

ORDINANCE NO. 2014-07

(Amendments to Ordinance Code Chapter 450-8, on Industrial Safety)

The Contra Costa County Board of Supervisors ordains as follows (omitting the parenthetical footnotes from the official text of the enacted or amended provisions of the County Ordinance Code):

SECTION I. SUMMARY. This ordinance amends specified sections of County Ordinance Code Chapter 450-8 to impose additional measures to improve industrial safety. This ordinance amends County Ordinance Code Chapter 450-8 by: (1) amending section 450-8.004 to broaden specified goals of the regulations set forth in Chapter 450-8; (2) amending section 450-8.014 to clarify the definition of “major chemical accident or release” and add definitions of “Layer of Protection Analysis,” “process hazard analysis” and “process safety performance indicators”; (3) amending section 450-8.016 by requiring the use of process safety performance indicators in the evaluation of performance of process safety systems, requiring a stationary source to conduct and document an inherently safer systems analysis (a) every five years for existing covered processes, (b) in the development and analysis of recommended action items identified in a process hazard analysis, (c) as part of a management of change review, whenever a major change is proposed at a facility that could reasonably result in a major chemical accident or release, (d) when an incident investigation report recommends a major change that could reasonably result in a major chemical accident or release, (e) when a root cause analysis report recommends a major change that could reasonably result in a major chemical accident or release, and (f) during the design of new processes, process units and facilities, requiring inherently safer systems to be implemented to the greatest extent feasible and as soon as administratively practicable, and requiring a stationary source to conduct and document a safeguard protection analysis no later than June 30, 2019, and every five years thereafter, (4) amending section 450-8.018 to require final determination reports regarding a stationary source’s safety plan or safety program to be provided to specified agencies; and (5) amending section 450-8.030 by adding process safety performance indicators to the required contents of the annual performance review and evaluation report that is provided to the board of supervisors. This ordinance also makes various clarifying, administrative, and other non-substantive changes to section 450-8.016.

SECTION II. AUTHORITY. This ordinance is adopted pursuant to Article 11, section 7 of the California Constitution.

SECTION III. Section 450-8.004 of the County Ordinance Code is amended to read:

450-8.004 Purpose and Goals. (a) The purpose of this chapter is to impose regulations which improve industrial safety by:

- (1) Requiring the conduct of process hazard analyses for covered processes handling hazardous materials not covered by the federal or state accidental release prevention programs;
- (2) Requiring the review of action items resulting from process hazard analyses and requiring completion of those action items selected by the stationary source for implementation within a reasonable time frame;

- (3) Requiring the review of accidental release prevention efforts of stationary sources and providing for the conduct of investigations and analyses for the determination of the root cause for certain incidents;
 - (4) Providing review, inspection, auditing and safety requirements that are more stringent than those required in existing law and regulations;
 - (5) Providing for public input into the safety plan and safety program and public review of any inspection and audit results;
 - (6) Facilitating cooperation between industry, the county, local fire departments, Cal/OSHA, EPA, other agencies that have oversight of refineries, and the public in the prevention and reduction of incidents at stationary sources;
 - (7) Expanding the application of certain provisions of the federal and state accidental release prevention programs to processes not covered by the federal or state accidental release prevention programs;
 - (8) Verifying that an approved security and vulnerability study is performed, and that the recommendations are addressed within a reasonable time frame;
 - (9) Requiring the development and implementation of a written human factors program; and
 - (10) Preventing and reducing the number, frequency, and severity of accidental releases in the county to the greatest extent feasible.
- (Ords. 2014-07 § 3, 2006-22 § 2, 98-48 § 2).

SECTION IV. Section 450-8.014 of the County Ordinance Code is amended to read:

450-8.014 Definitions. For purposes of this chapter, the definitions set forth in this section shall apply. Words used in this chapter not defined in this section shall have the meanings ascribed to them in the Clean Air Act Regulations (40 CFR Section 68.3) and in California Health and Safety Code Article 2 (Section 25531 et seq.) of Chapter 6.95, unless the context indicates otherwise.

- (a) "Covered process" means any process at a stationary source.
- (b) "Department" means the Contra Costa County health services director and any director authorized deputies.
- (c) "Feasible" means capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors.
- (d) "Hazard category A materials" are substances which meet the hazard category A material definition as set forth in Section 84-63.1016 of this code.
- (e) "Hazard category B materials" are substances which meet the hazard category B material definition as set forth in Section 84-63.1016 of this code.
- (f) "Industry codes, standards, and guidelines" means the edition of the codes, standards, and guidelines in effect at the time of original design or construction for the design, construction, alteration, maintenance or repair of process units, industrial equipment, or other industrial facilities, structures or buildings published by, but not limited to, the American Petroleum Institute (API), the American Chemistry Council (ACC), the American Society of Mechanical Engineers (ASME) or the American National Standards Institute (ANSI), and meets recognized and generally accepted good engineering practices (RAGAGEP).

(g) "Inherently safer systems" means "inherently safer design strategies" as discussed in the latest edition of the Center for Chemical Process Safety Publication "Inherently Safer Chemical Processes," and means feasible alternative equipment, processes, materials, lay-outs, and procedures meant to eliminate, minimize, or reduce the risk of a major chemical accident or release by modifying a process rather than adding external layers of protection. Examples include, but are not limited to, substitution of materials with lower vapor pressure, lower flammability, or lower toxicity; isolation of hazardous processes; and use of processes which operate at lower temperatures and/or pressures.

(h) "Major chemical accident or release" means an incident that meets the definition of a level 3 or level 2 incident in the community warning system incident level classification system defined in the hazardous materials incident notification policy, as determined by the department; or results in the release of a regulated substance and meets one or more of the following criteria:

- (1) Results in one or more fatalities;
- (2) Results in at least twenty-four hours of hospital treatment of each of at least three persons;
- (3) Causes on- and/or off-site property damage (including clean-up and restoration activities) initially estimated at five hundred thousand dollars or more. On-site estimates shall be performed by the stationary source. Off-site estimates shall be performed by appropriate agencies and compiled by the department;
- (4) Results in a vapor cloud of flammables and/or combustibles that is more than five thousand pounds.

(i) "Regulated substance" means (1) any chemical substance which satisfies the provisions of California Health and Safety Code Section 25532(g), as amended from time to time, or (2) a substance which satisfies the provisions of hazard categories A or B in Section 84-63.1016 of this code. Mixtures containing less than one percent of a regulated substance shall not be considered in the determination of the presence of a regulated material.

