

BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Develop a  
Risk-Based Decision-Making Framework  
to Evaluate Safety and Reliability  
Improvements and Revise the General Rate  
Case Plan for Energy Utilities.

Rulemaking 13-11-006  
(Filed November 14, 2013)

**OPENING COMMENTS ON THE REFINED STRAW PROPOSAL  
OF COMMUNITIES FOR A BETTER ENVIRONMENT**

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**I. The New Risk Proceeding(s) Must Prioritize Safety, and Cost Cannot be a Driving Factor**

Communities for a Better Environment (“CBE”) submits these comments on the refined straw proposal (RSP) in order to emphasize the importance of making safety the primary concern of this rulemaking and resulting risk and General Rate Case (GRC) proceedings, and to propose mechanisms for that to occur. The California Legislature has made clear that the utilities must make safety a top priority:

It is the policy of the state that the commission and each gas corporation place safety of the public and gas corporation employees as the top priority. The commission shall take all reasonable and appropriate actions necessary to carry out the safety priority policy of this paragraph consistent with the principle of just and reasonable cost-based rates.<sup>1</sup>

The Legislature also emphasized the importance of meaningful participation in safety reviews and plans by utility workers “with the objective of developing an industry-wide culture of safety

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<sup>1</sup> Pub. Util. Code § 963(b)(3).

<sup>2</sup> Pub. Util. Code § 961(e); *see also* Pub. Util. Code § 451 (“Every public utility shall furnish and

that will minimize accidents, explosions, fires, and dangerous conditions for the protection of the public and the gas corporation workforce.”<sup>2</sup>

Indeed, the Commission also conceived of this rulemaking as heralding a major shift in the way utilities evaluate and prioritize safety:

[W]e expect an evolution in the way utilities identify safety and reliability risks and justify the value of investments and operations expenses in relation to how well those risks are mitigated. . . .

We need to have the utility’s system evaluated in terms of implementation of best practices, industry standards, and the associated metrics of the security and safety of its electric grid, gas pipelines, and facilities. . . .

As part of our deliberate efforts to change our culture and organization in order to elevate safety, we should determine how the RCP should be revised to explicitly include a showing and scrutiny of programs to ensure appropriate safety, reliability and security of the utility’s physical and cyber systems, and not just a presentation of claimed costs.<sup>3</sup>

Thus, the Commission must ensure that the new risk-based decision-making proceedings, first and foremost, emphasize safety over all other considerations. Further, in order to create “an evolution,” in the way utilities analyze and mitigate risk, the rulemaking must create a proceeding that forces utilities to incorporate safety into every level of their decisionmaking. For this to occur, CBE recommends that the Commission require Inherently Safer Systems (“ISS”) to be the overarching framework of the newly created proceeding(s), and that the risk assessment methods and alternatives or mitigation chosen flow from that framework.

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<sup>2</sup> Pub. Util. Code § 961(e); *see also* Pub. Util. Code § 451 (“Every public utility shall furnish and maintain such adequate, efficient, just, and reasonable service, instrumentalities, equipment, and facilities, including telephone facilities, as defined in Section 54.1 of the Civil Code, as are necessary to promote the safety, health, comfort, and convenience of its patrons, employees, and the public.”).

<sup>3</sup> Order Instituting Rulemaking, R. 13-11-006 (November 14, 2013), pp. 7, 8. This emphasis on safety is also consistent with Cal. Pub. Util. Comm. Gen. Order 166, Standards for Operation, Reliability, and Safety During Emergencies and Disasters, and Cal. Pub. Util. Comm. Gen. Order 112E, State of California Rules Governing Design, Construction, Testing, Operation, and Maintenance of Gas Gathering, Transmission, and Distribution Piping Systems.

## **II. The Commission Should Ensure Meaningful Worker and Community Participation at All Phases of this Proceeding.**

In the original Straw Proposal, staff noted the importance of including in this proceeding “the transparent stakeholder process” utilized in the Commission’s LTPP proceedings.<sup>4</sup> CBE emphasized in its redlines and at the workshop the importance of maintaining such a transparent process for the outcome of this proceeding, and in particular, that interested parties be afforded several opportunities to provide official comment and testimony that would not only be part of the official record of the proceeding, but also warrant the Commission’s consideration of those comments.<sup>5</sup> We commend the Commission for including the essence of this request in the RSP, and noting that both transparency and participatory inclusivity serve as procedural principles.

