

## PSM REGULATION CITATIONS: Trends in OSHA PSM Enforcement

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Since OSHA began issuing citations under the Process Safety Management (PSM) standard (29 CFR 1910.119), the relative frequency of citations related to some subsections of the regulation has increased dramatically, while the frequency of others has decreased just as dramatically. Has OSHA changed its focus over time? Will there be new trends in the future? These issues can be better understood by looking at citation history and the continuing deadlines built into the regulation.

### *I. OSHA PSM CITATIONS FROM MAY 1992 TO MAY 1995*

Federal and State OSHA Programs cited 384 establishments for 1,843 violations of the PSM standard during the first 36 months after its effective date (May 26, 1992). This reflects an average of approximately 5 violations per PSM-cited inspection, covering the full range of inspection types (regularly scheduled, complaints, catastrophes, etc.). Table 1 lists the total numbers of cited violations under each of the 14 subsections of the PSM regulation.

**Table 1 OSHA PSM Enforcement (All 14 Subsections), 5/26/92 through 5/31/95  
 (36 months)**

| <b>Subsection of Standard 29 CFR 1910.119</b> | <b>Number of Violations</b> | <b>% of Total</b> |
|-----------------------------------------------|-----------------------------|-------------------|
| (f) Operating Procedures (OP)                 | 405                         | 22                |
| (j) Mechanical Integrity (MI)                 | 295                         | 16                |
| (g) Training (TNG)                            | 193                         | 10                |
| (c) Employee Participation (EP)               | 180                         | 10                |
| (h) Contractors (CONT)                        | 168                         | 9                 |
| (e) Process Hazard Analysis (PHA)             | 165                         | 9                 |
| (d) Process Safety Information (PSI)          | 151                         | 8                 |
| (l) Management of Change (MOC)                | 125                         | 7                 |
| (m) Incident Investigation (INC)              | 59                          | 3                 |
| (n) Emergency Planning and Response (EPR)     | 51                          | 3                 |
| (k) Hot Work Permits (HWP)                    | 29                          | 2                 |
| (i) Pre-startup Safety Review (PSSR)          | 19                          | 1                 |
| (o) Compliance Audits (CA)                    | 3                           | --                |
| (p) Trade Secrets (TS)                        | 0                           | --                |
| <b>Total for All 14 Subsections</b>           | <b>1,843</b>                | <b>100</b>        |

Source of data for tables: Compilation from data provided by OSHA's Office of Management Data Systems

The overall data provides useful information about citation emphasis during the first 36 months of enforcement of the PSM standard. Clearly, operating procedures, mechanical integrity, and training have been major concerns, together making up nearly 50% of all the cited violations. Industry should also focus attention on the next five items in the table (employee participation, contractors, process hazard analysis, process safety information, and management of change), which together comprise over 40% of the cited violations. Thus far, the remaining six elements make up only 10% of the citations; however, this may change in the near future.

## ***II. TRENDS IN OSHA PSM CITATIONS***

From time to time, JBF Associates, Inc. (JBFA) and the Process Safety Institute (PSI) have compiled summaries of OSHA citations of the PSM standard. The different periods of time covered by the summaries are not of a consistent length, so care needs to be exercised in interpreting the data; however, JBFA and PSI found comparisons of the data to be of interest, and the data are used in this paper to illustrate areas that OSHA has focused on (and that industry probably should focus on, too).

The relative frequency of cited violations pertaining to each subsection of the standard has changed over time as illustrated in Tables 2-5, which appear on the following pages. For the first 16 months of OSHA PSM enforcement (5/26/92 through 9/30/93), 72 establishments received 437 violations, including those illustrated in Table 2. (Note that in each of these periods, six subsections had very few or no citations; consequently, only the eight most-cited subsections for each period appear in Tables 2-5.) In the next 7 months (10/1/93 through 4/30/94), OSHA cited 109 establishments for 326 violations (the eight most-cited subsections are illustrated in Table 3). Table 4 shows the breakdown of the eight most-cited subsections from a total of 874 violations that 159 establishments received over the next 8 months (5/1/94 through 12/30/94), and Table 5 presents the numbers for the eight most-cited subsections for the last 5 months (12/31/94 through 5/31/95), in which 44 establishments had 206 cited violations.

