



Technical Safety



RADIATION PROCEDURES MANUAL

Procedure Cover Sheet

Procedure Title: National Emission Standards for Hazardous Air Pollutants for Radionuclides (Rad NESHAPs)

Procedure Number: TSO-08-10-Rev 1

Effective Date: September 1, 2008

Approved By:  Date: 19 May, 2009
Technical Safety Office Director



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A. INTRODUCTION

From the Rad NESHAPs webpage
(<http://www.epa.gov/radiation/neshaps/>)

Hazardous air pollutants are pollutants that cause or may cause cancer or other serious health problems, such as reproductive effects or birth defects, or adverse environmental and ecological effects. Radionuclides are among those pollutants.

The Clean Air Act requires the EPA to regulate airborne emissions of hazardous air pollutants (HAPs) (including radionuclides) from a specific list of industrial sources called "source categories." Each source category that emits radionuclides in significant quantities must meet technology requirements to control them and is required to meet specific regulatory limits. These standards are the National Emission Standards for Hazardous Air Pollutants for Radionuclides (Rad NESHAPs).

Idaho State University falls under 40 CFR part 61, subpart I, *National Emissions Standards for Radionuclide Emissions From Facilities Licensed by the Nuclear Regulatory Commission and Facilities Not Operated by the Department of Energy.*

From the Rad NESHAPs webpage
(<http://www.epa.gov/radiation/neshaps/subparti/index.html>)

Subpart I limits radionuclide emissions to the ambient air based on two criteria:

- 1. the annual effective dose equivalent (ede) to any individual must not exceed 10 millirem (mrem)*
- 2. the annual ede from radioiodine must not exceed 3 mrem*

Owners or operators of these facilities must use the COMPLY computer model to calculate EDE or obtain approval from EPA to use other models.

ISU is exempt from the requirement to *submit* the report to the EPA, under 40 CFR 61.108 but is required to demonstrate compliance with 10 CFR 20.1101(d), which provides a 10 mrem/year limit for the general public. The report must be done and filed with the TSO by the deadline of March 31st of the following year, demonstrating compliance using the COMPLY code or other code approved by the EPA.

B. PURPOSE

The purpose of this procedure is to describe what is required to properly complete the NESHAPS report, as well as what must be included in the report.

C. REQUIRED MATERIAL(S)

COMPLY code

Inventory of the TSO rad shed and any other inventories of dispersible radioactive material.

D. PROCEDURE

COMPLY Code

The COMPLY code is a simple DOS-based program which calculates the effective dose equivalent (EDE) to those living and working near the 'stacks' of dispersible radioactive materials.

The program requires you to know:

- The total activity of each radionuclide, as well as its physical state (solid, liquid, gas)
- The distance to the nearest dairy farm
 - *Approximately 8,000 meters
- The distance to the nearest meat farm
 - *Approximately 8,000 meters
- The distance to the nearest vegetable garden
 - *The nearest resident to the exhaust point
- The distance to the nearest receptor (person)
 - *Approximately 40 meters

*All distances given are reference values taken from the 2007 Rad NESHAPS report.

The program, once given all required information, will tell the user whether or not they are in compliance.

NOTE: The COMPLY computer software includes four levels of complexity. A user can demonstrate compliance at any level. Level 1 requests the least amount of information, however "worst case" assumptions are used in the dose estimate. Level 4 requests the most information and uses site specific data instead of assuming the worst.

NESHAPS REPORT

Typically included in the NESHAPS report is:

- Introduction: Explaining the purpose of the report, why it is required (with reference to proper regulations)
- Section on NESHAPS Worksheet A from EPA 520/1-89-002, *A Guide for Determining Compliance With the Clean Air Act Standard for Radionuclides Emissions From NRC-Licensed and Non-DOE Federal Facilities*
- Section explaining the COMPLY code input parameters and output results
- Summary

The appendix to this procedure includes a sample NESHAPS report.

REFERENCES

Rad NESHAPS. United States Environmental Protection Agency. Available at: <http://www.epa.gov/radiation/neshaps/index.html>. Accessed 14 April, 2008.



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REVISION TRACKER

Revision 1	September 1, 2008	Original Procedure
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