However, the RSP fails to include specific elements, highlighted by CBE’s prior redlined comments, to properly implement these principles. These include the following two specific examples.

First, the Commission should clarify the efficacy of interested parties’ comments at both the S-MAP and RAMP stages of this proceeding. For the S-MAP portion of the proceeding, the Commission should clarify that it *must* take into account interested parties’ comments, just as in the LTPP proceedings, and further, that it will be a full Commission proceeding with an ultimate Commission decision. CBE is wary that “examining, understanding and commenting upon” proposals, with no LTPP-type guaranteed administrative procedures, may amount to simply disregarded comments. Similarly, the RSP is clear that the RAMP phase of this proceeding will *not* have a standalone decision.<sup>6</sup> If the Commission wishes to maintain this procedure “in the interest of avoiding delay,” the Commission should ensure other methods for the actual

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<sup>4</sup> Staff Straw Proposal, p. 3.

<sup>5</sup> CBE Straw Proposal Redlines, p. 3.

<sup>6</sup> RSP, p. 5.

consideration of interested parties' comments. An efficient method could require all interested party responses to be part of the official record for the future GRC proceeding.

Moreover, as noted by the Opening Comments of the Utility Workers Union of America, the Commission should ensure the inclusion and express consideration of workforce issues in any safety proceeding. Similarly, the “fence-line communities” that CBE represents are impacted immediately second, after the workers, by any incident, and the Commission should therefore also ensure the same inclusion and consideration of the environmental justice implications of this proceeding.

Related to this issue, the Commission should clarify the involvement of its Commission Staff, specifically in recommending different portfolios at the RAMP phase of this proceeding. To ensure the actual consideration and potential adoption of Staff's recommendations, the Commission could incorporate a method similar to that used in the Clean Air Act's Risk Management Program, or locally, Industrial Safety Ordinances. For example, the Contra Costa County Industrial Safety Ordinance requires that “stationary sources shall select and implement inherently safer systems to the greatest extent feasible.” An impractical implementation must be documented to include, “sufficient evidence to demonstrate to the County's satisfaction that implementing this inherently safer system is impractical.”<sup>7</sup> The Commission should similarly include such language to ensure the proper consideration of Staff's recommendations. Instead, currently at the RAMP phase, the Commission proposes to require utilities to simply consider two other alternative risk mitigation plans and include an explanation as to the utility's ultimate

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<sup>7</sup> See Contra Costa County Ordinance 450-8.016(d)(3) (hereinafter “Industrial Safety Ordinance”), available at [http://cchealth.org/hazmat/pdf/iso/2006\\_iso\\_official\\_code\\_complete.pdf](http://cchealth.org/hazmat/pdf/iso/2006_iso_official_code_complete.pdf)

plan election.<sup>8</sup> This is far weaker than, for example, “sufficient evidence to demonstrate to the Commission’s satisfaction. . . .”

Second, in our redlined comments of the original Straw Proposal and at various workshops, CBE has emphasized the importance of soliciting comments from utility workers and affected communities, as well as other relevant agencies, for instance, the Fire Marshal, Cal/OSHA, and local air districts. Such potentially interested agencies or stakeholders can offer additional insight into the evaluation of safety plans and risk reduction. This is not a novel request. For instance, with respect to hazardous materials, state law requires that “within 15 days after the administering agency determines that an RMP [Risk Management Plan] is complete, the unified program agency shall make the RMP available to the public for review and comment for a period of at least 45 days. A notice briefly describing and stating that the RMP is available for public review at a certain location shall be placed in a daily local newspaper or placed on an administering agency's Internet Web site, and mailed to interested persons and organizations.”<sup>9</sup> The Commission could similarly solicit comment not just from interested parties already in the proceeding, but also other agencies that may not be aware of this proceeding, but could prove beneficial to the evaluation of proposals.

### **III. The Refined Straw Proposal**

#### **A. Prior to the S-MAP or Similar Proceeding, the Commission Should Establish the Values Included in What Constitutes “Risk,” and Must Prioritize Safety, Environmental and Health Harm, and Reliability**

In order to ensure that safety and similar values are prioritized, the Commission must establish the values prior to the S-MAP or similar proceeding. Without knowing what values they must protect, or at least prioritize, the utilities cannot ascertain what assets, processes, or

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<sup>8</sup> RSP, p. 6.

