

**NISTIR 7227**

# **Eighth Annual Report on Federal Agency Use of Voluntary Consensus Standards and Conformity Assessment**

Kevin L. McIntyre

Michael B. Moore

*Standards Coordination and Conformity Group*

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**NIST**

**National Institute of Standards and Technology**  
Technology Administration, U.S. Department of Commerce

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**U.S. DEPARTMENT OF COMMERCE**

*Carlos M. Gutierrez, Secretary*

**TECHNOLOGY ADMINISTRATION**

*Michelle O'Neill, Deputy Under Secretary of Commerce for Technology*

**NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY**

*Hratch G. Semerjian, Acting Director*

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# Summary Report on Federal Agency Use of Voluntary Consensus Standards and Conformity Assessment Activities for FY 2004

## 1.0 – Executive Summary

This summary report is provided to the Office of Management and Budget (OMB) by the U.S. Department of Commerce's National Institute of Standards and Technology (NIST) in compliance with OMB Circular A-119 and Public Law 104-113, the National Technology Transfer and Advancement Act (NTTAA). It describes activities related to the use of voluntary consensus standards and conformity assessment practices by agencies of the Federal government during FY 2004 as required by Section 9 of the Circular. This report presents the standards and conformity assessment activities of 26 Federal agencies.

The OMB Circular states that it does not establish a preference among standards developed in the private sector. Therefore, references in the NTTAA and the OMB Circular to voluntary consensus standards are interpreted throughout this report as private sector standards, a term that includes non-consensus as well as consensus standards. Consequently, the information contained in this report, as received from the agencies, includes the use of private sector standards, both consensus and non-consensus, as well as participation in standards development activities of both consensus and non-consensus standards developing organizations.

Reported data show that, overall, Federal agencies continue to look overwhelmingly to the private sector to fulfill government needs rather than creating new government-unique standards. Federal agencies reported using 4,559 private sector standards during FY 2004, while using only 71 government-unique standards during the same period.

For FY 2004, Federal agencies reported 179 new uses of private sector standards. In addition, during the same period agencies substituted 104 private sector standards for government-unique standards. Agency reports on the number of government-unique standards used in lieu of voluntary consensus standards showed a net decrease of one (i.e., one new use and two rescissions) reported in FY 2004.

Federal agencies reported participation in 431 private sector standards developing organizations during FY 2004, a noticeable decrease from the FY 2003 participation level. The number of agency staff participating in standards activities was 3,208, a decline from the previous reporting period, but still substantially higher than the numbers reported in FY 1999 through FY 2001, when participation dropped by more than 15%. Private sector standards developers continue to recruit government participation to ensure input on key standards-related issues.

For their part, Federal agencies report that maintaining their current levels of participation in standards developing organizations is becoming increasingly difficult. Competing organizational priorities, dwindling budget resources and anticipation of accelerated staff losses due to retirement and downsizing in coming years are just some

of the reasons for concern in this area among agency Standards Executives. Federal agencies continue to make advances in their ability to assess their standards-related activities, thus permitting them to make accurate reports of their activities for incorporation into this annual report. NIST is focusing its efforts on improving information sharing among Federal agencies, as well as between the public and private sectors. Most recently, NIST launched standards.gov, a web portal offering background materials, useful links, and search tools for locating information about the use of standards in government.

## **2.0 – Overview and Scope**

This report fulfills the reporting requirements of Section 12 of the National Technology Transfer and Advancement Act (NTTAA) and of OMB Circular A-119. It describes Federal agency activities related to the use of private sector standards in regulation, procurement and conformity assessment during FY 2004. In close consultation with OMB, NIST formulates this report based on inputs submitted to NIST by Federal agencies in fulfillment of the requirements of OMB Circular A-119.

Section 12 of the Act, enacted on March 7, 1996, directs Federal government agencies to achieve two main goals. First, the Federal government must achieve greater reliance on voluntary consensus standards developed by the private sector. Second, the Federal government must decrease its dependence on government-unique standards developed by and for the Federal government. The Act also directs Federal agency personnel to participate in the activities of voluntary consensus standards developing organizations (SDOs) so that the SDOs remain familiar with the Federal government's position on standards and consider that position in their final standards documents. This provision is intended to help ensure that standards produced in the private sector will be more appropriate for use by Federal agencies. While these policies have been a part of the Circular for many years, the enactment of the NTTAA served to codify these policies into statute, thereby reinforcing them.

