**SUPPORTING STATEMENT FOR**

**INFORMATION COLLECTION REQUIREMENTS CONTAINED IN**

**THE HAZARDOUS ENERGY CONTROL STANDARD**

**(LOCKOUT/TAGOUT) (29 CFR 1910.147)**[[1]](#footnote-3)

**OMB CONTROL NO. 1218-0150 (July 2024)**

The agency is requesting an extension of a currently approved data collection.

**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.**

The main objective of the Occupational Safety and Health Act of 1970 (i.e., “the Act”) is to “assure so far as possible every working man and woman in the Nation safe and healthful working conditions and to preserve our human resources” (29 U.S.C. 651). To achieve this objective, the Act authorizes “the development and promulgation of occupational safety and health standards” (29 U.S.C. 651).

Section 6(b)(7) of the Act specifies that “[a]ny standard promulgated under this subsection shall prescribe the use of labels or other appropriate forms of warning as are necessary to insure that employees are apprised of all hazards to which they are exposed, relevant symptoms and appropriate emergency treatment, and proper conditions and precautions of safe use or exposure.” This provision goes on to state that “[t]he Secretary, in consultation with the Secretary of Health and Human Services, may by rule promulgated pursuant to section 553 of title 5 [United States Code], make appropriate modifications in the foregoing requirements relating to the use of labels or other forms of warning . . . as may be warranted by experience, information, or medical or technological developments acquired subsequent to the promulgation of the relevant standard” (29 U.S.C. 655).

About recordkeeping, the Act specifies that “[e]ach employer shall make, keep and preserve, and make available to the Secretary . . . such records . . . as the Secretary

. . . may prescribe by regulation as necessary or appropriate for the enforcement of this Act . . .” (29 U.S.C. 657). The Act states further that “[t]he Secretary . . . shall prescribe such rules and regulations as [he/she] may deem necessary to carry out [his/her] responsibilities under this Act, including rules and regulations dealing with the inspection of an employer’s establishment” (29 U.S.C. 657).

Under the authority granted by the Act, the Occupational Safety and Health Administration (i.e., “OSHA” or “the agency”) published at 29 CFR 1910.147 a safety standard for general industry titled “Control of Hazardous Energy (Lockout/Tagout)” (i.e., “the LO/TO Standard” or “the Standard”). The Standard regulates the control of hazardous-energy sources using lockout or tagout procedures while workers service, maintain, or repair machines or equipment when activation, start-up, or release of energy from an energy source is possible. Items 2 and 12 below describe in detail the specific information collection requirements of the Standard.

**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 Standard specifies several information collection requirements. The following sections describe who uses the information collected under each requirement, as well as how they use it. The purpose of these requirements is to control the release of hazardous-energy sources while workers service, maintain, or repair machines or equipment when activation, start-up, or release of energy from an energy source is possible; proper control of hazardous-energy sources prevent death or serious injury among these workers.

**Energy-Control Procedure (paragraph (c)(4)(i) and (c)(4)(ii))**. With limited exception, employers must document the procedures used to isolate from its energy source and render inoperative, any machine or equipment before servicing, maintenance, or repair by workers. These procedures are necessary when activation, start-up, or release of stored energy from the energy source is possible, and such release could cause injury to the workers.

Paragraph (c)(4)(ii) states that the required documentation must clearly and specifically outline the scope, purpose, authorization, rules, and techniques workers are to use to control hazardous energy, and the means to enforce compliance. The document must include at least the following elements:

A) A specific statement regarding the use of the procedure;

B) Detailed procedural steps for shutting down, isolating, blocking, and securing machines or equipment to control hazardous energy;

C) Detailed procedural steps for placing, removing, and transferring lockout or tagout devices, including the responsibility for doing so; and

D) Requirements for testing a machine or equipment to determine and verify the effectiveness of lockout or tagout devices, as well as other energy control measures.

The employer uses the information in this document as the basis for informing and training workers about the purpose and function of the energy control procedures, and the safe application, use, and removal of energy controls. Also, this information enables employers to effectively identify operations and processes in the workplace that require energy-control procedures.

**Protective Materials and Hardware (paragraph (c)(5)(ii)(D) and paragraph (c)(5)(iii)).** Paragraph (c)(5)(ii)(D) requires that lockout and tagout devices indicate the identity of the employee applying it. Paragraph (c)(5)(iii) requires that tags warn against hazardous conditions if the machine or equipment is energized. Also, the tag must include a legend such as one of the following: Do Not Start; Do Not Open; Do Not Close; Do Not Energize; Do Not Operate.

These provisions provide a safe work practice to authorized workers applying the lockout/tagout devices by giving the identity of the person applying it and warning against hazards that might exist.

**Periodic Inspection Certification Records (paragraphs (c)(6)(i) and (c)(6)(ii))**. Under paragraph (c)(6)(i), employers are to conduct inspections of energy control procedures at least annually. An authorized worker other than an authorized worker using the energy-control procedure that is the subject of the inspection is to conduct the inspection and correct any deviations or inadequacies identified. For procedures involving either lockout or tagout, the inspection must include a review, between the inspector and each authorized worker, of that worker's responsibilities under the procedure; for procedures using tagout systems, the review also involves affected workers and includes an assessment of the workers’ knowledge of the training elements required for these systems. Paragraph (c)(6)(ii) requires employers to certify the inspection by documenting the date of the inspection and identifying the machine or equipment inspected, the workers included in the inspection, and the worker who performed the inspection.

**Training Certification Records (paragraph (c)(7)(iv))**.

The requirements that employers provide training to workers under paragraph (c)(7)(i),(ii), and (iii) are not considered to be an information collection requirement. OSHA is not taking burden for this activity under Item 12 of this Supporting Statement.

