**Communities for a Better Environment**
**Labor Occupational Health Program, UC Berkeley**
**Asian Pacific Environmental Network**
**Natural Resources Defense Council**

BY E-MAIL

11 October 2013

Mayor Gayle McLaughlin
City of Richmond

Supervisor John Goia
Supervisor Federal Glover
Contra Costa County

Attention: Randall A. Sawyer, Chief Environmental Health
and HazMat Officer, Contra Costa County

Re: **Comment on the Proposed "Inherently Safer Systems" (ISS) Revision of the Industrial Safety Ordinance (ISO); 20 September 2013 draft**

Dear Mayor, Supervisors, and Mr. Sawyer:

Communities for a Better Environment, the Labor Occupational Health Program at U.C. Berkeley, the Asian Pacific Environmental Network, and the Natural Resources Defense Council respectfully submit this comment focused on improving environmental health and safety performance in the Bay Area oil refining sector. Thank you for inviting comment on your proposed revision of the Industrial Safety Ordinance (ISO).

The City's and County's ISO is the most comprehensive law protecting refinery workers' and communities' lives and health from industrial chemical spills, fires, and explosions in our region, and is seen as a model statewide and nationwide. It is thus important to take seriously the deficiencies in the ISO revealed by the U.S. Chemical Safety Board (CSB) in its Interim Investigation Report on the Chevron Richmond Refinery August 2012 crude unit fire, and to implement the CSB's expert recommendations for correcting these problems in the ISO. We deeply appreciate your statements of intent to fully implement the CSB's recommendations for revision of the ISO, and thank you for your work to provide this critically needed safety protection for workers and communities promptly.

The CSB recommends that the City and County:

> Revise the Industrial Safety Ordinance (ISO) to require that Process Hazard Analysis include documentation of the recognized methodologies, rationale and conclusions used to claim that safeguards intended to control hazards will be effective. This process shall use established qualitative, quantitative, and/or semi-quantitative methods such as Layers of Protection Analysis (LOPA).
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> Revise the Industrial Safety Ordinance (ISO) to require the documented use of inherently safer systems analysis and the hierarchy of controls to the greatest extent feasible in estab-

> lishing safeguards for identified process hazards. The goal shall be to drive the risk of major accidents to As Low As Reasonably Practicable (ALARP). Include requirements for inherently safer systems analysis to be automatically triggered for all Management of Change and Process Hazard Analysis reviews, prior to the construction of new processes, process unit rebuilds, significant process repairs, and in the development of corrective actions from incident investigation recommendations.
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> *CSB Recommendations 2012-03-I-CA-R3 and R4; see also R6 and R7.*

We have identified important questions about whether the 20 September 2013 draft revisions to the ISO ("draft") would implement the CSB's recommendations effectively. We believe that these questions should be addressed and resolved before adoption of the revisions. These questions are of three general types, as outlined directly below, and are described in more detail (and numbered for ease of reference) in the following discussion.

- Questions about definitions of terms needed to understand fully what is and is not required, and to provide a foundation for clear and enforceable implementation.
- Questions about substantive issues that may (inadvertently) create loopholes in the ISO and result in its failure to implement the CSB's recommendations.
- Questions about provisions for informed public participation that is required both as a matter of environmental justice, and, we believe, is required to support and ensure effective implementation.

**Questions about definitions of terms needed to understand fully what is and is not required, and to provide a foundation for clear and enforceable implementation.**

1. "Process." This term is not defined in the draft, and a previous draft's definition of this term has been removed, even though new requirements would be applied at the level of each "process" in a facility, with the result that these requirements appear to apply to each "process" as this term is defined by federal and state requirements. This reliance on federal or state definitions is questionable because the ISO asserts a broader goal than those of existing federal or state requirements with respect to safety requirements applied to the processes in question. Additionally, in the absence of a specific definition in the ISO, its requirements for safer interaction of a process with upstream and downstream parts of the processing facility are inadequately defined, unclear, and therefore difficult or potentially impossible to implement and enforce.

2. "New process" and "new facility." These terms are not defined in the draft even though its requirements for ISS that are not yet applied in federal and state regulations would apply to a "new process" or "new facility." Additionally, the extent to which applying these requirements to new processes and facilities differs from the CSB's recommendation to apply them "prior to the construction of new processes, process unit rebuilds, [and] significant process repairs" is unclear, at best, in the absence of definitions for these terms in the ISO. We believe that these terms will need to be defined to fully understand, implement or enforce the intent of the proposed new requirements.

