

Applicability of Effluent Guidelines and Standards to Research & Development Facilities

There are a variety of indicators that can assist Control Authorities and NPDES permitting authorities in determining the applicability of Effluent Guidelines and Standards (ELGs) to research and development (R&D) operations. This document summarizes the history of EPA's position on R&D facilities and includes a list of information regulators can apply to help determine whether the wastewater from a facility that conducts R&D should be subject to ELGs or categorical standards.

EPA was first tasked to address the applicability of categorical standards (focused on introductions of pollutants to publicly owned treatment works) to stand-alone R&D facilities (independent from production facilities) in 1985¹, and has clarified its position in correspondence, including a 1995 letter to the Sanitation Districts of Los Angeles County².

The applicability of ELGs as expressed in the regulations at 40 CFR 405-471 should be reviewed and reported in accordance with procedures outlined in 40 CFR § 122.21, 40 CFR § 403.6, 40 CFR § 403.12(b), and 40 CFR § 403.13. EPA has included R&D activities in its supporting analysis for relevant regulations. There are five ELGs that specifically discuss R&D activities in the administrative record or the regulatory text itself: **Organic Chemicals, Plastics, and Synthetic Fibers** (40 CFR Part 414), **Pharmaceutical Manufacturing Point Source Category** (40 CFR Part 439), **Pesticide Chemicals Category, Formulating, Packaging and Repackaging** (40 CFR Part 455), **Plastics Molding & Forming** (40 CFR Part 463) and **Pulp, Paper, and Paperboard Point Source Category** (40 CFR Part 430). Furthermore, the **Dental Office Point Source Category** (40 CFR Part 441) discusses processes performed at universities for research or training purposes. A Pretreatment Program Control Authority or NPDES permitting authority should consult materials associated with these regulations for a discussion on the appropriateness of applying the ELG or categorical standard to stand-alone R&D facilities in these industry categories.

Some facilities, particularly those reporting R&D activities, might conduct activities on site that are proprietary, experimental, or use emerging technologies and applications, which can cause challenges to pretreatment coordinators in determining the applicability to the corresponding industry effluent guideline. In some instances, these experimental or emerging industrial processes may differ materially from the industrial processes evaluated as the basis of the ELG such that they are outside the applicability scope of the ELG. Conducting proprietary or experimental operations is not sufficient basis to exempt all processes within a facility from the requirements of the Clean Water Act.

¹ United States Environmental Protection Agency (USEPA). 1985. *Pretreatment Implementation Review Task Force Final Report to Administrator*. January 30, 1985. <https://www.epa.gov/sites/default/files/2015-10/documents/owm0020.pdf>

² Silva, L. Keith, USEPA, to Kilgore, John D., Los Angeles County Sanitation Districts. January 3, 1995. Letter. <https://www.epa.gov/npdes/applicability-federal-categorical-pretreatment-standards-arias-research-associates-inc>

A Control Authority or NPDES permitting authority should consider all operations within an R&D facility and should request more information as needed to make the applicability of ELG and categorical standards determination. Some information that may assist the evaluator in determining the applicability of a categorical pretreatment standard to an operation include, but are not limited to:

- Whether the research facility is a stand-alone facility that does not provide the sale of goods or services using processes that match the regulatory applicability description in the ELG or categorical standard;
- Whether the facility exclusively uses experimental processes that differ substantively from the processes described in the applicability section of the corresponding ELG;
- Whether the facility engages in any processes that are otherwise covered by an ELG;
- Whether the pollutants of concern that the original ELG or standard intended to address are expected to be present in the resulting wastewater or are present in different quantities or concentrations than determined in the regulatory analysis.

To make the applicability determination, the Control Authority or NPDES permitting authority may request additional monitoring data, process diagrams, schedules for potential development of full scale (non-R&D) operations, etc., from the facility to determine whether the processes fall within the applicability criteria of the regulation. To be considered outside the scope of an ELG or categorical standard, processes at a stand-alone R&D facility should be novel and experimental in nature and differ substantively from the processes EPA evaluated. Under these circumstances, the ELG or categorical standard would not apply, because the wastewater quality or quantity may differ from the wastewater that EPA analyzed as the basis for the regulation.

There are situations, however, where processes that are materially the same as the process EPA intended to regulate through an effluent guideline or categorical standard are conducted at stand-alone R&D facilities. An example is an R&D facility that manufactures standard components (such as semiconductors) in-house that are then used by the facility in its experimental activities, or that is conducting bench scale testing before transitioning to commercial operations. Additionally, a university or training facility that trains students in standard, non-experimental processes that match the applicability requirements of an ELG may also meet the industry applicability criteria, even if there is no sale of goods or services. In these cases, a Control Authority or NPDES permitting authority should consider the indicators and information listed above in reviewing ELG applicability to the facility.

Where can I find more information?

More information on the ELGs and pretreatment program can be found on EPA's Industrial Effluent Guidelines website at <https://www.epa.gov/eg/industrial-effluent-guidelines> and EPA's National Pretreatment Program website at <https://www.epa.gov/npdes/national-pretreatment-program>.

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