Under paragraph (c)(7)(iv), employers are to certify that workers have completed the required training and that this training is up-to-date. The certification is to contain each worker’s name and the training date. Written certification of the training assures the employer that workers receive the training specified by the Standard.

**Disclosure of Inspection and Training Certification Records (paragraphs (c)(6)(ii) and (c)(7)(iv))**. Under these provisions, employers subject to an OSHA inspection are required to disclose inspection and training certification records to the OSHA compliance officer. The inspection records provide employers with assurance that workers can safely and effectively service, maintain, and repair machines and equipment covered by the Standard. These records also provide the most efficient means for an OSHA compliance officer to determine that an employer is complying with the Standard and that the machines and equipment are safe for servicing, maintenance, and repair. The training records provide the most efficient means for an OSHA compliance officer to determine whether an employer has performed the required training.

The agency has no annualized records disclosure costs associated with enforcing the Standard. OSHA would only review records in the context of an investigation of a particular employer to determine compliance with the Standard. These activities are outside the scope of the PRA. See 5 CFR 1320.4(a)(2).

**Notification of Employees (paragraph (c)(9))**. This provision requires the employer or authorized worker to notify affected workers before applying, and after removing, a lockout or tagout device from a machine or equipment. Such notification informs workers of the impending interruption of the normal production operation and serves as a reminder of the restrictions imposed on them by the energy-control program. Also, this requirement ensures that workers do not attempt to reactivate a machine or piece of equipment after an authorized worker isolates its energy source and renders it inoperative. Notifying workers after removing an energy-control device alerts them that the machines and equipment are no longer safe for servicing, maintenance, and repair.[[2]](#footnote-4)

**Offsite Personnel (Contractors, etc.) (paragraph (f)(2)(i))**. When the onsite employer uses an offsite employer (e.g., a contractor) to perform the activities covered by the scope and application of the Standard, the two employers must inform each other regarding their respective lockout or tagout procedures. This provision ensures that each employer knows about the unique energy-control procedures used by the other employer; this knowledge prevents any misunderstanding regarding the implementation of lockout or tagout procedures, and the use of lockout or tagout devices for a particular application.

**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.**

Employers may use automated, electronic, mechanical, or other technological information-collection techniques, or other forms of information technology (e.g., electronic submission of responses), when establishing and maintaining the required records. The agency wrote the information collection requirements of the Standard in performance-oriented language (i.e., in terms of what data to collect, not how to record the data).

**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 A.2 above.**

The requirements to collect and maintain information are specific to each employer and worker involved, and no other source or agency duplicates these requirements or can make the required information available to OSHA (i.e., the required information is available only from employers).

**5.** **If the collection of information impacts small businesses or other small entities, describe any methods used to minimize the burden.**

The information collection requirements specified by the Standard do not have a significant impact on a substantial number of small entities. The agency has published *OSHA Instruction, Directive Number CPL 02-00-147, The Control of Hazardous Energy – Enforcement Policy and Inspection Procedures, February 11, 2008*. Although this directive establishes OSHA’s enforcement policy for the standards addressing the control of hazardous energy, the agency has made the directive available to the public to assist them in complying with and understanding the requirements of the LO/TO Standard.

**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 agency believes that the information collection frequencies required by the Standard are the minimum frequencies necessary to effectively regulate hazardous-energy sources, and thereby fulfill its mandate “to assure so far as possible every working man and woman in the Nation safe and healthful working conditions and to preserve our human resources” as specified by the Act at 29 U.S.C. 651. Accordingly, when employers do not perform the required information collections or delay in providing this information, workers may not use energy-control procedures effectively and safely, thereby increasing their probability of death and serious injury caused by the uncontrolled release of hazardous energy.

**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 statistical data classification that has not been reviewed and approved by OMB;**
* **that includes a pledge of confidentially 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 secret, or other confidential information unless the agency can demonstrate that it has instituted procedures to protect the information's confidentially to the extent permitted by law.**

No special circumstances exist that require employers to collect information using the procedures specified by this item. The requirements are within the guidelines outlined 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.**

As required by the Paperwork Reduction Act (44 U.S.C. 3506(c)(2)(A)), OSHA published a notice on April 30, 2024 in the Federal Register(89 FR 34274)soliciting public comments on its proposal to extend the Office of Management and Budget‘s (OMB) approval of the information collection requirements specified in the Control of Hazardous Energy Standard (Lockout/Tagout) (29 CFR 1910.147) under docket number OSHA-2011-0033. This notice was part of a preclearance consultation program that provides the general public and government agencies with an opportunity to comment. The agency did not receive any public comments in response to this notice.

**9. Explain any decision to provide any payments or gifts to respondents, other than remuneration of contractors or grantees.**

The agency will 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.**

The information collection requirements specified by the Standard do not involve confidential information.

**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.**

None of the provisions in the Standard require sensitive information.

**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. General, 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.**
* **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.**

**Respondent Burden Hour and Cost Determinations**

For this Information Collection Request (ICR), in deriving establishment and employment figures for the three impact groups affected by the standard (described below), the agency updated the total number of establishments from the previous ICR using U.S. Census Bureau 2023 data (2021 County Business Patterns).[[3]](#footnote-5) The agency applied percentages obtained from the Regulatory Impact Analysis (RIA) performed on the final Standard to these updated figures to estimate the number of high- and low-impact establishments having authorized workers, as well as the number of authorized and affected workers at these establishments. These estimates are available at the end of this Supporting Statement in Tables 8, “Establishments and Employment for the Manufacturing Sector (High-Impact Industries)” and 9, “Establishments and Employment in Low-Impact Industries.”