(j) "Risk management program" means the documentation, development, implementation, and integration of management systems by the facility to comply with the regulations set forth in 40 CFR, Part 68 and the California Health and Safety Code, Article 2, commencing with Section 25531.

(k) "RMP" means the risk management plan required to be submitted pursuant to the requirements of the 40 CFR Section 68.150-68.185 and the California Health and Safety Code Article 2 (Section 25531 et seq.) of Chapter 6.95.

(l) "Root cause" means prime reasons, such as failures of some management systems, that allow faulty design, inadequate training, or improper changes, which lead to an unsafe act or condition, and result in an incident. If root causes were removed, the particular incident would not have occurred.

(m) "Safety plan" means the safety plan required to be submitted to the department pursuant to the requirements of Section 450-8.016 of this chapter.

(n) "Safety program" means the documentation, development, implementation, and integration of management systems by the stationary source to comply with the safety requirements set forth in Section 450-8.016 of this chapter.

(o) "Stationary source" or "source" means a facility which includes at least one process as defined in 40 CFR 68.10 that is subject to federal risk management program level 3 requirements and whose primary North American Industry Classification System code (NAICS) is 324 (Petroleum and Coal Products Manufacturing) or 325 (Chemical Manufacturing).

(p) "California accidental release prevention program" means the documentation, development, implementation, and integration of management systems by a facility to comply with the regulations set forth in California Code of Regulations, Title 19, Division 2, Chapter 4.5.

(q) "Catastrophic release" means a major uncontrolled emission, fire, or explosion, involving one or more highly hazardous chemicals, that presents serious danger to employees in the workplace and/or the public. As used in this section, "highly hazardous chemical" has the meaning ascribed to it in 29 CFR 1910.119(b) as of May 21, 2003.

(r) "Human factors" means a discipline concerned with designing machines, operations, and work environments so that they match human capabilities, limitations, and needs. "Human factors" can be further referred to as environmental, organizational, and job factors, and human and individual characteristics that influence behavior at work in a way that can affect health and safety.

(s) "Human systems" means the systems, such as written and unwritten policies, procedures, and practices, in effect to minimize the existence/persistence of latent conditions at the stationary source. It also includes the broad area of safety culture of a stationary source to the extent that it influences the actions of individuals or groups of individuals.

(t) "Layer of Protection Analysis" (LOPA) means a semi-quantitative analysis of the risk of process hazards and the adequacy of safeguards against those hazards.

(u) "Process hazard analysis" (PHA) means a qualitative, semi-quantitative or quantitative analysis of a process, involving the identification of individual hazards of a process, determination of the mechanisms by which hazards could give rise to undesired events, and evaluation of the consequences of these events on health, property and the environment.

(v) "Process safety performance indicators" are measurements of a stationary source's activities and other events that are used to evaluate the performance of process safety systems.

(Ords. 2014-07 § 4, 2006-22 § 4, 98-48 § 2).

SECTION V. Section 450-8.016 of the County Ordinance Code is amended to read:

450-8.016 Stationary source safety requirements. The stationary source shall submit a safety plan to the department within one year of the effective date of the ordinance codified in this chapter or within three years of the date a facility becomes a stationary source, that complies with the provisions of this section and that includes the safety elements listed in subsection (a) of this section. In addition, the stationary source shall comply with the safety requirements set forth in subsections (a) through (e), (i) and (j) of this section and shall include a description of the manner of compliance with these subsections in the safety plan. A new covered process at an existing stationary source shall comply with subsections (a) through (e), (i) and (j) of this section prior to initial startup.

(a) Safety Program Elements. All covered processes shall be subject to the safety program elements listed below. The safety plan shall include a description of the manner in

which these safety program elements listed below shall be applied to the covered process. These safety program elements shall be implemented in conformance with the California accidental release prevention program and the safety plan shall follow Chapters 5, 7, 8 and 9 of the Contra Costa County health services department CalARP program guidance document.

(1) Process Safety Information.

(A) The stationary source shall complete a compilation of written process safety information before conducting any process hazard analysis as required by this chapter. The compilation of written process safety information is to enable the stationary source and the employees involved in operating the covered process to identify and understand the hazards posed by the covered process. This process safety information shall include information pertaining to the hazards of the regulated substances used or produced by the process, information pertaining to the technology of the process, information pertaining to the equipment in the process, and information pertaining to the hazards of the regulated substances in the process.

(i) This information shall consist of at least the following: toxicity information; permissible exposure limits; physical data; reactivity data; corrosivity data; thermal and chemical stability data; and hazardous effects of inadvertent mixing of different materials that could foreseeably occur.

(ii) Material safety data sheets meeting the requirements of Section 5189, Title 8 of California Code of Regulations may be used to comply with this requirement to the extent they contain the information required by this subsection.

(iii) Information pertaining to the technology of the process shall include at least the following: a block flow diagram or simplified process flow diagram; process chemistry; maximum intended inventory; safe upper and lower limits for such items as temperatures, pressures, flows or compositions; and, an evaluation of the consequences of deviations. Where the original technical information no longer exists, such information may be developed in conjunction with the process hazard analysis in sufficient detail to support the analysis.

(iv) Information pertaining to the equipment in the process shall include: materials of construction; piping and instrument diagrams (P&ID's); electrical classification; relief system design and design basis; ventilation system design; design codes and standards employed; material and energy balances for processes built after the compliance date of the ordinance codified in this chapter; and safety systems (e.g., interlocks, detection or suppression systems).

(B) The stationary source shall document that equipment complies with recognized and generally accepted good engineering practices.

(C) For existing equipment designed and constructed in accordance with codes, standards, or practices that are no longer in general use, the stationary source shall determine and document that the equipment is designed, maintained, inspected, tested, and operating in a safe manner.

(2) Operating Procedures.

(A) The stationary source shall develop and implement written operating procedures that provide clear instructions for safely conducting activities involved in each covered process consistent with the process safety information and shall address at least the following elements:

(i) Steps for each operating phase: initial startup; normal operations; temporary operations; emergency shutdown, including the conditions under which emergency shutdown is required, and the assignment of shutdown responsibility to qualified operators to ensure that

emergency shutdown is executed in a safe and timely manner; emergency operations; normal shutdown; and, startup following a turnaround, or after an emergency shutdown.