This report presents the standards and conformity assessment activities of the 26 Federal agencies listed in Appendix A. For the first time, it includes data from the Department of Homeland Security (DHS). On March 1, 2003, the majority of 180,000 employees from 22 agencies were merged into DHS to create the 15th cabinet level department in the Federal government. Many of the 22 agencies that now report as part of DHS previously reported their standards activities to NIST through their former parent Departments.

In reporting the full measure of their efforts at minimizing reliance on government-unique standards, Federal agencies have historically reported the use of private sector standards including other than voluntary consensus standards. The OMB Circular classifies these other private sector standards as non-consensus standards, industry standards, company standards, or de facto standards. The Circular also states that it does not establish a preference among standards developed in the private sector. Consequently, the information contained in this report, as received from the agencies, includes the use of standards by, and participation in standards development activities of,

both consensus and non-consensus standards developing organizations.

This report continues a shift, begun in FY 2003, in NIST's reporting methodology. The new methodology reflects the constructive feedback received from the reporting agencies and the public about previous reports. It also reflects discussions held by the Interagency Committee on Standards Policy (ICSP). As with supporting data received for the FY 2003 report, NIST will make individual agency reports available to interested parties at <http://standards.gov>. These reports are also available directly from NIST.

### **3.0 – Federal Agency Use of Standards**

The OMB Circular requires that Federal agencies use voluntary consensus standards in lieu of government-unique standards in their regulatory and procurement activities. However, a Federal agency is given the discretion to decide not to use existing voluntary consensus standards if the agency determines that use of such standards would either be inconsistent with applicable laws or otherwise impractical.

According to Section 6 of the OMB Circular:

"Use" means the incorporation of a standard in whole, in part, or by reference for procurement purposes, and the inclusion of a standard in whole, in part, or by reference in regulation(s).

"Impractical" includes circumstances in which such use would fail to serve the agency's program needs; would be infeasible; would be inadequate, ineffectual, inefficient, or inconsistent with agency mission; or would impose more burdens, or would be less useful, than the use of another standard.

The Circular also directs agencies to establish a process for a continuing review of their use of standards for purposes of updating such use, including substitution of private sector standards for government-unique standards wherever possible.

### **3.1 – Government-Unique Standards Used in Lieu of Private Sector Standards**

According to Section 6 of the Circular, the heads of agencies:

"...must transmit to OMB through NIST an explanation of the reason(s) for using government-unique standards in lieu of voluntary consensus standards."

Table 3.1 illustrates the cumulative use since FY 1997 of government-unique standards in lieu of private sector standards, as well as the number of government-unique standards introduced and withdrawn in each fiscal year. For FY 2004, the Department of Labor (DOL) added one, and the General Services Administration (GSA) and the Department of

Health and Human Services (HHS) each rescinded one government-unique standard. These changes yield a net loss of one government-unique standard in use by all reporting agencies in FY 2004. As a result, a total of 71 government-unique standards were reported as being in use during the period from FY 1997 through FY 2004. This figure is approximately two percent of the total number of voluntary and government-unique standards reported as used during the same period by all reporting agencies.

**Table 3.1 Government-unique Standards Used in Lieu of Private Sector Standards**

Agency	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004
HHS	3	3	3	3	3	3	3	2
HUD				2	2	2	2	2
DOL					1	2	4	5
DOT	1	2	2	2	2	3	3	3
EPA		3	28	29	40	45	50	50
GSA				3	2	2	3	2
NARA				1	1	1	1	1
CPSC				1	1	1	2	2
GPO				4	4	4	4	4
New Uses	+4	+4	+25	+12	+12	+7	+9	+1
Rescinded Uses					-1			-2
<b>Total in Use</b>	<b>4</b>	<b>8</b>	<b>33</b>	<b>45</b>	<b>56</b>	<b>63</b>	<b>72</b>	<b>71</b>

Note: DoD and NASA use the categorical reporting method allowed in Section 12 of OMB Circular A-119. Therefore, their use of government-unique standards is not quantified in this table.

