Statement of Reasons.

ALTERNATIVES CONSIDERED

The Board invited interested persons to present statements or arguments with respect to alternatives to the proposed regulation. No alternative considered by the Board would be more effective in carrying out the purpose for which the action is proposed or would be as effective and less burdensome to affected private persons than the adopted action.