

SUPPORTING STATEMENT

Information Collection Title: Examinations and Testing of Electrical Equipment, Including Examination, Testing, and Maintenance of High Voltage Longwalls

Provisions: 30 CFR 75.512, 75.703-3, 75.800, 75.800-3, 75.800-4, 75.820, 75.821, 75.900, 75.900-3, 75.900-4, 75.1001-1, 77.502, 77.800, 77.800-1, 77.800-2, 77.900, 77.900-1, and 77.900-2

Collection Instrument(s): None

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 of each regulation mandating or authorizing the collection of information.

The Federal Mine Safety and Health Act of 1977 (Mine Act) and 30 CFR Parts 75 and 77, mandatory safety standards for coal mines, make this collection of information necessary. Subsection 103(h) of the 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.

Inadequate maintenance of electric equipment is a major cause of serious electrical accidents in the coal mining industry. It is imperative that mine operators adopt and follow an effective maintenance program to ensure that electric equipment is maintained in a safe operating condition to prevent electrocutions, mine fires and mine explosions. MSHA regulations require the mine operator to establish an electrical maintenance

program by specifying minimum requirements for the examination, testing, and maintenance of electric equipment. The regulations also contain recordkeeping requirements that help operators in implementing an effective maintenance program.

(a) Examinations of Electric Equipment

- (1) Section 75.512 requires that all electric equipment be frequently examined, tested, and maintained by a qualified person to assure safe operating conditions and that a record of such examinations be kept. Section 75.512-2 specifies required examinations and at least weekly tests.
- (2) Section 75.703-3(d)(11) requires that all grounding diodes be tested, examined, and maintained as electric equipment and records of these activities be kept in accordance with the provisions of section 75.512.
- (3) Section 77.502 requires that electric equipment be frequently examined, tested, and maintained by a qualified person to ensure safe operating conditions and that a record of such examinations be kept. Section 77.502-2 requires examinations and tests at least monthly.

(b) Examinations of High-Voltage Circuit Breakers

- (1) Section 75.800 requires that circuit breakers protecting high-voltage circuits, which enter the underground area of a coal mine, be properly tested and maintained as prescribed by the Secretary. Section 75.800-3 requires that such circuit breakers be tested and examined at least once each month. Section 75.800-4 requires that a record of the examinations and tests be made.
- (2) Section 75.820 requires persons to lock-out and tag disconnecting devices when working on circuits and equipment associated with high-voltage longwalls.
- (3) Section 75.821(a) requires testing and examination of each unit of high-voltage longwall equipment and circuits to determine that electrical protection, equipment grounding, permissibility, cable insulation, and control devices are being properly maintained to prevent fire, electrical shock, ignition, or operational hazards. These tests and examinations, including the activation of the ground-fault test circuit, are required once every seven days. Section 75.821(b) requires that each ground-wire monitor and associated circuits be examined and tested at least once every 30 days. Section 75.821(d) requires that, at the completion of examinations and tests, the person making the examinations and tests must certify that they have been conducted. In addition, a record must be made of any unsafe condition found and any corrective action taken.
- (4) Section 77.800 requires that circuit breakers protecting high-voltage portable or mobile equipment be properly tested and maintained. Section 77.800-1 requires that such circuit breakers be tested and examined at least once each month. Section 77.800-2 requires a record of each test, examination, repair, or adjustment of all circuit breakers protecting high-voltage circuits.

(c) Examinations of Low- and Medium-Voltage Circuits

- (1) Section 75.900 requires that circuit breakers protecting low- and medium-voltage power circuits serving three-phase alternating-current equipment be properly tested and maintained. Section 75.900-3 requires that such circuit breakers be

tested and examined at least once each month. Section 75.900-4 requires that a record of the required examinations and tests be made.

- (2) Section 77.900 requires that circuit breakers protecting low- and medium-voltage circuits which supply power to portable or mobile three-phase alternating-current equipment be properly tested and maintained. Section 77.900-1 requires that such circuit breakers be tested and examined at least once each month. Section 77.900-2 requires that a record of the examinations and tests be made.