The OMB Circular permits Federal agencies to report their use of private sector standards on either a categorical or a transactional basis. For agencies that routinely make reference to standards in very large procurements or in very large numbers of procurement actions, Section 12 of OMB Circular A-119 states that those agencies may report their use of standards on a categorical basis. Therefore, agencies that make large-scale procurements are not required to list each use of a government-unique standard in lieu of one or more private sector standards in procurement actions. However, an agency that reports categorically must meet certain requirements as outlined in the OMB Circular. For example, the agency must maintain a centralized standards management system that identifies how the agency uses both government-unique and voluntary consensus standards. The agency must also maintain records on the groups or categories in which the agency uses government-unique standards in lieu of voluntary consensus standards. Only two agencies, the Department of Defense (DoD) and the National Aeronautics and Space Administration (NASA), consistently report standards use in this manner. Agencies that report categorically are also required to have in place a system to ensure that government-unique standards are developed only when suitable voluntary consensus standards are not available for use. In those cases when government-unique standards are required because private-sector standards do not exist, use of the government-unique standard is not subject to reporting.

Regulatory agencies must report on a transactional basis since they use far fewer standards in their rulemaking processes and must therefore count each instance of use.

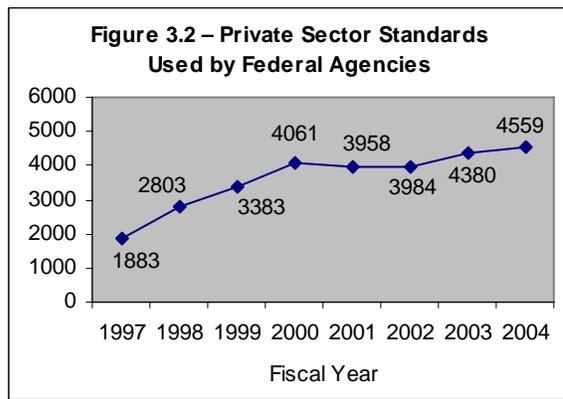
Table 3.1 indicates that Federal agencies develop only a small number of new government-unique standards each year for regulatory purposes.

A complete listing of government-unique standards used in lieu of private sector standards from FY 1997 through FY 2004 is available at <http://standards.gov>. The list includes rationales explaining the reason(s) why each listed private sector standard was not used. Agency justifications for new uses of government-unique standards tend to focus on the need for more detailed requirements, higher performance specifications and measurements, and/or the need to accommodate highly specialized technologies not adequately addressed by private sector standards.

Since Federal agencies were not required to report the use of government-unique standards prior to the onset of the NTTAA and OMB reporting requirements (1997), there are no historical data available to determine the total number of government-unique standards currently in use by Federal agencies. As an alternative to a potentially burdensome process of surveying Federal agencies to gather this information, NIST is developing a baseline inventory of standards referenced in the Code of Federal Regulations (CFR). After completion in fiscal year 2005, this inventory will permit identification of currently used government-unique standards that were adopted prior to 1997. Identification of these government-unique standards may well uncover opportunities for agencies to replace these standards through collaborative efforts with private-sector standards developers. This database, although still under development, is currently available at <http://standards.gov>.

### 3.2 – Federal Agency Use of Private Sector Standards

This measure provides a count of the total number of private sector standards used by the Federal government in a reporting period. Changes in this number from year to year generally reflect the regulatory or procurement priorities and policies of individual agencies during the reporting year.