(ii) Operating limits: consequences of deviation; and steps required to correct or avoid deviation.

(B) Safety and Health Considerations. Properties of, and hazards presented by, the chemicals used in the process; precautions necessary to prevent exposure, including engineering controls, administrative controls, and personal protective equipment; control measures to be taken if physical contact or airborne exposure occurs; quality control for raw materials and control of hazardous chemical inventory levels; and, any special or unique hazards.

(C) Safety systems and their functions.

(D) Operating procedures shall be readily accessible to employees who work in or maintain a process.

(E) The operating procedures shall be reviewed as often as necessary to assure that they reflect current operating practice, including changes that result from changes in process chemicals, technology, and equipment, and changes to stationary sources. The stationary source shall certify annually that these operating procedures are current and accurate.

(F) The stationary source shall develop and implement safe work practices to provide for the control of hazards during operations such as lockout/tagout; confined space entry; opening process equipment or piping; and control over entrance into a stationary source by maintenance, contractor, laboratory, or other support personnel. These safe work practices shall apply to employees and contractor employees.

(3) Employee Participation.

(A) The stationary source shall develop a written plan of action regarding the implementation of the employee participation required by this chapter.

(B) The stationary source shall consult with employees and their representatives on the conduct and development of process hazards analyses and on the development of the other elements of the safety program in this chapter.

(C) The stationary source shall provide to employees and their representatives access to process hazard analyses and to all other information required to be developed under this chapter.

(4) Training. For each employee in such covered process:

(A) Initial Training. Each employee presently involved in operating a covered process, and each employee before being involved in operating a newly assigned covered process, shall be trained in an overview of the process and in the operating procedures as specified in subsection (a)(2)(A) of this section. The training shall include emphasis on the specific safety and health hazards, emergency operations including shutdown, and safe work practices applicable to the employee's job tasks. In lieu of initial training for those employees already involved in operating a process, an owner or operator may certify in writing that the employee has the required knowledge, skills, and abilities to safely carry out the duties and responsibilities as specified in the operating procedures.

(B) Refresher Training. Refresher training shall be provided at least every three years, and more often if necessary, to each employee involved in operating a covered process to assure that the employee understands and adheres to the current operating procedures of the covered process. The stationary source, in consultation with the employees involved in operating the process, shall determine the appropriate frequency of refresher training.

(C) Training Documentation. The stationary source shall ascertain that each employee involved in operating a process has received and understood the training required by this section. The stationary source shall prepare a record which contains the identity of the employee, the date of training, and the means used to verify that the employee understood the training.

(5) Mechanical Integrity, Including the Use of Industry Codes, Standards, and Guidelines.

(A) Application. Subsections (a)(5)(B) through (a)(5)(F) of this section apply to the following process equipment: pressure vessels and storage tanks; piping subsystems (including piping components such as valves); relief and vent systems and devices; emergency shutdown systems; controls (including monitoring devices and sensors, alarms, and interlocks) and pumps.

(B) Written Procedures. The stationary source shall establish and implement written procedures to maintain the on-going integrity of process equipment.

(C) Training for Process Maintenance Activities. The stationary source shall train each employee involved in maintaining the on-going integrity of process equipment in an overview of that process and its hazards and in the procedures applicable to the employee's job tasks to assure that the employee can perform the job tasks in a safe manner.

(D) Inspection and Testing.

(1) Inspections and tests shall be performed on process equipment. Inspection and testing procedures shall follow recognized and generally accepted good engineering practices. The frequency of inspections and tests of process equipment shall be consistent with applicable manufacturers' recommendations and good engineering practices, and more frequently if determined to be necessary by prior operating experience. The stationary source shall document each inspection and test that has been performed on process equipment. The documentation shall identify the date of the inspection or test, the name of the person who performed the inspection or test, the serial number or other identifier of the equipment on which the inspection or test was performed, a description of the inspection or test performed, and the results of the inspection or test.

(E) Equipment Deficiencies. The stationary source shall correct deficiencies in equipment that are outside acceptable limits (defined by the process safety information in subsection (a)(1) of this section) before further use or in a safe and timely manner when necessary means are taken to assure safe operation.

(F) Quality Assurance. In the construction of new plants and equipment, the stationary source shall assure that equipment as it is fabricated is suitable for the process application for which they will be used. Appropriate checks and inspections shall be performed to assure that equipment is installed properly and consistent with design specifications and the manufacturer's instructions. The stationary source shall assure that maintenance materials, spare parts and equipment are suitable for the process application for which they will be used.

(6) Management of Change.

(A) The stationary source shall establish and implement written procedures to manage changes (except for "replacements in kind") to process chemicals, technology, equipment, and procedures; and changes to stationary sources that affect a covered process.

(B) The procedures shall assure that the following considerations are addressed prior to any change: the technical basis for the proposed change; impact of change on safety and health; modifications to operating procedures; necessary time period for the change; and authorization requirements for the proposed change. The procedures shall also require

identification and analysis of inherently safer systems as required by subsection (i) of this section.

(C) Employees involved in operating a process and maintenance and contract employees whose job tasks will be affected by a change in the process shall be informed of, and trained in, the change prior to startup of the process or affected part of the process.

(D) If a change covered by this section results in a change in the process safety information required by subsection (a)(1) of this section, such information shall be updated accordingly.

(E) If a change covered by this section results in a change in the operating procedures or practices required by subsection (a)(2) of this section, such procedures or practices shall be updated accordingly.

(7) Pre-Startup Reviews.

(A) The stationary source shall perform a pre-startup safety review for new stationary sources and for modified stationary sources when the modification is significant enough to require a change in the process safety information.

(B) The pre-startup safety review shall confirm that prior to the introduction of regulated substances to a covered process: construction and equipment is in accordance with design specifications; safety, operating, maintenance, and emergency procedures are in place and are adequate; for new covered processes, a process hazard analysis has been performed and recommendations have been resolved or implemented before startup; and modified covered processes meet the requirements contained in management of change, subsection (a)(6) of this section; and training of each employee involved in operating a process has been completed.

(8) Compliance Audits.

(A) The stationary source shall certify that they have evaluated compliance with the provisions of this section at least every three years to verify that the procedures and practices developed under this chapter are adequate and are being followed.

(B) The compliance audit shall be conducted by at least one person knowledgeable in the process.