(d) Tests and Calibrations of Automatic Circuit Interrupting Devices

Section 75.1001-1(b) requires that automatic circuit interrupting devices that protect trolley wires and trolley feeder wires be tested and calibrated at intervals not to exceed six months. Section 75.1001-1(c) requires that a record of the tests and calibrations be kept.

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 respondents are coal mine operators. The records of tests and examinations are reviewed by coal miners, coal mine officials, and MSHA and State inspectors. The records are intended to verify that examinations and tests were conducted and give insight into the actual and potentially hazardous conditions at the mine. These records greatly assist those who use them in making decisions during accident investigations to establish root causes and to prevent similar occurrences. These decisions will ultimately affect the safety and health of miners.

Miners examine the records to determine if electric equipment is safe to operate and to determine if reported safety defects have been corrected. Mine officials examine the records to evaluate the effectiveness of their electrical maintenance programs, to determine that the required tests and examinations have been conducted, and to determine if reported safety defects have been corrected. MSHA and State inspectors review the records to determine if the required tests and examinations have been conducted and to identify units of electric equipment that may pose a potential safety hazard, and to evaluate the effectiveness of the coal mine operator's electrical maintenance programs. By comparing the records with the actual condition of the electric equipment, MSHA inspectors may be able to identify weaknesses in the coal mine operator's electrical maintenance programs and require that these weaknesses be corrected.

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.

Mine operators may retain the records in whatever method they choose, which may include using computer technology. The subject regulations do not specify how the required records must be kept. They could be kept in the traditional manner or stored electronically, provided the records are secure and not susceptible to loss or alteration. 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 purpose(s) described in 2 above.

MSHA knows of no other Federal or State reporting requirements that would duplicate the reporting requirements contained in these standards. The information collected is unique to each mine operation.

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 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.

Reduction of these requirements could result in increased hazards to miners. A reduction in the frequency of examinations and tests could allow unsafe conditions to develop, jeopardizing the safety of miners.

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.

MSHA published a 60-day *Federal Register* notice on June 16, 2017 (82 FR 27728). MSHA received no public 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.

MSHA has made no assurance of confidentiality.

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:

- * **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 included in Item 13.**

Respondents: There are currently 194 underground coal mines, 399 surface coal mines and 250 surface facilities covered by the requirements to examine and test electrical equipment, totaling 843 respondents.

Examinations of High-Voltage Longwall Equipment: An electrician earning an hourly wage rate of \$42.35 conducts the examination and testing of high-voltage longwall equipment. The wage for estimating hour burden cost is from the Bureau of Labor Statistics (BLS), Occupational Employment Statistics (OES) May 2015 survey¹ increased by 1.039 for wage inflation² since the May 2015 survey and a 1.48 benefit-scaling factor³ to obtain the fully loaded wage rate of \$42.35 ($\$27.54 \times 1.48 \times 1.039$). In underground coal mines, there are currently 36 longwall units affected by Sections 75.820 and 75.821.

¹ Options for obtaining OES data are available at item "E3. How to get OES data. What are the different ways to obtain OES estimates from this website?" at https://www.bls.gov/oes/oes_ques.htm. MSHA used the mean hourly wage of \$27.54 from OES May 2015 survey, Standard Occupational Classification (SOC) code 47-2110, Electrician (NAICS codes 212100 Coal Mining).

² 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 2016/Qtr 2 2015 = 126.7/122.0 = 1.039).

³ The benefit-scaler comes from BLS Employer Costs for Employee Compensation access by menu <http://www.bls.gov/data/> or directly with <http://download.bls.gov/pub/time.series/cm/cm.data.0.Current>. The data series CMU2030000405000P, Private Industry Total benefits for Construction, extraction, farming, fishing, and forestry occupations, is divided by 100 to convert to a decimal value. MSHA used the latest 4-quarter moving average 2015Qtr3-2016Qtr2 to determine that 32.65 percent of total loaded wages are benefits. The scaling factor may be approximated with the formula and values $1 + (\text{benefit percentage}/(1-\text{benefit percentage})) = 1 + (.3265/(1-.3265)) = 1.48$.