In Tables 8 and 9, OSHA uses an industry-classification scheme from the RIA.[[4]](#footnote-6) This scheme classifies industries covered by the Standard into the following three groups: high-impact, low-impact, and zero- or negligible-impact. The high-impact group consists of all manufacturing industries (i.e., North American Industrial Classification System (NAICS) Codes 31-33 while the low-impact group includes industries in the following sectors: transportation, communications, utilities, wholesale-trade, retail-food, and several industries in the service sector (i.e., personal services, business services, automotive repair, miscellaneous repair, and amusement services. See Table 9 for a detailed listing of the specific industries included in each sector. Also note that electrical generation, transmission, and distribution industries are excluded from the utility sector as establishments in these industries are explicitly not in scope for the standard. Finally, included in the zero- or negligible-impact group is industries found to have little potential for an accident involving hazardous-energy release. These industries include retail trade, finance, insurance, real estate, service, and public-administration industries not classified as high- or low-impact groups.

Regarding the time estimates for performing the wide variety of information collections required by the Standard, OSHA is using the estimates from the previous ICR. These estimates appear to be reasonable because the agency based them on the data from the RIA which was available for public review and comment when it was published in the final Standard. Also, most of the establishments engaged in performing these information collections have many years of experience in doing so; therefore, these times probably are upper-bound estimates.

**Wage Rate Determinations**

The agency determined the wage rate from mean hourly wage earnings to represent the cost of employee time for the relevant Standard Occupational Classification (SOC) category, OSHA used the wage rates reported in the Bureau of Labor Statistics, U.S. Department of Labor, *Occupational Employment and Wage Statistics (OEWS)*, *May 2022* [date accessed: March 5, 2024]. (OEWS data is available at <https://www.bls.gov/oes/tables.htm>. To access a wage rate, select the year, “Occupation Profiles,” and the Standard Occupational Classification (SOC) code.)

To derive the loaded hourly wage rate presented in table 1 below, the agency used data from the Bureau of Labor Statistics’ (BLS) *Occupational Employment and Wage Statistics (OEWS*), as described in the paragraph above.  Then, the agency applied to the wage rate a fringe benefit markup based on the following BLS release: *Employer Costs for Employee Compensation – September 2023* news release text; released 10:00 AM (EDT), December 15, 2023 (<https://www.bls.gov/news.release/pdf/ecec.pdf>).BLS reported that for private industry workers, fringe benefits accounted for 29.4 percent of total compensation and wages accounted for the remaining 70.6 percent.  To calculate the loaded hourly wage for each occupation, the agency divided the mean hourly wage rate by 1 minus the fringe benefits. These results are summarized in table 1.

| **Table 1: WAGE HOUR ESTIMATES** | | | | |
| --- | --- | --- | --- | --- |
| **Occupational Title** | **SOC Code** | **Mean Hourly Wage Rate (A)** | **Fringe Benefits**  **(B)** | **Loaded Hourly Wage Rate**  **(C) = (A)/(1-(B))** |
| [First-Line Supervisors of Production and Operating Workers](https://www.bls.gov/oes/current/oes511011.htm) (Supervisor) | 51-1011 | $33.22 | 0.294 | $47.05 |
| Production Occupations (Non-supervisory manufacturing worker) | 51-0000 | $21.81 | 0.294 | $30.89 |
| [Secretaries and Administrative Assistants, Except Legal, Medical, and Executive](https://www.bls.gov/oes/current/oes436014.htm) (Secretary) | 43-6014 | $20.87 | 0.294 | $29.56 |

The following sections summarize the methodology used to estimate the number of burden hours and the costs resulting from the information collection requirements of the Standard.

**(A) Energy-Control Procedure (paragraph (c)(4)(i))**

OSHA estimates that 24,405 high-impact establishments develop new procedures annually. The time to perform this activity ranges from 2 to 80 hours. Also, 52,424 low-impact establishments will develop new procedures. The time for low-impact establishments to develop procedures is estimated at 2 hours. (See Table 10 for a specific number of establishments in each size category for both high- and low-impact establishments; the burden hour for each size establishment; and details as to how OSHA arrived at the number of establishments.)

The agency also estimates that every year, a supervisor takes from 30 minutes (30/60 hours) to 20 hours to update procedures in the 250,917 high-impact establishments and 30 minutes to update procedures in the 524,236 low-impact establishments affected. (See Table 10 for a specific number of establishments in each size category for both high- and low-impact establishments; the burden hour for each size establishment; and details as to how OSHA arrived at the number of establishments.)

*1. High-impact establishments (new procedures)*:

**Table 2 – Estimated Burden Hours and Cost for****High-impact Establishments**

| **Establishment Size** | **Responses** | **Time per Response** | **Burden Hours** | **Loaded Hourly Wage** | **Cost** |
| --- | --- | --- | --- | --- | --- |
| *Very Small* | 17,894 | 2 | 35,788 | $47.05 | $1,683,825 |
| *Small* | 4,874 | 12 | 58,488 | $47.05 | $2,751,860 |
| *Medium* | 1,145 | 40 | 45,800 | $47.05 | $2,154,890 |
| *Large* | 492 | 80 | 39,360 | $47.05 | $1,851,888 |
| *Sub-total* | 24,405 | - | 179,436 | - | $8,442,464 |

**Burden Hours:** 24,405 high-impact establishments (new procedures) x range of 2 to 80 hours = 179,436 hours

**Burden Costs:** 179,436 hours x $47.05 = $8,442,464

*2. Low-impact establishments (new procedures)*:

**Table 3 – Estimated Burden Hours and Cost for****Low-impact Establishments**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Industry** | **Responses** | **Time per Response** | **Burden Hours** | **Loaded Hourly Wage** | **Cost** |
| *Transportation* | 30,342 | 2 | 60,684 | $47.05 | $2,855,182 |
| *Communications* | 6,210 | 2 | 12,420 | $47.05 | $584,361 |
| *Utilities* | 1,384 | 2 | 2,768 | $47.05 | $130,234 |
| *Wholesale Trade* | 3,400 | 2 | 6,800 | $47.05 | $319,940 |
| *Food Stores* | 1,566 | 2 | 3,132 | $47.05 | $147,361 |
| *Services* | 9,521 | 2 | 19,042 | $47.05 | $895,926 |
| *Sub-total* | 52,423 | - | 104,846 | - | $4,933,004 |