<sup>9</sup> Health and Safety Code § 25535.2.

cultural institutions pose the greatest risks. For example, if protecting the utilities' profits is the highest value, the utilities will rank risks according to which poses the most threat to their profits. In this case, because of the events that helped lead to this proceeding (for instance, the San Bruno pipeline explosion, the San Gabriel Valley windstorm<sup>10</sup>) the mandate of the Legislature, and the stated purpose of this rulemaking, *reducing safety risks to as low as reasonably practicable* or equivalent must always be the highest priority in utilities' operations, and the utilities must evaluate their risks based on those that pose the greatest threat to both worker and public safety.<sup>11</sup>

CBE proposes that the Commission adopt the broadest possible interpretation of what constitutes a "safety" risk. For example, the risks must include environmental and public health hazards and pollution emissions are also threats to safety must be included as a valued risk. For the public, leaking pipelines and emissions from power plant operations pose both acute and long-term health risks. Health risks are only made worse in areas that include power plants and a large number of pipelines, because the multitude of sources bombard the residents, workers, and school children nearby to a number of harmful and hazardous air pollutants, causing cumulative and synergistic health impacts.<sup>12</sup> (These impacts are borne disproportionately by low-income

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<sup>10</sup> See, e.g., R.13-11-006 Staff Straw Proposal (March 2014), p. 1; California Senate Committee on Energy, Utilities, and Communication, Subcommittee on Gas and Electric Infrastructure Safety, *Slow Progress Toward Safety: Improving Performance and Priorities in the Safety Plans of the California Public Utilities Commission* (October 2013) (hereinafter "Utilities Safety Report"), pp. 7-8, available at [http://seuc.senate.ca.gov/sites/seuc.senate.ca.gov/files/SlowProgressCPUC\\_v1pt1\\_10-28-13.pdf](http://seuc.senate.ca.gov/sites/seuc.senate.ca.gov/files/SlowProgressCPUC_v1pt1_10-28-13.pdf).

<sup>11</sup> See U.S. Chemical Safety Board, Regulatory Report: Chevron Richmond Refinery Pipe Rupture and Fire (May 2014) (hereinafter "CSB Report") for a general description of "as low as reasonably practicable," available at: [http://www.csb.gov/assets/1/7/Chevron\\_Regulatory\\_Report\\_05012014.pdf](http://www.csb.gov/assets/1/7/Chevron_Regulatory_Report_05012014.pdf)

<sup>12</sup> On synergistic effects of being exposed to multiple types of pollution, see, e.g., Ilona Silins and Johan Högberg, "Combined Toxic Exposures and Human Health: Biomarkers of Exposure and Effect," *Int J Environ Res Public Health*. 2011 March, 8(3): 629–647, 2011 February 24, <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3083662/>; "Mix of Chemicals Plus Stress Damages Brain, Liver in Animals and Likely in Humans," [http://www.dukehealth.org/health\\_library/news/7433](http://www.dukehealth.org/health_library/news/7433) (citing Feb. 27, 2004, *Journal of Toxicology and Environmental Health*); Mergler, Donna, Valciukas, José A., "Nervous System: Overview," in 7. Nervous System, Mergler, Donna, Editor, *Encyclopedia of*

communities of color, since industries like power plants and related assets are most often located in these communities.) In the short term, exposure to particulates, hydrocarbons, NO<sub>x</sub>, and other emissions from utility operations, causes headaches, dizziness, nausea, and impaired pulmonary function, among other harms.<sup>13</sup> In the long term, these pollutants in addition to greenhouse gas emissions also pose chronic health risks, and contribute to climate change, which carries with it a host of safety considerations, including increased frequency of wild fires, droughts, and heat waves, which impact both safety and reliability of utility service.<sup>14</sup> Moreover, disruption of the reliability of utility service causes billions of dollars in economic damage, a cost that is often passed on to ratepayers.<sup>15</sup> Because of the interconnectedness of safety, environmental harm, reliability of service, and ratepayer impacts, CBE proposes that these be included the Commission's interpretation of what constitutes "safety" and delineate them as values that must be protected in the proceedings that result from this rulemaking.

**B. Methods and Models Used to Evaluate Risk Must be Based on Clear Performance-Based Standards Adopted by the Commission and Able to Account for Highly Complex, Tightly Coupled Systems**

In addition to delineating a the values prior to the beginning the S-MAP proceeding, the Commission must also adopt clear performance-based standards against which it can measure the

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Occupational Health and Safety , Jeanne Mager Stellman, Editor-in-Chief. International Labor Organization, Geneva (2011), <http://www.ilo.org/oshenc/part-i/nervous-system/item/287-nervous-system-overview?tmpl=component&print=1>.