Section 75.820: MSHA estimates that it will take an electrician an average of 5 minutes to lock out and tag a disconnecting device as specified in Section 75.820(b) and (e) and that an average of one lock and tag will occur each day at each longwall unit. Longwall mines operate an average of 350 workdays/year (7 days/week x 50 weeks/year).

350 days/year x 36 longwall units =	12,600 responses
5 minutes x 350 days/year x 36 longwall units =	1,050 burden hours
1,050 hours x \$42.35 per hour =	\$44,468 burden-hour cost

Section 75.821: Section 75.821(d) requires that each unit of high-voltage longwall equipment and circuits must be examined every seven days, (50 responses). Section 75.821(b) requires that ground-wire monitors and circuits be tested every 30 days, (12 responses). Section 75.821(d) requires the electrician to certify by signature and date that the examinations required by Section 75.821 have been conducted and to make a record of any unsafe conditions found and any corrective action taken. MSHA estimates that an electrician would find and correct an unsafe condition, on average, once every 2 weeks, (26 responses). It takes an electrician about 6 minutes to produce each record and certify that the examinations were conducted.

88 (50 + 12 + 26) responses/longwall x 36 longwalls =	3,168 responses
6 minutes x 3,168 responses/year =	317 burden hours
317 hours x \$42.35 =	\$13,416 burden-hour cost

Examinations of Electric Equipment: MSHA estimates that a mine supervisor earns an hourly wage rate of \$58.37. The wage for estimating hour burden cost is from Bureau of Labor Statistics (BLS), Occupational Employment Statistics (OES) May 2015 survey⁴ increased by 1.039 for wage inflation since the May 2015 survey and a 1.48 benefit-scaling factor to obtain the fully loaded wage rate of \$58.37 (\$37.96 x 1.48 x 1.039).

Section 75.512: There are approximately 477 underground coal mining sections utilizing electric equipment. Each mining section has on average 6 pieces of electrical equipment. The total number of underground electric equipment is approximately 2,862 (477 x 6). Each piece of equipment is required to be examined weekly and the results of each examination are required to be recorded. MSHA estimates that only one record apiece is made for each section of the mine (6 pieces of equipment) and for each electric equipment, and that it will take 6 minutes to create each record.

3,339 (477 + 2,862) exams/week x 1 record/exam x 50 weeks =	166,950 responses
166,950 responses x 6 minutes/response =	16,695 burden hours
16,695 hours x \$58.37/hour =	\$974,487 burden-hour cost

⁴ MSHA used the mean hourly wage of \$37.96 from OES May 2015 survey, Standard Occupational Classification (SOC) code 47-1011, First-Line Supervisors of Construction Trades and Extraction Workers (NAICS codes 212100, Coal Mining).

Section 75.703-3(d)(11): All grounding diodes must be tested, examined, and maintained as electrical equipment in accordance with the provisions of Section 75.512; therefore, recordkeeping in connection with diode testing calculations are included as part of the recordkeeping burden under Section 75.512 above.

Sections 77.502 and 77.502-2: The number of electric equipment at surface coal mines and surface facilities is approximately 10,081. Section 77.502-2 requires these equipment to be examined monthly and Section 77.502 requires the results of each examination to be recorded. MSHA estimates that the results of each examination will take 15 minutes to record.

10,081 exams/month x 1 response/exam x 12 months =	120,972 responses
120,972 responses x 15 minutes =	30,243 burden hours
30,243 burden hours x \$58.37 =	\$1,765,283 burden-hour cost

Examinations of High-Voltage Circuit Breakers:

Sections 75.800-3 and -4: The number of circuit breakers protecting high-voltage circuits extending underground is approximately 776. Each circuit breaker is required to be examined and tested once a month and the results of each examination and test must be recorded. It is estimated that the results of each examination will take 15 minutes to record.