(C) A report of the findings of the audit shall be developed.

(D) The stationary source shall promptly determine and document an appropriate response to each of the findings of the compliance audit, and document that deficiencies have been corrected.

(E) The stationary source shall retain the two most recent compliance audit reports.

(9) Incident Investigation.

(A) The stationary source shall investigate each incident which resulted in, or could reasonably have resulted in a catastrophic release of a regulated substance.

(B) An incident investigation shall be initiated as promptly as possible, but not later than forty-eight hours following the incident.

(C) An incident investigation team shall be established and consist of at least one person knowledgeable in the covered process involved, including a contract employee if the incident involved work of the contractor, and other persons with appropriate knowledge and experience to thoroughly investigate and analyze the incident.

(D) A report shall be prepared at the conclusion of the investigation which includes at a minimum: date of incident; date investigation began; a description of the incident; the factors that contributed to the incident; and recommendations resulting from the investigation. The

written summary shall indicate whether the cause of the incident and/or recommendations resulting from the investigation are specific only to the process or equipment involved in the incident, or are applicable to other processes or equipment at the stationary source. The incident investigation report shall be made available to the department upon request.

(E) The stationary source shall establish a system to promptly address and resolve the incident report findings and recommendations. As part of this system, inherently safer systems shall be identified and analyzed as required by subsection (i) of this section. Resolutions and corrective actions shall be documented.

(F) The report shall be reviewed with all affected personnel whose job tasks are relevant to the incident findings including contract employees where applicable.

(G) Incident investigation reports shall be retained for five years.

(10) Hot Work.

(A) The stationary source shall issue a hot work permit for hot work operations conducted on or near a covered process.

(B) The permit shall document that the fire prevention and protection requirements in Section 5189 of Title 8 of California Code Regulations have been implemented prior to beginning the hot work operations; it shall indicate the date(s) authorized for hot work; and identify the object on which hot work is to be performed. The permit shall be kept on file until completion of the hot work operations.

(11) Contractors.

(A) Application. This section applies to contractors performing maintenance or repair, turnaround, major renovation, or specialty work on or adjacent to a covered process. It does not apply to contractors providing incidental services which do not influence process safety, such as janitorial work, food and drink services, laundry, delivery or other supply services.

(B) Stationary Source Responsibilities.

(i) The stationary source, when selecting a contractor, shall obtain and evaluate information regarding the contract owner or operator's safety performance and programs.

(ii) The stationary source shall inform contract owner or operator of the known potential fire, explosion, or toxic release hazards related to the contractor's work and the process.

(iii) The stationary source shall explain to the contract owner or operator the applicable provisions of the emergency response program subsection (a)(12) of this section.

(iv) The stationary source shall develop and implement safe work practices consistent with subsection (a)(2) of this section to control the entrance, presence, and exit of the contract owner or operator and contract employees in covered process areas.

(v) The stationary source shall periodically evaluate the performance of the contract owner or operator in fulfilling their obligations as specified in subsection (a)(11)(C) of this section.

(C) Contract Owner or Operator Responsibilities.

(i) The contract owner or operator shall assure that each contract employee is trained in the work practices necessary to safely perform his/her job.

(ii) The contract owner or operator shall assure that each contract employee is instructed in the known potential fire, explosion, or toxic release hazards related to his/her job and the process, and the applicable provisions of the emergency action plan.

(iii) The contract owner or operator shall document that each contract employee has received and understood the training required by this section. The contract owner or operator

shall prepare a record which contains the identity of the contract employee, the date of training, and the means used to verify that the employee understood the training.

(iv) The contract owner or operator shall assure that each contract employee follows the safety rules of the stationary source including the safe work practices required by subsection (a)(2) of this section.

(v) The contract owner or operator shall advise the stationary source of any unique hazards presented by the contract owner or operator's work, or of any hazards found by the contract owner or operator's work.

(12) Emergency Response Program.

(A) The stationary source shall develop and implement an emergency response program for the purpose of protecting public health and the environment. Such program shall include the following elements:

(i) An emergency response plan, which shall be maintained at the stationary source and contain at least the following elements: procedures for informing the public and local emergency response agencies about accidental releases, emergency planning, and emergency response; documentation of proper first-aid and emergency medical treatment necessary to treat accidental human exposures; and procedures and measures for emergency response after an accidental release of a regulated substance;

(ii) Procedures for the use of emergency response equipment and for its inspection, testing, and maintenance, including documentation of inspection, testing, and maintenance;

(iii) Training for all employees in relevant procedures and the incident command system; and

(iv) Procedures to review and update, as appropriate, the emergency response plan to reflect changes at the stationary source and ensure that employees are informed of changes.

(B) A written plan that complies with other federal contingency plan regulations or is consistent with the approach in the National Response Team's Integrated Contingency Plan Guidance ("One Plan") and that, among other matters, includes the elements provided in subsection (a)(12)(A) of this section, shall satisfy the requirements of this section if the stationary source also complies with subsection (a)(12)(C) of this section.

(C) The emergency response plan developed under this section shall be coordinated with the community emergency response plan developed under 42 U.S.C. Section 11003. Upon request of the local emergency planning committee or emergency response officials, the stationary source shall promptly provide to the local emergency response officials information necessary for developing and implementing the community emergency response plan.

(D) The stationary source whose employees will not respond to accidental releases of regulated substances need not comply with subsections (a)(12)(A) through (a)(12)(C) of this section provided that they meet the following:

(i) For stationary sources with any regulated toxic substance held in a process above the threshold quantity, the stationary source is included in the community emergency response plan developed under Section 11003 of Title 42 of the United States Code (USC); or

(ii) For stationary sources with only regulated flammable substances held in a process above the threshold quantity the stationary source has coordinated response actions with the local fire department; and

(iii) Appropriate mechanisms are in place to notify emergency responders when there is a need for a response.

(13) Safety Program Management.

(A) The owner or operator of a stationary source subject to this chapter shall develop a management system to oversee the implementation of the safety program elements.

(B) The owner or operator shall assign a qualified person or position that has the overall responsibility for the development, implementation, and integration of the safety program elements.

(C) When responsibility for implementing individual requirements of this chapter is assigned to persons other than the person identified under subsection (a)(13)(B) of this section, the names or positions of these people shall be documented and the lines of authority defined through an organization chart or similar document.

(D) Process Safety Performance Indicators.

