

Gamma Radiation Surveys
OMB Control Number 1219-0039
October 31, 2022

**Supporting Statement for
Paperwork Reduction Act Submissions**

OMB Control Number: 1219-0039

Title: Gamma Radiation Surveys

Collection Instruments: None

CFR Section: 30 CFR 57.5047

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.

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 (Secretary) to develop, promulgate, and revise as may be appropriate, improved mandatory health or safety standards for the protection of life and prevention of injuries in coal and metal and nonmetal mines.

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Under section 103(c) of the Mine Act, 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." In addition, 30 CFR 57.5047(a) requires that gamma radiation surveys be conducted annually in all underground mines where radioactive ores are mined. Section 57.5047(b) requires that surveys must be in accordance with American National Standards Institute (ANSI) N13.8-1973 entitled "Radiation Protection in Uranium Mines." Section 57.5047(c) requires that gamma radiation dosimeters be provided for all affected persons where average gamma radiation measurements are in excess of 2.0 milliroentgens per hour (mr/h) in the working place, and that records of cumulative individual gamma radiation exposures be retained. Section 57.5047(d) specifies that an annual individual gamma radiation exposure should not exceed 5 rems.

Gamma radiation occurs where radioactive materials are present. Natural sources include uranium and other radioactive elements found in rocks, soils, and ground water. Gamma radiation hazards may also be found near radiation sources in surface and underground mines operations using X-ray machines, weightometers, nuclear gauges and diffraction units. Such gauges contain radioactive materials and are mounted outside tanks, pipes, bins, hoppers or other types of vessels; gamma rays measure the level and density of liquids, slurries or solids.

Gamma rays penetrate the body and can cause cell death or damage in their path which can affect many of the body's organs. If a radioactive element is inhaled or ingested, gamma radiation can also be emitted and absorbed internally. The adverse health effects from exposure to gamma radiation vary depending upon the energy level of the radiation and the type of cell affected. Gamma radiation can cause many types of cancer.

Currently, there are three radioactive ore mines in the United States: one active facility and two non-producing underground uranium mines. Gamma radiation levels have not exceeded the level of 2 milliroentgens per hour in the workplace which would require mine operators to provide gamma radiation dosimeters and maintain a record of cumulative individual exposures required by section 57.5047(c). We do not anticipate that individual gamma radiation levels will exceed the annual exposure limit of 5 rems contained in section 57.5047(d).

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.

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MSHA uses this information to evaluate the effectiveness of a mine operator's protection program in demonstrating compliance with the radiation standards. The collected information on cumulative occupational radiation exposures serves two purposes: it aids MSHA in its efforts to protect the health and safety of the miners; and, it aids MSHA in developing prevention and control methods for subsequent radiation exposures.

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.

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. No similar or duplicate information exists that could be used to reduce the paperwork burden.

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. However, MSHA has made available on our website (www.msha.gov) various sources of information, such as "Technical Assistance," "Best Practices," and "Accident Prevention." To assist with compliance, these resources provide tips and general information on a number of various topics.

6. Describe the consequence 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.

The standard requires that gamma radiation surveys be conducted annually in all underground mines where radioactive ores are mined. Where average gamma radiation measurements are in excess of 2.0 milliroentgens per hour, gamma radiation dosimeters shall be provided to all persons affected and records of cumulative individual gamma radiation exposure are required to be kept. MSHA believes that the monitoring

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of miners' exposure to gamma radiation is essential to the protection of their health at these underground mines. Inadequate or non-existent gamma radiation exposure information may result in undetected and unremedied excessive exposures.

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

(a) Requiring respondents to report information to the agency more often than quarterly.

(b) Requiring respondents to prepare a written response to a collection of information in fewer than 30 days after receipt of it.

(c) Requiring respondents to submit more than an original and two copies of any document.

(d) Requiring respondents to retain records, other than health, medical, government contract, grant-in-aid, or tax records for more than three years.

(e) 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.

(f) Requiring the use of a statistical data classification that has not been reviewed and approved by OMB.

(g) 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.

(h) 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.

The special circumstances contained in item 7 of the supporting statement are not applicable to this information collection.

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 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 record keeping, 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 May 4, 2022 (87 FR 26374). MSHA received no comments.

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 the respondents.