**Burden Hours:** 52,424 low-impact establishments (new procedures) x 2 hours = 104,846 hours

**Burden Costs:** 104,846 hours x $47.05 = $4,933,004

*3. High-impact establishments (updating procedures)*:

**Table 4 – Estimated Burden Hours and Cost for****High-impact Establishments**

| **Establishment Size** | **Responses** | **Time per Response** | **Burden Hours** | **Loaded Hourly Wage** | **Cost** |
| --- | --- | --- | --- | --- | --- |
| *Very Small* | 178,943 | 30/60 | 89,472 | $47.05 | $4,209,658 |
| *Small* | 48,743 | 4 | 194,972 | $47.05 | $9,173,433 |
| *Medium* | 11,446 | 12 | 137,352 | $47.05 | $6,462,412 |
| *Large* | 4,918 | 20 | 98,360 | $47.05 | $4,627,838 |
| *Sub-total* | 244,050 | - | 520,156 | - | $24,473,341 |

**Burden Hours:** 244,050 high-impact establishments (updating) x range of 30/60 to 20 hours = 520,156 hours

**Burden Costs:** 520,156 hours x $47.05 = $24,473,341 (rounded)

*4. Low-impact establishments (updating procedures)*:

**Table 5 – Estimated Burden Hours and Cost for****Low-impact Establishments**

| **Industry** | **Responses** | **Time per Response** | **Burden Hours** | **Loaded Hourly Wage** | **Cost** |
| --- | --- | --- | --- | --- | --- |
| *Transportation* | 303,421 | 30/60 | 151,711 | $47.05 | $7,138,003 |
| *Communications* | 62,101 | 30/60 | 31,051 | $47.05 | $1,460,950 |
| *Utilities* | 13,844 | 30/60 | 6,922 | $47.05 | $325,680 |
| *Wholesale Trade* | 33,998 | 30/60 | 16,999 | $47.05 | $799,803 |
| *Food Stores* | 15,661 | 30/60 | 7,831 | $47.05 | $368,449 |
| *Services* | 95,210 | 30/60 | 47,605 | $47.05 | $2,239,815 |
| *Sub-total* | 524,235 |  | 262,119 | - | $12,332,700 |

**Burden Hours:** 524,236 low-impact establishments x 30/60 hour = 262,119 hours

**Burden Costs:** 262,119 hours x $47.05 = $12,332,700 (rounded)

**(B) Periodic Inspection (Paragraph (c)(6)(ii))**

OSHA assumes that a supervisor takes 20 minutes (20/60 hours) to inspect an establishment’s energy-control procedure once a year and to prepare and maintain the inspection certificate. Therefore, the estimated total yearly burden hours and cost resulting from this information collection requirement are:

1. *High-impact establishments*:

**Burden Hours:** 282,654 high-impact establishments x 20/60 hour = 94,218 hours

**Burden Costs:** 94,218burden hours x $47.05 = $4,432,957

1. *Low-impact establishments*:

**Burden Hours:** 524,236 low-impact establishments x 20/60 hour = 174,745 hours

**Burden Costs:** 174,745 burden hours x $47.05 = $8,221,752

**(C) Training Certification Records (Paragraph (c)(7)(iv))**

The agency estimates that 6.5 million workers (i.e., 6,519,671) covered by the Standard require training each year (i.e., the total number of authorized and affected workers in high- and low-impact establishments listed in Tables 8 and 9). This provision specifies that employers must prepare, maintain, and disclose training records. The agency assumes that each year, employers have to prepare and maintain training records for 23 percent, or 1,500,815 of (1,500,815 = 806,890 establishments x 1.86) these workers (i.e., new workers and workers who require training), as well as maintain training records for the remaining 5,018,856 workers (5,018,856 = 806,890 establishments x 6.22).[[5]](#footnote-7)  In this regard, OSHA believes that a secretary spends 3 minutes (3/60 hour) preparing and maintaining the record for the 23 percent of workers who are new or require retraining; and, another 1 minute (1/60 hour) maintaining the already prepared record for the remaining workers (77 percent). Accordingly, the annual burden hour and cost estimates for the information collection requirements associated with this training requirement are:

*1. Establishments with new/retrained workers*:

**Burden Hours:** 1,500,815 training records – new/retraining x 3/60 hour = 75,041 hours

**Burden Costs: 7**5,141burden hours x $29.56 =$2,218,212

*2. Establishments with remaining workers*:

**Burden Hours:** 5,018,856 training records for remaining workers x 1/60 hour = 83,648 hours

**Burden Costs:** 83,648burden hours x $29.56 = $2,472,635

**(D) Notification of Employees (Paragraph (c)(9))**

OSHA has determined that the average number of lockout or tagout events that occur annually varies by the size of the establishment and whether the establishment is in a high-impact or low-impact industry. OSHA estimates that there are approximately 88,488 authorized workersin very small, high-impact establishments who would have to notify affected workers of the application and removal of lockout/tagout devices (since this practice was not customary and normal in these facilities before the promulgation of the standard) (see Table 8). [[6]](#footnote-8)  (88,488 workers = 196,641 establishments x .45 workers/establishment.)

OSHA estimates that, on average, there are 75 maintenance or servicing operations conducted annually in each very small, high-impact establishment. For other high-impact establishments, it is estimated that there are approximately 287,283 authorized workers in establishments who would have to notify affected workers of the application and removal of lockout/tagout devices (see Table 8). It is estimated that, on average, there will be 150 such maintenance or service operations conducted annually in each of these establishments. (287,283 workers = 86,013 high-impact, other than very small establishments x 3.34 workers/establishment.)

