

HAZARDOUS WASTE GENERATOR IMPROVEMENTS RULE:

THE IOWA STATE UNIVERSITY EXPERIENCE

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Objectives

- ▶ Introduction
- ▶ Important new provisions and changes to the old rule
- ▶ Iowa State University's participation in Rule Making
- ▶ Iowa State University's experience implementing the New Rule

Iowa State University at a Glance

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ISU at a Glance

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36,660

Total enrollment
2016-2017 school year



5.6 Million

Net assignable
square feet



11,472 acres

Land Owned



3.4 Million

Residence Halls
(gross sq. ft.)

ISU at a Glance

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\$1.3 Billion

Total budget
2015-2016



\$760 Million

Total endowment funds



18.4%

State appropriation



\$426 Million

Sponsored funding
2015-2016

Resource Conservation and Recovery Act (RCRA)

- ▶ RCRA was enacted by Congress in 1976 and regulates the management of solid waste (e.g., garbage), hazardous waste, and underground storage tanks holding petroleum or certain other chemicals.

RCRA Program Goals

- ▶ To protect human health and the environment from the potential hazards of waste disposal.
- ▶ To conserve energy and natural resources.
- ▶ To reduce the amount of waste generated.

In 2004, EPA conducted an evaluation of the generator program

- ▶ ANPRM (April 22, 2004, 69 FR 21800)
- ▶ Four public meetings soliciting comment on the effectiveness of the generator program



Comments included:

- ▶ Simplify the regulations
- ▶ Eliminate cross-referencing
- ▶ Provide one-pager basic information for contingency planning

History of the Rule

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After 2004, EPA took a number of non-regulatory actions to respond to public comments and to improve the generator program:

- ▶ Improved website
- ▶ Developed online guide “Hazardous Waste Generator Regulations”
- ▶ Released “Closed Container” guidance
- ▶ Issued a Technical Corrections

Proposed rule on September 25, 2015

- ▶ Presented more than 60 proposed changes
- ▶ Presented more than 30 technical corrections
- ▶ Public comments were due December 24, 2015

Over **230** public comments were received on the Generator Improvements Proposed Rule

The commenters included:

- ▶ 25 states
- ▶ 10 local governments
- ▶ More than 50 from academic institutions
- ▶ About a dozen from the energy sector/utilities
- ▶ More than 25 from industry and related trade associations
- ▶ 10 from the waste management industry

Comments covered all aspects of the rule

- ▶ Waste determinations
- ▶ Marking and labeling
- ▶ Independent requirements and conditions for exemption

History of the Rule

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- ▶ Final Rule Published November 28, 2016
- ▶ Over 60 rule changes
- ▶ Over 30 technical edits
- ▶ Many “we always meant” comments in preamble
- ▶ Iowa State University referenced on page 85765

Federal Register / Vol. 81, No. 228 / Monday, November 28, 2016 / Rules and Regulations 85765

proposed and final SAA regulations.⁵⁹ As stated in the record, “Originally, the Agency had proposed to use 72 hours as the time limit but realized that determining when 72 hours had elapsed would have required placing both the date and time of day on containers. In the final rule the Agency switched to using three days as that generation only need to date containers that hold the excess of 55 gallons of non-acute hazardous waste” (1 quart of acute hazardous waste).⁶⁰ The Agency was simply proposing to clarify long-standing existing policy on the issue of what “three days” meant, as it is used in the SAA regulations. Comments on this issue were mixed, with some commenters supporting the

maximum volume has been, until this rulemaking, 1 quart. When the SAA regulations were finalized in 1984, EPA explained that 35 gallons was selected for non-acute hazardous waste in part because it is the size of the most commonly used accumulation containers.⁶¹ EPA also explained in that final SAA rule that 1 quart was chosen for acute hazardous waste because it is the volumetric equivalent of 1 kilogram of acute hazardous waste used elsewhere in the regulations⁶² and that commenters expressed opposition to using a weight measure. Since then, however, stakeholders have indicated that the 1-quart volume maximum is not a practical way to measure the accumulation of some wastes,

