

SUPPORTING STATEMENT

Radiation Sampling and Exposure Records, 30 C.F.R. §§ 57.5037 and 57.5040 (pertains to underground uranium mines and metal and nonmetal underground mines).

A. JUSTIFICATION

1. Explain the circumstances that make the collection of information necessary. Identify any legal or administrative requirements that necessitate the collection. Attach a copy of the appropriate section of each statute and regulation mandating or authorizing the collection of information.

Under the authority of Section 103 of the Federal Mine Safety and Health Act of 1977, MSHA is required to "...issue regulations requiring operators to maintain accurate records of employee exposures to potentially toxic materials or harmful physical agents which are required to be monitored or measured under any applicable mandatory health or safety standard promulgated under this Act."

Airborne radon and radon daughters exist in every uranium mine and in mines containing several other underground mining commodities. Radon is radioactive gas. It diffuses into the mine atmosphere through the rock and the ground water. Radon decays in a series of steps into other radioactive elements (which are solids) called radon daughters. Radon and radon daughters are invisible and odorless. Decay of radon and its daughters results in emissions of alpha energy.

Medical doctors and scientists have associated high radon daughter exposures with lung cancer. The health hazard arises from breathing air contaminated with radon daughters which are in turn deposited in the lungs. The lung tissues are sensitive to alpha radioactivity.

The amounts of airborne radon daughters to which most miners can be exposed with no adverse effects have been established and are expressed as working levels. The current MSHA standard is a maximum personal exposure of 4 working level months per year.

Excess lung cancer in uranium miners, just as coal workers' pneumoconiosis, silicosis, and other debilitating occupational diseases, has been recognized for many years. Thus, an adequate base of accurate exposure level data is essential to provide input into new studies that will accurately yield dose-response relationships and will permit an evaluation of current regulations and the effectiveness of disease control programs.

Standard 30 C.F.R. § 57.5037 establishes the procedures to be used by the mine operator in sampling mine air for the presence and concentrations of radon daughters.

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Operators are required to conduct weekly sampling where concentrations of radon daughters exceed 0.3 WL. Sampling is required bi-weekly where uranium mines have readings of 0.1 WL to 0.3 WL and every three months in non-uranium underground mines where the readings are 0.1 WL to 0.3 WL. The mine operators are required to keep records of all mandatory samplings. Records include the sample date, location and results, and must be retained at the mine site or nearest mine office for at least two years.

Standard 30 C.F.R. § 57.5040 requires mine operators to calculate, record and report individual exposures to concentrations of radon daughters. The calculations are based on the results of the weekly sampling required by 30 C.F.R. § 57.5037. Records are maintained by the operator and are submitted to MSHA annually.

2. Indicate how, by whom, and for what purpose the information is to be used. Except for a new collection, indicate the actual use the agency has made of the information received from the current collection.

The sampling and recordkeeping requirement alerts the mine operator and MSHA to possible failure in the radon daughter control system, and permits appropriate corrective action to be taken in a timely manner. Data submitted to MSHA (on MSHA Form 4000-9, Record of Individual Exposure to Radon Daughters) is intended to: (a) establish a means by which MSHA can assure compliance with underground radiation standards; (b) form a data base of miner exposure for future epidemiological studies; and (c) assure that miners can, upon written request, have records of cumulative exposures made available to them or their estate, and to medical and legal representatives who have obtained written authorization.

3. Describe whether, and to what extent, the collection of information involves the use of automated, electronic, mechanical, or other technological collection techniques or other forms of information technology, e.g., permitting electronic submission of responses, and the basis for the decision for adopting this means of collection. Also describe any consideration of using information technology to reduce burden.

No improved information technology has been identified that would reduce the burden; however, in order to comply with the Government Paperwork Elimination Act, mine operators may retain the records in whatever method they choose, which may include utilizing computer technology. Form 4000-9 can be printed from the MSHA.gov web site and mailed or faxed to MSHA.

