



# NESHAPs

## A Glimpse into their Ongoing Evolution

The National Emission Standards for Hazardous Air Pollutants, or NESHAPs, are federal regulations that focus on the emissions of air contaminants that the U.S. Environmental Protection Agency (EPA) considers to have toxic health effects. Unlike several other EPA air pollution control programs, NESHAPs can affect sources that are newly constructed or previously existing, regardless of if the emission unit requires an air permit, and regardless of the size of the facility. Indeed, process operations at large manufacturing plants that span square miles and cellular telephone towers equipped with an emergency generator no bigger than the one at your house can both be covered under the same NESHAPs. This issue of *EM* focuses on this group of air regulations, including some discussion of recent trends that affect large numbers of industrial and institutional facilities across the United States.

**Nationwide regulation of hazardous air pollutants (HAPs) began in 1970** with the issuance of the U.S. Clean Air Act (CAA) and the requirement, within Section 112 of the CAA, to identify and control air contaminants that “cause or contribute to an increase in mortality or an increase in serious irreversible, or incapacitating, reversible illness.”<sup>1</sup> Initially, EPA conducted research and developed a list of eight HAPs, and over 20 years promulgated fewer than 25 regulations within 40 CFR Part 61 to control those pollutants to with the purpose to provide an “ample margin of safety to protect public health.” Each of these early NESHAPs focused on controlling emissions of individual HAPs from a specific industry group, or the emissions of the compounds regardless of industry.

This risk-based approach to regulating HAPs remained largely unchanged until the overhaul of the CAA in 1990. The change in HAPs regulation was made, in large part, due to the limited number of NESHAPs issued by EPA, and the challenges to the risk analysis required under the original CAA.<sup>2</sup> Under the 1990 CAA, the focus of regulating HAP shifted to establishing required control technologies or work practices for the regulated source categories. Additionally, EPA focused on controlling groups of HAPs from specific industrial sectors rather than the earlier approach of focusing on individual HAPs. In the 26 years since the 1990 CAA Amendments, more than 130 Maximum Achievable Control

from area sources has expanded to affect area sources of HAPs across the country and include disparate industries ranging from chemical manufacture and metal goods fabrication to auto body shops, heating hospitals, and emergency power.

A quick look through the list of source categories regulated by 40 CFR Parts 61 and 63 illustrate how broad the reach of NESHAPs are, potentially affecting every industry in the country. As the NESHAPs program evolved through the 1990 CAA Amendments, with legal action, required risk and technology reviews, and other factors, the stringency and scope of the NESHAPs has also continued to increase. This is illustrated by Jeremy Jewell’s aptly named article, “All Engines Must Comply.” In his article, Jewell discusses the wide array of Reciprocating Internal Combustion Engines (RICE) that are subject to the major and area source engine rules, as well as practical challenges of determining what requirements apply to an engine and complying with the regulations. The engine rules have the potential to affect nearly any facility with an emergency generator or other RICE used on site, including non-industrial sites such as schools and hospitals.

The 1990 CAA Amendments also expanded upon the programmatic requirements that EPA was required to implement. Two significant requirements of this program are a review of residual risk from HAPs emissions following



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Technology (MACT) and/or Generally Available Control Technology (GACT) standards have been promulgated within 40 CFR Part 63, addressing emissions of HAPs from dozens of source categories at large and small emitters, and the number of regulated HAPs has expanded to 187.

In addition to expanding the number of chemicals designated as HAPs and the shift to technology-based standards, the 1990 CAA Amendments introduced the requirement to regulate sources that affect urban air quality. In this issue, Jennifer Kelley discusses the impact of HAPs emissions on urban air quality and the NESHAPs that focus on area sources (i.e., those sources of HAPs that do not meet the major source threshold). As Kelley explains, what began as a mandate to protect the health and welfare of residents of urban areas from risks associated with emissions of toxic air contaminants

implementation of MACT for specific source categories, and the update of MACT and GACT regulations as warranted considering developments in practices, processes, and control technologies in industry.<sup>3</sup> These requirements ensure that the standards are revisited regularly to validate that current maximum achievable and/or generally available controls are indeed in place. EPA has combined these two related requirements under the Risk and Technology Review (RTR), which must be conducted on promulgated MACTs eight years after having been finalized. A recent RTR on the Petroleum Refinery Sector Rule set several groundbreaking approaches to HAPs control. In their article, Charles P. Feerick and his colleagues at the American Petroleum Institute (API) provide details on some of those approaches and API’s experience of working with EPA on the development of that final rule.