(i) No later than September 30, 2014, the department shall develop a list of stationary source activities and other events to be measured by each stationary source in order to evaluate the performance of process safety systems. This list is the "Event List." Each stationary source shall measure these activities and other events and document the measurements. These documented measurements are "common process safety performance indicators." No later than June 30 of each year after 2014, each stationary source will report to the department the common process safety performance indicators recorded by the stationary source in the prior calendar year. The department will include these common process safety performance indicators in the annual performance review and evaluation report required by Section 450-8.030 of this chapter.

(ii) The department shall review the Event List at least once every three years to determine if it should be revised. If the department determines that a new activity or other event will be added to the Event List, stationary sources shall report to the department the new common process safety performance indicator(s) by June 30 of the next year following the revision of the Event List.

(iii) No later than September 30, 2014, each stationary source shall develop a list of site-specific activities and other events that it will measure in order to evaluate the performance of its process safety systems. Each stationary source shall document these site-specific process safety performance indicators and make this documentation available to the department during an audit or inspection and upon request.

(b) Human Factors Program.

(1) Stationary sources shall develop a written human factors program that follows the human factors guidance document developed or adopted by the department. The program shall be developed within one year following the issuance of the Contra Costa County guidance documents, the effective date of the ordinance codified in this section, or as otherwise allowed by this chapter, whichever is later. The human factors program shall address:

(A) The inclusion of human factors in the process hazards analysis process;

(B) The consideration of human systems as causal factors in the incident investigation process for major chemical accidents or releases or for an incident that could reasonably have resulted in a major chemical accident or release;

(C) The training of employees in the human factors program;

(D) Operating procedures;

(E) Maintenance safe work practice procedures and maintenance procedures for specialized equipment, piping, and instruments, no later than June 30, 2011; and

(F) The requirement to conduct a management of change prior to staffing changes for changes in permanent staffing levels/reorganization in operations, maintenance, health and safety, or emergency response. This requirement shall also apply to stationary sources using contractors in permanent positions in operations and maintenance. Prior to conducting the management of change, the stationary source shall ensure that the job function descriptions are current and accurate for the positions under consideration. Staffing changes that last longer than ninety days are considered permanent. Temporary changes associated with strike preparations shall also be subject to this requirement. Employees and their representatives shall be consulted in the management of change.

(2) Employees and their representatives shall participate in the development of the written human factors program.

(3) The program shall include, but not be limited to, issues such as staffing, shiftwork and overtime.

(4) A description of the human factors program subsections (b)(1) through (b)(3) of this section shall be included in the safety plan prepared by the stationary source.

(c) Root Cause Analysis and Incident Investigation.

(1) Stationary sources shall conduct a root cause analysis for each major chemical accident or release which occurs after the effective date of the ordinance codified in this chapter. Stationary sources shall periodically update the department on facts related to the release or incident, and the status of a root cause analysis conducted pursuant to this section, at meetings scheduled by the department in cooperation with the stationary source. To the maximum extent feasible, the department and the stationary source shall coordinate these meetings with other agencies with jurisdiction over the stationary source. Within thirty days of completing a root cause analysis performed pursuant to this section, the stationary source shall submit to the department a final report containing that analysis, including recommendations to be implemented to mitigate against the release or incident reoccurring, if any, and a schedule for completion of resulting recommendations. The stationary source shall also comply with subsection (i)(1)(E) of this section if applicable. The department may require the stationary source to submit written, periodic update reports at a frequency not to exceed every thirty days until the final report is submitted. The methodology of the root cause analysis shall be one of the methodologies recognized by the Center for Chemical Process Safety or shall be reviewed by the department to determine substantial equivalency.

(2) The department may elect to do its own independent root cause analysis or incident investigation for a major chemical accident or release. If the department elects to conduct a root cause analysis or incident investigation the stationary source shall cooperate with the department by providing the following access and information in a manner consistent with the safety of department and stationary source personnel and without placing undue burdens on the operation of the stationary source:

(i) Allow the department to investigate the accident site and directly related facilities such as control rooms, physical evidence and where practicable the external and internal inspection of equipment;

(ii) Provide the department with pertinent documentation; and

(iii) Allow the department to conduct independent interviews of stationary source employees, subject to all rights of the stationary source and employees to be represented by legal counsel and/or management and union representatives during such interviews. If in the course of

the department's root cause analysis or incident investigation access is required to areas of the stationary source which in the judgment of the stationary source requires personnel entering the area to use protective equipment and/or have specialized training the department shall provide its personnel with such equipment and training. To the maximum extent feasible, the department shall coordinate any root cause analysis or incident investigation it conducts with investigations conducted by other agencies with jurisdiction over the stationary source to minimize the adverse impacts on the stationary source and/or its employees.

(3) No part of the conclusions, findings or recommendations of the root cause analysis conducted by the department or stationary source, or incident investigation conducted by the department, relating to any major chemical accident or release or the investigation thereof shall be admitted as evidence or used in any action or suit for damages arising out of any matter mentioned in such report.

(4) If the department issues a root cause analysis report, the stationary source shall comply with subsection (i)(1)(E) of this section if applicable.

(d) Process Hazard Analysis/Action Items.

(1) Process hazard analyses will be conducted for each of the covered processes according to one of the following methods: What-If, Checklist, What-If/Checklist, Hazard and Operability Study (HAZOP), Failure Mode and Effects Analysis (FMEA), fault tree analysis or an appropriate equivalent methodology approved by the department prior to conducting the process hazard analysis. The PHA shall be appropriate to the complexity of the covered process and shall identify, evaluate, and control the hazards involved in the covered process. The PHA shall address: the hazards of the process; the identification of any previous incident which had a likely potential for catastrophic consequences; engineering and administrative control applicable to the hazards and their interrelationships such as appropriate application of detection methodologies to provide early warning of releases (acceptable detection methods might include process monitoring and control instrumentation with alarms, and detection hardware such as hydrocarbon sensors); consequences of failure of engineering and administrative controls; covered process and stationary source siting; human factors; and a qualitative evaluation of a range of the possible safety and health effects of failure of controls. Process hazard analyses should also include consideration of external events except for seismic analyses, which are only required when criteria listed in subsection (d)(2) of this section are satisfied. All process hazard analyses shall be performed by a team with expertise in engineering and process operations, and the team shall include at least one employee who has experience and knowledge specific to the process being evaluated. Also, one member of the team must be knowledgeable in the specific PHA methodology being used.