4. Describe efforts to identify duplication. Show specifically why any similar information already available cannot be used or modified for use for the purposes described in Item 2 above.

Records are of individual miner's exposure to concentrations of radon daughters. Calculations are based on air samples taken at designated work areas and the time miners were present in those areas. No similar information exists.

5. If the collection of information impacts small businesses or other small entities (Item 5 of OMB Form 83-I), describe any methods used to minimize burden.

This information does not have a significant impact on small businesses or other small entities.

6. Describe the consequences to Federal program or policy activities if the collection is not conducted or is conducted less frequently, as well as any technical or legal obstacles to reducing burden.

Without this information collection to assure that a miner does not exceed the annual exposure limit to radon daughters, the individual miner could be at high risk of developing lung cancer.

7. Explain any special circumstances that would cause an information collection to be conducted in a manner:

- requiring respondents to report information to the agency more often than quarterly:
- requiring respondents to prepare a written response to a collection of information in fewer than 30 days after receipt of it;
- requiring respondents to submit more than an original and two copies of any documents;
- requiring respondents to retain records, other than health, medical, government contract, grant-in-aid, or tax records for more than three years;
- in connection with a statistical survey, that is not designed to produce valid and reliable results that can be generalized to the universe of study;
- requiring the use of a statistical data classification that has not been reviewed and approved by OMB;
- that includes a pledge of confidentiality that is not supported by authority established in statute or regulations, that is not supported by disclosure and data security policies that are consistent with the pledge, or which unnecessarily impedes sharing of data with other agencies for compatible confidential use; or

- **requiring respondents to submit proprietary trade secret, or other confidential information unless the agency can demonstrate that it has instituted procedures to protect the information's confidentiality to the extent permitted by law.**

While there is no specific requirement that records be kept for more than two years, mine operators are required to have such records during the time their mines are actively operating. This collection of information is otherwise consistent with the guidelines in 5 C.F.R. § 1320.5, and does not contain any requirements for respondents to report more than quarterly.

8. If applicable, provide a copy and identify the data and page number of publication in the Federal Register of the agency's notice, required by 5 C.F.R. § 1320.8(d), soliciting comments on the information collection prior to submission to OMB. Summarize public comments received in response to that notice and describe actions taken by the agency in response to these comments. Specifically address comments received on cost and hour burden.

Describe efforts to consult with persons outside the agency to obtain their views on the availability of data, frequency of collection, the clarity of instructions and recordkeeping, disclosure, or reporting format (if any), and on the data elements to be recorded, disclosed, or reported.

MSHA published a 60-day preclearance Federal Register notice on August 22, 2007 (Volume 72, Number 162, Page 47080), soliciting public comments regarding the extension of this information collection. No comments were received.

9. Explain any decision to provide any payment or gift to respondents, other than remuneration of contractors or grantees.

MSHA does not provide payments or gifts to respondents.

10. Describe any assurance of confidentiality provided to respondents and the basis for the assurance in statute, regulations, or agency policy.

Operators are given no assurances of confidentiality. However, the records of individual exposure to radon daughters that are submitted to MSHA are covered by a Privacy Act Systems of Records Notice published in the Federal Register (Vol. 58, No. 183, Thursday, September 23, 1993). The records are stored in locked file cabinets and are accessible only to authorized personnel during working hours.

11. Provide additional justification for any questions of a sensitive nature, such as sexual behavior and attitudes, religious beliefs, and other matters that are commonly considered private. This justification should include the reasons why the agency considers the questions necessary, the specific uses to be made of the information,

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the explanation to be given to persons from whom the information is requested, and any steps to be taken to obtain their consent.

There are no such questions of a sensitive nature.