As illustrated by Figure 3.2, the total number of private sector standards in use by Federal agencies has grown rather steadily since the initiation of agency reporting under the NTTAA in 1997. In FY 2004, Federal agencies used a total of 179 private sector standards for the first time. See Appendix B for detailed figures of standards use on an agency basis. It should be noted that, since these data include only standards used since the onset of agency reporting under the

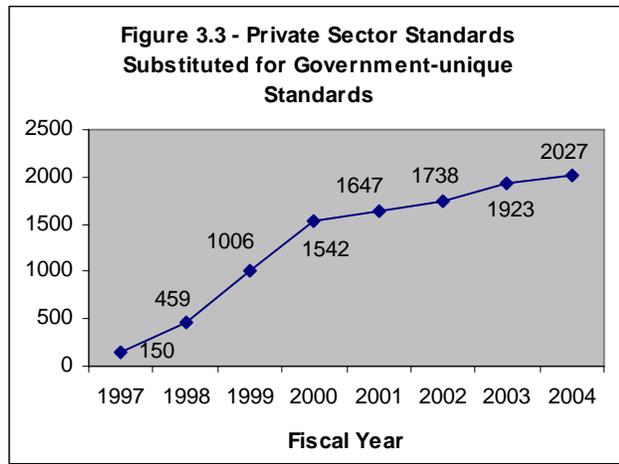
NTTAA in 1997, the data do not include all nongovernmental standards currently in use by DoD, which started its efforts to minimize use of government-unique standards prior to enactment of the NTTAA. Consequently, with 9,156 total private sector standards in

use as of the close of FY 2004, DoD continues to lead all other Federal agencies in the cumulative use of private sector standards.

### 3.3 – Private Sector Standards Substituted for Government-Unique Standards

As illustrated by Figure 3.3, Federal agencies continue to replace government-unique standards with private sector standards in fulfillment of Section 12 of the NTTAA (P.L. 104-113).

The cumulative trend of agency substitution of voluntary consensus standards for government-unique standards is represented in Figure 3.3. The data in Appendix B show that, as in previous years, the Department of Defense continues to be responsible for the largest number of substitutions with 97 in FY 2004. DoD’s standards substitutions address a diverse set of technologies, including metals and alloys, and manufactured parts.



### 3.4 – Summary Observations

It is difficult to completely and accurately represent the full measure of standards use through this rather cursory review of reported figures. Even so, the overall trends continue to show that Federal agencies are making positive efforts to increase their use of private sector standards while minimizing their reliance upon standards developed specifically for government use.

OMB, NIST, and the reporting agencies continue to review the data reported in current and previous years to improve the consistency of the reported data. All concerned parties agree that this improved communication and interaction will lead to a better, more consistent means of reporting data, which in turn will lead to a better means for evaluating the effectiveness of the Federal government’s efforts to satisfy the intent of the NTTAA.

### 4.0 – Federal Participation in Private Sector Standards Activities

OMB Circular A-119 states that Federal agencies “must consult with voluntary consensus standards bodies, both domestic and international, and must participate with such bodies in the development of voluntary consensus standards when consultation and participation is in the public interest and is compatible with their missions, authorities, priorities, and budget resources.” The Circular goes on to declare that “agency support provided to a

voluntary consensus standards activity must be limited to that which clearly furthers agency and departmental missions, authorities, priorities, and is consistent with budget resources.”

#### 4.1 – Federal Agency Participation in Private Sector Standards Development Bodies

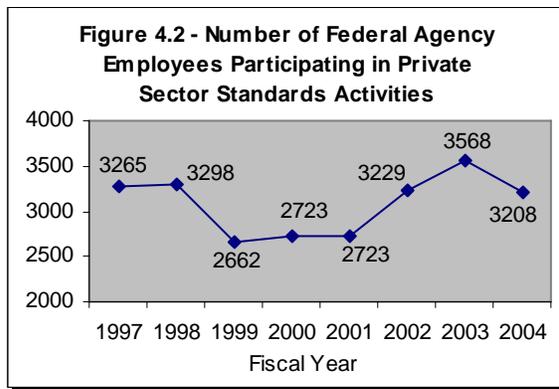
Most agencies reported little or no change in their participation in voluntary consensus standards bodies in FY 2004. Some agencies, including HHS and DoD, participated in significantly more standards developing organizations than in the previous year, while others, such as DOC and DOE, participated in fewer. Overall, Federal agencies reported participation in 431 private sector standards developing organizations (SDOs) during FY 2004, compared to 433 reported for FY 2003. Agencies reported participation in activities of a wide array of standards developers, both domestic and international. The table in Appendix B shows SDO participation by agency. The list of organizations includes ANSI-accredited voluntary consensus standards developers, industry and trade associations, industry consortia, state-level organizations, and international organizations.