Table 6 (on page 6) presents the violation frequency rankings of the eight most-cited PSM subsections for the four periods in the first 36 months of OSHA enforcement of the PSM regulation. Significant trends in the frequency rankings are as follows: operating procedures and mechanical integrity consistently rank #1 and #2, respectively; training has fallen from #3 to #7; employee participation has moved from #4 to #7, then back to #3; and process hazard analysis began ranked #8 and ended at #4. Figure 1 illustrates these trends.

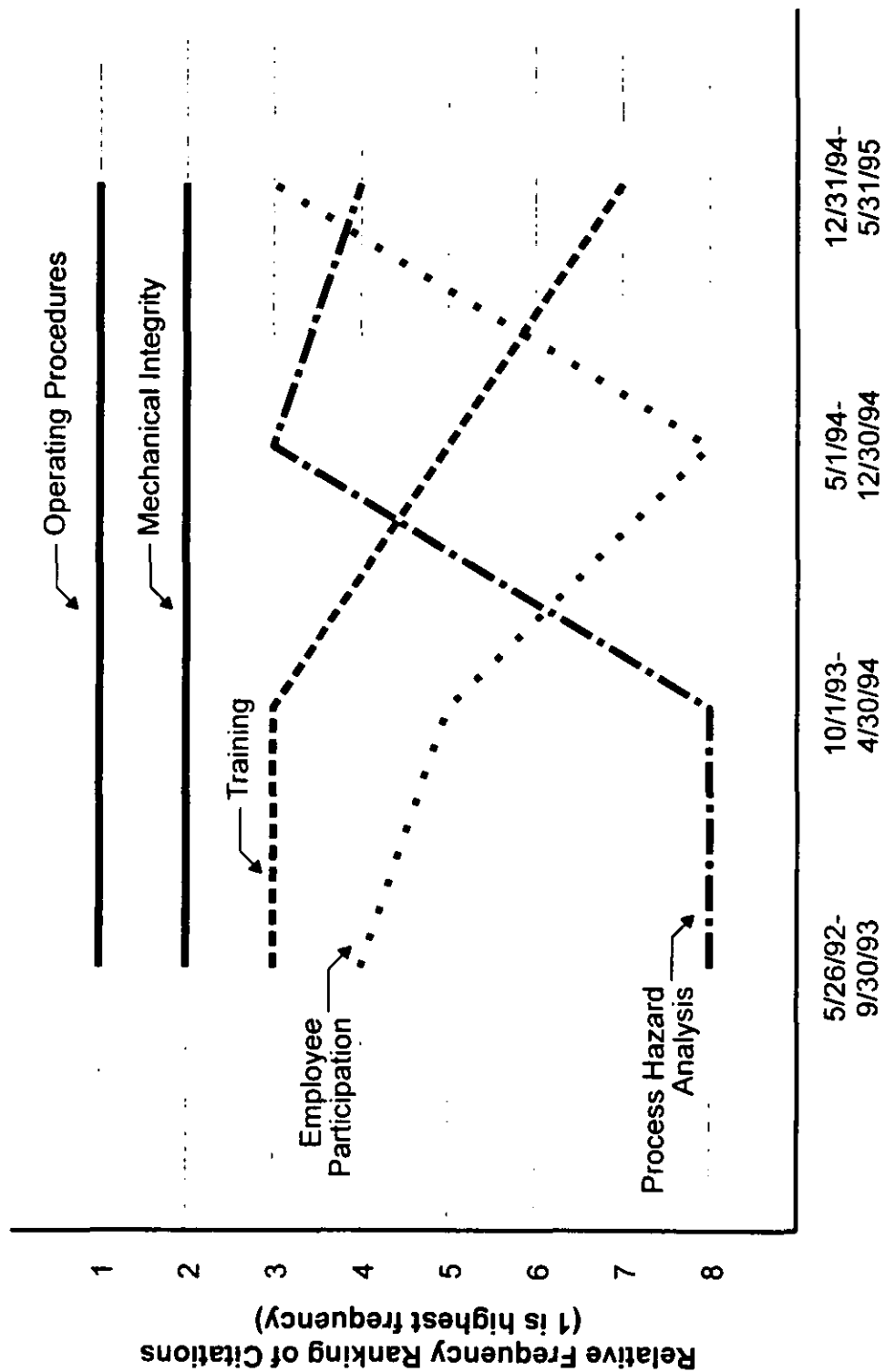


Figure 1 Significant Trends in Citations

**TABLE 2 OSHA PSM Enforcement (8 most-cited subsections),  
5/26/92 through 9/30/93 (16 months)**

| <b>Subsection of Standard</b>           | <b>Number of Violations</b> | <b>% of Total</b> |
|-----------------------------------------|-----------------------------|-------------------|
| 1. (f) OP                               | 103                         | 24                |
| 2. (j) MI                               | 63                          | 14                |
| 3. (g) TNG                              | 54                          | 12                |
| 4. (c) EP                               | 50                          | 11                |
| 5. (h) CONT                             | 49                          | 11                |
| 6. (d) PSI                              | 30                          | 7                 |
| 7. (l) MOC                              | 21                          | 5                 |
| 8. (e) PHA                              | 19                          | 5                 |
| Subtotal (for 8 most-cited subsections) | 389                         | 89                |
| Total for All 14 Subsections            | 437                         | 100               |

**TABLE 3 OSHA PSM Enforcement (8 most-cited subsections),  
10/1/93 through 4/30/94 (7 months)**

| <b>Subsection of Standard</b>           | <b>Number of Violations</b> | <b>% of Total</b> |
|-----------------------------------------|-----------------------------|-------------------|
| 1. (f) OP                               | 72                          | 22                |
| 2. (j) MI                               | 58                          | 18                |
| 3. (g) TNG                              | 43                          | 13                |
| 4. (l) MOC                              | 31                          | 10                |
| 5. (c) EP                               | 27                          | 8                 |