12. Provide estimates of the hour burden of the collection of information. The statement should:

- **Indicate the number of respondents, frequency of response, annual hour burden, and an explanation of how the burden was estimated. Unless directed to do so, agencies should not conduct special surveys to obtain information on which to base hour burden estimates. Consultation with a sample (fewer than 10) of potential respondents is desirable. If the hour burden on respondents is expected to vary widely because of differences in activity, size, or complexity, show the range of estimated hour burden, and explain the reasons for the variance. Generally, estimates should not include burden hours for customary and usual business practices.**
- **If this request for approval covers more than one form, provide separate hour burden estimates for each form and aggregate the hour burdens in Item 13 of OMB Form 83-I.**
- **Provide estimates of annualized cost to respondents for the hour burdens for collections of information, identifying and using appropriate wage rate categories. The cost of contracting out or paying outside parties for information collection activities should not be included here. Instead, this cost should be included in Item 14.**

Based on the actual number of radon reports received for 2006, the potential respondent universe is approximately 2 underground uranium mine operators. Therefore, MSHA's estimates are based on 2 mine operators being required to sample and keep records on a weekly basis. Standard 57.5037 requires operators to take air samples for concentrations of radon daughters and to keep records of the results of the samples. Based on the results of the air samples, Standard 57.5040 requires the operator to calculate and record individual miners' exposure to radon daughter concentrations.

Calculations are performed on a weekly basis and the results are reported to MSHA annually. MSHA health specialists estimate that 5 hours will be spent on sampling, 1.5 hours will be spent on recordkeeping and 1.25 hours on performing calculations and recording the results, per week, per mine, 50 weeks per year. Salaries used are based upon data from the U.S. Metal & Industrial Mineral Mine Salaries, Wages, & Benefits - 2004 Survey Results, for metal and nonmetal supervisors and clerical personnel.

Sampling:

$$\begin{aligned} 2 \text{ mines} \times 50 \text{ wks} \times 5 \text{ hrs} &= 500 \text{ hrs.} \\ 500 \text{ hours} \times \$47.10 \text{ hr} &= \$23,550 \end{aligned}$$

Recording results of air samples:

$$\begin{aligned} 2 \text{ mines} \times 50 \text{ wks} \times 1.5 \text{ hrs.} &= 150 \text{ hrs.} \\ 150 \text{ hours} \times \$22.17 \text{ hr.} &= \$3,326 \end{aligned}$$

The burden for calculating and reporting individual miner's exposure to radon daughter concentrations is estimated at:

$$\begin{aligned} 2 \text{ mines} \times 50 \text{ wks.} \times 1.25 \text{ hours} &= 125 \text{ hrs.} \\ 125 \text{ hours} \times \$47.10/\text{hr} &= \$5,888 \end{aligned}$$

Clerical to prepare annual report for MSHA:

$$\begin{aligned} 2 \text{ mines} \times 50 \text{ wks.} \times 0.25 &= 25 \text{ hrs.} \\ 25 \text{ hours} \times \$22.17/\text{hr} &= \$ 554 \end{aligned}$$

TOTAL HOUR BURDEN:	800 hrs.
TOTAL HOUR COST BURDEN	\$33,318

The reporting burden is estimated to be minimal and is based on the average salary of a miner properly trained to accomplish the required tests. Clerical work is calculated using the average salary of a clerical employee trained to perform the required paperwork.

13. Provide an estimate of the total annual cost burden to respondents or recordkeepers resulting from the collection of information. (Do not include the cost of any hour burden shown in Items 12 and 14).

- **The cost estimate should be split into two components: (a) a total capital and start -up cost component (annualized over its expected useful life); and (b) a total operation and maintenance and purchase of services component. The estimates should take into account costs associated with generating, maintaining, and disclosing or providing the information. Include descriptions of methods used to estimate major cost factors including system and technology acquisition, expected useful life of capital equipment, the discount rate(s), and the time period over which costs will be incurred. Capital and start-up costs include, among other items, preparations for collecting**

information such as purchasing computers and software; monitoring, sampling, drilling and testing equipment; and record storage facilities.