Federal agency participation is often affected by current purchasing or regulatory priorities within the agencies as well as technology-based efforts in which agencies are engaged. Agencies also report that their participation is affected in large part by the availability of financial and human resources assigned to carrying out these responsibilities.

A complete listing of the standards developing organizations in which Federal agencies participated can be viewed in the extended appendices to this report on <http://standards.gov>.

#### 4.2 – Federal Agency Employees Participating in Private Sector Standards Activities

Figure 4.2 shows a decrease in employee participation in private sector standards bodies,



although the level of participation in FY 2004 is not far different from past levels of participation. Most agencies reported little or no change from FY 2003 in FY 2004. DOE, GSA, and DOC increased their employee participation during this reporting period; however, HHS, DOI, and USDA decreased their levels of employee participation. Data detailing participation on an agency basis is provided in Appendix B. No specific reasons were reported for the decrease in

individual employee participation; however, as with participation at the agency level, employee participation is affected by the availability of both human and financial

resources. In some cases, resource constraints oblige an agency to focus attention on its highest priority activities and to strive to make its participation in those activities as effective as possible. Other factors affecting federal employee participation levels include competing organizational priorities as well as personnel changes, workplace attrition, and retirements, all of which present some difficulty for agencies to maintain constant levels of participation as well as accurate records of their activities. In one case, an agency participated in several hundred standards development activities of well over 100 private sector standards bodies. However, the exact number of employee participants was not known since the agency lacks an established procedure to gather this information.

### **4.3 – Summary Observations**

The reported data support the fact that Federal agencies continue to put forward earnest efforts to satisfy the requirements of the NTTAA and the OMB Circular. Over and above the applicable mandates, Federal agencies have demonstrated that they recognize the importance of participation in private sector standards activities. Participation levels still vary from agency to agency for a number of reasons, including different agency needs, competing organizational priorities, limited resources, and personnel losses.

### **5.0 – Federal Agency Conformity Assessment Activities**

Federal conformity assessment activities are a means of providing assurance that the products and services regulated or procured by Federal agencies have the required characteristics and/or perform in a specified manner. Agency conformity assessment procedures may include sampling and testing, inspection, accreditation, certification; licensing; product listing; the submission to an agency of manufacturing, operational, and related data for review; manufacturer self-declaration of conformity to agency requirements; mandatory labeling and advertising requirements; establishment of national requirements which are adopted/enforced at state and local government levels; issuance of regulatory guidelines; pre-marketing approval requirements; post-marketing monitoring requirements; and the conduct of environmental impact assessments.

OMB Circular A-119 directed the Secretary of Commerce to issue guidance to the agencies to improve coordination on conformity assessment. That guidance was published by NIST in 2000 and can be found in Part 287 of Title 15 of the U.S. Code of Federal Regulations. The guidance applies to all agencies that set policy for, manage, operate, or use conformity assessment activities and results, both domestic and international, except for activities carried out pursuant to treaties. The guidance outlines Federal agencies' responsibility for evaluating the efficacy and efficiency of their conformity assessment activities. Each agency is responsible for coordinating its conformity assessment activities with those of other cognizant government agencies and with those of the private sector in order to make more productive use of the increasingly limited federal resources available for the conduct of conformity assessment activities and to reduce unnecessary duplication.

The provisions are solely intended to be used as guidance for agencies in their conformity assessment activities; they do not preempt the agencies' authority and responsibility to make regulatory and procurement decisions authorized by statute or required to meet programmatic objectives and requirements.

## **6.0 – Evaluation of the Effectiveness of OMB Circular A-119**

Many agencies believe that OMB Circular A-119 continues to be effective in guiding their efforts toward achieving the goals of the NTTAA and the intent of Congress. For a handful, the extent to which standards are incorporated into federal procurements and regulations is due largely to the ability of standards professionals in agencies to leverage the existence of the law and Circular to promote use of, and participation in the development of voluntary standards. Some sample comments, as reported by Federal agencies, are summarized below:

- The Department of Interior's U. S. Geological Survey stated that, since its issuance, Circular A-119 has worked in a straightforward manner to encourage the use of voluntary consensus standards.
- The Department of Housing and Urban Development states that the policy continues to be effective in encouraging agencies to replace Federal standards with publicly developed standards. This has resulted in more up-to-date and technically accurate standards.
- The Nuclear Regulatory Commission believes that the Circular provides appropriate direction and encouragement for Federal agencies to develop internal agency-wide guidelines. The Circular also provides sufficient and reasonable flexibility for each agency to make an independent determination relative to participation on voluntary consensus bodies and use of developed standards.

