

*Changes in the Estimates:* There is an increase in burden of 7,015 hours from the most recently approved ICR, due primarily to the assumption that there will be approximately 105 new sources each year that will become subject to this rule and, therefore, will be required to submit the appropriate notifications and conduct performance tests. As in the active ICR, we have assumed that there will be a number of existing sources (*i.e.*, 140 facilities) conducting modifications of their facilities and, therefore, will be required to submit appropriate notifications and conduct performance tests.

There are no annualized capital and operations and maintenance costs for this ICR because the rule does not require the use of continuous emission monitoring equipment, as stated in the active ICR.

The use of updated higher labor rates and the inclusion of managerial and clerical labor categories in the burden calculation also affected both industry and the Federal government costs for complying with the recordkeeping and reporting requirements of the rule. We also deleted any burden associated with the Agency conducting inspection activities, such as travel costs and labor burden, which are activities that are exempt under the Paperwork Reduction Act. These changes resulted in a decrease in the Federal Government burden even when the number of sources submitting reports increased significantly, as discussed above.

Dated: February 7, 2006.

**Oscar Morales,**

*Director, Collection Strategies Division.*

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## ENVIRONMENTAL PROTECTION AGENCY

[EPA-HQ-OAR-2002-2005; FRL-8034-3]

### National Emission Standards for Hazardous Air Pollutants (Radionuclides), Availability of Updated Compliance Model

**AGENCY:** Environmental Protection Agency (EPA).

**ACTION:** Notice of availability.

**SUMMARY:** Pursuant to section 112 of the Clean Air Act, the Environmental Protection Agency is announcing the availability of Version 3 of the CAP88-PC model used to demonstrate compliance with the National Emission Standards for Hazardous Air Pollutants (NESHAPs) applicable to radionuclides. CAP88-PC is approved for this use by

EPA. Version 3 includes an expanded library of radionuclides and incorporates updated radionuclide risk conversion factors. Hence, it is recommended that Version 3 be used for future compliance demonstrations.

**FOR FURTHER INFORMATION CONTACT:**

Behram Shroff, Office of Radiation and Indoor Air, Radiation Protection Division (6608J), U.S. Environmental Protection Agency, 1200 Pennsylvania Ave., NW, Washington, DC 20460-0001; telephone number: (202) 343-9707; fax number: (202) 343-2304; e-mail address: [shroff.behram@epa.gov](mailto:shroff.behram@epa.gov).

**SUPPLEMENTARY INFORMATION:**

#### I. General Information

##### A. Does This Action Apply to Me?

You may be potentially affected by this action if you are subject to the reporting requirements for radionuclide NESHAPs found in 40 CFR part 61, subpart H. This subpart applies to Department of Energy (DOE) facilities.

##### B. How Can I Get Copies of the Model and Related Information?

1. *Docket.* EPA has established a docket for this action under Docket ID No. EPA-HQ-OAR-2002-0050; FRL-XXXX-X. Publicly available docket materials are available either electronically through <http://www.regulations.gov> or in hard copy at the Air and Radiation Docket in the EPA Docket Center (EPA/DC), EPA West, Room B102, 1301 Constitution Ave., NW., Washington, DC. The EPA Docket Center Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Public Reading Room is (202) 566-1744, and the telephone number for the Air and Radiation Docket is (202) 566-1742.

2. *Electronic Access.* You may access this **Federal Register** document electronically through the EPA Internet under the "**Federal Register**" listings at <http://www.epa.gov/fedrgstr/>.

3. *EPA Web site.* You may download the CAP88-PC model and documentation from EPA's Web site at <http://www.epa.gov/radiation/assessment/CAP88/index.html>.

#### II. Background

On October 31, 1989, EPA promulgated the National Emission Standards for Hazardous Air Pollutants (NESHAPs) under Section 112 of the Clean Air Act to control radionuclide emissions to the ambient air from a number of different source categories (54 FR 51654, December 15, 1989 (Docket EPA-HQ-OAR-2002-0050, Item 0028)). Subpart H of 40 CFR part

61 is one of the source categories covered in this 1989 final rule. Facilities owned and operated by the Department of Energy (DOE) are covered by subpart H. DOE administers many facilities, including government-owned, contractor-operated facilities across the country. Some of these DOE facilities handle significant amounts of radioactive material and can emit radionuclides into the air in various physical and chemical states. The purpose of subpart H is to limit radionuclide emissions (not including radon) from the stacks and vents at DOE facilities so that no member of the public receives an effective dose equivalent of more than 10 millirem per year (mrem/yr).