that are liquids have a maximum volume of 1 quart and acute hazardous wastes that are solids have a maximum mass of 1 kg (or 2.2 lb). The maximum thresholds for acute hazardous wastes are not intended to be additive, so in cases where a generator has both liquid and solid acute hazardous waste accumulating in an SAA, the 1 kg or 2.2 lb limit will be applied. In contrast, for non-acute hazardous waste, commenters indicated that the existing volumetric accumulation limit of 55 gallons for SAA is sufficient and that it is not necessary to add a mass equivalent. Therefore, for non-acute hazardous waste, 55 gallons will remain the only unit for measuring maximum accumulation limits in SAA. EPA

⁵⁹ Though this is only a rough equivalent, as 1 quart is an English unit and 1 kg is a metric unit. Further, as one commenter noted, whether 1 quart (or liter) is equivalent to 1 kg depends on the density of the waste (Iowa State University, EPA-HQ-RCRA-2012-0121-0099).

use “single consecutive calendar days.”
4. Providing a Maximum Weight for the Accumulations of Acute Hazardous Waste in Containers (60 FR 282,135(a)).
The SAA regulations impose a maximum volume of hazardous waste that may be accumulated in an SAA without a permit or interim status, or complying with the central accumulation area standards for S2Gs or LQGs. For non-acute hazardous waste, the maximum volume is 55 gallons. For acute hazardous waste, the

allowing a generator to choose which unit to use, we should specify in the regulations that the 1 quart maximum for acute hazardous waste in an SAA should apply to liquids and the 1 kg maximum for acute hazardous waste in an SAA should apply to solids. We agree with those commenters and we are revising the final regulatory language for SAA so that acute hazardous wastes

§ 262.106(f)(2) stated that “within the maximum volume are generated in an SAA, a generator ‘must, with respect to that amount of acute waste, comply within 15 days with paragraph (a) of this section or other applicable provisions of this chapter.’” The Agency proposed to revised that regulation in order to more clearly state the generator’s options for managing the materials that exceed the limit. The

⁵⁹ 60 FR 282,135(a).
⁶⁰ 60 FR 282,135(a).
⁶¹ 49 FR 282,135(a).
⁶² 49 FR 282,135(a).

⁶¹ Memorandum from Robert Springer, Director of EPA’s Office of Solid Waste, to EPA Regional Directors, “Proposed Action Decision, Hazardous Waste Accumulation Area,” March 12, 2004, RCRA Online 1470.
⁶² Memorandum from Robert Springer, Director of EPA’s Office of Solid Waste, to EPA Regional Directors, “Proposed Action Decision, Hazardous Waste Accumulation Area,” March 12, 2004, RCRA Online 1470.

FEDERAL REGISTER VOL. 81,
NO.228, NOVEMBER 28, 2016

- ▶ New Generator Status
 - ▶ Reorganized Generator Programs into one location in the Rules – 40 CFR part 262
 - ▶ Elaborated on and clarified Hazardous Waste Determinations
 - ▶ Revamped Recordkeeping and Reporting Requirements
 - ▶ Clarified Markings and Labeling



Rule Implementation on Campus

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- ▶ Reviewed all 369 pages of the new Rule
- ▶ Invited EPA Region VII for discussions
- ▶ Noted all areas where changes were needed
- ▶ Communicated the Plan within EH&S and Campus
- ▶ Developed a schedule for making the changes
- ▶ Assigned responsibilities for developing materials needed to facilitate the changes
- ▶ Implemented Rollout of the New Management Scheme



The 4 Ls

- ▶ Lid
- ▶ Label
- ▶ Leaks
- ▶ Location

Hazardous Waste Satellite Accumulation Area

IOWA STATE UNIVERSITY
Environmental Health and Safety

For emergencies, dial 911. Clean up small spills *immediately*.