3. "Hierarchy of controls." This term is not defined in the draft even though the CSB explicitly recommends revising the ISO to require "the documented use of inherently safer systems analysis *and* the hierarchy of controls" (*Emphasis added*.) This term will need to be defined in order to require its use as recommended by the CSB. Requiring the use of the hierarchy of controls also is critical to the ISO's ability to require inherently safer systems (ISS) analysis effectively, as discussed in point 12 below.

4. "Mitigation items resulting from a process hazard analysis" is not defined in the draft. This term will need to be defined in order to implement and enforce the revised requirement for ISS analysis of each such "item." This is important because the inherent safety of a system is necessarily relative to the specific hazard identified,[1] and especially important for existing and aging processes where a new or worsening hazard may develop over time.

5. "New hazard" and "safe operating limits." In a previous draft revision to the ISO, ISS requirements would have been triggered by the identification of a *significant* change in a process, and the term *significant* would have been defined in the ISO. Now, as proposed in this draft, ISS requirements would be triggered by the recommendation of a *major change* as defined by federal and state regulations, which define a *major change* as one that results in a change to the safe operating limits of a process or introduces a new hazard.[2] Thus, these terms—"new hazard" and "safe operating limits"—must be defined in order to identify a *major change* that would actually require ISS analysis. However, neither the term "new hazard" nor the term "safe operating limits" is defined as these terms relate specifically to the application and implementation of requirements for ISS, and these terms are not defined or mentioned in the draft. That, at the very least, makes the requirement for ISS analysis and implementation unclear.

6. "Flaring." "Flaring" is not defined, or is not defined adequately, in the draft, to ensure that flaring incidents indicating the existence of a potentially catastrophic process hazard can trigger appropriate preventive safety action, such as, where appropriate, ISS analysis. Definitions that are adequate to distinguish such incidents from other flaring incidents will be necessary to fully implement the CSB recommendations for ISO revisions, as discussed further in point 11 below.

**Questions about substantive issues that may (inadvertently) create loopholes in the ISO and result in its failure to implement the CSB's recommendations.**

7. Recommended requirement: The draft would trigger ISS requirements only upon a *recommended* change. This contrasts with a previous draft that could have triggered ISS requirements for an *identified* change, hazard, or safeguard—and is of great concern. So-called regulated entities, basically the oil companies that own and operate local refineries, would make these recommendations. The only exception would be a major change recommended by an incident investigation performed by the County itself, but we are informed that the County has never performed such an investigation of a refinery incident, opting instead to let the oil companies investigate and report on their major incidents (while overseeing those investigations). We are concerned that linking ISS requirements to only those changes "recommended" could be interpreted, in practice,

[1] U.S. Chemical Safety Board, 2013. Chevron Richmond Refinery Interim Investigation Report, "Inherently Safer Systems" chapter.
[2] See 40 C.F.R. §68.3.

to require an oil refiner to perform ISS analysis only when it chooses to recommend a triggering change. In other words, it might rely on companies to exercise their own discretion in making such a recommendation voluntarily, instead of *requiring* ISS.

8. Hazard/safeguard identification: A documented analysis of ISS must document all hazards and potential safeguards identified. Despite the draft's clear intent to document ISS analysis, however, an explicit and unambiguous requirement to document all hazards and potential safeguards that are identified is not apparent anywhere in the draft. We are concerned that failure to require that an identified hazard or safeguard will be documented could result in the inability to verify that ISS analysis addressed that safeguard appropriately, and thus in failure to require ISS. Importantly, this need applies to analysis of identified safeguards when new or worsening hazards are found in old and existing industrial processes.

9. Pre-construction analysis: The draft does not provide for the review and verification of documented ISS analysis for new, rebuilt, or repaired industrial processes *before* permitting or construction of them. Requirements before startup—but after permitting and construction—do not address this loophole because the ISO's existing definition of "feasible" requires consideration of the capital committed upon construction. Indeed, the CSB advises that "[i]t is simpler, less expensive, and more effective to introduce inherently safer features during the design process of a facility rather than after the process is already operating" and the CSB further quotes a Chevron training program's statement that "we have the greatest opportunity to eliminate or minimize hazards during the development phase of new projects or major revamps of existing facilities."[3] Moreover, we face this question today. As we write, County staff[4] and CBE[5] have questioned whether cooled storage is an inherently safer system relative to catastrophic explosion hazard from expanded pressurized storage of LPG that might be permitted by the County and installed by the Phillips 66 Rodeo refinery before this question is resolved. Thus, this loophole in the draft cannot be dismissed as merely hypothetical, and could allow refiners to avoid ISS for new projects by inappropriately delaying review of their analyses until after the projects are built.

