

**UNITED STATES
DEPARTMENT OF ENERGY**



Comments On
*40 CFR 262, SUBPART K – STANDARDS APPLICABLE TO
ACADEMIC LABORATORIES*

Proposed Rule
(71 FR 29712; May 23, 2006)

**UNITED STATES DEPARTMENT OF ENERGY
COMMENTS ON
STANDARDS APPLICABLE TO GENERATORS OF HAZARDOUS WASTE;
SUBPART K – STANDARDS APPLICABLE TO ACADEMIC LABORATORIES**

**PROPOSED RULE
(71 FR 29712; May 23, 2006)**

GENERAL COMMENT

1. The U.S. Department of Energy (DOE) appreciates the opportunity to review and comment on the U.S. Environmental Protection Agency (EPA or the Agency) notice of proposed rulemaking (NPRM) regarding an alternative set of hazardous waste generator requirements for college and university laboratories. In general, DOE supports EPA's effort to provide a flexible approach that would allow certain laboratories to implement a more appropriate and effective method of regulatory compliance for their specific circumstances, without reducing protection of human health and the environment.

2. As is further explained in Specific Comment IV.B.1, item 1, the DOE complex includes a number of national laboratories which, like colleges and universities, (1) have a large number of independent points of generation located in many different individual laboratories throughout each facility, (2) generate highly variable waste streams many of which have relatively small volumes, (3) have many individuals involved in waste generation and management – a significant fraction of which are students, visiting scientists, and researchers (i.e., personnel with limited knowledge of hazardous waste characterization and regulation), and (4) have difficulty implementing certain Resource Conservation and Recovery Act (RCRA) hazardous waste regulations because the regulations were formulated for industrial settings that have different waste generation patterns. Accordingly, DOE supports expanding the scope of the proposed rule to give such government facilities the same alternatives for managing unwanted materials from laboratories as has been proposed for colleges and universities. DOE believes that allowing government facilities the option to utilize proposed Subpart K would improve hazardous waste determinations at such facilities, resulting in a more effective regulatory program that is protective of human health and the environment.

SPECIFIC COMMENTS

IV. Detailed Discussion of Today's Proposed Rule

IV.A Discussion of Proposed Definitions

1. **p. 29723, cols. 2 & 3** – The NPRM indicates that the term “laboratory” would be defined as follows in the new Subpart K: “An area within a college or university

where relatively small quantities of chemicals and other substances are used on a non-production basis for teaching or research purposes and are stored and used in containers that are easily manipulated by one person. An area where the same hazardous wastes are routinely generated, such as photo processing, is not a laboratory.”

If EPA decides to expand the scope of Subpart K to include national (government research and development) laboratories, as suggested in General Comment 2, DOE further suggests that the proposed definition of “laboratory” be modified in the following manner (**redline** = addition; **strikeout** = deletion):

An area within a college, ~~or~~ university, **or government facility** where ~~relatively~~ small quantities of chemicals and other substances are used on a non-production basis for teaching **and/or** research purposes and are stored and used in containers that are easily manipulated by one person. An area where the same hazardous wastes are routinely generated, such as photo processing, is not a laboratory.

2. **p. 29724, col. 3 – The NPRM states that the term “laboratory worker” will be defined in the new Subpart K regulations as follows: “A person who handles chemicals and/or unwanted materials in a laboratory and may include, but is not limited to faculty, staff, post-doctoral fellows, graduate students, interns, researchers, technicians, supervisors/managers, and principal investigators. A person does not need to be paid or otherwise compensated for his/her work in the laboratory to be considered a laboratory worker. Students in a supervised classroom setting are not laboratory workers.”**

- a. If EPA decides to expand the scope of Subpart K to include national (government research and development) laboratories, as suggested in General Comment 2, DOE further suggests that the definition of “laboratory worker” be modified to read as follows (**redline** = addition; **strikeout** = deletion):

A person who handles chemicals and/or unwanted materials in a laboratory and may include, but is not limited to faculty, staff, post-doctoral fellows, graduate students, interns, researchers, **visiting scientists**, technicians, supervisors/managers, and principal investigators. A person does not need to be paid or otherwise compensated for his/her work in the laboratory to be considered a laboratory worker. Students in a supervised classroom setting are not laboratory workers.

- b. DOE suggests that, if national laboratories are included in the scope of Subpart K, EPA should also consider excluding temporary, short-term laboratory personnel from the

definition of “laboratory workers” (for the same reasons that students are excluded). Like students, these persons would receive instruction relevant to their activities in the laboratory and would be under the direct supervision of a RCRA-trained laboratory worker. However, also like students, the large number of these persons and their short tenure would make it impracticable to provide them all with RCRA training in compliance with 40 CFR 264/265.16 for larger quantity generators or 40 CFR 262.34(d)(5)(iii) for small quantity generators. “Temporary, short-term laboratory personnel” could be defined as “persons (e.g., certain postdoctoral researchers, undergraduate and graduate students employed as interns, co-op students, and summer researchers) whose duration of employment (1) is fixed at 3 months or less, and (2) will be conducted under the direct supervision of a RCRA-trained laboratory worker.”