(2) The process hazard analyses shall be conducted within one year of the effective date of the ordinance codified in this chapter and no later than the submittal date of the safety plan. Previously completed process hazard analyses that comply with the California Code of Regulations, Title 8, Section 5189, and/or the California Code of Regulations, Title 19, Section 2760.2 are acceptable for the purposes of this chapter. Process hazard analyses shall be updated and revalidated at least once every five years after completion of the initial process hazard analysis. Updated and revalidated process hazard analyses completed to comply with the California Code of Regulations, Title 8, Section 5189, and/or the California Code of Regulations, Title 19, Section 2760 are acceptable for meeting the update and revalidation requirement. Seismic events shall be considered for processes containing a substance defined in the California

Code of Regulations, Title 19, Chapter 4.51, Section 2770.5, if the distance to the nearest public receptor for a worst case release scenario specified by the California Code of Regulations, Title 19, Chapter 4.5, Section 2750.3 is within the distance to a toxic or flammable endpoint as defined in California Code of Regulations, Title 19, Chapter 4.5, Section 2750.2(a).

(3) For all covered processes, the stationary source shall document the decision made to implement or not implement all PHA recommended action items and the results of recommendations for additional study. The stationary source shall complete recommended actions from the initial PHA and from PHA revalidations, identified by the process hazard analysis and selected for implementation by the stationary source as follows: all actions not requiring a process shutdown shall be completed within one year after the completion of the PHA; all actions requiring a process shutdown shall be completed during the first regularly scheduled turnaround of the applicable process subsequent to one year after the completion of the PHA unless the stationary source demonstrates to the satisfaction of the department that such a schedule is infeasible. For recommended actions not selected for implementation, the stationary source shall include the justification for not implementing the recommended action. For all covered processes, the stationary source shall retain documentation of closure, and any associated justifications, of actions identified by the PHA. The stationary source shall communicate the actions to operating, maintenance, and other employees whose work assignments are in the process and who may be affected by the recommendations or actions.

(e) Accident History.

(1) The stationary source shall include an accident history in the safety plan of all major chemical accidents or releases from June 1, 1992, through the date of safety plan submittal to the department. For each major chemical accident or release the stationary source shall report the following information, to the extent known:

Date, time and approximate duration of the release;

Chemicals released;

Estimated quantity released in pounds;

Type of release event and its source;

Weather conditions at the time of the release;

On-site impacts;

Known off-site impacts;

Initiating event and contributing factors;

Root cause(s);

Whether off-site responders were notified; and

Operational or process changes that resulted from the investigation of the release.

(2) The stationary source shall annually submit a report of the accident history to the department. The first report shall be due two years after the effective date of the ordinance codified in this chapter, and subsequent reports shall be due by June 30th of each year.

(f) Certification. The owner or operator shall submit in the safety plan a single certification that, to the best of the signer's knowledge, information, and belief formed after reasonable inquiry, the information submitted is true, accurate, and complete.

(g) Security and Vulnerability Assessment. Each stationary source shall perform and document a security and vulnerability assessment as defined in the Contra Costa County CalARP program guidance document, by June 30, 2007, and at least once every five years after the initial

assessment, or as prescribed by federal regulation. The stationary source shall document its process for assuring that recommendations are addressed.

(h) Safety Culture Assessment. The stationary source shall conduct a safety culture assessment. The assessment shall be based upon a method listed in the Contra Costa County CalARP program guidance document or shall be reviewed by the department to determine substantial equivalency. The initial assessment shall be performed by one year following the revisions to the Industrial Safety Ordinance guidance document that addresses the safety culture assessment, and at least once every five years thereafter. The safety culture assessment will be reviewed during the audit and inspection of the stationary source. The department may perform its own safety culture assessment after a major chemical accident or release or the occurrence of any incident that could reasonably have led to a major chemical accident or release, or based on department audit results of the stationary source.

(i) Inherently Safer Systems Analysis.

(1) A stationary source shall conduct an inherently safer systems analysis (ISSA) for each covered process as follows:

(A) The stationary source shall conduct an ISSA on existing covered processes every five years.

(B) The stationary source shall conduct an ISSA in the development and analysis of recommended action items identified in a PHA.

(C) Effective September 30, 2014, whenever a major change is proposed at a facility that could reasonably result in a major chemical accident or release, the stationary source shall conduct an ISSA as part of a Management of Change review required by subsection (a)(6)(B) of this section.

(D) If an incident occurs on or after September 30, 2014, an investigation of the incident is conducted pursuant to subsection (a)(9)(A) of this section and the incident investigation report recommends a major change that could reasonably result in a major chemical accident or release, the stationary source shall commence and complete an ISSA of the recommended major change as soon as administratively practicable after completion of the incident investigation report.

(E) If an incident occurs on or after September 30, 2014, a root cause analysis of the incident is conducted as required by subsections (c)(1) or (c)(2) of this section, and the root cause analysis report or an associated incident investigation report recommends a major change that could reasonably result in a major chemical accident or release, the stationary source shall commence and complete an ISSA of the recommended major change as soon as administratively practicable after completion of the root cause analysis report.

(F) The stationary source shall conduct an ISSA during the design of new processes, process units and facilities. Immediately upon completion of the ISSA report referred to in subsection (i)(2) of this section, the stationary source shall advise the department of the availability of the ISSA report.

(2) The stationary source shall prepare a written report documenting each ISSA within thirty days of completion of the ISSA and make the report available to the department during an audit or inspection and upon request. The ISSA report must contain, at a minimum, the following information:

(A) Identification and a description of the inherently safer system(s) analyzed in the ISSA;

- (B) A description of the methodology used to analyze the inherently safer systems(s);
- (C) The conclusions of the analysis;
- (D) The rationale for the conclusions; and
- (E) An action plan, including a timeline to implement the inherently safer system(s)

recommended in the ISSA.

(3) The stationary source shall select and implement each inherently safer system identified in an ISSA report to the greatest extent feasible and as soon as administratively practicable. If a stationary source concludes that implementation of an inherently safer system is not feasible, the stationary source shall document the basis for this conclusion in meaningful detail. The documentation shall include sufficient evidence to demonstrate to the department's satisfaction that implementing the inherently safer system is not feasible and the reasons for this conclusion. A claim that implementation of an inherently safer system is not feasible shall not be based solely on evidence of reduced profits or increased costs.