<sup>13</sup> See, e.g. Clark et al, "National Patterns in Environmental Injustice and Inequality: Outdoor NO<sub>2</sub> Air Pollution in the United States," Univ. of Minnesota, 2014, available at: <http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0094431>; CDC, Health Impacts of Fine Particles in Air, available at: <http://ephtracking.cdc.gov/showAirHIA.action>.

<sup>14</sup> See, e.g., [http://www.ipcc.ch/publications\\_and\\_data/publications\\_and\\_data\\_reports.shtml](http://www.ipcc.ch/publications_and_data/publications_and_data_reports.shtml); Union of Concerned Scientists, Western Wildfires and Climate Change, [http://www.ucsusa.org/global\\_warming/science\\_and\\_impacts/impacts/infographic-wildfires-climate-change.html](http://www.ucsusa.org/global_warming/science_and_impacts/impacts/infographic-wildfires-climate-change.html).

<sup>15</sup> See EPRI, "The Cost of Power Disturbances to Industrial and Digital Economy Companies," June 2001, <http://www.epri.com/abstracts/Pages/ProductAbstract.aspx?ProductId=00000003002000476>.



assessments presented by the utilities.<sup>16</sup> First, at the very least, it must require that the utilities consider ISS in all of its risk-based and safety-related decisionmaking.<sup>17</sup> ISS requirements ensure that systems “incorporate the greatest degree of hazard reduction, to the maximum extent feasible. . . . The focus is on adopting measures that permanent and inseparable from the production process, as opposed to adding on equipment or installing external layers of protection,” such as “through the use of non-hazardous materials or processes.”<sup>18</sup>

The Commission should take some steps to require utilities to begin to implement ISS principles and regulatory best practices even before it initiates the S-MAP, RAMP, and GRC proceedings. In the context of oil refineries, for instance, the California Interagency Working

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<sup>16</sup> Some potential performance-based requirements can be found in regulations and recommendations for refineries and chemical plants. CBE recommends the Commission look particularly at: Refinery Action Collaborative, Initial Response of the Collaborative to the Findings and Recommendations of the July 2013 Draft Report of the Interagency Working Group on Refinery Safety (October 10, 2013) (hereinafter, “RAC Report,” available at: [http://coeh.berkeley.edu/people/apers\\_educ/docs/RACMemo20131015.pdf](http://coeh.berkeley.edu/people/apers_educ/docs/RACMemo20131015.pdf); Improving Public and Worker Safety at Oil Refineries: Report of the Interagency Working Group on Refinery Safety (Feb. 2014), available at: <http://www.calepa.ca.gov/Publications/Reports/2013/Refineries.PDF> (hereinafter “Interagency Refinery Safety Report”); U.S. Chemical Safety Board, Regulatory Report: Chevron Richmond Refinery Pipe Rupture and Fire (May 2014) (hereinafter “CSB Report”), available at: [http://www.csb.gov/assets/1/7/Chevron\\_Regulatory\\_Report\\_05012014.pdf](http://www.csb.gov/assets/1/7/Chevron_Regulatory_Report_05012014.pdf); and Industrial Safety Ordinance, *supra*, n. 7, and Industrial Safety Ordinance Guidance Document, available at: <http://cchealth.org/hazmat/iso/guidance.php>.

<sup>17</sup> For example, the Commission could require the utilities’ risk assessments to incorporate the Integrated Inherent Safety Index, or I2SI, developed by Faisal I. Khan and Paul Amyotte, which combines measurements of a process’ damage potential and the applicability of inherent safety principles into the process, incorporating information about controls and costs. *See* Khan, F. I., & Amyotte, P. R. “I2SI: A Comprehensive Quantitative Tool for Inherent Safety and Cost Evaluation” 18 *Journal of Loss Prevention in the Process Industries* 310-26 (2005).

<sup>18</sup> Interagency Refinery Safety Report, p. 28. *See also* Industrial Safety Ordinance, 450-8.014(g), defining ISS as: “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.”; Center for Chemical Process Safety, *Guidelines for Developing Quantitative Safety Risk Criteria* (August 2009), <http://www.wiley.com/WileyCDA/WileyTitle/productCd-0470261404.html>.