The Environmental Protection Agency offered a number of recommendations for improvement. The recommendations suggest that changes in the reporting process are needed to bring about accurate reporting of standards activities and to eliminate unreasonable performance comparisons that could result from presenting regulatory agencies in side-by-side comparisons with procurement agencies.

Complete comments as submitted by the reporting agencies can be viewed in the full agency reports on <http://standards.gov>.

## **7.0 – The Interagency Committee on Standards Policy**

As set out in Section 13 of OMB Circular A-119, the Interagency Committee on Standards Policy (ICSP) is directed to advise the Secretary of Commerce and other Executive Branch agencies about standards policy matters. The Committee reports to the Secretary of Commerce through the Director of NIST. Section 14 of OMB Circular A-119 places a responsibility on those agencies with significant interest in the use of standards to "designate a senior level official as the Standards Executive who will be responsible for the agency's implementation of (the) Circular and who will represent the

agency on the ICSP."

There were 52 members on the ICSP during FY 2004. The membership included agency Standards Executives, their alternate representatives, NIST support staff, and representation from OMB. Four agencies had vacant Standards Executive positions; there were six vacancies in FY 2003. The newly-formed Department of Homeland Security appointed representatives to the committee for the first time. The committee anticipates an additional appointment to represent the newly-formed Access Board, formerly the Architectural and Transportation Barrier Compliance Board. The Access Board is an independent Federal Board created by Congress in 1973 to address public access for persons with disabilities. Both the Access Board and the Department of Homeland Security make extensive use of private sector standards and have conformity assessment programs.

The ICSP met four times in FY 2004. Meetings were held in November 2003, February 2004, June 2004, and September 2004 at various locations in the Washington metropolitan area. Of note, the June meeting was the first joint meeting with the American National Standards Institute's Government Member Forum to discuss issues of mutual interest. Future joint meetings with organizations having interests related to the Committee's role will be explored.

The following examples illustrate some of the issues discussed during FY 2004:

1. A NIST-sponsored study: *Measuring the Benefits of the National Technology Transfer and Advancement Act*. This report attempted to quantify economic benefits realized by Federal agencies through NTTAA compliance; see below for a summary of findings.
2. Continued dialogue on the Leadership in Energy and Environmental Design (LEED) Green Building Rating System and its use by Federal agencies.
3. A discussion of joint American National Standards Institute and U.S. Environmental Protection Agency efforts on an Environmentally Preferable Purchasing program.
4. The Department of Energy's information system for managing standards development and participation; i.e., RevCom.

## **8.0 – Challenges and Opportunities**

As in past years, Federal agencies continue to experience significant personnel turnover at all organizational levels due to reorganizations, accelerated or early retirements, and normal attrition. These changes make it very difficult for Federal agencies to retain high-level managers who appreciate the importance of standards and who visibly support standards-related activities. Likewise, due to staff turnover, Federal agencies also continue to struggle to retain "institutional memory" of past standards policies, responsibilities, and practices. Also, shrinking budgets and competing organizational priorities cause agencies to make difficult choices which often lead to reduced participation in standards development activities.

During FY 2004, representatives from several ICSP member agencies participated in strategy meetings along with several voluntary consensus standards developers and representatives from ANSI and OMB. The purpose of these meetings was to gather input from key organizations having a stake in the success of the NTTAA. This input would then serve as the basis for NIST strategic plans designed to advance the principles of the NTTAA and the OMB Circular. As a result of these meetings, the stakeholder group identified certain outcomes that, if achieved, would lead to substantially increased use of voluntary consensus standards and participation by Federal agencies in the activities of standards developing bodies. For example, high-level Federal agency leadership was identified as the primary driver of successful NTTAA implementation because of agency ability to direct policy and resources in ways that bring about other desirable outcomes such as increased Federal participation and collaboration with the private sector.