Lid

- Close the container so it won't spill if tipped over (no foil, parafilm, etc.)
- Vent as necessary to prevent overpressure
- Remove funnel after use

Label

- Label the container "Hazardous Waste"
- Identify the hazards, such as flammable, corrosive, toxic, etc.
- Describe the contents
- Spell out abbreviations

Leaks

- Use waste containers that are compatible with the contents
- Segregate incompatible materials
- Use secondary containment to capture leaks
- Maintain your spill kit with appropriate materials; restock after each use

Location

- Keep waste in the room where it was created
- Dispose of waste containers at least every 90 days
- Contact EH&S immediately if you have 55 gallons of hazardous waste or 1L of acutely toxic waste

Environmental Health & Safety
2408 Wanda Daley Drive
Ames, IA 50011-3602

515.294.5359
ehsinfo@iastate.edu
<http://apps.ehs.iastate.edu/waste-rem>



Lid

- ▶ Ensure container is closed
- ▶ Vent container as necessary to avoid over pressurization
- ▶ Remove funnel after use



Label

- ▶ Label container
- ▶ Identify the hazards
- ▶ Describe the contents
- ▶ Spell out abbreviations

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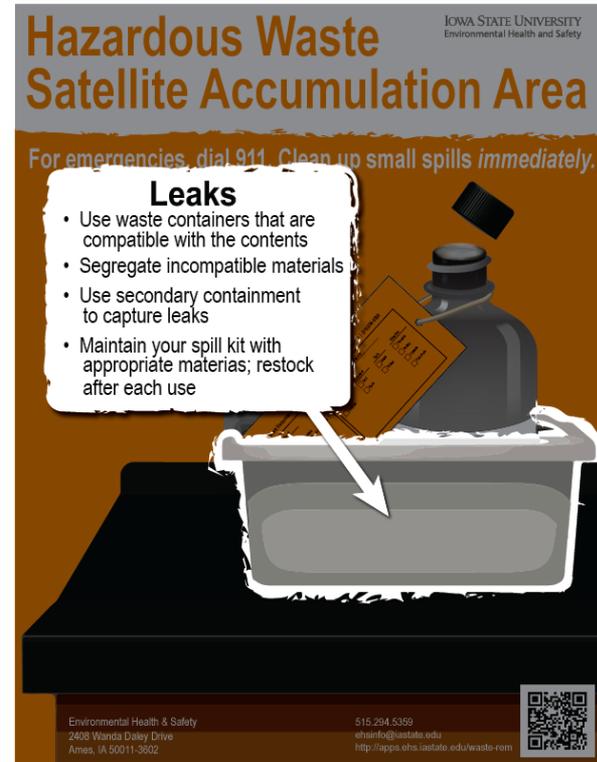
Environmental Health & Safety
2400 Wanda Daley Drive
Ames, IA 50011-3002

515.294.5359
ehsinfo@iastate.edu
http://regis.ehs.iastate.edu/waste-rem



Leaks

- ▶ Use containers compatible with contents
- ▶ Segregate incompatible materials
- ▶ Deploy secondary containment to capture leaks
- ▶ Maintain a spill kit in the area



The poster is titled "Hazardous Waste Satellite Accumulation Area" and is from Iowa State University's Environmental Health and Safety department. It features a central illustration of a dark bottle with a label and a black cap, placed inside a white secondary containment tray. A white callout box with a jagged edge is overlaid on the image, containing the word "Leaks" in bold and a bulleted list of instructions. The background is a dark brown color with a white border at the top and bottom. A QR code is located in the bottom right corner.

