

Radiation Sampling and Exposure Records
OMB Control Number 1219-0003
OMB Expiration Date: 10/31/2023

Supporting Statement for Paperwork Reduction Act Submission

This ICR seeks to extend, without change, an existing information collection request.

OMB Control Number: 1219-0003

Information Collection Request Title: Radiation Sampling and Exposure Records

Authority:

30 CFR 57.5037 Radon daughter exposure monitoring.
30 CFR 57.5040 Exposure records.

Collection Instrument(s): MSHA Form 4000-9, Record of Individual Exposure to Radon Daughters

General Instructions

A Supporting Statement, including the text of the notice to the public required by 5 CFR 1320.5(a)(i)(iv) and its actual or estimated date of publication in the *Federal Register*, must accompany each request for approval of a collection of information. The Supporting Statement must be prepared in the format described below, and must contain the information specified in Section A below. If an item is not applicable, provide a brief explanation. When the question “Does this ICR contain surveys, censuses or employ statistical methods” is checked "Yes", Section B of the Supporting Statement must be completed. OMB reserves the right to require the submission of additional information with respect to any request for approval.

Specific Instructions

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.

Section 103(h) of the Federal Mine Safety and Health Act of 1977 (Mine Act), 30 U.S.C. 813(h), authorizes the Mine Safety and Health Administration (MSHA) to collect information necessary to carry out its duty in protecting the safety and health of miners. Further, section 101(a) of the Mine Act, 30 U.S.C. 811, authorizes the Secretary of Labor to develop, promulgate, and revise as may be appropriate, improved mandatory health or

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safety standards for the protection of life and prevention of injuries in coal and metal and nonmetal mines.

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 (also known as “radon decay products”) exist in every uranium mine and in several other underground mining commodities. Radon is a radioactive gas. It diffuses into the underground 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 decay products or “daughters.” Radon and radon decay products are invisible and odorless. Radon decay results in emissions of ionizing alpha radiation.

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

The amounts of airborne radon daughters (decay products) to which most miners can be exposed with no adverse effects have been established and are expressed as working levels (WL). The current MSHA standard is a maximum personal exposure of 4 working level months (WLM) 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 database of accurate exposure level results is essential to control miners’ exposures and permit an evaluation of the effectiveness of existing regulations.

30 CFR 57.5037 established the procedures to be used by the mine operator in sampling mine air for the presence and concentrations of radon daughters (decay products).

Operators are required to conduct weekly sampling where concentrations of radon daughters (decay products) exceed 0.3 WL. Sampling is required bi-weekly where uranium mines have readings of 0.1 WL to 0.3 WL and every 3 months in non-uranium underground mines where the readings are 0.1 WL to 0.3 WL. Mine operators are required to keep records of all mandatory samplings. Records must include the sample date, location, and results, and must be retained at the mine site or nearest mine office for at least 2 years.

30 CFR 57.5040 requires mine operators to calculate and record individual exposures to radon daughters (decay products) on MSHA Form 4000-9 “Record of Individual Exposure to Radon Daughters.” The calculations are based on the results of the weekly sampling

required by 30 CFR 57.5037. Records must be maintained by the operator and 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 decay product control system and permits appropriate corrective action to be taken in a timely manner. Data submitted to MSHA is intended to: (a) establish a means by which MSHA can assure compliance with underground radiation standards; and (b) assure that miners can, on 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.

To comply with the Government Paperwork Elimination Act (GPEA), mine operators may retain the records in whatever method they choose, which may include using computer technology. MSHA Form 4000-9 can be printed from the MSHA web site at <https://www.msha.gov/support-resources/forms-online-filing/2018/05/23/record-individual-exposure-radon-daughters>. MSHA allows electronic submission of MSHA Form 4000-9.

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 unique to each mine and pertain to radon daughter (decay product) concentration in the exhaust air and records of individual miner's exposure to concentrations of radon daughters (decay products). 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, 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 (decay products) the individual miner could be at increased 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 document;**
- **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 regulation, 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 secrets, 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.**

This collection of information is consistent with the guidelines in 5 CFR 1320.5.

8. If applicable, provide a copy and identify the date and page number of publication in the *Federal Register* of the agency's notice, required by 5 CFR 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.

Consultation with representatives of those from whom information is to be obtained or those who must compile records should occur at least once every 3 years - even if the collection of information activity is the same as in prior periods. There may be circumstances that may preclude consultation in a specific situation. These circumstances should be explained.