(j) Safeguard Protection Analysis.

(1) Effective September 30, 2014, a stationary source shall conduct a Layer of Protection Analysis or an alternative type of analysis approved by the department that uses a quantitative, qualitative or equivalent semi-quantitative method to determine the effectiveness of existing safeguards and safeguards recommended in a PHA to reduce the probability and/or severity of a catastrophic release. The safeguard protection analysis may be a standalone analysis or incorporated within a PHA.

(2) The stationary source shall complete the safeguard protection analysis no later than June 30, 2019. A safeguard protection analysis that was completed by a stationary source within five years prior to June 30, 2019, in accordance with the standards set forth in subsection (j)(1) of this section, will be deemed to comply with this requirement. The stationary source shall update and revalidate the safeguard protection analysis at least once every five years.

(3) All safeguard protection analyses shall be performed by a team with expertise in engineering and process operations. The team shall include at least one employee who has experience and knowledge specific to the safeguards and one member who is knowledgeable about the specific safeguard protection analysis method used.

(4) The stationary source shall prepare a written report that documents the safeguard protection analysis in accordance with the standard of practice applicable to the type of analysis conducted. The stationary source will complete the report within thirty days after the completion of the safeguard protection analysis and make the report available to the department during an audit or inspection and upon request.

(Ords. 2014-07 § 5, 2006-22 § 5, 2000-20 § 1, 98-48 § 2).

SECTION VI. Section 450-8.018 of the County Ordinance is amended to read:

450-8.018 Review, audit and inspection.

(a) Upon submission of a safety plan by the stationary source, the department shall review the safety plan to determine if all the elements required by Section 450-8.016 of this chapter are included and complete. The department shall provide to the stationary source a written notice of deficiencies, if any. The stationary source shall have sixty calendar days from receipt of the notice of deficiencies to make any corrections. The stationary source may request, in writing, a one-time thirty-day calendar day extension to correct deficiencies. By the end of the

sixty calendar days or any extension period, the stationary source shall resubmit the revised safety plan to the department. After the department determines that the safety plan is complete, the department shall schedule a public meeting on the stationary source's safety plan to explain its contents to the public and take public comments. Public comments on the safety plan shall be taken by the department for a period of forty-five days after the safety plan is made available to the public. The department shall schedule a public meeting on the stationary source's safety plan during the forty-five day comment period. The public meetings shall be held in the affected community on evenings or weekends. The department shall respond in writing to all written comments received during the forty-five day comment period and to all oral comments received and not addressed at the public meeting. The department shall make portions of the safety plan, which are not protected trade secret information, available to the public for the public meeting.

(b)(1) The department shall, within one year of the submission of the stationary source's safety plan, conduct an initial audit and inspection of the stationary source's safety program to determine compliance with this chapter. Based upon the department's review of the safety plan and the audit and inspection of the stationary source, the department may require modifications or additions to the safety plan submitted by the stationary source, or safety program to bring the safety plan or safety program into compliance with the requirements of this chapter. Any determination that modifications or additions to the safety plan or safety program are required shall be in writing, collectively referred to as the "preliminary determination." The preliminary determination shall explain the basis for the modifications or additions required to bring the safety plan or safety program into compliance with the requirements of this chapter and provide a timetable for resolution of the recommendations. The preliminary determination shall be mailed to the stationary source.

(2) The stationary source shall respond in writing to the preliminary determination issued by the department. The response shall state that the stationary source will incorporate into the safety plan or safety program the revisions contained in the preliminary determination or shall state that the stationary source rejects the revisions; in whole or in part. For each rejected revision, the stationary source shall explain the basis for rejecting such revision. Such explanation may include substitute revisions.

(3) The stationary source's written response to the department's preliminary determination shall be received by the department within ninety days of the issuance of the preliminary determination or such shorter time as the department specifies in the preliminary determination as being necessary to protect public health and safety. Prior to the written response being due and upon written request from the stationary source, the department may provide, in writing, additional time for the response to be received.

(4) After receiving the written response from the stationary source, the department shall issue a public notice pursuant to the department's public participation policy and make portions of the safety plan, the preliminary determination and the stationary source's responses, which are not protected trade secret information, available for public review. Public comments on the safety plan shall be taken by the department for a period of forty-five days after the safety plan, the preliminary determination and the stationary source's responses are made available to the public. The department shall schedule a public meeting on the stationary source's safety plan during the forty-five day comment period. The public meetings shall be held in the affected community on evenings or weekends. The department shall respond in writing to all written

comments received during the forty-five day comment period and to all oral comments received and not addressed at the public meeting.

(c) Based upon the department's preliminary determination, review of the stationary source's responses and review of public comments on the safety plan, the preliminary determination and the stationary source's responses, the department may require modifications or additions to the safety plan submitted by the stationary source or safety program to bring the safety plan or safety program into compliance with the requirements of this chapter. Any determination that modifications or additions to the safety plan or safety program are required, and any determination that no modifications or additions to the safety plan or safety program are required shall be in writing (collectively referred to as "final determination"), shall be mailed to the stationary source and shall be made available to the public. A copy of the final determination report will be sent to Cal/OSHA, EPA and the local fire department that has oversight of the stationary source. The department may not include in a final determination any requirements to a safety plan or safety program that would cause a violation of, or conflict with, any state or federal law or regulation or a violation of any permit or order issued by any state or federal agency.

(d) Within thirty days of the department's final determination, the stationary source and/or any person may appeal the final determination to the board of supervisors pursuant to Chapter 14-4 of this code by a verified written notice of appeal filed with the clerk of the board of supervisors and payment of the applicable appeal fee. The appeal must be limited to issues raised during the public comment period. The notice shall state the grounds for any such appeal, including (i) the reasoning that the appeal is necessary because the stationary source is in compliance with this chapter, or (ii) the reasoning that the appeal is necessary to bring the stationary source into compliance with this chapter. In acting on the appeal, the board shall have the same authority over the final determination as the department. The board may require modifications or additions to the safety plan or safety program to bring the safety plan or safety program into compliance with the requirements of this chapter. The board may not include in its decision on the final determination any requirements to a safety plan or safety program that would cause a violation of, or conflict with, any state or federal law or regulation or a violation of any permit or order issued by any state or federal agency. The decision of the board of supervisors shall be final with respect to the final determination.