- **If cost estimates are expected to vary widely, agency should present ranges of cost burdens and explain the reasons for the variance. The cost of purchasing or contracting out collection services should be a part of this cost burden estimate. In developing cost burden estimates, agencies may consult with a sample of respondents (fewer than 10), utilize the 60 day pre-OMB submission public comment process and use existing economic or regulatory impact analysis associated with the rulemaking containing the information collection, as appropriate.**
- **Generally, estimates should not include purchases of equipment or services, or portions thereof, made: (1) prior to October 1, 1995, (2) to achieve regulatory compliance with requirements not associated with the information collection, (3) for reasons other than to provide information or keep records for the government, or (4) as part of customary and usual business or private practices.**

Because the records are maintained by the mine operator, there are no additional costs associated with this burden other than those described above.

14. Provide estimates of annualized cost to the Federal government. Also, provide a description of the method used to estimate cost, which should include quantification of hours, operational expenses (such as equipment, overhead, printing, and support staff), and any other expense that would not have been incurred without this collection of information. Agencies also may aggregate cost estimates from Items 12, 13, and 14 in a single table.

Based on the number of reporting mines (estimated at 2 mines) in Item 12 above, MSHA is estimating 8 hours (2 mines at 4 hours per mine annually) to perform data analysis. Estimated cost is based on a GS-12/5 Mine Safety and Health Inspector salary at the average rate of \$30.57 per hour for a total of \$245.00 cost per year to the Government.

15. Explain the reasons for any program changes or adjustments reporting in Items 13 or 14 of the OMB Form 83-I.

The number of hours, responses, respondents and costs remain the same.

16. For collections of information whose results will be published, outline plans for tabulation, and publication. Address any complex analytical techniques that will be used. Provide the time schedule for the entire project, including beginning and ending dates of the collection of information, completion of report, publication dates, and other actions.

Statistical analysis of exposure data is performed in-house by MSHA. Publication of the collected data per se is not contemplated. Disclosure of the data in consolidated and summary form will be published in annual reports on Metal and Nonmetal Mine Safety and Health.

17. If seeking approval to not display the expiration date for OMB approval of the information collection, explain the reasons that display would be inappropriate.

MSHA is not seeking approval to not display the expiration date for OMB approval of this information collection on MSHA Form 4000-9.

18. Explain each exception to the certification statement identified in Item 19, "Certification for Paperwork Reduction Act Submission," of OMB 83-I.

There are no exceptions to the certification statement.

B. Collection of Information Employment Statistical Methods

As statistical analysis is not required by the regulation, questions 1 through 5 do not apply.

**Federal Mine Safety & Health Act of 1977, Public Law 91-173,
As amended by Public Law 95-164
AN ACT**

INSPECTIONS, INVESTIGATIONS, AND RECORDKEEPING

SEC. 103(c) The Secretary, in cooperation with the Secretary of Health, Education, and Welfare, shall issue regulations requiring operators to maintain accurate records of employee exposures to potentially toxic materials or harmful physical agents which are required to be monitored or measured under any applicable mandatory health or safety standard promulgated under this Act. Such regulations shall provide miners or their representatives with an opportunity to observe such monitoring or measuring, and to have access to the records thereof. Such regulations shall also make appropriate provisions for each miner or former miner to have access to such records as will indicate his own exposure to toxic materials or harmful physical agents. Each operator shall promptly notify any miner who has been or is being exposed to toxic materials or harmful physical agents in concentrations or at levels which exceed those prescribed by an applicable mandatory health or safety standard promulgated under section 101, or mandated under title II, and shall inform any miner who is being thus exposed of the corrective action being taken.

[Code of Federal Regulations]
 [Title 30, Volume 1]
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 [CITE: 30CFR57.5037]
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TITLE 30--MINERAL RESOURCES

CHAPTER I--MINE SAFETY AND HEALTH ADMINISTRATION, DEPARTMENT OF LABOR

PART 57_SAFETY AND HEALTH STANDARDS_UNDERGROUND METAL AND NONMETAL MINES

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Subpart D_Air Quality, Radiation, Physical Agents, and Diesel Particulate Matter

Sec. 57.5037 Radon daughter exposure monitoring.