#### III. CAP88-PC Model for Demonstrating Compliance

##### A. CAP88-PC Model History

EPA is today announcing the availability of Version 3 of the CAP88-PC model for use in demonstrating compliance with the requirements of 40 CFR part 61, subpart H. CAP88 (Clean Air Act Assessment Package—1988) (Docket EPA-HQ-OAR-2002-0050, Items 0033 through 0036) is a set of computer programs, databases and associated utility programs for estimation of dose and risk from radionuclide emissions to air. CAP88-PC implements, on the personal computer platform, modified versions of the AIRDOS-EPA and DARTAB codes that were written in FORTRAN 77 and executed in a mainframe computing environment. CAP88-PC provides for dose and risk assessments of collective populations, maximally-exposed individuals, and selected individuals. The complete set of dose and risk factors is provided.

The original CAP88-PC software package, Version 1.0 (Docket EPA-HQ-OAR-2002-0050, Items 0040 and 0041), allowed users to perform full-featured dose and risk assessments in a DOS environment for the purpose of demonstrating compliance with 40 CFR 61.93(a); it was approved for compliance demonstration in February 1992.

CAP88-PC Version 2.0 (Docket EPA-HQ-OAR-2002-0050, Items 0042 and 0043) provided a framework for developing inputs to perform full-featured dose and risk assessments in a Windows environment for the purpose of demonstrating compliance with 40 CFR 61.93(a). Version 2.0 was approved for compliance demonstration in 1999. Version 2.1 included some additional changes compared to the DOS version and the previous Windows version, 2.0.

The changes included the addition of more decay chains, improvements in the Windows code error handling, and a modified nuclide data input form. Section 1.6 of the CAP88-PC Version 3 User's Guide (Docket EPA-HQ-OAR-2002-0050, Item 0047) provides a summary of the changes incorporated into Version 2.1 relative to Version 2.0.

CAP88-PC Version 3.0 is a significant update to Version 2.1. Version 3 incorporates dose and risk factors from Federal Guidance Report 13, "Cancer Risk Coefficients for Environmental Exposure to Radionuclides" (FGR 13, Docket EPA-HQ-OAR-2002-0050, Items 0037 through 0039, also available at <http://www.epa.gov/radiation/federal/techdocs.htm>), in place of the RADRISK data that was used in previous versions. The FGR 13 factors are based on the methods in Publication 72 of the International Commission on Radiological Protection (ICRP), "Age-Dependent Doses to Members of the Public from Intake of Radionuclides". In addition, the CAP88-PC database, the user interface, input files, and output files, were modified to accommodate the FGR 13 data formats and nomenclature. Section 1.7 of the CAP88-PC Version 3 User's Guide (Docket EPA-HQ-OAR-2002-0050, Item 0047) describes the modifications incorporated into Version 3 relative to Version 2.1.

#### B. CAP88-PC Model Summary

All versions of CAP-88 PC use a modified Gaussian plume equation to estimate the average dispersion of radionuclides released from up to six types of sources. The sources may be either elevated stacks, such as a smokestack, or uniform area sources, such as a pile of uranium mill tailings. Plume rise can be calculated assuming either a momentum or buoyant-driven plume. Assessments are made for a circular grid of distances and directions for a radius of up to 80 kilometers (50 miles) around the source. The Gaussian plume model produces results that agree with experimental data as well as any model, is fairly easy to work with, and is consistent with the random nature of turbulence. Site specific information on population locations and meteorological conditions are provided to CAP88-PC as input files developed by the user. The formats for these input files have not changed from the original mainframe version of the CAP88 code package.

There are a few differences between CAP88-PC and earlier mainframe versions. When performing population dose assessments, CAP88-PC uses the distances in the population array to determine the sector midpoint distances where the code calculates

concentrations. When an individual assessment is run, the sector midpoint distances are input by the user on the Run Option tab form. CAP88-PC only uses circular grids, whereas the mainframe version allowed users to define a square grid. Also, direct user input of radionuclide concentrations in each sector is not an option in CAP88-PC.

CAP88-PC is also modified to do either "Radon-only" or "Non-Radon" runs to conform to the format of the 1988 Clean Air Act NESHAPs Rulemaking. "Radon-only" assessments, which only have Rn-222 in the source term, automatically include working level calculations; any other source term ignores working levels. When performing "Radon-only" runs, CAP88-PC has the capability to vary the equilibrium fractions for the Radon daughters based on the distance from the source; previously the equilibrium fractions were set to a constant of 0.7. Synopsis reports customized to both "Radon Only" and "Non-Radon" formats are automatically generated. Input of any additional radionuclides, even Rn-220, will cause CAP88-PC to omit working level calculations. Version 3 has not changed the "Radon Only" methodology relative to the previous Versions 2.0 and 2.1.