| 6. (h) CONT                             | 25                          | 8                 |
| 7. (d) PSI                              | 24                          | 7                 |
| 8. (e) PHA                              | 19                          | 6                 |
| Subtotal (for 8 most-cited subsections) | 299                         | 92                |
| Total for All 14 Subsections            | 326                         | 100               |

**TABLE 4 OSHA PSM Enforcement (8 most-cited subsections),  
5/1/94 through 12/30/94 (8 months)**

| Subsection of Standard                  | Number of Violations | % of Total |
|-----------------------------------------|----------------------|------------|
| 1. (f) OP                               | 190                  | 22         |
| 2. (j) MI                               | 135                  | 15         |
| 3. (e) PHA                              | 103                  | 12         |
| 4. (h) CONT                             | 86                   | 10         |
| 5. (g) TNG                              | 81                   | 9          |
| 6. (d) PSI                              | 77                   | 9          |
| 7. (c) EP                               | 74                   | 8          |
| 8. (l) MOC                              | 54                   | 6          |
| Subtotal (for 8 most-cited subsections) | 800                  | 91         |
| Total for All 14 Subsections            | 874                  | 100        |

**TABLE 5 OSHA PSM Enforcement (8 most-cited subsections),  
12/31/94 through 5/31/95 (5 months)**

| Subsection of Standard                  | Number of Violations | % of Total |
|-----------------------------------------|----------------------|------------|
| 1. (f) OP                               | 40                   | 19         |
| 2. (j) MI                               | 39                   | 19         |
| 3. (c) EP                               | 29                   | 14         |
| 4. (e) PHA                              | 24                   | 12         |
| 5. (d) PSI                              | 20                   | 10         |
| 6. (l) MOC                              | 19                   | 9          |
| 7. (g) TNG                              | 15                   | 7          |
| 8. (h) CONT                             | 8                    | 4          |
| Subtotal (for 8 most-cited subsections) | 194                  | 94         |
| Total for All 14 Subsections            | 206                  | 100        |

