

DISCUSSION ITEM – Industrial Safety Ordinance (ISO) Revisions

Staff Report on Revising the ISO to Include Tank Terminals

Contra Costa Health
Hazardous Materials Programs

For the

Contra Costa County Board of Supervisors
September 10, 2024



SUMMARY

On Tuesday October 15, 2019, at approximately 13:48, the NuStar Facility had a fire and explosion involving two ethanol storage tanks. The first tank caught fire at approximately 13:48 and the second tank caught fire shortly thereafter. Prior to the event both tanks were static and contained less than 3,000 barrels of denatured ethanol each. With the exception of routine inspection and monitoring activities by facility personnel and contractors, there was no activity in the tank farm at the time of the fire. The terminal was evacuated. Emergency response vehicles were onsite within minutes and began response by directing water and firefighting foam to mitigate the fire and cool adjacent tanks. A grass fire began on the hillside adjacent to the terminal and was extinguished with the assistance of both fixed and rotary wing aircraft laying down fire suppressant and water.

CCH Hazmat Incident Response team deployed to the scene to perform air monitoring. At 15:11 a Shelter in Place was initiated for the affected community. Interstate 80 was closed in both directions for the duration of the incident. The fire was abated at approximately 19:00 and the Shelter in Place was lifted at 19:38. The fire and explosion destroyed two storage tanks at NuStar, each with an approximate size of 200,000 barrels (8.4 million gallons).

It was determined that CCH Hazmat Staff would work with stakeholders to develop the regulatory framework that requires select process safety programs to be implemented at Tank Terminals. That process is summarized in this staff report.

BACKGROUND/ANALYSIS:

After the fire and explosion, a team was put together to investigate the incident. The team was led by Contra Costa County Fire Protection District. The investigation in addition to reviewing the details of the NuStar incident also evaluated similar incidents investigated by the US Chemical Safety and Hazards Investigation Board. The aim of the investigation was to identify the contributing factors of the incident.

The incident investigation report identified an electrical fault as the cause of the incident and made the following recommendations:

- All automatic level gauge floats and tapes should be grounded in compliance with API 2003 and manufacturer's recommendations. All gauge devices and transmitters should be grounded in compliance with manufacturer's recommendations.
- Pad the head space in the tanks with an inert gas to mitigate the hazardous atmosphere within the tanks. This should be done in addition to removing all potential ignition sources.
- Overall compliance with all agency requirements and standards, including but not limited to the National Fire Protection Association (NFPA) and American Petroleum Institute (API).
- Tanks should be monitored for Lower Explosive Limit (LEL) conditions.

CCH Hazmat Staff reviewed the incident investigation report conclusions and worked with stakeholders to identify safety program elements which would be beneficial in accidental release prevention for Tank Terminals such as NuStar. Based upon the conclusions, staff recommended to the ISO/CWS Ad Hoc Committee at the May 16, 2022, meeting that a revision be made to the Contra Costa County Industrial Safety Ordinance (ISO) to include Tank Terminals. This recommendation included nine safety program elements for inclusion. Table 1 shows each element and a brief justification for inclusion.

Table 1. Draft Safety Program Elements

#		PROGRAM	CAPTURED WITHIN PROGRAM	BASIS	RELATION TO INCIDENT
1	Management Systems	Safety Information		Understanding the hazards	Review of electrical classification areas and design
2		Hazard Review	Seismic Assessments	Identifying and understanding risk	Review of hazard scenarios that could lead to fire/explosion and mitigation of risks of these scenarios
3		Operating Procedures	Safe Work Practices (including Hot Work)	Develop and maintain clear instructions for safely conducting activities	
4		Mechanical Integrity	Contractors	Ensuring equipment is in good working order, published standards are being followed, and training of personnel	Implementation of industry standards via Recognized And Generally Accepted Good Engineering Practices (RAGAGEP)
5		Management of Change		Managing changes and ensuring Safety Information, procedures, and practices remain up to date	Evaluation of safety risks when making changes to design, technology, equipment, process and mitigation of the risk
6		Pre-Startup Reviews		Managing changes and ensuring design, documents, and personnel are up to date	Evaluation of safety risks when making changes to design, technology, equipment, process. Ensuring proper fabrication, construction, and installation of equipment prior to start up after a change.
7		Incident Investigation	Root Cause Analysis	Learning from past incidents	
8		Emergency Response		Mitigating consequences	Requires emergency response coordination (drills) between facility and responding agencies

The draft ISO amendment includes the following definitions:

- "Ignitable liquid" means a flammable liquid or combustible liquid.
- "Tank terminal" means at least one field erected tank with a minimum shell capacity of 50,000 gallons that contains a minimum of 10,000 pounds of flammable liquid, or the owner or

operator thereof, on one or more contiguous properties.