The calculation of deposition velocity and the default scavenging coefficient in CAP88-PC is defined by current EPA policy. Deposition velocity is set to  $3.5 \times 10^{-2}$  (0.035) m/sec for Iodine,  $1.8 \times 10^{-3}$  (0.0018) m/sec for particulate, and 0.0 m/sec for gas. The default scavenging coefficient is calculated as a function of annual precipitation, which is input on the Meteorological Data tab form. Version 3 has not modified these calculations.

Organs and weighting factors have been modified in Version 3 to follow the FGR 13 method. In accordance with the FGR 13 dose model, the code now calculates dose for twenty-three (23) internal organs, rather than the seven (7) organs used in earlier versions. A twenty-fourth organ is also calculated, which is the total effective dose equivalent. The code now reports cancer risk for the fifteen (15) target cancer sites used in FGR 13. As was the case in Version 2, changing the organs and weights will invalidate the results.

#### C. Validation of the CAP88-PC Model

The CAP88-PC programs represent one of the best available validated codes for the purpose of making comprehensive dose and risk assessments. The Gaussian plume model used in CAP88-PC to estimate dispersion of radionuclides in air is one

of the most commonly used models in government guidebooks. It produces results that agree with experimental data as well as any model, is fairly easy to work with, and is consistent with the random nature of turbulence. Version 3 has not modified the basic Gaussian plume algorithm used by the AIRDOS module of CAP88-PC, and comparison of cases between Versions 2 and 3 has shown no significant changes in the dispersion calculations.

The Office of Radiation and Indoor Air has made comparisons between the predictions of annual average ground-level concentration to actual environmental measurements and found very good agreement. In the paper "Comparison of AIRDOS-EPA Prediction of Ground-Level Airborne Radionuclide Concentrations to Measured Values" (Docket EPA-HQ-OAR-2002-0050, Item 0048), environmental monitoring data at five DOE sites were compared to AIRDOS-EPA predictions. EPA concluded that the concentrations predicted by AIRDOS-EPA are in substantial agreement to the measured concentrations, within an acceptable uncertainty level.

#### D. Limitations of the CAP88-PC Model

Like all models, there are some limitations in the CAP88-PC system. While up to six stack or area sources can be modeled, all the sources are modeled as if located at the same point; that is, stacks cannot be located in different areas of a facility. The same plume rise mechanism (buoyant or momentum) is used for each source. Also, area sources are treated as uniform. Variation in radionuclide concentrations due to complex terrain cannot be modeled. Errors arising from these assumptions will have a negligible effect for assessments where the distance to exposed individuals is large compared to the stack height, area or facility size.

Dose and risk estimates from CAP88-PC are applicable only to low-level chronic exposures, since the health effects and dosimetric data are based on low-level chronic intakes. CAP88-PC cannot be used for either short-term or high-level radionuclide intakes.

These limitations, common to all versions of CAP88, have not changed in Version 3.

#### E. Summary of CAP88-PC Changes From Version 2.1 to Version 3

Version 3 of CAP88-PC is a significant update to Version 2.1. The most significant change is the incorporation of the FGR 13 dose and risk factors. FGR 13 includes both dose and risk factors for 825 isotopes rather

than the 265 previously available. The decay chains for these 825 isotopes are now modeled using a full implementation of the Bateman decay equations to replace the predefined decay chains in previous versions. The FGR 13 dose and risk factors also introduce new functionality and terminology. Ingestion and inhalation factors are now a function of the chemical form of the isotope, which is entered by the user. The radionuclide inhalation absorption "Class" terminology has been replaced by the new "Type" nomenclature. The new types are F (fast), M (medium), and S (slow), analogous to the older classes D (day), W (week), and Y (year). FGR 13 assumes a 1.0 micron size for inhaled particles, so Version 3 sets all particle sizes to 1.0 micron. Gas and vapor forms use a particle size of 0.0. Although not implemented in Version 3, CAP88-PC now also contains additional functionality that may be added in later versions, including age dependent factors, factors for morbidity in addition to mortality, and factors for additional exposure pathways.

To accommodate the FGR 13 methodology, CAP88-PC Version 3 also now calculates dose equivalent to 23 internal organs, and estimates the risk of cancer for 15 potential cancer induction sites. Additionally, CAP88-PC Version 3 no longer estimates genetic effects because genetic effects are not part of the FGR 13 dose and risk factor dataset.

The pathway transfer factors for all elements in the CAP88-PC database have been updated in Version 3 to the values from the National Council on Radiation Protection and Measurement (NCRP) report number 123, "Screening Models for Releases of Radionuclides to Atmosphere, Surface Water, and Ground". This was done to ensure that all the elements represented by the 825 isotopes in FGR 13 have appropriate elemental transfer factors.