Rules undergoing RTR are often revised as a result of the investigation of current work practices, control requirements, or residual risk from HAPs emissions from the source category. For example, Feerick et al. discuss the recent revision to the Refinery Sector Rule, which introduced fence-line monitoring for HAPs as method for demonstrating compliance, and work practice and appropriate corrective actions for emergency and other relief venting through pressure relief devices (PRDs). The latter change represents a departure from recent chemical sector regulations that prohibit venting through PRDs,<sup>4</sup> and require reporting of PRD events although such events typically serve the purpose of maintaining equipment safety in the face of process upset.

The regulated community and non-governmental organizations have also influenced the path of rulemaking by initiating legal action. In one such case, *Sierra Club vs. EPA*, that is affecting EPA rulemaking overall, and NESHAPs in particular. EPA had previously determined that emissions from NESHAPs-affected sources should not be subject to emission limitations during periods of startup, shutdown, or malfunction (SSM).<sup>5</sup> In fact, several NESHAPs included an exclusion from the requirement to meet emissions limits during SSM events. The NESHAPs General Provisions,<sup>6</sup> NESHAPs promulgated shortly after the 1990 CAA Amendments such as the Hazardous Organic NESHAP (HON),<sup>7</sup> and NESHAPs promulgated as recently as 2012<sup>8</sup> include this exclusion.

As a result of *Sierra Club vs. EPA*, EPA is systematically removing SSM exclusions from NESHAPs when they undergo revision. In some cases, such as the Generic MACT (regulating polycarbonate and other chemical compound manufacture), the so-called blanket exemption for meeting emissions standards during periods of startup and shutdown was removed entirely while undergoing RTR review.<sup>9</sup> When the major source Boiler MACT (BMACT) was finalized following reconsideration for issues unrelated to SSM emissions, the BMACT SSM exemption

was removed and replaced with work practice requirements that apply during periods of startup and shutdown.<sup>10</sup> In the preamble to the BMACT, EPA indicated that it does not find it reasonable to establish emissions limits for malfunctions, but also has not incorporated affirmative defense requirements in the rule, deferring to the court system and EPA's discretion regarding whether enforcement is warranted as a result of a malfunction event.<sup>11</sup>

Affirmative defense provisions were included in some NESHAPs following the vacatur of the SSM exemption provisions, which would have allowed facilities to avoid prosecution as a result of violating emission limits during SSM events, as long as specific actions were taken and reports submitted.<sup>12</sup> However, in 2014, the D.C. Circuit Court found that EPA did not have the authority to determine civil liability, and as a result, those provisions are being removed from NESHAPs in the same manner as the SSM exemptions.<sup>11</sup> The issues of SSM and affirmative defense affect NESHAP rulemaking considerably; however, they also affect other regulatory programs including federal approval of state regulations through the State Implementation Plan (SIP) process and the Title V operating permit program.

Like many federal air regulations, NESHAPs and the requirements they impose are ever-changing. Since the introduction of NESHAPs nearly 50 years ago, and the overhaul 20 years later, the NESHAPs program has expanded and shifted tremendously. At the time of this writing, there is considerable speculation about the future path of environmental regulation in the United States. Regardless of what the future holds, it is clear that the CAA Amendments of 1990 established a framework for extensive regulation for the control of emissions of HAPs. The articles in this issue highlight important aspects of those rules and illustrate that the requirements for controlling HAPs have become increasingly stringent and affect successively smaller facilities. **em**

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