

SUPPORTING STATEMENT

Examinations and Testing of Electrical Equipment, Including Examination, Testing, and Maintenance of High Voltage Longwalls: 30 CFR 75.351, 75.512, 75.703-3, 75.800-4, 75.820, 75.821, 75.900-4, 75.1001-1, 77.502, 77.800-2, and 77.900-2

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. Section 103(h) of the Mine Act, 30 U.S.C. 813, authorizes MSHA to collect information necessary to carry out its duty in protecting the safety and health of miners.

It has long been known that 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 if electrocutions, mine fires, and mine explosions are to be prevented. 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. § 75.512-2 specifies that the required examinations and tests be conducted at least weekly.
- (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 § 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. § 77.502-2 requires that the examinations and tests be conducted 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.
- (e) Testing and Calibration of Atmospheric Monitoring Systems
- Section 75.351(n)(3) requires testing and calibration of sensors every 31 days. Section 75.351(o) requires that a record be made of the alert or alarm signal showing date, time, type of sensor, the location of the sensor producing the signal, and the reason for activation.

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 for the paperwork provisions of the subject regulations 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 hazardous conditions that have been encountered and those that may be encountered. 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 electric equipment, MSHA inspectors may, in some cases, 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.

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 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.

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 February 17, 2011 (76 FR 9374). 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 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 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 13.**

There are currently 424 underground coal mines and 1,123 surface coal mines covered by the requirements to exam and test electrical equipment.

Examinations of High-Voltage Longwall Equipment

The burden was determined using the average compensation (wages + benefits) of \$35.30/hour for an electrician (U.S. Coal Mine Salaries, Wages and Benefits – 2009 Survey Results, Western Mine Eng, Inc.). In underground coal mines, there are currently 39 longwall units affected by §§ 75.820 and 75.821.

§ 75.820: MSHA estimates that it will take an electrician an average of 5 minutes (0.0833 hours) to lock out and tag a disconnecting device as specified in § 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 39 longwall units =	13,650 responses
0.0833 hour x 350 days/year x 39 longwall units =	1,137 burden hours
1,137 hours x \$35.30 per hour =	\$40,138 burden-hour cost

§ 75.821: § 75.821(d) requires that each unit of high-voltage longwall equipment and circuits must be examined every seven days. § 75.821(b) requires that ground-wire monitors and circuits be tested every 30 days. § 75.821(d) requires the electrician to certify by signature and date that the examinations required by § 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. It takes an electrician about 6 minutes (0.1 hours) to produce each record and certify that the examinations were conducted.

(50 + 12 + 26) responses/longwall x 39 longwalls =	3,432 responses
0.10 hour x 3,432 responses/year =	343 burden hours
343 hours x \$35.30 =	\$12,115 burden-hour cost

Examinations of Electric Equipment

The burden was determined using the average compensation (wages + benefits) of \$84.70 per hour for an underground mine supervisor and \$69.98 per hour for a surface coal mine supervisor (U.S. Coal Mine Salaries, Wages and Benefits – 2009 Survey Results, Western Mine Eng, Inc.).

§ 75.512: Approximately 921 underground coal mining sections utilizing electric equipment and each mining section has on average 6 pieces of electrical equipment. The number of other pieces of underground electrical installations is approximately 5,170. This equipment is required to be examined weekly and the results of each examination are required to be recorded. MSHA estimates that only one record is made for each section of the mine (6 pieces of equipment) and each other electrical installation and that it will take 6 minutes (0.10 hours) to create each record.

(921 + 5,170) exams/week x 1 record/exam x 50 weeks =	304,550 responses
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304,550 responses x 0.10 hour/response =	30,455 burden hours
30,455 hours x \$84.70/hour =	\$2,579,539 burden-hour cost

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

§§ 77.502 and 77.502-2: The number of electrical installations at surface coal mines and surface facilities is approximately 21,038. § 77.502-2 requires these installations to be examined monthly and § 77.502 requires the results of each examination to be recorded. MSHA estimates that the results of each examination will take 15 minutes (0.25 hour) to record.

21,038 exams/month x 1 response/exam x 12 months =	252,456 responses
252,456 responses x 0.25 hour =	63,114 burden hours
63,114 burden hours x \$69.98 =	\$4,416,718 burden-hour cost

Examinations of High-Voltage Circuit Breakers

§§ 75.800-3 and -4: The number of circuit breakers protecting high-voltage circuits extending underground is approximately 921. 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 (0.25 hour) to record.