3. **p. 29725, cols. 2 & 3** – The NPRM states that the term “reactive acutely hazardous unwanted material” is defined in proposed Subpart K as follows: “an unwanted material that is one of the acutely hazardous commercial chemical products listed in §261.33(e) for reactivity and toxicity.” The NPRM further states that: “Only unused chemicals are considered commercial chemical products that could carry a ‘P-listed’ waste code. Once a reactive chemical that is on the P-list has been used, it is not considered a commercial chemical product. Therefore, it cannot be a reactive acutely hazardous unwanted material”

DOE requests clarification concerning whether a used container that once held a P-listed chemical and does not meet the criteria in 40 CFR 261.7(b)(3) for being “empty” would be a “reactive acutely hazardous unwanted material” under the proposed Subpart K regulations. If so, how is such a used container to be counted for the purpose of evaluating compliance with the 1-quart limit on accumulation of reactive acutely hazardous unwanted material? Would the volume of unwanted material be equal to the container size (e.g., 1 liter or 1 pint, etc.) or, alternatively, the estimated volume of residue present in the container?

IV.B Scope of Laboratories at Colleges or Universities Covered Under This Proposed Rule

IV.B.1 Laboratories in Colleges and Universities

1. **p. 29726, cols. 2 & 3** – The NPRM requests comment on whether the scope of the proposed rule should be expanded to include labs outside of colleges and universities. For example, this could include government and private laboratories that generate large numbers of different waste streams, each in relatively small quantities that are stored and used in containers that can be easily manipulated by one person.

- a. DOE supports expanding the scope of the proposed rule to give government facilities the same alternative for managing unwanted materials in laboratories as has been proposed for colleges and universities.

DOE is the steward of 17 Federally Funded Research and Development Centers, which are commonly referred to as national laboratories. These centers support the missions of science, energy, and national security programs. At many DOE national laboratories, a university or a team of entities that includes at least one college/university partner manages facilities that promote education and perform research and development in much the same manner as colleges and universities do. For the reasons discussed in items b and c, DOE believes that the hazardous waste generation patterns and management challenges of many facilities at its national laboratories are similar to those of college and university laboratories and should have the same regulatory compliance options.

- b. The following table, which indicates the number of full time equivalent, student, and visiting scientist/facility user employees during fiscal year 2005 at nine DOE national laboratories funded by DOE's Office of Science, illustrates the educational focus of these facilities.

**Distribution and Comparisons of Human Capital
at DOE's Office of Science National Laboratories During FY2005**

	Full Time Equivalent (FTE)	Student	Facility User/ Visiting Scientist	Ratio of Students to FTE	Ratio of Users/ Visiting Scientist to FTE
Ames	320	185	140	0.58	0.44
Argonne	2635	600	3500	0.23	1.33
Brookhaven	2696	1550	3250	0.57	1.21
Fermi National Accelerator	2085	602	2258	0.29	1.08
Lawrence Berkeley	3014	1418	3232	0.47	1.07
Oak Ridge	3974	1736	2478	0.44	0.62
Princeton Plasma Physics	408	35	119	0.09	0.29
Stanford Linear Accelerator	1532	100	3000	0.07	1.96
Thomas Jefferson National Accelerator	617	315	2200	0.51	3.57

Source: DOE. March 2006. *Department of Energy Laboratory Plans, FY 2007 – FY 2011*.
http://www.sc.doe.gov/National_Laboratories/DOE_Laboratory_Plans/DOE%20Lab%20Plans%20Final.pdf

- c. The Oak Ridge National Laboratory (ORNL) located at Oak Ridge, Tennessee is an example of a DOE national laboratory having characteristics similar to those of colleges and universities. The ORNL is a multi-program science and technology research facility managed for DOE by UT-Battelle, LLC. It has approximately 350 satellite accumulation areas for hazardous wastes, 15 to 20 generator storage facilities that hold hazardous wastes for 90 days or less, and numerous areas designated for the accumulation and management of non-hazardous wastes. All but about 50 of the satellite accumulation areas are associated with individual laboratories located on the ORNL site.

A majority of the laboratory-associated satellite accumulation areas at ORNL rarely generate/accumulate as much as 55 gallons of hazardous waste between pickups. They routinely generate multiple, highly variable waste streams in small containers (less than five gallons) that can be easily handled by one person. Occasionally, they also generate a small quantity (less than one quart) of P-listed waste. Under existing procedures, the generator contributing to a laboratory-associated satellite accumulation area submits a written request for removal of wastes to the ORNL waste management organization before the accumulated waste exceeds the allowable quantity established in 40 CFR 262.34(c). This typically occurs no more than once per year and sometimes more than a year passes between waste removal requests.