CAP88-PC Version 3 still reports data in the same report structure used by previous versions of CAP88-PC. This has been done to retain conformance of the model to the applicable regulation, 40 CFR part 61, subpart H. Accordingly, the dose factors used in Version 3 are the values in FGR 13 for adults, and the risk values reported by Version 3 are those for mortality, not morbidity, although additional dose factor sets are now included in CAP88-PC Version 3. It is important to note that because of the extensive data modifications, Version 3 does not allow the use of case input files created under earlier versions to be used as input for Version 3. Previous POP and WIND files are still usable with Version 3.

CAP88-PC Version 3 will generate dose and risk results that differ from those results calculated by previous versions. The primary reason for this difference is the change in dose and risk conversion factors. Revisions of CAP88-PC up to Version 3 used dose factors generated by the RADRISK code, which was based upon the uptake and dose models contained in ICRP Publications 26 and 30. Risk was calculated in the earlier versions from dose using a constant conversion factor of 0.0004 risk per rem of whole body dose. Version 3 of CAP88-PC implements the dose conversion factors of FGR 13, which are calculated using models from more recent publications of the ICRP such as Publications 56, 66, 67, 69, and 71, and calculates risk using risk factors that are specific to the isotope rather than using the conversion factor method of previous versions. The effective dose coefficient in FGR 13 is calculated using the tissue weighting factors of ICRP publication 60. Dose factors in CAP88-PC Version 3 are also now in many cases a function of the chemical form of the isotope. This functionality was not present in previous versions of CAP88-PC.

Dose and risk results from CAP88-PC Version 3 also will differ from those calculated using previous versions because of a change in the elemental transfer factors. CAP88-PC Version 3 contains isotopes representing many more elements in the periodic table than were represented in previous versions of CAP88-PC. A new set of elemental transfer factors were required to support these new elements. CAP88-PC Version 3 replaces the transfer factors from the previous version of CAP88-PC with the factors listed in NCRP Publication 123.

Dose and risk results calculated by CAP88-PC Version 3 may also differ from those calculated by previous versions because Version 3 provides for a full incorporation of the decay chains for the radioisotopes represented in FGR-13. The new decay chain representation will most directly affect calculations that involve those radioisotopes that were not part of the decay chains represented in the earlier versions.

The changes implemented in Version 3 of CAP88-PC improve the code by bringing both the software code base and the modeling data used by the code up to the latest standards. The updated code base makes CAP88-PC Version 3 run faster and with greater stability on the latest Windows platforms, and provides improved debugging and troubleshooting tools. The updated code base also eases future coding modifications to make code support

easier. By implementing the dose and risk factor data from FGR 13 and the elemental transport factors from NCRP 123, CAP88-PC Version 3 now incorporates the latest dose and risk modeling data recommended by EPA. The new data, combined with the improved methods for calculating decay chains, provides Version 3 of CAP88 with a much larger library of radioisotopes and a more current scientific methodology for calculating dose and risk.

Dated: February 7, 2006.

**Bonnie C. Gitlin,**

*Acting Director, Radiation Protection Division, Office of Radiation and Indoor Air.*  
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## **ENVIRONMENTAL PROTECTION AGENCY**

[FRL-8034-4]

### **Notice of Meeting of the EPA's Children's Health Protection Advisory Committee (CHPAC)**

**AGENCY:** Environmental Protection Agency (EPA).

**ACTION:** Notice of meeting.

**SUMMARY:** Pursuant to the provisions of the Federal Advisory Committee Act, Public Law 92-463, notice is hereby given that the next meeting of the Children's Health Protection Advisory Committee (CHPAC) will be held February 28, March 1, and March 2, 2006 at the Hotel Washington, Washington, DC. The CHPAC was created to advise the Environmental Protection Agency on science, regulations, and other issues relating to children's environmental health.

**DATES:** The Emerging Chemicals of Concern, Voluntary Children's Chemical Evaluation Program (VCCEP), and National Ambient Air Quality for Particulate Matter task groups will meet Tuesday February 28, 2006. Plenary sessions will take place Wednesday, March 1, 2006 and Thursday, March 2, 2006.

**ADDRESSES:** Hotel Washington, 515 15th Street, NW., Washington, DC.

**FOR FURTHER INFORMATION CONTACT:** Contact Joanne Rodman, Office of Children's Health Protection, USEPA, MC 1107A, 1200 Pennsylvania Avenue, NW., Washington, DC 20460, (202) 564-2188, [rodman.joanne@epa.gov](mailto:rodman.joanne@epa.gov).

**SUPPLEMENTARY INFORMATION:** The meetings of the CHPAC are open to the public. The Science and Regulatory Work Groups will meet Tuesday, February 28, 2006 8:30 a.m. to 5:30 p.m.