Additionally, 807,323 authorized workers in low-impact establishments would have to notify affected workers of the application and removal of lockout/tagout devices (see Table 9). These workers are estimated to perform, on average, 12 maintenance or servicing operations annually for each low-impact establishment. (807,323 workers = 524,236 low-impact establishments x 1.54 workers/establishment.)

OSHA estimates that a total of 59,417,028 lockout or tagout events occur annually where notification (not customarily performed) is needed. OSHA assumes that an authorized worker is a non-supervisory manufacturing worker who requires 15 seconds (.25/60 hours) to provide the required notification (i.e., 10 seconds for applying a lockout/tagout device, and five seconds for removing the device). Accordingly, the total annual burden hour and cost estimates for this notification are:

*1. High-impact, very small establishments*:

**Burden Hours:** (196,641 establishments x .45 workers/establishments) x 75 operations/year = 6,636,634 events/year x 0.25/60 = 27,653 hours

**Burden Costs:** 27,653 hours x $30.89 = $854,201

*2. High-impact, other than very small establishments*:

**Burden Hours:** (86,013 establishments x 3.34 workers/establishment) x 150 operations/year = 43,092,513 events/year x 0.25/60 = 179,552 hours

**Burden Costs:** 179,552 hours x $30.89 = $5,546,361

*3. Low-impact establishments*:

**Burden Hours:** (524,236 establishments x 1.54 workers/establishment) x 12 operations/year = 9,687,881 events/year x 0.25/60 = 40,366 hours

**Burden Costs:** 40,366 hours x $30.89 = $1,246,906

**(E) Outside Personnel (Contractors, etc.) (Paragraph (f)(2)(i))**

Paragraph (f)(2)(i) requires onsite and outside (contractor) employers to notify each other of their respective LO/TO procedures. Notification of respective LO/TO procedures takes 5 minutes (5/60 hours) for the onsite and outside contractor to meet and discuss respective LO/TO procedures. As both the onsite employer and outside contractor attend the five-minute meeting, the agency assumes a total of 10 minutes (10/60 hours) for this requirement.

A supervisor/manager, at a wage rate of $47.05 per hour will perform the notifications. Further, OSHA believes that contractors are involved in 10 percent of all lockout/tagout events. As determined above, there are 59,417,028lockout/tagout events annually that require workers to be notified (59,417,028x 10% = 5,941,703 notifications) (5,941,703 notifications = 806,890 establishments x 7.3637 notifications per establishment).