**TABLE 6 Rankings of the Eight Most-Cited Subsections for Four Periods from May 1992 to May 1995**

| Subsection of Standard            | VIOLATION FREQUENCY RANKING |                     |                     |                      |
|-----------------------------------|-----------------------------|---------------------|---------------------|----------------------|
|                                   | 5/26/92-<br>9/30/93         | 10/1/93-<br>4/30/94 | 5/1/94-<br>12/30/94 | 12/31/94-<br>5/31/95 |
| 1. (f) Operating Procedures       | 1                           | 1                   | 1                   | 1                    |
| 2. (j) Mechanical Integrity       | 2                           | 2                   | 2                   | 2                    |
| 3. (g) Training                   | 3                           | 3                   | 5                   | 7                    |
| 4. (c) Employee Participation     | 4                           | 5                   | 7                   | 3                    |
| 5. (h) Contractors                | 5                           | 6                   | 4                   | 8                    |
| 6. (d) Process Safety Information | 6                           | 7                   | 6                   | 5                    |
| 7. (l) Management of Change       | 7                           | 4                   | 8                   | 6                    |
| 8. (e) Process Hazard Analysis    | 8                           | 8                   | 3                   | 4                    |

### *Analysis of OSHA PSM Citations*

An analysis of the citations that OSHA has given out in the first 36 months of PSM enforcement shows definite trends in regard to which subsections have been emphasized for enforcement in the different periods (as shown in Table 6, and Figure 1 on page 3). Taking some other factors into account, the following four conclusions may be drawn:

1. The relative citation frequency for violations of the operating procedures and mechanical integrity elements of the PSM regulation was initially high because industry did not know what OSHA expected and thought current practices were sufficient. It remains high because of the labor- and resource-intensive requirements, including highly detailed written procedures, mechanical integrity training, procedure updating, inspections and test documentation, and quality assurance.
2. The relative citation frequency for training in operating procedures and safe work practices has dropped because this training should have been completed in 1992, and industry has made substantial progress in integrating requirements under this subsection into management systems.
3. The relative citation frequency of employee participation provisions has varied dramatically, primarily due to the following. Companies were supposed to have a written plan for employee participation in PSM management in place on May 26, 1992, but in many cases

did not. Therefore, employee participation was initially cited at a high frequency. As companies developed their plans and increased employee involvement, there was a dramatic reduction in citations for the second and third periods; however, Change 1 to the PSM Compliance Directive, which placed emphasis on employee consultation, was issued in September 1994. OSHA field staff responded by giving out more citations related to the guidance in the directive, which elevated this element from a frequency ranking of 8 to 3 during the first 5 months of 1995.

4. The relative violation frequency in process hazard analysis increased significantly between the second and third periods because of the requirement to have at least 25% of the initial process hazard analyses complete with appropriate methodology and detail by May 26, 1994.

### ***III. FUTURE TRENDS IN OSHA PSM CITATIONS***

Deadlines built into the regulation will most likely cause changes in the mix of PSM-cited violations in the next period (after May 31, 1995). For example, the first round of compliance audits was required to be complete by May 26, 1995. OSHA will ask for the compliance reports and may use them as a basis for some aspects of its inspections. The regulation also required refresher training to be completed by May 26, 1995, or earlier, based on consultation with operating employees; therefore, training violation frequencies may increase. Process hazard analysis violations may remain at a high level due to the requirement to have completed at least 50% of them by May 26, 1995, and at least 75% by May 26, 1996. In addition, OSHA will be investigating whether actions to resolve compliance audit findings and PHA recommendations have been tracked to completion in a timely manner. So compliance audits, which have been one of the least-cited subsections of the standard, may climb higher in the rankings in the next period.

The dynamic nature of the PSM standard requires continued self-monitoring by businesses to make adjustments and improvements in their PSM programs. Keeping an eye on trends in OSHA citations can be an additional aid in fine-tuning these programs. Businesses should watch these trends in citations of the PSM standard for several reasons: (1) the trends reflect changing emphasis by OSHA compliance officers when they perform enforcement inspections related to the PSM standard; (2) businesses can increase their understanding of the PSM standard through observation of the changes in PSM standard requirements over time (such as the requirement for PHA revalidations, beginning in 1999 or earlier, depending on the date of initial PHAs); (3) the effectiveness of managing PSM programs will increase; and (4) inspected businesses are likely to receive fewer PSM violations, indicating a greater level of compliance with the PSM standard, safer and more healthful workplaces, and lower penalties assessed by OSHA.