10. Permitting unresolved violations: The draft should, but does not, address the problem of granting permits for proposed new processes to companies that remain in ongoing noncompliance with ISS requirements in older existing parts of the same facility. In contrast, Title V of the Clean Air Act seeks to require that any ongoing clean air violations by major industrial facilities must be resolved before the review and reissuance of air permits for those facilities can be completed. Support for such an enforcement backstop for ISS requirements includes substantial evidence of ongoing or worsening industry-wide hazards due to failures to upgrade aging refinery infrastructure to inherently safer designs.[6] Support for using this approach also includes the

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[3] U.S. Chemical Safety Board, 2013. Chevron Richmond Refinery Interim Investigation Report, "Inherently Safer Systems" Chapter.

[4] 11 July 2013 Correspondence from Michael Dossey, Hazardous Materials Programs, to Jim Ferris, Phillips 66 San Francisco Refinery. Subject: Phillips 66 Propane Recover Project (County File #LP12-2073).

[5] 4 September 2013 Expert Report of Greg Karras, Communities for a Better Environment (CBE), Regarding the Phillips 66 Company Propane Recovery Project Draft EIR, SCH #2012072046.

[6] U.S. Chemical Safety Board, 2013. Chevron Richmond Refinery Interim Investigation Report; and Wilson, 2013. Refinery Safety in California: Labor, Community, and Fire Agency Views. Summary report prepared for the Office of Govenor Brown, Interagency Task Force on Refinery Safety, by the Labor Occupational Health Program at U.C. Berkeley. Revised 4 June 2013.

widely-reported perception that currently authorized monetary penalties for safety violations fall far short of any credible and adequate deterrent to repeat violations by large, high-hazard but also highly profitable plants. We believe that this approach—making future permits contingent upon compliance—may be necessary to fully implement ISS requirements.

11. Catastrophic hazards identified from flaring: The draft would exempt refiners from ISS requirements triggered by industrial incidents "if the incident is a flaring event classified as a level 2 incident in the community warning system and fewer than five people receive medical treatment in response to the event." We are concerned that this could inappropriately exempt refiners from preventive safety requirements such as ISS analysis until people are harmed or possibly killed by process hazards that are identifiable from this flaring and, therefore, might be prevented to avoid potentially catastrophic harm. Refinery flares are safety devices. They are designed and permitted for use in emergency response. When they are used in an emergency this indicates an underlying process hazard. Bay Area refineries reported *at least forty-nine flaring incidents that were caused by emergency conditions* since March 2010.[7] BAAQMD officials, who require and use this refinery flare reporting data to control air emissions, do not require ISS analysis.[8] This evidence indicates that exempting emergency flaring as proposed in the draft is likely to result in the failure to require implementation of ISS to the maximum extent feasible.

12. Hierarchy of controls: The hierarchy of controls can be described as an effectiveness ranking of techniques used to control hazards and the risk they represent. The CSB recommends that the ISO be revised to, among other things, "require the documented use of inherently safer systems analysis *and* the hierarchy of controls" (*Emphasis added*). The CSB further states "all concepts in the hierarchy of controls should be included in the process of risk assessment and reduction" and it shows Chevron wrongly relied on less effective (low-ranking) inspection techniques to the exclusion of inherently safer, more corrosion resistant materials, in the run-up to its disastrous corrosion failure of August 2012.[9] Thus, proper ISS analysis depends upon a clearly documented hierarchy of controls. Therefore the ISO revisions should require this explicitly, in order to ensure that ISS is implemented to the maximum extent feasible. But the draft does not even mention the term "hierarchy of controls." This appears insufficient.

13. Exceptions from requirement to implement: The draft language providing for claims that an ISS is financially infeasible (§450-8.016(i)(4)) omits a clear requirement to demonstrate the profitability of the facility as a whole and not just that of individual processes. It must be explicit that exemptions will not be granted for processes that are unsustainable in isolation, because in an oil refinery, any individual process could be financially unsustainable when analyzed in isolation from the facility, into which multiple processes are integrated to generate facility-wide profit. The draft further omits a clear requirement to demonstrate that the potential hazard reduction is

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[7] BAAQMD, various dates. Flare causal analysis reports submitted pursuant to Rule 12-12, § 406.