921 exams/month x 1 response/exam x 12 months =	11,052 responses
11,052 responses x 0.25 hour/response =	2,763 burden hours
2,763 hours x \$84.70 =	\$234,026 burden-hour cost

§§ 77.800-1 and -2: The number of circuit breakers protecting high-voltage circuits extending to portable and mobile surface equipment is approximately 1,860. 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 (0.25 hour) to record.

1,860 exams/month x 1 response/exam x 12 months =	22,320 responses
22,320 responses x 0.25 hour/response =	5,580 burden hours
5,580 hours x \$69.98 =	\$390,488 burden-hour cost

Examinations of Low- and Medium-Voltage Circuit Breakers

§ 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 6,052. 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 (0.25 hour) to record.

6,052 power centers x 1 exam and test/month x 12 months =	72,624 responses
72,624 responses x 0.25 hours/response =	18,156 burden hours

18,156 hours x \$84.70/hour = \$1,537,813 burden-hour cost

§ 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 1,402. 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 (0.25 hour) to record.

1,402 installations x 1 exam and test/month x 12 months = 16,824 responses
 16,824 responses x 0.25 hours/response = 4,206 burden_hours
 4,206 x \$69.98/hour = \$294,336 burden-hour cost

Tests and Calibrations of Automatic Circuit Interrupting Devices

§ 75.1001-1(b) and (c). The number of trolley circuit breakers in underground coal mines is approximately 962. 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 (0.25 hour) to record.

962 trolley circuit breakers x 2 tests/year x 1 response/test = 1,924 responses
 1,924 responses x 0.25 hours/response = 481 burden hours
 481 hours x \$84.70/hour = \$40,741 burden-hour cost

Test and Calibration of Atmospheric Monitoring Systems

§ 75.351 (n)(3) and (o): The number of atmospheric monitoring systems in underground coal mines is approximately 622. Each monitoring system must be tested and calibrated once every 31 days and the results of the tests and calibrations must be recorded. It is estimated that the results of each test and calibration will take an average of 15 minutes (0.25 hour) to record.

622 monitoring systems x 12 tests/year x 1 response/test = 7,464 responses
 7,464 responses x 0.25 hour/response = 1,866 burden hours
 1,866 hours x \$84.70/hour = \$158,050 burden-hour cost

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

Cite/Reference	Responses	Burden Hours	Burden-Hour Costs
§ 75.820	13,650	1,137	\$40,138
§ 75.821	3,432	343	\$12,115
§§ 75.512 and 75.703-3	304,550	30,455	\$2,579,539
§§ 77.502 and 77.502-2	252,456	63,114	\$4,416,718
§§ 75.800-3 and -4	11,052	2,763	\$234,026
§§ 77.800-1 and -2	22,320	5,580	\$390,488

§§ 75.900-3 and -4	72,624	18,156	\$1,537,813
§§ 77.900-1 and -2	16,824	4,206	\$294,336
§ 75.1001-1	1,924	481	\$40,741
§ 75.351	7,464	1,866	\$158,050
TOTAL	706,296	128,101	\$9,703,964

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 shown in Items 13 and 15.)

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 designated under number 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 § 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 reporting in Items 13 or 14 of the OMB Form 83-1.

There is a decrease of 1,382 responses (from 707,678 to 706,296) and a decrease of 632,452 burden hours (from 760,553 to 128,101) due to fewer mining operations over the last 3-year period, and from a re-evaluation of the time needed to respond to the information collection requirements. Prior burden estimates included the time to perform the substantive examination work. The current estimates are based solely on the time needed to respond to the information collection.

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 either display or not display the expiration date for OMB approval of this information collection.

18. Explain each exception to the certification statement identified in Item 19, "Certification for Paperwork Reduction Act Submission," of OMB 83-1.

There are no certification exceptions identified with this information collection.

B. COLLECTION OF INFORMATION EMPLOYMENT STATISTICAL METHODS

The agency should be prepared to justify its decision not to use statistical methods in any case where such methods might reduce burden or improve accuracy of results. When Item 17 on the Form OMB 83-I is checked "Yes," the following documentation should be included in the Supporting Statement to the extent that it applies to the methods proposed:

This collection of information does not employ statistical methods.