776 exams/month x 1 response/exam x 12 months =	9,312 responses
9,312 responses x 15 minutes/response =	2,328 burden hours
2,328 hours x \$58.37 =	\$135,885 burden-hour cost

Sections 77.800-1 and -2: The number of circuit breakers protecting high-voltage circuits extending to portable and mobile surface equipment is approximately 1,427. Each circuit breaker is required to be examined and tested once a month and the results of each examination and test must be recorded. It is estimated that the results of each examination will take 15 minutes to record.

1,427 exams/month x 1 response/exam x 12 months =	17,124 responses
17,124 responses x 15 minutes/response =	4,281 burden hours
4,281 hours x \$58.37 =	\$249,882 burden-hour cost

Examinations of Low- and Medium-Voltage Circuit Breakers:

Section 75.900-3 and -4: The number of power centers containing circuit breakers protecting low- and medium-voltage power circuits serving three-phase underground equipment is approximately 5,167. The circuit breakers in each power center are required to be examined and tested once a month and the results of the examination and tests recorded. It is estimated that the results of each examination and test will take 15 minutes to record.

5,167 power centers x 1 exam and test/month x 12 months =	62,004 responses
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62,004 responses x 15 minutes/response = 15,501 burden hours
 15,501 hours x \$58.37/hour = \$904,793 burden-hour cost

Section 77.900-1 and -2: The number of installations containing circuit breakers protecting low- and medium voltage alternating-current equipment located on the surface is approximately 1,098. The circuit breakers in each installation are required to be examined and tested once a month and the results of the examination and test recorded. It is estimated that the results of each examination and test will take an average of 15 minutes to record.

1,098 installations x 1 exam and test/month x 12 months = 13,176 responses
 13,176 responses x 15 minutes/response = 3,294 burden_hours
 3,294 x \$58.37/hour = \$192,271 burden-hour cost

Tests and Calibrations of Automatic Circuit Interrupting Devices:

Section 75.1001-1(b) and (c). The number of trolley circuit breakers in underground coal mines is approximately 150. Each circuit breaker is required to be tested and calibrated once every six months and the results of the tests and calibrations recorded. It is estimated that the results of each test will take approximately 15 minutes to record.

150 trolley circuit breakers x 2 tests/year x 1 response/test = 300 responses
 300 responses x 15 minutes/response = 75 burden hours
 75 hours x \$58.37/hour = \$4,378 burden-hour cost

**ITEM 12 SUMMARY TABLE:
 Annual Responses, Burden Hours, and Burden-Hour Costs**

Provisions	Responses	Burden Hours	Burden-Hour Costs
30 CFR 75.820	12,600	1,050	\$44,468
30 CFR 75.821	3,168	317	\$13,416
30 CFR 75.512	166,950	16,695	\$974,487
30 CFR 77.502 and 77.502-2	120,972	30,243	\$1,765,284
30 CFR 75.800-3 and 75.800-4	9,312	2,328	\$135,885
30 CFR 77.800-1 and 77.800-2	17,124	4,281	\$249,882
30 CFR 75.900-3 and 75.900-4	62,004	15,501	\$904,793
30 CFR 77.900-1 and 77.900-2	13,176	3,294	\$192,271

30 CFR 77.1001-1(b) and (c)	300	75	\$4,378
TOTAL	405,606	73,784	\$4,284,864

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.)

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 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.

MSHA does not anticipate that there will be any costs associated with this information collection other than those indicated in Item 12 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.

There is no significant cost to the Federal Government. The review and inspection of records is just one aspect of the mine inspection. Complete inspections are required under Section 103(a) of the Mine Act four times per year for underground mines and twice a year for surface operations.

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

There is a decrease of 144,674 responses (from 550,280 to 405,606) and a decrease of 23,552 burden hours (from 97,336 to 73,784) due to fewer mining operations over the last 3-year period.

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.

MSHA has no plans to publish the information obtained through this information collection.

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

There are no forms associated with this request, therefore MSHA is not seeking approval to not display the expiration date for OMB approval of this information 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. COLLECTION OF INFORMATION EMPLOYING STATISTICAL METHODS

This collection of information does not employ statistical methods.