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FACT SHEET

AMENDMENTS OF GENERAL PROVISIONS TO ADD SPECIFICATIONS FOR HYDROGEN-FUELED FLARES

TODAY'S ACTION

- ◆ The Environmental Protection Agency (EPA) is issuing a direct final notice to amend the specifications for flares which are contained in the general provisions which apply to EPA's new source performance standards and air toxics regulations.
- ◆ These amendments would add specifications for non-assisted flares containing significant amounts of hydrogen in their waste streams to the current specifications for flares contained in the general provisions. General provisions are an introductory section of regulatory text that establishes the framework for standards and consolidates in one location the general information and requirements that relate to a particular grouping of regulations (e.g., air toxics regulations). Air toxics, also known as hazardous air pollutants, are those pollutants known or suspected to cause cancer and/or other serious health effects, such as birth defects or reproductive effects.
- ◆ The amendments would require non-assisted hydrogen-fueled flares to meet the same emission reductions that are currently required for other types of flares. Sources will have the option to use the amended specifications rather than the current EPA flare specifications if their waste streams contain sufficient hydrogen.

WHAT ARE THE HEALTH AND ENVIRONMENTAL BENEFITS?

- ◆ These amendments would achieve the same emission reduction (i.e., 98 percent or greater) required in the current specifications for other types of flares, but would avoid the emissions resulting from flare combustion if supplemental fuel had to be added to meet current flare specifications. The flare combustion emissions are known as "secondary emissions."
- ◆ For the six non-assisted hydrogen-fueled flares for which EPA has data, the combustion emissions or "secondary emissions" avoided are estimated to be 25 tons per year of oxides of nitrogen, 136 tons per year of carbon monoxide, and 44,000 tons per year of carbon dioxide.
- ◆ Although EPA expects other facilities may benefit from today's action, and additional secondary emissions may be avoided, the Agency has no data on which

to base an estimate of the potential number of facilities which may choose to comply with the amended specifications.

BACKGROUND

- ◆ Flares are emission control devices that burn volatile organic compounds and volatile air toxics contained in a waste stream from a process. Non-assisted flares, which are also known as pipe flares, depend upon the turbulence created by the discharge of the waste gas to provide mixing with ambient air to achieve efficient combustion. The fuel used by the flare is dependent on the content of the waste stream from the process, typically organics including hydrocarbons, carbon monoxide, and trace organic air toxics.
- ◆ EPA's current specifications are based on testing performed on flares which combust waste gases that derive their heat content from organic constituents. Propane was the primary fuel for much of this testing.
- ◆ The DuPont Company sponsored a series of flare tests to determine if efficient combustion (i.e., destruction) of volatile organic compounds and volatile air toxics could be achieved using a hydrogen-fueled flare. The DuPont Company expected that hydrogen-fueled flares could achieve the same destruction efficiency as flares complying with existing specifications while providing capital and operating cost savings to the company.
- ◆ The testing demonstrated that hydrogen-fueled flares achieve the same emission reductions as current flare specifications (i.e. 98 percent or greater), and EPA believes the results of this testing are universally applicable to non-assisted hydrogen-fueled flares. Consequently, EPA decided to add these specifications to the general provisions.

WHAT WOULD THE AMENDMENTS REQUIRE?

- ◆ The amendments would require non-assisted hydrogen-fueled flares to meet the same emission reductions that are currently required for other types of flares (i.e., 98 percent or greater emission reduction). Sources would have the option to use the amended specifications rather than their current flare specifications if their waste streams contain sufficient hydrogen.

WHAT FLEXIBILITY DO THESE AMENDMENTS PROVIDE TO INDUSTRY?

- ◆ These amendments would provide an alternative to the current specifications for non-assisted flares for those owners or operators who have sufficient hydrogen content in their waste streams. Owners or operators would not be required to use these specifications and would only use them if costs could be reduced.

WHO WOULD BE AFFECTED BY THE AMENDMENTS?

- ◆ EPA currently knows of six flares, which are operated by the DuPont Company, that would benefit from the amended flare specifications.
- ◆ There are likely other companies who would be able to benefit by using the amended flare specifications, but EPA does not have any information on which to base an estimate of how many or what processes.

HOW MUCH WILL THE AMENDMENTS COST?

- ◆ The operational flexibility resulting from the amended flare specifications will result in a cost savings to facilities that choose to use them.
- ◆ For example, the DuPont Company will be able to meet specifications while saving the cost of a capital investment of \$3 to \$5 million dollars for larger capacity flares as well as a savings of about \$2.8 million dollars per year for natural gas required to comply with the current specifications.

FOR FURTHER INFORMATION

- ◆ Interested parties can download the direct final rule amendments from EPA's web site on the Internet under recent actions at the following address: (<http://www.epa.gov/ttn/oarpg>). For further information about the amendments, contact Robert Rosensteel of EPA's Office of Air Quality Planning and Standards at (919) 541-5608.
- ◆ EPA's Office of Air and Radiation's homepage on the Internet contains a wide range of information on the air toxics program, as well as many other air pollution programs and issues. The Office of Air and Radiation's home page address is: (<http://www.epa.gov/oar/>).