Group on Refinery Safety has proposed a series of recommendations to improve safety at refineries.<sup>19</sup> These include, among others:

- Creating an interagency refinery task force within the California Environmental Protection Agency to coordinate activities and carry out the recommendations of the report;
- Creating clear emergency response plans with specific requirements;
- Implementing inherently safer systems to the greatest extent feasible;
- Performing periodic safety culture assessments;
- Adequately incorporating damage mechanism hazard reviews into process hazard analysis;
- Requiring complete root cause analyses after significant accidents or releases;<sup>20</sup>
- Explicitly accounting for human factors and organizational changes;
- Using structure methods such as layer of protection analysis to ensure adequate safeguards in process hazard analysis; and,
- Creating enhanced public information and out reach protocols during emergency events.

In addition, the report recommends exploring reporting of leading and lagging indicators, increasing worker and community involvement, and the safety case approach. Other examples of performance-based standards could include clear reporting requirements on a normalized, publicly accessible database of: leaks and threatened leaks; emissions and air monitoring data; near-miss performance metrics; maintenance and safety requests made; corrective actions taken or not taken; outcomes; and the management individual accountable.<sup>21</sup>

Additionally, the risk assessment models themselves cannot be only simple probabilistic models to determine the severity of threats. First, for instance, the Commission should delineate up front any risks that are inherently unacceptable. These should include certain safety, health, environmental, and reliability risks, especially those with potential outcomes that are so severe

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<sup>19</sup> Interagency Refinery Safety Report, pp. 2-3, 24-34.

<sup>20</sup> For more information on root cause analysis and human factors, *see* Industrial Safety Ordinance § 450-8.016(c)(1); Industrial Safety Ordinance Guidance Document, Section C: Root Cause Analysis and Incident Investigation, available at: [http://cchealth.org/hazmat/pdf/iso/section\\_c.pdf](http://cchealth.org/hazmat/pdf/iso/section_c.pdf); Industrial Safety Ordinance Guidance Document, Section B, Ch. 2: Human Factors and Human Error, available at: [http://cchealth.org/hazmat/pdf/iso/sect\\_b\\_ch\\_2.pdf](http://cchealth.org/hazmat/pdf/iso/sect_b_ch_2.pdf); Interagency Refinery Safety Report, pp. 29, 30.

<sup>21</sup> RAC Report, Appendix A.

they cannot be dismissed even if the outcomes are not probable, as well as risks with outcomes that are less severe but very probable.

Additionally, the models the utilities use to evaluate and assess their risk vis-à-vis the values and standards prescribed by the Commission must take into account the fact that the utilities' assets and operations are high-risk (highly complex, tightly coupled) systems.<sup>22</sup>

Accidents in these systems are rarely the result of one failure, but rather are the result of a series of failures that interact to cause the disaster. For example, the San Bruno pipeline explosion was the result of multiple interacting safety failures: poor quality control and assessment; inadequate pipeline integrity, inspection, and monitoring program based on incomplete pipeline information, a failure to consider the design and materials as contributing to risk of rupture, and inspections that did not consider welded seam cracks as risks; wholly inadequate emergency response; and inadequate oversight and regulation by the Commission, resulting from a *lack of effective and meaningful metrics as part of its guidance for performance-based management pipeline safety programs*.<sup>23</sup>

The utilities' models must, therefore, be able to identify multiple types of risks, and how they can interact with each other in various situations over varied periods of time. Thus, for instance, a natural gas pipeline poses safety and environmental risks not just from age, but also from particular combinations of factors including age, size, pressure, proximity to people, proximity to sensitive environmental areas, the utility's safety culture, the contents of the gas, the

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<sup>22</sup> See Charles Perrow, *Normal Accidents: Living with High-Risk Technologies* (Princeton University Press, Princeton, NJ: 1999). Perrow argues that accidents in highly complex, tightly coupled (difficult to isolate various processes) are expected and the result of multiple failures, including in several areas: design, equipment, procedures, operators, organization and management, environment, supplies and materials. He further argues that merely adding a technological control or "fix" on top of existing systems to stem one risk often causes others.

<sup>23</sup> National Transportation Safety Board (NTSB), Pacific Gas and Electric Natural Gas Transmission Pipeline Rupture and Fire, San Bruno, CA, Sept. 9, 2010, available at: <http://www.nts.gov/investigations/summary/PAR1101.html>.

materials used to construct the pipes, and so forth.<sup>24</sup> It must also include cybersecurity, as software is becoming increasingly central to running power plants, electrical grids and other utility systems.