In accordance with 5 CFR 1320.8(d), MSHA will publish the proposed information collection requirements in the Federal Register, notifying the public that these information collection requirements are being reviewed in accordance with the Paperwork Reduction Act of 1995, and giving interested persons 60 days to submit comments. MSHA published a 60-day Federal Register notice on March 21, 2023 (88 FR 54). No comments 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 an individual's identity and his/her exposure to radon daughters (decay products) that are submitted to MSHA are covered by a Privacy Act Systems of Records Notice, MSHA 1, Mine Safety and Health Administration Standardized Information System (MSIS) (81 FR 25766) published on April 29, 2016. 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, 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.**
- **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 under Item 13.**

Wage Rates Determinations¹

MSHA used data from the May 2021 Occupational Employment and Wage Statistics (OEWS) published by the Bureau of Labor Statistics (BLS) for hourly wage rates² and adjusted the rates for benefits³ and wage inflation⁴. The occupations listed below in Table 12-1 are those that were determined to be relevant for the cost calculations.

¹ For all wage rates, MSHA uses the relevant precision throughout the calculation to avoid compound rounding errors and rounds at the final rate value. Displayed intermediate calculation values are presented to explain the calculation and are representative but the final rate value reflects the correct rounding and final estimate.

² Options for obtaining OEWS data are available at item "E3. How to get OEWS data. What are the different ways to obtain OEWS estimates from this website?" at https://www.bls.gov/oes/oes_ques.htm.

³ The benefit multiplier comes from BLS Employer Costs for Employee Compensation accessed by menu at <http://data.bls.gov/cgi-bin/srgate> or directly with <http://download.bls.gov/pub/time.series/cm/cm.data.0.Current>. Insert the data series CMU2030000405000D and CMU2030000405000P, Private Industry Total benefits for Construction, extraction, farming, fishing, and forestry occupations, which is divided by 100 to convert to a decimal value. MSHA used the latest 4-quarter moving average to determine what percent of total loaded wages are benefits. MSHA computes the benefit multiplier with a number of detailed calculations, but it may be approximated with the formula $1 + (\text{benefit percentage}/(1-\text{benefit percentage}))$.

⁴ Wage inflation is the change in Series ID: CIS2020000405000I; Seasonally adjusted; Series Title: Wages and salaries for Private industry workers in Construction, extraction, farming, fishing, and forestry occupations, Index. (<https://data.bls.gov/cgi-bin/srgate> ; Inflation Multiplier = (Current Quarter Cost Index Value / OEWS Wage Base Quarter Index Value).

Table 12-1 Hourly Wage Rates

		A	B	C	A x B x C
Occupation	NAICS Code	Wage Rate	Benefit Multiplier	Inflation Multiplier	Loaded Hourly Wage Rate [†]
Metal mine supervisor*	212200	\$42.12	1.490	1.043	\$65.46
Metal mine clerk**	212200	\$27.27	1.490	1.043	\$42.38

Note: [†]MSHA used the latest 4-quarter moving average 2021Q3-2022Q2 to determine that 32.9 percent of total loaded wages are benefits. The benefit multiplier is $1.49 = 1 + (.329 / (1 - .329))$. The inflation multiplier of 1.043 ($= 150.5 / 144.3$) was determined by using the employment price index from the latest quarter, 2022Q2, divided by the base year and quarter of the OEWS employment and wage statistics, 2021Q2.

*The Standard Occupation Codes (SOC) used for this occupation are: (43-1011), (47-1011), (49-1011), (51-1011), (53-1047).

**The Standard Occupation Codes (SOC) used for this occupation are: (43-9061).

Respondents The potential respondent universe is one non-producing active underground uranium mine and three temporarily idle underground uranium mines. There are no other mines of commodities using MSHA Form 4000-9. Therefore, MSHA's estimates are based on four mine operators going into production at any time and being required to record sampling results weekly and maintain those weekly records.

30 CFR 57.5037 requires operators to take air samples for concentrations of radon daughters (decay products) and to keep records of the results. Based on the results of the air samples, 30 CFR 57.5040 requires the operator to calculate and record individual miners' exposures to radon daughters (decay products).