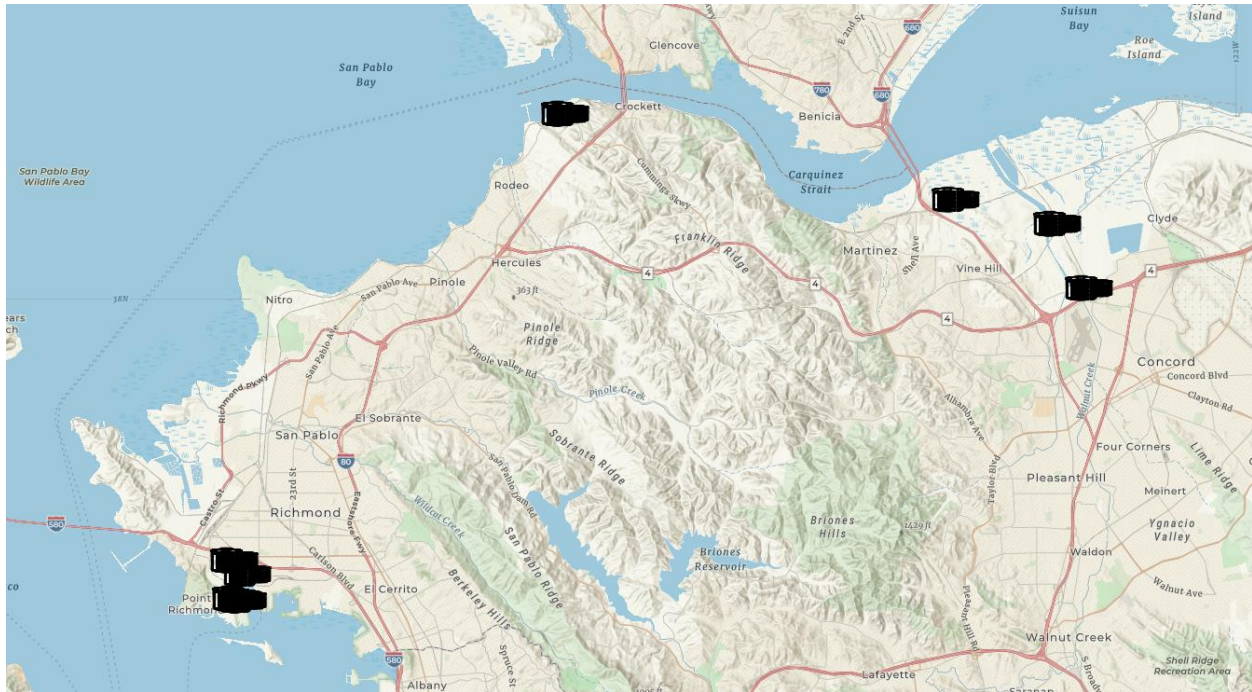
- "Tank terminal activities" mean any activity at a tank terminal involving an ignitable liquid, including but not limited to using, storing, blending, producing, gathering, refining, transferring, distributing, consuming, handling or moving an ignitable liquid.
- "Tank terminal equipment" means equipment that is at a tank terminal and involved in tank terminal activities, and such equipment is under the control of the tank terminal owner or operator. This equipment includes, but is not limited to, tanks, pumps, piping, valves, and ancillary equipment.

The above definitions address a gap in current Federal, State, and Local accidental release prevention programs by capturing ignitable liquids that were not previously captured such as ethanol.

CCH Hazmat has identified 8 facilities that would be subject to the new ISO section for Tank Terminals. Figure 1 shows the approximate locations of each. There is 1 in the City of Martinez, 3 in unincorporated county, and 4 in the City of Richmond.

The proposed amendments would impose process safety requirements on select facilities reducing the likelihood of industrial incidents. Modification of existing Tank Terminals or establishment of new Tank Terminals would each be separate discretionary projects subject to review under their own subsequent CEQA analysis.

Figure 1: Map of Tank Terminals in Contra Costa County



WORKING GROUP:

A working group was established to draft proposed language for the Industrial Safety Ordinance which would be applicable to Tank Terminals that met the proposed criteria. The working group is comprised of members from the community, members from facilities who would be covered by the proposed regulations, a representative from existing ISO facilities, agency representatives, and city representatives. This working group met monthly from September 2022 to January 2023 to develop the draft ISO language. After developing the draft language, it was sent to county counsel.

UPDATED AMENDMENT:

In January 2024, stakeholder meetings began to work on developing a guidance document to assist the Tank Terminals in complying with the requirements. That same month, CCH Hazmat was contacted by county counsel to review and fine tune the draft ISO language. CCH Hazmat met with county counsel as well as with the Department of Conservation and Development to clarify the draft ISO language. Due to the expected changes to the draft ISO language, stakeholder meetings were postponed until revised language was proposed and allowed to be shared. The draft amendment language was finalized in August 2024. Appendix A of this staff report includes a redlined copy of the updated amendment that highlights the changes proposed to the existing language.

NEXT STEPS:

- Reestablish meetings with stakeholder to develop guidance document

Conclusion:

In conclusion, staff has determined based on the above analysis that amending the Industrial Safety Ordinance to include tank terminal facilities would afford additional safety and protections against accidental releases from incidents. Staff therefore recommends the following:

OPEN the public hearing; RECEIVE testimony and public comments; and CLOSE the public hearing.

ADOPT Ordinance No. 2024-14.

DETERMINE that the adoption of Ordinance No. 2024-14 is exempt from the California Environmental Quality Act (CEQA) pursuant to CEQA Guidelines section 15061(b)(3) because it can be seen with certainty that there is no possibility that this activity could have a significant effect on the environment.

DIRECT the Director of Conservation and Development, or designee, to file a CEQA notice of exemption with the County Clerk and the State Clearinghouse.

AUTHORIZE the Health Services Director, or designee, to pay the Department of Conservation and Development \$25 for processing the notice of exemption, and the County Clerk \$50 for filing the notice of exemption.