The models must also be able to evaluate risks within nested timelines, starting from the very near future to the full lifecycle of the asset, and even longer in the case of assets and impacts that can persist in the environment long after the utilities are done using the assets. (The most obvious example of this type of persistent risk is nuclear waste, but could also include climate change and other environmental impacts.) In addition, the model(s) should be able to incorporate potential changes in the surrounding environment over time. For example, is it possible that a housing development could be built near a natural gas pipeline in the next five years? Ten years? Longer? What are the safety implications of this change?

The models must also be based on a clear knowledge of the baseline of assets and risks. Further, the utilities must have and present proactive plans and strategies for establishing and understanding the baselines of their systems—for instance, current assets, their locations, their contributions to safety (e.g., in the instance of smart meters), and also their risks to safety and capacities for failure (e.g., can natural gas smart meters transmit data if the power goes out? Can they also monitor for leaks? Do the utilities have any leak-detection monitors on their pipelines?). The utilities must be required, at a minimum, to map and maintain an online, publicly accessible database of their entire network of pipelines and related assets, so that that

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<sup>24</sup> The U.S. DOT, Pipeline and Hazardous Materials Safety Administration hosts a wealth of materials on safety research, near-misses, safety recommendations, pipeline integrity management and regulatory oversight. Available at: <http://www.phmsa.dot.gov/pipeline>. The Commission should incorporate these recommendations into the performance-based standards CBE recommends it adopt. Further, in order to account for uncertain risks, the Commission and utilities should be required to use this data to develop metrics of risk-causing activities and a series of questions the Commission and utilities will use to evaluate whether certain activities, materials, processes, etc. could pose a risk.

the public, the utilities, the Commission staff, and regulatory/emergency response agencies have this information.

C. RAMP Phase Must Also Emphasize Safety More, but Deemphasize Costs

There are some aspects of the RAMP phase and proposal CBE agrees are positive steps. These include requiring utilities to provide a description of the controls currently in place, the development of a risk mitigation plan, requiring the consideration of alternative mitigation plans, and the evaluation of these plans by Commission Staff. The requirements emphasize cost too much at the expense of safety, however. This rulemaking should be developing ways to push the utilities to incorporate safety into every level of decision-making, rather than simply making it an entirely separate category of costs to consider as an after-thought to its other asset and operational costs.<sup>25</sup> By implementing uniform requirements and performance standards prior to the RAMP-phase proceedings, the Commission can guide utilities toward prioritizing safety over cost throughout its decision-making and operations.<sup>26</sup>

CBE maintains that the Commission should not consider cost of risk mitigation methodologies at this RAMP stage of the proceeding, but should instead defer consideration of cost to the GRC phase of the proceeding. This makes sense, given the Legislature's statement that

[i]t is the policy of the state that the Commission and each gas corporation place safety of the public and gas corporation employees as the top priority. The commission shall take *all* reasonable and appropriate actions *necessary* to carry out the safety priority policy of this paragraph *consistent with* the principle of just and reasonable cost-based rates.<sup>27</sup>

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<sup>25</sup> CBE further recommends that the Commission consider ways to consider safety implications of decisions in all proceedings, as recommended in the Senate Utility Safety Report, pp. 16-20.

<sup>26</sup> See Section III.B, *supra*, and Section IV, *infra*, in which CBE offers some alternative regulatory regimes and agency recommendations that the Commission should review and evaluate for ideas prior to creating its final proposal below.

<sup>27</sup> Pub. Util. Code Section 963(b) (emphasis added).

This mandate highlights two things: first, safety is the Commission’s highest priority; second, given this high priority, utilities must do “all reasonable and appropriate actions necessary” to ensure safety and at the same time, ensure just and reasonable rates. This implicitly requires utilities to, if necessary, absorb some cost of risk mitigation measures in order to avoid any increase in rates.

In CBE’s redlined comments to the original Straw Proposal, CBE explicitly deleted “cost” from the consideration of the risk taxonomy.<sup>28</sup> However, in the RSP, cost plays a main role in the RAMP phase: a description of controls currently in place should also include the “baseline” costs associated with those controls; prioritization of risk mitigation alternatives should include consideration of mitigation costs; and finally, “utility financial constraints” appears at the top of the list mitigation plan considerations, even coming before “affordability impacts.”<sup>29</sup> In order to maintain conformity with its own regulations and to properly address risk reduction, the Commission should deemphasize cost at the RAMP phase of this proceeding.<sup>30</sup>

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<sup>28</sup> CBE Straw Proposal Redlines, p. 8.