Ultimately, this cooperative stakeholder effort represents an opportunity to redirect and focus the efforts of key players in ways that can maximize the benefits of NTTAA implementation for both public and private sector organizations. To enhance this effort, it was decided that future meetings of the NTTAA stakeholders group would involve participants from private industry so that interests and perspectives of that very important stakeholder group can be incorporated into future strategy and action plans.

Sound economic analysis that demonstrates the benefits of greater use of private sector standards and conformity assessment activities is essential in making the case for Federal agency leaders to intensify their agencies' activities in these areas. However, capturing this important information has thus far proven to be extremely difficult. The NIST-sponsored study, *Measuring the Benefits of the National Technology Transfer and Advancement Act*, which was conducted by Research Triangle Institute, points to (1) a lack of useful data necessary to support economic analysis, and (2) the difficulties Federal agencies face in gathering data that can be used to estimate economic benefits broadly across the Federal Government. Consequently, there are real opportunities for advances in methods and techniques that can be employed to demonstrate real economic benefits of NTTAA implementation.

However, in some cases, agencies are able to demonstrate clear economic benefits as well as qualitative benefits on a case-by-case basis. The Department of Defense has created several case studies<sup>1</sup> that demonstrate a range of positive results from its collaborations with the private sector on standardization issues. Some of DoD's documented benefits include:

- Reduced labor costs to operate and maintain equipment
- Lower inventory costs
- Improved safety
- Improved equipment readiness
- Enhanced interchangeability, reliability, and availability of equipment and parts and better equipment performance

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<sup>1</sup> DoD case studies can be obtained from the Defense Standardization Program website at <http://www.dsp.dla.mil/>.

Federal agencies are able to point to specific instances where they have benefited from NTTAA implementation in ways that cannot be measured in dollars. For example, one indicator that the NTTAA is receiving more widespread consideration within the EPA is the "beyond-regulation" use that EPA is making of voluntary consensus bodies and of ANSI in particular. EPA leaders in environmentally preferable procurement acknowledged the important role of voluntary consensus organizations for the development and promulgation of standards for environmentally conscientious products. EPA partnered with ANSI to educate and train standards organizations in the need for such environmental products. Together, they provided organizations with criteria that can serve as a guideline for use in committee work where standards and/or testing procedures for these products are developed. ANSI conducted several workshops and training sessions in cooperation with EPA and posted information on ANSI's website.

Federal agencies are reaping significant benefits from their current use of private sector standards and participation in private sector standards and conformity assessment activities. There is evidence to suggest that enhanced activities in these areas will lead to even more positive results, both economic and otherwise, for Federal agencies that comply with the NTTAA and OMB Circular A-119. Greater efforts to document these positive results could prove to be the key to full realization of the potential benefits of NTTAA compliance.

## Appendix A – FY 2004 List of Reporting Federal Agencies

<u>Agency</u>	<u>Acronym</u>
Department of Agriculture	USDA
Department of Commerce	DOC
Department of Defense	DoD
Department of Energy	DOE
Department of Education	ED
Department of Health and Human Services	HHS
Department of Homeland Security	DHS
Department of Housing and Urban Development	HUD
Department of the Interior	DOI
Department of Justice	DOJ
Department of Labor	DOL
Department of State	DOS
Department of Transportation	DOT
Department of the Treasury	TRES
Department of Veterans Affairs	VA
Environmental Protection Agency	EPA
Agency for International Development	USAID
General Services Administration	GSA
National Archives and Records Administration	NARA
National Aeronautics and Space Administration	NASA
National Science Foundation	NSF
Consumer Product Safety Commission	CPSC
Federal Communications Commission	FCC
Federal Trade Commission	FTC
Nuclear Regulatory Commission	NRC
Government Printing Office	GPO