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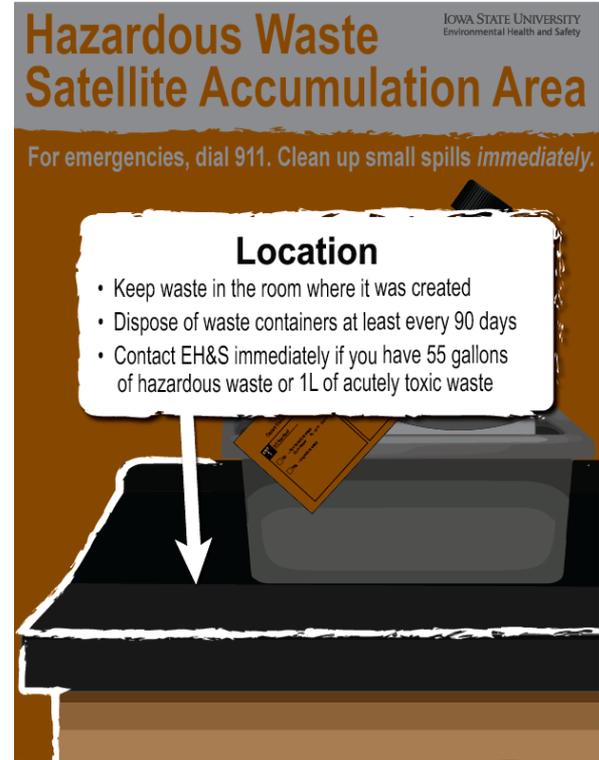
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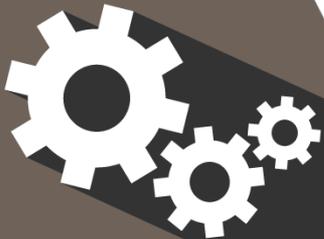


Location

- ▶ Keep waste in the room where generated
- ▶ Have waste containers removed at least every 90 days
- ▶ Contact EH&S immediately if you have 55 gallons of hazardous waste or 1 liter of acutely toxic wastes



- ▶ EPA Region VII agrees with ISU that there is nothing “quick” about 1,800 “quick reference guides.”
 - ▶ ISU Proposed a generic one-page guide for SAAs.
 - ▶ EPA requested a list of buildings that have SAAs.
 - ▶ Has not been tested in an inspection.



Quick Reference Guide

- ▶ Types of hazardous waste
- ▶ Maximum amount of hazardous waste
- ▶ Unique hazards
- ▶ SAA locations
- ▶ Map/Evacuation routes
- ▶ Fire hydrants
- ▶ On-site notification systems
- ▶ Emergency Coordinator



“



Rollout at ISU

ORANGE is the new GREEN

”

Out with the OLD Tag and SAA Sign

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Waste Description Tag
Environmental Health and Safety
(515) 294-5359
www.ehs.iastate.edu

Material Number: 1 Quantity (kg or liter) 2L
Start Date 6-15-16 *Remove by 9-5-16

**ISU policy requires the removal of waste from satellite accumulation areas within 90 days.*

Satellite Accumulation Area 12/2

Generator (print name) Jane Smith Department Chemistry
Campus Address 0376 Gilman Campus Phone 5-5555

*Please fill out all the information on the reverse side.
Use the information contained on this tag to complete a Waste Removal Form.*

Circle all of the following that are present in the waste:

Arsenic Barium Cadmium Chloroform Chromium Lead Mercury Selenium Silver

Chemical Description of Waste (list all components not circled above)

IOWA STATE UNIVERSITY
OF SCIENCE AND TECHNOLOGY

Hazardous Waste Satellite Accumulation Area*

For large chemical spills or emergencies, call 911
For small chemical spills, call EH&S at (515) 294-5359

Accumulation Area Requirements

- ✓ Containers must be
 - **Tightly sealed** at all times, except during transfers
 - **Compatible** with contents
 - In **good condition**
- ✓ Segregate containers by compatibility
 - Use secondary containment trays for segregation.
- ✓ No more than 55 gallons of hazardous waste or more than 1 quart of acutely hazardous waste may be accumulated.
- ✓ Waste containers must be electronically submitted to and collected by EH&S within 90 days of the waste accumulation start date.