<sup>29</sup> See RSP, pp. 5-6.

<sup>30</sup> In addition, the GRC and verification phases seem to incorporate cost in a cost-benefit type of analysis, a “Risk Mitigated to Cost Ratio” and “projections of the benefits and costs of the risk mitigation programs adopted in the GRC with the actual benefits and costs.” RSP, pp. 5, 9. This is similar to cost-benefit analysis (CBA). Instead, CBE prefers that cost be considered using a more nuanced tool for incorporating cost into the risk analysis. (We can elaborate further in future in the second round of comments.) Some examples, however, are trade-off analysis and multidimensional assessment.

- Trade-off analysis presents costs and benefits of each choice in a non-aggregated form, using quantitative and qualitative measures depending upon the particular economic, environmental, health or other effect. It leaves it to the policymakers to informally balance the trade-offs in selecting a policy option. (See Nicholas A. Ashford and Charles C. Caldart, ENVIRONMENTAL LAW, POLICY AND ECONOMICS 168-169 (2008)(describing trade-off analysis); Matthew D. Adler and Eric A. Posner, *Rethinking Cost-Benefit Analysis*, 109 Yale L.J. 165, 233 -234 (1999-2000)(describing “qualitative” multidimensional assessment))
- Multidimensional assessment aggregates the impacts (positive and negative) for all the relevant decision criteria, allowing for trade-offs in performance across the criteria. Multidimensional assessment typically uses formal decision tools such as multi-criteria decision analysis to generate the aggregated assessment, taking into account the full range of economic, environmental, health, social and other criteria relevant to overall social welfare. (See Adler and Posner, at 229-235; National Academy of Sciences, *The Use and Storage of Methyl Isocyanate (MIC) BAYER CROPSCIENCE*

Moreover, it is critical for the Commission to establish a proceeding that can modify the profit structure that drives utilities to one that could instead disincentivize capital investment and incentivize safety and reliability. Utilities operate with a fiduciary duty to their shareholders. Absent any inherent drive for utilities to push for safety, especially at the expense of the company and its shareholders, the Commission has a role to fulfill the function of the market in providing safe, reliable service.<sup>31</sup> CBE also supports the Commission exploring the possibility, as suggested in the Senate Utilities Safety Report, of tying rate incentives and penalties to compliance with, or achievement of, the specified levels of performance the Commission would set out (see, *supra*, III.B).<sup>32</sup>

#### D. Verification Should be Independent and Include an Enforcement Component

The RSP would require the utilities to submit two reports, essentially verifying that they spent the money on the proposed mitigation projects and that the money spent achieved the projected benefits.<sup>33</sup> While requiring the two reports is a good first step, the Risk Mitigation Accountability Report must include all performance-based standards set out by the Commission (see *supra*, III.B), as well as any other applicable safety standards. Verification must also include transparency. Thus, for example, as described in section III.B above, verification could include clear reporting requirements on a normalized, publicly accessible database of: leaks and

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115-124 (2012); D. Diakoulaki, and F. Karangelis, *Multi-Criteria Decision Analysis and Cost-Benefit Analysis of Alternative Scenarios for the Power Generation Sector in Greece*, 11 *Renewable and Sustainable Energy Reviews* 716, (2007); Alejandro Tudela, Natalia Akiki and Rene Cisternas, *Comparing the Output of Cost Benefit and Multi-Criteria Analysis: An Application to Urban Transport Investments*, 40 *TRANSPORTATION RES.* 414, 415 (2006).

<sup>31</sup> See, *Cost of Regulation In The Investor-Owned Electric Utility Industry*, Dr. Karl McDermott, June 2012, p.7, available at

[http://www.eei.org/issuesandpolicy/stateregulation/Documents/COSR\\_history\\_final.pdf](http://www.eei.org/issuesandpolicy/stateregulation/Documents/COSR_history_final.pdf). As noted in the Senate Utilities Safety Report, “if one does not consider risk, one cannot allocate it, which tends to mean that it is borne by ratepayers.” (p. 19.) This is the situation as it stands now.

<sup>32</sup> See, e.g., Recommendation in Senate Utilities Safety Report, p. 13.