[8] BAAQMD's Air Pollution Control Officer, Jack Broadbent, has stated publicly that he believes the agency lacks authority to require analysis of refinery piping integrity or to require inherently safer materials relative to sulfidic corrosion hazard in order to prevent flare emissions. APCO response to CBE presentation, 19 November 2012 Update to the BAAQMD Board of Directors on the Chevron Richmond refinery fire of August 2012.

[9] U.S. Chemical Safety Board, 2013. Chevron Richmond Refinery Interim Investigation Report, "Inherently Safer Systems" Chapter.

drastically disproportionate and small compared with any financial sustainability problem—it does not even mention the critical roles of properly documented LOPA, ALARP, and hierarchy of controls analyses in this demonstration that risk is being driven as low as reasonably possible. The draft also omits any requirement to demonstrate that all costs of climate protection requirements—which are *intended* to internalize the climate costs of oil refining and its products—have not been double-counted by including any portion of those costs in this separate safety analysis. Given the likelihood of broad secrecy claims around refinery finances and agency staff's likely resource capabilities, there is reason to question whether such a vaguely defined exception will be limited appropriately.

**Questions about provisions for informed public participation that is required both as a matter of environmental justice, and, we believe, is required to support and ensure effective implementation.**

14. Public information: By allowing reported documentation that is essential to verify key details about hazards, safeguards, ISS analyses, recommendations, and ISS implementation status to be kept at the facility, the draft could thwart informed community participation. This may contradict the requirements for delegated programs under the federal Clean Air Act, since federal requirements for RMP reporting are not so weak as this proposal. Under federal law, these RMP's *shall* be available to the public.[10] Additionally, under state law, the equivalent CalARP, RMP's also *shall* be available to the public for review and comment for at least 45 days.[11] By contrast, the draft simply requires a facility to provide reporting and documentation during an audit or inspection or upon request, and only to the department. Contrary to state and federal law, in Contra Costa County, a member of the public would have to hope that the County makes this request, and then must request the same information from the County. There is no requirement for a facility to make any information available to public. This is not only a weakening of the authorizing statutes, but completely contrary to the stated goal of the draft:

> "the public is a key stakeholder in chemical accident prevention, preparedness, and response at the local level…the first steps toward accident prevention are identifying the hazards and assessing the risks. Once information about chemical hazards in the community is openly shared, industry, government, and the community can work together towards reducing the risk to public health and safety."[12]

The draft's provisions for public disclosure, in addition to being contrary and weaker than its federal and state authorizing counterparts, utterly thwart and prevent the accomplishment of the draft's own stated goal. The draft should instead, at a minimum, conform its public disclosure requirements to those of state or federal law.

15. Community and worker participation: At a minimum, the ISO must specifically outline the procedures that a facility must follow if the department is not satisfied with the facility's report. This critical step of enforcement must be explicit and cannot be left to assumption. Specifically, draft sections 450-8.016 (d)(4) (the stationary source shall demonstrate implementation of PHA

[10] 40 C.F.R. § 68.210.
[11] CA Health and Safety Code § 25535.2.
[12] ISO Draft § 450-8.002(d).

recommended actions to the department's satisfaction) and 450-8.016(i) (ISSA's to the department's satisfaction) both address implementation of safety measures, critical to this ordinance. The department must state explicitly what will happen if it is not satisfied.

In addition, we believe that as people living and working in and near high-hazard industries we have a right to participate as equal partners in the decisions affecting our health and safety—and that our participation is necessary to ensure that the implementation of the CSB's recommendations is achieved and sustained. Options for full community and worker participation may range, for example, from advisory committees with authority to request information that are provided resources to hire independent experts and provide advice, to citizen suit provisions. We believe the question of which set of options to use here should by explored cooperatively with the City and County, and request a seriously engaged discussion to explore this question.

**Conclusion**

We applaud your leadership initiating action to revise this critically important safety ordinance as recommended by the U.S. Chemical Safety Board. We advise further work to explore and answer the critical questions about the current draft revision discussed above before assuming it should be adopted as drafted. We look forward to working together for worker and community health and safety.

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