(a) In all mines at least one sample shall be taken in exhaust mine air by a competent person to determine if concentrations of radon daughters are present. Sampling shall be done using suggested equipment and procedures described in section 14.3 of ANSI N13.8-1973, entitled "American National Standard Radiation Protection in Uranium Mines," approved July 18, 1973, pages 13-15, by the American National Standards Institute, Inc., which is incorporated by reference and made a part of the standard or equivalent procedures and equipment acceptable to the Administrator, MSHA Metal and Nonmetal Mine Safety and Health district office. This publication may be examined at any Metal and Nonmetal Mine Safety and Health Subdistrict Office of the Mine Safety and Health Administration, or may be obtained from the American National Standards Institute, Inc., 25 W. 43rd Street, 4th Floor, New York, NY 10036; <http://www.ansi.org>. The mine operator may request that the required exhaust mine air sampling be done by the Mine Safety and Health Administration. If concentrations of radon daughters in excess of 0.1 WL are found in an exhaust air sample, thereafter--

(1) Where uranium is mined--radon daughter concentrations representative of worker's breathing zone shall be determined at least every two weeks at random times in all active working areas such as stopes, drift headings, travelways, haulageways, shops, stations, lunch

rooms, magazines, and any other place or location where persons work, travel, or congregate. However, if concentrations of radon daughters are found in excess of 0.3 WL in an active working area, radon daughter concentrations thereafter shall be determined weekly in that working area until such time as the weekly determinations in that area have been 0.3 WL or less for 5 consecutive weeks.

(2) Where uranium is not mined--when radon daughter concentrations between 0.1 and 0.3 WL are found in an active working area, radon daughter concentration measurements representative of worker's breathing zone shall be determined at least every 3 months at random times until such time as the radon daughter concentrations in that area are below 0.1 WL, and annually thereafter. If concentrations of radon daughters are found in excess of 0.3 WL in an active working area radon daughter concentrations thereafter shall be determined at least weekly in that working area until such time as the weekly determinations in that area have been 0.3 WL or less for 5 consecutive weeks.

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(b) If concentrations of radon daughters less than 0.1 WL are found in an exhaust mine air sample, thereafter:

(1) Where uranium is mined--at least one sample shall be taken in the exhaust mine air monthly.

(2) Where uranium is not mined--no further exhaust mine air sampling is required.

(c) The sample date, locations, and results obtained under (a) and (b) above shall be recorded and retained at the mine site or nearest mine office for at least two years and shall be made available for inspection by the Secretary or his authorized representative.

[50 FR 4082, Jan. 29, 1985, as amended at 60 FR 33723, June 29, 1995; 71 FR 16667, Apr. 3, 2006]

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TITLE 30--MINERAL RESOURCES

CHAPTER I--MINE SAFETY AND HEALTH ADMINISTRATION, DEPARTMENT OF LABOR

PART 57 SAFETY AND HEALTH STANDARDS UNDERGROUND METAL AND NONMETAL MINES

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Subpart D_Air Quality, Radiation, Physical Agents, and Diesel Particulate Matter

Sec. 57.5040 Exposure records.

(a) The operator shall calculate and record complete individual exposures to concentrations of radon daughters as follows:

(1) Where uranium is mined--the complete individual exposures of all mine personnel working underground shall be calculated and recorded. These records shall include the individual's time in each active working area such as stopes, drift headings, travelways, haulageways, shops, stations, lunch rooms, magazines and any other place or location where persons work, travel or congregate, and the concentration of airborne radon daughters for each active working area.