<sup>33</sup> RSP, p. 9.

threatened leaks; emissions and air monitoring data; near-miss performance metrics; maintenance and safety requests made; corrective actions taken or not taken; outcomes; and the management individual accountable.<sup>34</sup>

In addition, the Commission must be able to independently and physically verify that the mitigation projects actually occurred and did not create new risks. One way this can be achieved is through independent inspections, with penalties attached if the inspections show the mitigation measure did not occur. Further, as recommended by the Refinery Action Collaborative and the Interagency Refinery Safety Report with respect to refinery regulation, the Commission should consider establishing an interagency regulatory entity to help analyze the utilities' safety plans and risk assessment models, enforce utility safety requirements, conduct random inspections, and provide a more qualitative evaluation of the plans and outcomes.<sup>35</sup>

#### **IV. Alternatives to the Straw Proposal from Other Industries**

##### **A. Implement Inherently Safer Systems as Overarching Framework**

As noted above, CBE recommends that the Commission require all utilities to implement ISS principles as the framework for the utilities to evaluate, assess, and mitigate their risks. Each facility can identify and propose methodologies for achieving ISS, but ISS would be the overarching frame and goal.

##### **B. Review and Evaluate Alternative Regimes from Other Industries Prior to Finalizing the Proposal**

As CBE noted in its redlines to the original straw proposal, it is not necessary to reinvent the wheel in developing appropriate risk assessment methods and mitigation measures and alternatives to abate the risks. Though we do not endorse any one particular regime, we believe the Commission should analyze and evaluate safety regulations from other highly complex,

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<sup>34</sup> RAC Report, Appendix A.

<sup>35</sup> RAC Report, p. 19; Interagency Refinery Safety Report, pp. 24-27.



dangerous industries before moving forward with a final proposal. CBE believes these other regimes, in addition to the recommendations from the refinery sector described above, can offer guidance in developing appropriate regulatory requirements that would further the Legislature and Commission's goal of prioritizing safety in the utilities' risk-based decision-making. Some potential regulatory regimes include:

- Federal Aviation Administration, FAA Order 8000.369A.56; Aviation Safety Policy, available at: <http://www.faa.gov/documentLibrary/media/Order/VS%208000.367.pdf> ; and Aviation Safety Workplan (2013), available at: [https://www.faa.gov/about/office\\_org/headquarters\\_offices/avs/nextgen\\_workplan/media/AVS-Work-Plan-for-NextGen-2013.pdf](https://www.faa.gov/about/office_org/headquarters_offices/avs/nextgen_workplan/media/AVS-Work-Plan-for-NextGen-2013.pdf). Note, too, that the Senate Utilities Safety Report ([http://seuc.senate.ca.gov/sites/seuc.senate.ca.gov/files/SlowProgressCPUC\\_v1pt1\\_10-28-13.pdf](http://seuc.senate.ca.gov/sites/seuc.senate.ca.gov/files/SlowProgressCPUC_v1pt1_10-28-13.pdf)) analyzes the FAA's Safety Management System as a potential model for CPUC utility safety.
- Contra Costa County Industrial Safety Ordinance, available at: <http://cchealth.org/hazmat/iso/>, and guidance available at: <http://cchealth.org/hazmat/iso/guidance.php>.
- EPA's Risk Management Program, <http://www.epa.gov/emergencies/content/rmp/>.
- Nuclear Regulatory Commission, Risk-Informed and Performance-Based Regulation (White Paper): <http://www.nrc.gov/reading-rm/doc-collections/commission/srm/1998/1998-144srm.pdf>.
- NIOSH, Prevention Through Design program, <http://www.cdc.gov/niosh/programs/ptdesign/>.
- U.S. Chemical Safety Board's discussion of the "safety case regime," in U.S. Chemical Safety Board, Regulatory Report: Chevron Richmond Refinery Pipe Rupture and Fire (May 2014) (hereinafter "CSB Report"), available at: [http://www.csb.gov/assets/1/7/Chevron\\_Regulatory\\_Report\\_05012014.pdf](http://www.csb.gov/assets/1/7/Chevron_Regulatory_Report_05012014.pdf).
- Nuclear Regulatory Commission's risk and performance-based regulation: <http://www.nrc.gov/about-nrc/regulatory/risk-informed.html>.

## **VI. CONCLUSION**

For the foregoing reasons, CBE respectfully requests that the Commission consider and adopt the above recommendations.

Respectfully submitted,

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