(e) The safety plan shall be valid for a period of three years from the date of receipt by the department and shall be reviewed and updated by the stationary source every three years pursuant to the requirements of this chapter. Any revisions to the safety plan as a result of the review and update shall be submitted to the department and shall be subject to the provisions of this section.

(f) The department may, within thirty days of a major chemical accident or release, initiate a safety inspection to review and audit the stationary source's compliance with the provisions of Section 450-8.016 of this chapter. The department shall review and audit the stationary source's compliance with the provisions of Section 450-8.016 of this chapter at least once every three years. The department may audit the stationary source based upon any of the following criteria: accident history of the stationary source, accident history of other stationary sources in the same industry, quantity of regulated substances present at the stationary source, location of the stationary source and its proximity to the public and environmental receptors, the presence of specific regulated substances, the hazards identified in the safety plan, a plan for

providing neutral and random oversight, or a complaint from the stationary source's employee(s) or their representative. The stationary source shall allow the department to conduct these inspections and audits. The department, at its option, may select an outside consultant to assist in conducting such inspection.

(g) Within thirty days of a major chemical accident or release the department may commence an incident safety inspection with respect to the process involved in the incident pursuant to the provisions of Section 450-8.016(c) of this chapter.

(h)(1) Based upon the department's audit, safety inspection or an incident inspection, the department may require modifications or additions to the safety plan submitted by the stationary source or safety program to bring the safety plan or safety program into compliance with the requirements of this chapter. Any determination by the department shall be in writing and shall be mailed to the stationary source (referred to as the "notice of findings"). The stationary source shall have sixty calendar days from receipt of the notice of findings to make any corrections. The stationary source may request, in writing, a one-time thirty-day calendar day extension to make corrections. The department may not include in its notice of findings requirements to a safety plan or safety program that would cause a violation of, or conflict with, any state or federal law or regulation or a violation of any permit or order issued by any state or federal agency. The notice of findings made by the department will be available to the public.

(2) Within thirty days of the department's notice of findings, the stationary source and/or any person may appeal the notice of findings to the board of supervisors pursuant to Chapter 14-4 of this code by a verified written notice of appeal filed with the clerk of the board of supervisors and payment of the applicable appeal fee. The appeal must state the grounds for any such appeal, including (i) the reasoning that the appeal is necessary because the stationary source is in compliance with this chapter, or (ii) the reasoning that the appeal is necessary to bring the stationary source into compliance with this chapter. In acting on the appeal, the board shall have the same authority over the notice of findings as the department. The board may require modifications or additions to the safety plan or safety program to bring the safety plan or safety program into compliance with the requirements of this chapter. The board may not include in its decision on the notice of findings any requirements to a safety plan or safety program that would cause a violation of, or conflict with, any state or federal law or regulation or a violation of any permit or order issued by any state or federal agency. The decision of the board of supervisors shall be final with respect to the notice of findings.

(i) Nothing in this section shall preclude, limit, or interfere in any way with the authority of the county to exercise its enforcement, investigatory, and information gathering authorities under any other provision of law nor shall anything in the chapter effect or diminish the rights of the stationary source to claim legal privileges such as attorney client privilege and/or work product with respect to information and/or documents required to be submitted to or reviewed by the department.

(Ords. 2014-07 § 6, 2006-22 § 6, 98-48 § 2).

SECTION VII. Section 450-8.030 of the County Ordinance Code is amended to read:

450-8.030 Annual performance review and evaluation.

(a) The department shall annually: (1) review its activities to implement this chapter, and (2) evaluate the effectiveness of this chapter in achieving its purpose and goals pursuant to Section 450-8.004 of this chapter.

(b) An annual performance review and evaluation report shall be prepared by the department based upon the previous fiscal year's activities and shall be submitted to the board of supervisors on or before October 31, 2000 and each year thereafter. The report shall contain:

(1) A brief description of how the department is meeting the requirements of this chapter as follows: (i) effectiveness of the department's program to ensure stationary source compliance with this chapter; (ii) effectiveness of the procedures for records management; (iii) number and type of audits and inspections conducted by the department pursuant to this chapter; (iv) number of root cause analyses and/or incident investigations conducted by the department; (v) the department's process for public participation; (vi) effectiveness of the public information bank, including status of electronic accessibility; (vii) effectiveness of the hazardous materials ombudsperson; (viii) other required program elements necessary to implement and manage this chapter.

(2) A listing of all stationary sources covered by this chapter, including for each: (i) the status of the stationary source's safety plan and program; (ii) a summary of all stationary source safety plan updates and a listing of where the safety plans are publicly available; (iii) the annual accident history report submitted by the stationary source pursuant to Section 450-8.016(e)(2) of this chapter; (iv) a summary, including the status, of any root cause analyses conducted or being conducted by the stationary source and required by this chapter, including the status of implementation of recommendations; (v) a summary, including the status, of any audits, inspections, root cause analyses and/or incident investigations conducted or being conducted by the department pursuant to this chapter, including the status of implementation of recommendations; (vi) description of inherently safer systems implemented by the stationary source; (vii) legal enforcement actions initiated by the department, including administrative, civil, and criminal actions pursuant to this chapter; and (viii) process safety performance indicators reported by the stationary source as required under Section 450-8.016(a)(13)(D)(i) of this chapter.

(3) Total penalties assessed as a result of enforcement of this chapter.

(4) Total fees, service charges, and other assessments collected specifically for the support of this chapter.

(5) Total personnel and personnel years utilized by the jurisdiction to directly implement or administer this chapter.

(6) Comments from interested parties regarding the effectiveness of the local program that raise public safety issues.

(7) The impact of the chapter in improving industrial safety.

(c) The department shall provide a copy of the annual performance audit submission required by Title 19 Chapter 4.5 Section 2780.5 of the California Code of Regulations to the board of supervisors on or before October 31st of each year. (Ords. 2014-07 § 7, 2006-22 § 7, 98-48 § 2).

SECTION VIII. EFFECTIVE DATE. This ordinance becomes effective 30 days after passage, and within 15 days after passage shall be published in the Contra Costa Times, a newspaper published in this County. This ordinance shall be published in a manner satisfying the requirements of Government Code section 25124, with the names of the supervisors voting for and against it.

PASSED on _____, by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

ATTEST: David J. Twa, Clerk of the Board
of Supervisors and County Administrator

By: _____
Deputy

Board Chair

[seal]

LW/

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