Calculations are performed on a weekly basis and the results are reported to MSHA annually. MSHA estimates that it takes a metal mine supervisor 30 minutes, each week, to complete the calculations and record the results. In addition, MSHA estimates that it takes a clerk 1 hour and 30 minutes (90 minutes), each week, to maintain and keep a record of the results and disclose them to a 3rd party such as legal or medical representatives. MSHA estimates that, on average, mines operate 50 weeks out of the year. MSHA estimates that, once each year, a clerk at the mine takes 25 minutes to mail or fax the annual report to MSHA. The burden for recording the sampling results and calculations for the individual miner's results of exposure to radon daughter concentrations is estimated in Table 12-2 below.

Table 12-2 Hour burden of Radiation Sampling

Occupation/ Activity	No. of Respondents (Mines)	No. of Responses per Respondent	No. of Responses (Sample Results)	Minutes per Response	Burden Hours	Wage	Burden Cost
Metal mine supervisor/ calculate and record results	4	50	200	30	100.0	\$65.02	\$6,545.74
Metal mine clerk/maintain and disclose records of results	4	50	200	90	300.0	\$42.38	\$12,713.85
Metal mine clerk/send annual results	4	1	4	25	1.7	\$42.38	\$70.63
Total	4		404		402 (rounded)		\$19,330 (rounded)

13. Provide an estimate for the total annual cost burden to respondents or record keepers resulting from the collection of information. (Do not include the cost of any hour burden already reflected on the burden worksheet).

- **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, agencies should present ranges of cost burdens and explain the reasons for the variance. The cost of purchasing or contracting out information collections 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.

MSHA estimates that the yearly cost to copy and mail or fax the annual reports to MSHA is minimal and will average \$5 per mine per year.

Table 13-1 Formed Mailed

Cost components	No. of Responses	Unit Cost	Cost to Recordkeeper
Forms mailed to MSHA	4	\$5.00	\$20.00

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.

MSHA used data from the June 2022 FedScope Employment Cube published by the U.S. Office of Personnel Management for annual salary and adjusted the rates for benefits. The occupations listed below in Table 14-1 are those that were determined to be relevant for the cost calculations.

Table 14-1 Federal Hourly Wage Rate

Occupation	Occupation Code	A Mean Wage Rate	B Benefit Multiplier	= A x B Loaded Hourly Wage Rate
GS-13 MSHA Safety Specialist*	1822	\$53.92	1.440	\$77.64

Note: Hourly wage rates developed from Office of Personnel Management (OPM) June 2022 FedScope Employment Cube, <http://www.fedscope.opm.gov/>. Data search qualifiers were: Agency = DLMS, Occupation = 1822 (Mine Safety and Health Inspection), Work Schedule = Full-Time, Salary Grade = GS-13, Measure = Average Salary. The hourly wage is the annual salary divided by 2,087. To include the cost of benefits, MSHA multiplied the average annual salary by a federal benefit scaler for MSHA of 1.440 (FY 2023 budget submission). The average wage rate of a GS-13 MSHA Safety Specialist equals \$77.64 = (\$112,521 / 2,087 x 1.440).

MSHA estimates it takes a GS-13 Mine Safety and Health Inspector 4 hours per mine annually to perform data analysis for 4 annual reports (from Question 12). Presented below is the annual burden on the Federal Government.

Table 14-2 Estimated Federal Hour and Cost Burden, Radiation Sampling

Occupation	No. of Responses (Annual Reports)	Burden per Response (Hours)	Annual Burden (Hours)	Hourly Wage Rate	Burden Cost
GS-13 MSHA Safety Specialist	4	4	16	\$77.64	\$1,242 (rounded)

15. Explain the reasons for any program changes or adjustments reported on the burden worksheet.

There is no change in respondents, responses, burden hours, or respondents or recordkeeper costs. Federal costs increased due to a change in the classification of the MSHA safety and health inspector analyzing the submitted reported from GS-12 to GS-13.

Table 15-1 Cost Changes

	Previous	Current	Difference
Respondents	4	4	0
Responses	404	404	0
Burden Hours	402	402	0
Respondents or Recordkeeper Costs	\$20	\$20	\$0

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 will display the expiration date on any instruments.

18. Explain each exception to the topics of the certification statement identified in "Certification for Paperwork Reduction Act Submissions."

There are no exceptions to the certification statement.

B. COLLECTION OF INFORMATION EMPLOYING STATISTICAL METHODS

This information collection does not employ statistical methods.