Labeling Requirements

- ✓ Complete and attach a green EH&S waste tag.
- Be sure to include the date when waste was first placed in the container.
- ✓ Each container must be labeled with the full name of the chemical contents.
 - Abbreviations or chemical formulas are not acceptable.

Visit EH&S online at www.ehs.iastate.edu to submit your waste for removal.

*The Satellite Accumulation Area must be at or near the point of waste generation. Post this sign in each area where hazardous waste is accumulated. Do not transfer waste from room to room. Contact EH&S to establish additional Satellite Accumulation Areas when necessary.

SAA#

Environmental Health and Safety | 2809 Daley Drive | Ames, IA 50011-3680 | Ph: (515) 294-5359 | www.ehs.iastate.edu

In with the NEW Tag and SAA Sign

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<p>STEP 3 Complete Generator Information</p> <p>Material Number (for laboratory use):</p> <p>Quantity (kg or liter):</p> <p>Building / Room Number:</p> <p>Department:</p> <p>Contact Info:</p>	<p>STEP 4 Describe the Contents (spell out full chemical name, concentration, etc.)</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>
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Waste Description Tag
Contact Environmental Health and Safety | <http://apps.ehs.iastate.edu/waste-rem> | (515) 294-5359

<p>STEP 1 Is it hazardous?</p> <p><input type="checkbox"/> Yes — Hazardous waste (Go to Step 2) →</p> <p><input type="checkbox"/> No — Non-hazardous waste (Skip to Step 3) ↘</p>	<p>STEP 2 If hazardous, check all that apply refer to safety data sheet or container label</p> <table border="0"> <tr> <td><u>Ignitable</u></td> <td><u>Corrosive</u></td> <td><u>Toxic</u></td> <td><u>Reactive</u></td> </tr> <tr> <td><input type="checkbox"/> Flammable</td> <td><input type="checkbox"/> Acid</td> <td><input type="checkbox"/> Metal</td> <td><input type="checkbox"/> Peroxide</td> </tr> <tr> <td><input type="checkbox"/> Oxidizer</td> <td><input type="checkbox"/> Base</td> <td><input type="checkbox"/> Poison</td> <td><input type="checkbox"/> Sulfide</td> </tr> <tr> <td></td> <td></td> <td></td> <td><input type="checkbox"/> Cyanide</td> </tr> <tr> <td></td> <td></td> <td></td> <td><input type="checkbox"/> Pyrophoric</td> </tr> </table> <p><input type="checkbox"/> Other (describe) _____</p>	<u>Ignitable</u>	<u>Corrosive</u>	<u>Toxic</u>	<u>Reactive</u>	<input type="checkbox"/> Flammable	<input type="checkbox"/> Acid	<input type="checkbox"/> Metal	<input type="checkbox"/> Peroxide	<input type="checkbox"/> Oxidizer	<input type="checkbox"/> Base	<input type="checkbox"/> Poison	<input type="checkbox"/> Sulfide				<input type="checkbox"/> Cyanide				<input type="checkbox"/> Pyrophoric
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Hazardous Waste Satellite Accumulation Area

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Program development

December 2016 – February 2017

Training of EH&S staff

March – April 2017

Training of waste generators

April – May, 2017 into the future

Program rollout

May 30, 2017





Conclusion

- ▶ **No** real issues since roll out
- ▶ **No** negative reaction or push back from the campus community
- ▶ **No** compliance inspection so far from the EPA
- ▶ If all else fails, we will return to **Subpart K**

Main generator website: <https://www.epa.gov/hwgenerators>

Generator Improvements Rule website:
<https://www.epa.gov/hwgenerators/final-rule-hazardous-waste-generator-improvements>

EPA plans to add FAQs, a map showing when states adopt the new rule, and other implementation materials as needed.



The End

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