Many ORNL laboratories have collection bottles for the products of their experiments. Separate collection bottles are assigned to receive organic wastes, solvent wastes, corrosive wastes, and other wastes that typically have characteristics associated with hazardous waste. The total volume of material added to a collection bottle at any one time is approximately 100 milliliters or less, and it may take up to a year to fill the bottle. Under existing procedures, generators maintain records of additions to each bottle (or of their research inputs) in order to provide waste characterization data. Sampling and analysis of the contents of bottles is sometimes undertaken to confirm the characteristics present.

ORNL generated a total of 81 tons of hazardous and mixed wastes during 2005, including both laboratory and non-laboratory wastes, which is comparable to a college or university. Also, like a college or university, the bulk of these wastes were in the form of lab packs, ignitables, spent solvents, commercial chemicals (P- and U-listed), inorganic metals, reactives, oxidizers, and mixtures of used chemicals.

IV.C Specific Requirements Under the Alternative Regulations

IV.C.4 Training and Instruction Requirements

1. **pp. 29730, col. 3 and 29731, col. 1 -- The NPRM states that "laboratory workers" must receive "training" while students only require "instruction" needed to perform assigned functions and fulfill job or enrollment classification. The NPRM explains that "training" is more formalized than "instruction," and that EPA**

believes “instruction” constitutes familiarization or transference of knowledge to perform tasks and assignments in a safe and environmentally sound manner, but does not necessarily address such topics as regulatory requirements for chemical analyses, preparing containers for transport, and emergency response duties.

- As previously indicated in Specific Comment IV.A., item 2.b, DOE suggests that, if national laboratories are included in the scope of Subpart K, EPA should also consider excluding temporary, short-term laboratory personnel from the definition of “laboratory workers.” Like students, these persons would receive instruction relevant to their activities in the laboratory and would be under the direct supervision of a RCRA-trained laboratory worker. However, also like students, the large number of these persons and their short tenure would make it impracticable to provide them all with RCRA training in compliance with 40 CFR 264/265.16 for large quantity generators or 40 CFR 262.34(d)(5)(iii) for small quantity generators. “Temporary, short-term laboratory personnel” could be defined as “persons (e.g., certain postdoctoral researchers, undergraduate and graduate students employed as interns, co-op students, and summer researchers) whose duration of employment (1) is fixed at 3 months or less, and (2) will be conducted under the direct supervision of a RCRA-trained laboratory worker.”

IV.C.5 Removal Frequency of Unwanted Materials

1. **p. 29733, col. 1 – The NPRM explains that all unwanted materials must be routinely removed from laboratories at regular intervals specified in the Laboratory Management Plans. The regular intervals for routine removal cannot exceed 6 months in length.**

DOE notes that because *all* unwanted material must be removed during each scheduled pickup, at the time of a scheduled pickup, some unwanted material may have been awaiting the pickup for only a short time. DOE believes that, for such unwanted material, there may have been insufficient time for generators to assemble adequate characterization information for use in the waste determination at the central accumulation area. For this reason, DOE suggests that removal of *all* unwanted material during each scheduled pickup not be required. Instead, DOE requests that EPA consider adopting a system that mirrors the system used for Universal Wastes (40 CFR 273.15) for tracking the amount of time that unwanted materials are stored. Under such a system, a laboratory would be allowed to demonstrate the length of time that each container stores unwanted materials from the date the container first receives such materials. A limit of 6 months could then be placed on the time allowed for a container to remain in the laboratory from the time it first receives unwanted materials. This would prevent unwanted materials from being stored longer than 6 months while improving the availability of characterization information for each container before its required removal date.

IV.C.10 Laboratory Clean-Outs

1. **p. 29739, col. 1** – The NPRM states that “All records pertaining to laboratory clean-outs must be maintained for as long as the college or university” operates under the new Subpart K.

DOE notes that the proposed regulatory text [40 CFR 262(a)(3); 71 FR 29751, col. 3] indicates that colleges and universities must maintain records related to a laboratory clean-out “for a period of three years from the date the clean-out ends,” rather than “for as long as the college or university operates under” the new Subpart K, as stated on page 29739. DOE suggests that the final rule clarify that the retention period for laboratory clean-out records is three years, as stated in the proposed regulatory text.

Proposed Regulatory Text

1. **p. 29749, cols. 2 & 3** – EPA proposes that §§262.203(a) and 262.204(a) begin with the following phrase: “A college or university must notify the appropriate *EPA Regional Administrator* in writing that it is electing to ...” (emphasis added).

DOE suggests that the above-quoted phrase be modified in the text of the final rule to read as follows: “A college or university must notify the Director (as defined in 40 CFR 270.2) in writing that it is electing to ...”. This change would make the language of §§262.203 and 262.204 in the final rule consistent with the language in other RCRA hazardous waste regulations that may be implemented by authorized States. If the term “EPA Regional Administrator” is used in the final rule, it will suggest that colleges and universities must notify the EPA Regional Administrator as indicated in §§262.203 and 262.204, whether or not the State in which they are located has been authorized to implement 40 CFR 262, Subpart K.