**Burden Hours:** 5,941,703 x 10/60 hour = 990,284hours

**Burden Costs:** 990,284hours x $47.05 = $46,592,862

| **Table 6** **- Estimated Annualized Respondent Cost and Hour Burden** | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |
| **Information Collection Requirements** | **No. of Respondents** | **No of Responses per Respondent** | **Total Responses** | **Time per Response (in Hours)** | **Total**  **Burden Hours** | **Loaded Hourly Wage** | **Total**  **Burden Cost** |
|
| **(A) Energy-Control Procedure (paragraph (c)(4)(i))** |  | | | | | | |
| *1. High-impact establishments (new procedures)* |  | | | | | | |
| *Very Small* | 17,894 | 1 | 17,894 | 2 | 35,788 | $47.05 | $1,683,825 |
| *Small* | 4,874 | 1 | 4,874 | 12 | 58,488 | $47.05 | $2,751,860 |
| *Medium* | 1,145 | 1 | 1,145 | 40 | 45,800 | $47.05 | $2,154,890 |
| *Large* | 492 | 1 | 492 | 80 | 39,360 | $47.05 | $1,851,888 |
| *Sub-total* | 24,405 | - | 24,405 | - | 179,436 | - | $8,442,463 |
| *2. Low-impact establishments (new procedures)* |  | | | | | | |
| *Transportation* | 30,342 | 1 | 30,342 | 2 | 60,684 | $47.05 | $2,855,182 |
| *Communications* | 6,210 | 1 | 6,210 | 2 | 12,420 | $47.05 | $584,361 |
| *Utilities* | 1,384 | 1 | 1,384 | 2 | 2,768 | $47.05 | $130,234 |
| *Wholesale Trade* | 3,400 | 1 | 3,400 | 2 | 6,800 | $47.05 | $319,940 |
| *Food Stores* | 1,566 | 1 | 1,566 | 2 | 3,132 | $47.05 | $147,361 |
| *Services* | 9,521 | 1 | 9,521 | 2 | 19,042 | $47.05 | $895,926 |
| *Sub-total* | 52,423 | - | 52,423 | - | 104,846 | - | $4,933,004 |
| *3. High-impact establishments (updating procedures)* |  | | | | | | |
| *Very Small* | 178,943 | 1 | 178,943 | 30/60 | 89,472 | $47.05 | $4,209,658 |
| *Small* | 48,743 | 1 | 48,743 | 4 | 194,972 | $47.05 | $9,173,433 |
| *Medium* | 11,446 | 1 | 11,446 | 12 | 137,352 | $47.05 | $6,462,412 |
| *Large* | 4,918 | 1 | 4,918 | 20 | 98,360 | $47.05 | $4,627,838 |
| *Sub-total* | 244,050 | - | 244,050 | - | 520,156 | - | $24,473,341 |
| *4. Low-impact establishments (updating procedures)* |  |  |  |  |  |  |  |
| *Transportation* | 303,421 | 1 | 303,421 | 30/60 | 151,711 | $47.05 | $7,138,003 |
| *Communications* | 62,101 | 1 | 62,101 | 30/60 | 31,051 | $47.05 | $1,460,950 |
| *Utilities* | 13,844 | 1 | 13,844 | 30/60 | 6,922 | $47.05 | $325,680 |
| *Wholesale Trade* | 33,998 | 1 | 33,998 | 30/60 | 16,999 | $47.05 | $799,803 |
| *Food Stores* | 15,661 | 1 | 15,661 | 30/60 | 7,831 | $47.05 | $368,449 |
| *Services* | 95,210 | 1 | 95,210 | 30/60 | 47,605 | $47.05 | $2,239,815 |
| *Sub-total* | 524,235 |  | 524,235 |  | 262,119 | - | $12,332,700 |
| **Total for (A)** | **-** | **-** | **845,113** | **-** | **1,066,557** | **-** | **$50,181,508** |
|  | | | | | | | |
| **(B) Periodic Inspection (paragraph (c)(6)(ii))** |  | | | | | | |
| *High-impact establishments* | 282,654 | 1 | 282,654 | 20/60 | 94,218 | $47.05 | $4,432,957 |
| *Low-impact establishments* | 524,236 | 1 | 524,236 | 20/60 | 174,745 | $47.05 | $8,221,752 |
| **Total for (B)** | **-** | **-** | **806,890** | **-** | **268,963** | **-** | **$12,654,709** |
|  | | | | | | | |
| **(C) Training Certification Records (paragraph (c)(7)(iv))** |  | | | | | | |
| *Establishments with new/retrained workers* | 806,890 | 1 x 1.86 | 1,500,815 | 3/60 | 75,041 | $29.56 | $2,218,212 |
| *Establishments with remaining workers* | 806,890 | 1 x 6.22 | 5,018,856 | 1/60 | 83,648 | $29.56 | $2,472,635 |
| **Total for (C)** | **-** | **-** | **6,519,671** | **-** | **158,689** | **-** | **$4,690,847** |
|  | | | | | | | |
| **(D) Notification of Employees (paragraph (c)(9))** |  | | | | | | |
| *High-impact, very small establishments* | 196,641 | 75 x .45 | 6,636,634 | 0.25/60 | 27,653 | $30.89 | $854,201 |
| *High-impact, other than very small establishments* | 86,013 | 150 x 3.34 | 43,092,513 | 0.25/60 | 179,552 | $30.89 | $5,546,361 |
| *Low-impact establishments* | 524,236 | 12 x 1.54 | 9,687,881 | 0.25/60 | 40,366 | $30.89 | $1,246,906 |
| **Total for (D)** |  |  | **59,417,028** |  | **247,571** |  | **$7,647,468** |
|  | | | | | | | |
| **(E) Outside Personnel (Contractors, etc.) (paragraph (f)(2)(i))** |  |  |  |  |  |  |  |
| **Total for (E)** | 806,890 | 1 x 7.3637 | **5,941,703** | 10/60 | **990,284** | $47.05 | **$46,592,862** |
|  | | | | | | | |
| **GRAND TOTAL** | **806,890** | **-** | **73,530,405** | **-** | **2,732,064** | **-** | **$121,767,394** |

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

* **The cost estimate should be split into two components: (a) a total capital**

**and start-up cost component (annualized over its expected useful life); and (b) a**

**total operation and maintenance and purchase of service components.**

**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.**

Paragraph (c)(5)(ii)(D) requires that each lock and tag indicate the identity of the authorized worker applying it. Paragraph (c)(5)(iii) requires that tags warn against hazardous conditions that could arise if the machine, equipment, or system is energized. Also, the tag must include a legend such as one of the following: Do Not Start; Do Not Open; Do Not Close; Do Not Energize; Do Not Operate.

OSHA estimates that a total of **59,417,028** lockout or tagout events occur annually where notification is needed. The agency is estimating the cost of tags based on the average use of 7 times per tag. The cost for each tag and tie is 0.17 cents. Therefore, OSHA estimates that employers will incur a cost for tags of **$1,442,985**.

**Cost:** **59,417,028** (notifications)/ 7 (average use of tag) x 0.17 cents = **$1,442,985**

**14. Provide estimates of the 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), 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 into a single table.**

The agency has no annualized cost associated with enforcing the Standard. OSHA would only review records in the context of an investigation of a particular employer to determine compliance with the Standard. These activities are outside the scope of the PRA. See 5 CFR 1320.4(a)(2).

**15. Explain the reasons for any program changes or adjustments.**

OSHA is requesting an adjustment increase of 109,152 burden hours (from 2,622,912 to 2,732,064 hours). This increase is due to an increase in the number of affected establishments going from 773,209 establishments to 806,890 establishments.

Also, OSHA is requesting an adjustment increase of $72,331 in operation and maintenance costs (from $1,370,654 to $1,442,985) associated with the purchase of tags and ties by employers. This increase in capital cost is the result of an increase in the number of affected establishments.

| **Table 7: Requested Burden-Hour Adjustments** | | | | | |
| --- | --- | --- | --- | --- | --- |
| **Information Collection Requirement** | **Current Burden Hours** | **Requested Burden Hours** | **Adjustment in Hours** | **Cost Under Item 12** | **Responses** |
| (**A) Energy-Control Procedure (paragraph (c)(4)(i))** |  |  |  |  |  |
| High-impact establishments developing new procedures | 183,276 | 179,436 | -3,840 | $8,442463 | 24,405 |
| Low-impact establishments developing new procedures | 96,532 | 104,846 | 8,314 | $4,933,004 | 52,423 |
| High-impact establishments updating procedures | 532,093 | 520,156 | -11,937 | $24,473,341 | 244,050 |
| Low-impact establishments updating procedures | 241,325 | 262,119 | 20,794 | $12,333,700 | 524,236 |
| **(B) Periodic Inspection Certification Records (paragraph (c)(6)(ii)** | 257,736 | 268,963 | 11,227 | $12,654,709 | 806,890 |
| **(C) Training Certification Records (paragraph (c)(7)(iv))** | 136,144 | 158,689 | 22,545 | $4,690,847 | 6,519,671 |
| **(D) Notification of Workers (paragraph (c)(9))** | 235,161 | 247,571 | 12,410 | $7,647,468 | 59,417,028 |
| **(E) Offsite Personnel (Contractors, etc.) (paragraph (f)(2)(i))** | 940,645 | 990,284 | 49,639 | $46592,862 | 5,936,570 |
| **TOTALS** | **2,622,912** | **2,732,064** | **109,152** | **$121,767,394** | **73,530,405** |

**16. For collections of information whose results will be published, outline plans for tabulations, 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 the report, publication dates, and other actions**.

