



THE CUBICAL

August 12, 2021 - *Focus on Regulation of Process Safety*

PROCESS SAFETY AND THE MOVE BEYOND "END-OF-THE-PIPE" REGULATION

My first exposure to environmental affairs came in the 1970s when I was a teenager. My father was the manager of a manufacturing plant in Pennsylvania. Air emissions from the plant had become the focus of a local community activist group and other interested citizens. Discussions among the company, the community activist group, local politicians, local community leaders, and regulators resulted in the convening of a public forum at a local high school. At the forum, one of the leaders of the community group presented a list of demands for oversight of the plant's operations. These demands did not merely focus on the plant's emissions, but on its operations as well. This was fairly novel stuff in the 1970s. Environmental regulation at that time focused mostly on "end-of-the-pipe" emissions and discharges. Needless to say, the presentation of these demands prompted a variety of strong reactions, both for and against.

Fast forward 45 years later, and hardly anyone bats an eye at the idea of EPA and OSHA regulating how a facility conducts its operations. Regulatory oversight regarding matters such as the content of standard operating procedures (SOPs) and the inspection of critical pieces of equipment have been in existence since 1987 when OSHA promulgated its Process Safety Management (PSM) Standard. EPA promulgated its own version of the PSM Standard when it promulgated its Risk Management Plan (RMP) Rule in 1993.

One can consider the PSM Standard and the RMP Rule as two points along a regulatory evolution from "end-of-the-pipe" standards, through the core of a regulated facility's operations, and even into the heart of a regulated facility's decision-making processes and results. This evolution takes on particular

importance today as a new administration conducts listening sessions with an eye towards picking back up on a previous Democratic presidential administration's efforts to strengthen the RMP Rule.

With this in mind, this edition of *The Cubical* focuses on the regulation of process safety, albeit on a general level. The next two articles address particular aspects of process safety regulation and note how these aspects illustrate the regulatory evolution described in the preceding paragraph. Finally, I provide a few general thoughts regarding why environmental and legal professionals from manufacturing businesses with both higher-hazard operations and lower-hazard operations should pay attention to developments in the area of process safety regulation, even if only on a general level.

WHAT IS RAGAGEP? AND, WHY IS IT IMPORTANT?

In order to understand how environmental regulation has moved from the "end-of-the-pipe" to the heart of a facility's operations, a good place to start is with the concept of *RAGAGEP* (pronounced *RAH-geh-geh*). *RAGAGEP* is the acronym for *recognized and generally accepted good engineering practices*, and is the concept that has been adopted to incorporate existing industrial design codes, standards, and practices directly into OSHA's PSM Standards and EPA's RMP Rule. Pursuant to these regulations, certain higher-hazard facilities are required to develop and implement a program for ensuring the mechanical integrity of certain covered categories of process equipment. Such a program must include procedures for inspecting and testing such process equipment. These inspection and testing procedures are required to conform with the design codes, standards, and practices that collectively make up *RAGAGEP*.

RAGAGEP is one of the most important components of a facility's PSM or RMP program. Failure to develop and implement a robust mechanical integrity program that conforms to *RAGAGEP* can lead to a catastrophic event such as the metallurgical failure of a pressure vessel. Such an event can lead to fatalities, serious injuries, harm to the environment, and significant damage to a facility's operating assets. In addition, the number of pressure vessels, piping circuits, control systems, relief devices, and other pieces of process equipment covered by these rules can be quite significant - even for a facility of moderate size and complexity. Failure to properly account for all covered pieces of process equipment can lead to very significant fines and other liabilities in an enforcement action by OSHA or EPA. (I discuss these ramifications in greater detail in an article entitled *Federal Enforcement of the Clean Air Act: Past, Present, and Future*, a link for which is [here](#).)

Possessing at least a passing familiarity with the concept of *RAGAGEP* is important for a wide variety of businesses. In a regulatory regime where industry codes are incorporated as enforceable regulations, it is relatively easy for the regulatory authorities to enforce them as "general duties" even where the regulations do not specifically apply. The enforcement of these codes under the corresponding General Duty Clauses of both the PSM Standard and the RMP Rule is likely to increase under the new administration.