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

There is no assurance of confidentiality provided to respondents.

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 questions of a sensitive nature.

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

- a. 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.**
- b. If this request for approval covers more than one form, provide separate hour burden estimates for each form and aggregate the hour burdens.**
- c. 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 under Item 13.**

All information related to quantities and inspection rates are estimated by MSHA's Headquarters Enforcement Division based on field experience with different types of mining operations, sizes of mines, and the frequency of inspections dictated by statute. Mine operators provide MSHA Headquarters Enforcement Division the number of mines and employment, and from this information MSHA tracks the number of active and inactive mines and mine types throughout the United States.

The annual gamma radiation survey required by 30 CFR 57.5047(a) is typically completed by taking instant radiation readings with a Geiger-Müller counter at all active workplaces. Although the MSHA standard does not specify how the recordkeeping is to be conducted, it is an information collection activity, and the gamma radiation reading results are recorded when taken and can be used to demonstrate compliance.

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MSHA used data from the May 2020 Occupational Employment and Wage Statistics (OEWS) published by the Bureau of Labor Statistics (BLS) for hourly wage rates¹ and adjusted the rates for benefits² and wage inflation³. In 2021 there were a total of three respondents, two underground and one facility radioactive ore mines in the United States. MSHA estimates that the survey would take a metal/nonmetal mine supervisor, earning an hourly wage rate of \$57.28 per hour⁴, approximately two hours at each mine to take and record the measurements.

There have been no exposure monitoring records for these mines and consequently average gamma radiation measurements are not known in excess of 2.0 milliroentgens per hour in the working place, and none were or are expected. Therefore, because no gamma radiation dosimeters have to be provided and no records are required to be maintained for cumulative individual gamma radiation exposures under 30 CFR 57.5047(c), MSHA estimates no burden for this activity.

1 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.

2 The benefit multiplier comes from BLS Employer Costs for Employee Compensation accessed by menu at <http://www.bls.gov/data/> or directly with <http://download.bls.gov/pub/time.series/cm/cm.data.0.Current>. Insert the data series 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 2020Qtr4-2021Qtr3 to determine that 32.8 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 and values $1 + (\text{benefit percentage}/(1-\text{benefit percentage})) = 1 + (.328/(1-.328)) = 1.49$.

3 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>; Qtr 4 2021/Qtr 2 2020=147.3/139.2=1.058).

4 For the supervisor wage rate, MSHA used the employment weighted average of the mean hourly wages for 4 First-Line Supervisor occupations from Standard Occupational Classification (SOC). Occupational Codes are from the BLS May 2020 OEWS data (<http://www.bls.gov/oes>) for North American Industry Classification System (NAICS) codes 212200 & 212300, Metal and Nonmetal Mining. The weighted average rate was adjusted for benefits and inflation to obtain a fully loaded rate of \$57.28 = \$36.34 x 1.49 benefit adjustment x 1.058 inflation adjustment. All subsequent uses of \$57.28 to represent supervisor hourly wage rate.

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Estimated Annualized Burden Hours and Costs								
Type of Respondent	Collection Burden	Respondents	Responses Per Respondent	Total Responses	Burden Hours per Response	Total Annual Burden Hours	Hourly Wage Rate	Monetized Value of Respondent Time
Business or other for-profit	30 CFR 57.5047(a)	3	1	3	2.00	6.00	\$57.28	\$343.68
Total		3		3		(rounded) 6		(rounded) \$344

13. Provide an estimate of 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.)

- a. 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.
- b. 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 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.

- c. **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.**

There is no annual cost burden to respondents or record keepers resulting from this information collection.

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.

No Federal inspection costs have been associated specifically with this information collection. The examination of these records is just one aspect of annual inspections. (The Mine Act requires MSHA to conduct at least four inspections a year for underground mines and two inspections a year for surface operations).

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

Respondents: There were no changes in the number of respondents (3).

Responses: The number of responses (3) remained the same.

Burden Hours: There were no changes in the burden hours (6).

Cost: The cost (\$0) remained the same from question 13.

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.

The results from the information gathered from this collection will not be published.

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

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inappropriate.

MSHA associates no forms associated with this collection.

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

There are no certification exceptions identified with this information collection.

B. Collections of Information Employing Statistical Methods.

There is no statistical methodology involved in this collection.