OSHA will not publish the information collected under the Standard.

**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.**

OSHA lists current valid control numbers in §§1910.8, 1915.8, 1917.4, 1918.4, and 1926.5 and publishes the expiration date in the Federal Register notice announcing OMB approval of the information-collection requirement. (See 5 CFR 1320.3(f)(3).) OSHA believes that this is the most appropriate and accurate mechanism to inform interested parties of these expiration dates.

**18. Explain each exception to the certification statement.**

OSHA is not seeking an exception to the certification statement.

**B. COLLECTIONS OF INFORMATION EMPLOYING STATISTICAL METHODS**

This Supporting Statement does not contain any information collection requirements that employ statistical methods.

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Table 8: Establishments and Employment for the Manufacturing Sector (High-Impact Industries)** | | | | | | | | | | |
| **Number of Authorized Employees** | | | | | | | | **Number of Additional Employees Covered** | | |
| Size Category | Employment Size | Total Number of Establishments | Number of Establishments Employing Authorized Workers | Total Number of Employees | Total | In Establishments with Compliant Lockout/ Tagout Programs When the Standard Published | In Establishments without Lockout/ Tagout Programs When the Standard Published | Total | In Establishments with Compliant Lockout/Tagout Programs When the Standard Published | In Establishments without Lockout /Tagout Programs When the Standard Published |
| Very Small | <20 | 196,641 | 196,641 | 1,099,372 | 109,937 | 21,987 | 87,950 | 109,937 | 21,987 | 87,950 |
| Small | 20-99 | 61,466 | 61,466 | 2,710,334 | 271,033 | 121,965 | 149,068 | 542,067 | 243,930 | 298,137 |
| Medium | 100-249 | 16,281 | 16,281 | 2,508,179 | 250,818 | 163,032 | 87,786 | 501,636 | 326,063 | 175,573 |
| Large | 250+ | 8,266 | 8,266 | 5,051,147 | 505,115 | 454,603 | 50,511 | 1,010,229 | 909,206 | 101,023 |
| **Total** |  | **282,654** | **282,654** | **11,369,032** | **1,136,903** | **761,587** | **375,316** | **2,163,869** | **1,501,187** | **662,682** |
| Source: 2021 County Business Patterns Survey. U.S. Census Bureau, 2023. (<https://www.census.gov/data/datasets/2021/econ/cbp/2021-cbp.html>). | | | | | | | | | | |

| **Table 9: Establishments and Employment in (Low Impact Industries)** | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | **Number of Authorized Employees** | | | **Number of Additional Employees Covered** | | |
| Industry | Total Number of Establishments | Number of Establishments Employing Authorized Workers | Total Number of Employees | Total | In Establishments with Compliant Lockout / Tagout Programs When the Standard Published | In Establishments without Lockout / Tagout Programs When the Standard Published | Total | In Establishments with Compliant Lockout / Tagout Programs When the Standard Published | In Establishments without Lockout / Tagout Programs When the Standard Published |
| Transportation (a) | 303,421 | 303,421 | 5,978,256 | 314,164 | 157,082 | 157,082 | 314,164 | 157,082 | 157,082 |
| Communications (b) | 62,101 | 62,101 | 936,472 | 590,100 | 295,050 | 295,050 | 590,100 | 295,050 | 295,050 |
| Utilities (c) | 13,844 | 13,844 | 231,910 | 66,417 | 33,209 | 33,209 | 66,417 | 33,209 | 33,209 |
| Wholesale Trade (d) | 390,783 | 33,998 | 5,867,998 | 191,054 | 95,527 | 95,527 | 191,054 | 95,527 | 95,527 |
| Food Stores (e) | 233,751 | 15,661 | 5,908,781 | 22,877 | 11,438 | 11,438 | 22,877 | 11,438 | 11,438 |
| Services (f) | 1,107,100 | 95,210 | 17,089,560 | 426,146 | 213,073 | 213,073 | 426,146 | 213,073 | 213,073 |
| **Total** | **2,111,000** | **524,236** | **36,012,977** | **1,610,758** | **805,379** | **805,379** | **1,610,758** | **805,379** | **805,379** |