Finally, it is important to recognize that *RAGAGEP* and similar terms - such as "good engineering practices" or "acceptable engineering practices" - pre-date OSHA's and

EPA's process safety regulations. These terms can be, and often are, used in slightly varying contexts, depending on the particular situation. In certain industries or facilities, the term RAGAGEP might be used to refer to: (i) the specific regulatory definition; (ii) the applicable process safety regulation as a whole; (iii) or some other related, but distinct concept that is unique to the facility or industry. Environmental, legal, and business professionals who do not deal with this concept on a regular basis should be aware of these subtle, but important differences.

AS GOES CONTRA COSTA COUNTY, SO GOES...

Environmental and legal professionals are familiar with the saying "as goes California, so goes the rest of the country." While this saying might be an exaggeration, it acknowledges the role that California has played in shaping environmental policy. With respect to process safety, this saying can be extended one step further with something like "as goes Contra Costa County, so goes the rest of the country." The reason for this is that Contra Costa County's public health agency - Contra Costa Health Services (CCHS) - has been at the vanguard of robust process safety regulation for more than 20 years.

Contra Costa County, California - located just east of Oakland and Berkeley - is home to a number of refining and petrochemical operations. The County's Industrial Safety Ordinance (ISO) was enacted in 1998 to regulate the process safety activities of these operations. The ISO is substantially similar to California's Accidental Release Prevention program (Cal ARP). Both the ISO and Cal ARP are implemented and enforced by experienced engineering staff with CCHS's Hazardous Materials Program (HMP).

The ISO is more stringent than OSHA's PSM or EPA's RMP Rule in certain aspects. One particular aspect that should be of interest to the regulated community is the ISO's emphasis on *inherently safer technology or IST* (sometimes also referred to as *inherently safer design or ISD*). IST is a design concept that involves engineering hazards out of a particular process, or at least reducing the consequences of an incident arising from such hazards. Under the ISO, regulated facilities are required to perform and document the results of IST analyses as part of their process hazard analyses. (A copy of CCHS HMP's *Industrial Safety Ordinance Annual Performance Review and Evaluation Report* for 2021 - which describes HMP's implementation of the ISO - can be accessed by clicking [here](#).)

For now, no similar requirement exists at the federal level. However, it is possible that such a requirement may be a part of future efforts to amend the RMP Rule. IST and its role in the regulation of process safety have featured prominently in EPA's on-going listening sessions regarding possible amendments to the RMP Rule.

Contra Costa County's emphasis on IST is a good illustration of how environmental regulation has moved even beyond the regulation of a facility's operations, and into its decision-making processes and results. The incorporation of IST concepts into process safety regulation establishes - at minimum - requirements for a facility's decision-making processes. It can be taken even further to mandate particular outcomes (i.e., a particular design change based on an analysis of safer technologies) based on the results of such processes.

When it comes to process safety, this evolution - from "end-of-the-pipe", through a

facility operations, and finally into a facility's decision-making processes - mostly impacts businesses with higher-hazard operations. However, such an evolution may eventually impact a broader array of businesses by manifesting itself in other areas of environmental regulatory affairs. Manufacturing business of all types and sizes should be mindful of this evolution, and how it might ultimately impact their respective operations.

PROCESS SAFETY: A FEW FINAL THOUGHTS

Process safety regulation tends to focus primarily on facilities with higher-hazard operations. However, process safety management regulation is something that the entire regulated community should pay attention to, even if on a general level. This is so for the following reasons:

- The evolution from "end-of-the-pipe" regulation, through regulating a facility's operations, and into the regulation of a facility's decision-making processes and results mirrors environmental regulatory evolution in other areas.
- The same provisions of the Clean Air Act Amendments (CAAA) that are the source of EPA's authority to promulgate the RMP Rule also impose a "general duty" on all facilities to conduct operations in a manner that protects human health and the environment. EPA has used this so-called General Duty Clause as the basis for numerous enforcement actions since the enactment of the CAAA. EPA will likely make even greater use of the General Duty Clause as a new administration ramps up its enforcement efforts. OSHA has used its version of the General Duty Clause in a similar manner and will continue to do so as well.
- Although the PSM Standard and the RMP Rule focus primarily on heavier industries such as chemicals and steel manufacturing, safe and reliable operation is something that is critical to a broader variety of industries. Employees want to feel secure that their safety and well-being are being protected through the implementation of sound operations and maintenance practices. In addition, property insurers insist that their insureds develop and implement such sound practices.

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