(2) Where uranium is not mined--the complete individual exposure of all mine personnel working in active working areas with radon daughter concentrations in excess of 0.3 WL shall be calculated and recorded. These records shall include the individual's time in each active working area and the concentrations of airborne radon daughters for each active working area. The operator may discontinue calculating and recording the individual exposures of any personnel assigned to work in active working areas where radon daughter concentrations have been reduced to 0.3 WL or less for 5 consecutive weeks provided that such exposure calculation and recordation shall not be discontinued with respect to any person who has accumulated more exposure than $\frac{1}{12}$ (one-twelfth) of a WLM times the number of months for which exposures have been calculated and recorded in the calendar year in which the exposure calculation and recordation is proposed to be discontinued.

(b) The operator shall maintain the form entitled "Record of Individual Exposure to Radon Daughters" (Form 4000-9), or equivalent forms that are acceptable to the Administrator, Metal and Nonmetal Mine Safety and Health, Mine Safety and Health Administration, on which there shall be recorded the specific information required by the form with respect to each person's time-weighted current and cumulative exposure to concentrations of radon daughters.

(1) The form entitled "Record of Individual Exposure to Radon Daughters" (Form 4000-9), shall consist of an original of each form for the operator's records which shall be available for examination by the Secretary or his authorized representative.

(2) On or before February 15 of each calendar year, or within 45 days after the shutdown of mining operations for the calendar year, each mine operator shall submit to the Mine Safety and Health Administration a copy of the "Record of Individual Exposure to Radon Daughters" (Form 4000-9), or acceptable equivalent form, showing the data required by the form for all personnel for whom calculation and recording of exposure was required during the previous calendar year.

(3) Errors detected by the operator shall be corrected on any forms kept by the operator and a corrected copy of any forms submitted to the Mine Safety and Health Administration shall be submitted to the Mine Safety and Health Administration within 60 days

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of detection and shall identify the errors and indicate the date the corrections are made.

(4) The operator's records of individual exposure to concentrations of radon daughters and copies of "Record of Individual Exposure to Radon Daughters" (Form 4000-9) or acceptable equivalent form or true legible facsimiles thereof (microfilm or other), shall be retained at the mine or nearest mine office for a period as specified in paragraph 9.8, ANSI N13.8-1973, or shall be submitted to the Mine Safety and Health Administration. These records, if retained by the operator, shall be open for inspection by the Secretary of Labor, his authorized representative, and authorized representatives of the official mine inspection agency of the State in which the mine is located. Paragraph 9.8, ANSI N13.8-1973, is incorporated by reference and made a part of this standard. ANSI N13.8-1973 may be examined at any Metal and Nonmetal Mine Safety and Health District Office of the Mine Safety and Health Administration, and may be obtained from the American National Standards Institute, Inc., at 25 W. 43rd Street, 4th Floor, New York, NY 10036; <http://www.ansi.org>.

(5) Upon written request from a person who is a subject of these

records, a statement of the year-to-date and cumulative exposure applicable to that person shall be provided to the person or to whomever such person designates.

(6) The blank form entitled "Record of Individual Exposure to Radon Daughters" (Form 4000-9) may be obtained on request from any MSHA Metal and Nonmetal Mine Safety and Health district office.

Note: To calculate an individual's exposure to WLM for a given period of time, multiply the total exposure time (hours to the nearest half-hour) in an active working area by the average concentration of airborne radon daughters for the applicable active working area (average working level calculated to the nearest hundredth working level) and divide the product by the constant 173 hours per month.

An average airborne radon daughter concentration for a designated active working area shall be determined by averaging all sampling results for that working area during the time that persons are present. Any sample taken by Federal or State mine inspectors, which represents exposure to miners and reported to the operator within three days of being taken, shall be included in the average concentration; except that if the mine operator samples simultaneously with the inspector, he may use his own sample results.

[50 FR 4082, Jan. 29, 1985, as amended at 60 FR 33723, June 29, 1995; 60 FR 35695, July 11, 1995; 71 FR 16667, Apr. 3, 2006]