| **Table 10: Written Procedures Assuming Half of the Original "Percent of establishments in Compliance When the Rule was Published"** | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Establishment Calculations -- High Impact Establishments** |  |  |  |  |  |  |  |  |  |
| Establishment Size | Number of Establishments | Percent of Establishments in Compliance when Rule Published | Existing Establishments Originally Lacking LOTO Program | Existing Establishments with LOTO Procedures when Rule Published | Percent of Establishments with Procedures but without Written Plans | Existing Establishments with Unwritten Plans when Rule Published | Total Existing Establishments Requiring Revision | Annual Firm Turnover | New Establishments Requiring Revision |
| Very Small | 196,641 | 10% | 176,977 | 19,664 | 10% | 1,966 | 178,943 | 10% | 17,894 |
| Small | 61,466 | 23% | 47,329 | 14,137 | 10% | 1,414 | 48,743 | 10% | 4,874 |
| Medium | 16,281 | 33% | 10,908 | 5,373 | 10% | 537 | 11,446 | 10% | 1,145 |
| Large | 8,266 | 45% | 4,546 | 3,720 | 10% | 372 | 4,918 | 10% | 492 |
| **Total** | **282,654** |  | **239,760** | **42,894** |  | **4,289** | **244,050** |  | **24,405** |
|  |  |  |  |  |  |  |  |  |  |
| **Calculation of Hours for New Establishments (No Existing Program) -- High-Impact Establishments** |  |  |  |  |  |  |  |  |  |
| Establishment Size | Number of Establishments | First Year Hours | Total Hours First Year |  |  |  |  |  |  |
| Very Small | 17,894 | 2 | 35,789 |  |  |  |  |  |  |
| Small | 4,874 | 12 | 58,491 |  |  |  |  |  |  |
| Medium | 1,145 | 40 | 45,782 |  |  |  |  |  |  |
| Large | 492 | 80 | 39,346 |  |  |  |  |  |  |
| **Total** | **24,405** |  | **179,408** |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
| **Calculation of Hours for Recurring Burden in Existing Establishments -- High-Impact Establishments** |  |  |  |  |  |  |  |  |  |
| Establishment Size | Number of Establishments | Hours | Existing Establishment Hours | **Total Hours High Impact** |  |  |  |  |  |
| Very Small | 178,943 | 0.5 | 89,472 | 125,261 |  |  |  |  |  |
| Small | 48,743 | 4 | 194,970 | 253,461 |  |  |  |  |  |
| Medium | 11,446 | 12 | 137,347 | 183,129 |  |  |  |  |  |
| Large | 4,918 | 20 | 98,365 | 137,711 |  |  |  |  |  |
| Total | **244,050** |  | **520,154** | **699,562** |  |  |  |  |  |
| **Calculation of Hours for New Establishments (No Existing Program) -- Low-Impact Establishments** |  |  |  |  |  |  |  |  |  |
|  | Number of Establishments | First Year Hours | Total Hours First Year |  |  |  |  |  |  |
| Transportation | 30,342 | 2 | 60,684 |  |  |  |  |  |  |
| Communications | 6,210 | 2 | 12,420 |  |  |  |  |  |  |
| Utilities | 1,384 | 2 | 2,769 |  |  |  |  |  |  |
| Wholesale Trade | 3,400 | 2 | 6,800 |  |  |  |  |  |  |
| Food Stores | 1,566 | 2 | 3,132 |  |  |  |  |  |  |
| Services | 9,521 | 2 | 19,042 |  |  |  |  |  |  |
| **Total** | **52,424** |  | **104,847** |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
| **Calculation of Hours for Recurring Burden in Existing Establishments -- Low-Impact Establishments** |  |  |  |  |  |  |  |  |  |
|  | Number of Establishments | Hours | Existing Establishment Hours | **Total Hours Low Impact** |  |  |  |  |  |
| Transportation | 303,421 | 0.5 | 151,711 | 212,395 |  |  |  |  |  |
| Communications | 62,101 | 0.5 | 31,051 | 43,471 |  |  |  |  |  |
| Utilities | 13,844 | 0.5 | 6,922 | 9,691 |  |  |  |  |  |
| Wholesale Trade | 33,998 | 0.5 | 16,999 | 23,799 |  |  |  |  |  |
| Food Stores | 15,661 | 0.5 | 7,831 | 10,963 |  |  |  |  |  |
| Services | 95,210 | 0.5 | 47,605 | 66,647 |  |  |  |  |  |
| **Total** | **524,236** |  | **262,119** | **366,966** |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
| **Grand Totals** |  |  |  |  |  |  |  |  |  |
|  | **Total Hours** |  |  |  |  |  |  |  |  |
| High-Impact Establishments | 699,562 |  |  |  |  |  |  |  |  |
| Low-Impact Establishments | 366,966 |  |  |  |  |  |  |  |  |
| **Grand Total Hours:** | **1,066,528** |  |  |  |  |  |  |  |  |

1. The purpose of this Supporting Statement analyzes and describes burden hours and cost associated with provisions of this standard that contain information collection ; this Supporting Statement does not provide information or guidance on how to comply with, or how to enforce, these provisions. [↑](#footnote-ref-3)
2. Paragraph (e)(2) requires similar notification; because of this similarity, the agency is taking no burden hours or cost for this provision.

   [↑](#footnote-ref-4)
3. Source: 2021 County Business Patterns Survey. U.S. Census Bureau, Released April 27, 2023. (<https://www.census.gov/data/datasets/2021/econ/cbp/2021-cbp.html>). [↑](#footnote-ref-5)
4. *Regulatory Impact and Regulatory Flexibility Analysis of 29 CFR 1910.147 (The Control of Hazardous Energy Sources—Lockout/Tagout)*, U.S. Department of Labor, OSHA, Office of Regulatory Analysis, August, 1989. The source of these data was a contract report titled, *Industry Profile Study of a Standard for Control of Hazardous Energy Sources Including Lockout/Tagout Procedures*, the Eastern Research Group, May, 1985. [↑](#footnote-ref-6)
5. Because the number of authorized workers and establishments are fixed numbers based on data, as displayed in Tables 8 and 9 of this analysis, the decimal used to back-calculate the ratio of establishments to workers cannot be rounded in this equation and similar equations below. [↑](#footnote-ref-7)
6. To calculate burden hours and cost, OSHA assumes that every authorized worker will notify the affected workers. The Standard requires only that one of the authorized workers (or an employer representative) notify the affected workers. Thus, OSHA likely overestimates the burden hours and cost associated with this requirement. [↑](#footnote-ref-8)