**Appendix B – Federal Agency Use of Standards and Participation in Voluntary Consensus Standards Bodies**

<b>I Agency</b>	<b>II Government-unique Standards in Use in lieu of Voluntary Consensus Standards FY 1997-2004</b>	<b>III Voluntary Consensus Standards Substituted for Government-unique Standards in FY 2004</b>	<b>IV Voluntary Consensus Standards in Use in FY 2004</b>	<b>V Employee Participation in Voluntary Consensus Standards Bodies in FY 2004</b>	<b>VI Change from Previous Year</b>	<b>VII Voluntary Consensus Standards Bodies with Agency Participation in FY 2004</b>	<b>VIII Change from Previous Year</b>
USDA	0	5	145	82	-24	35	-7
DOC	0	0	0	438	23	94	-24
DoD	*	97	97	436	-14	123	68
ED	0	0	0	0	-2	0	-1
DOE	0	0	1325	729	55	65	-20
HHS	2	0	711	503	-120	182	17
DHS	0	0	13	10	10	7	7
HUD	2	0	300	10	0	5	0
DOI	0	0	788	269	-376	19	-6
DOJ	0	0	1	5	0	1	0
DOL	5	0	165	54	-7	19	3
DOS	0	0	0	7	7	1	1
DOT	3	0	343	167	0	41	11
TRES	0	0	5	5	2	5	2
VA	0	0	0	4	0	18	1
EPA	50	0	67	45	1	23	2
USAID	0	0	0	0	0	0	0
GSA	2	0	305	91	66	26	0
NARA	1	2	52	19	6	10	0
NASA	*	0	39	147	3	30	-3
NSF	0	0	0	5	2	5	-2
CPSC	2	0	0	30	-1	8	1
FCC	0	0	0	5	0	7	0
FTC	0	0	0	0	0	0	0
NRC	0	0	77	145	9	13	-2
GPO	4	0	126	2	0	6	2
Totals	71	104	4559	3208	-360	**	**

\* Agencies reporting on a categorical basis per OMB Circular A-119, Section 12.

\*\* Totals not provided. (Totals would include multiple counting of certain bodies that enjoy simultaneous participation from two or more Federal agencies.)

## **Appendix C –Government-Unique Standards Used in Lieu of Voluntary Consensus Standards**

### **Appendix C.1 – Government-Unique Standards Used in Lieu of Voluntary Consensus Standards Incorporated in FY 2004**

**Agency: Department of Labor (DOL)**

**Government Standard: Fire Protection for Shipyards, 29 CFR Part 1915, Subpart P**

**Voluntary Standard**

NFPA 312-2000 Standard for Protection of Vessels During Construction, Repair, and Lay-Up

NFPA 33-2003 Standard for Spray Application Using Flammable or Combustible Materials

**Rationale**

Many consensus standards were relied on for various provisions in OSHA's final rule, including 15 consensus standards that are incorporated by reference. However, OSHA and its negotiated rulemaking committee determined that there was no, one consensus standard available that covered all the topics in the rule.

## **Appendix C.2 –Instances of Government-Unique Standards Used in lieu of Voluntary Consensus Standards Rescinded in FY 2004**

**Agency: Department of Health and Human Services (HHS)**

**Government Standard: National Standard Format [Incorporated: 1997]**

<b>Voluntary Standard</b>	<b>Rationale</b>
ANSI X12 837	The NSF was used widely across the health care payment industry and has become a defacto national standard. However, the Centers for Medicare and Medicaid Services (CMS) directed their contractors to discontinue use of the NSF standard and replace it with ANSI X12 837 by the beginning of FY 2003.

**Agency: Government Services Administration (HHS)**

**Government Standard: Federal Specification A-A-1925 - Shield, Expansion (Nail Anchors) [Incorporated: 2000]**

<b>Voluntary Standard</b>	<b>Rationale</b>
Not applicable	Upon subsequent review, it was determined that this is not a government-unique standard. Rather, it is described by the Defense Logistics Agency, the originator of the document, as a Commercial Item Description (CID), and it does not replace the applicable test method standard ASTM E488.

**Appendix C.3 – Government-Unique Standards Used in Lieu of Voluntary Consensus Standards from FY 1997 through FY 2004**

**Government Unique Standards used in lieu of Voluntary Consensus Standards**

**Agency: Consumer Product Safety Commission (CPSC)**

**Government Standard: CPSC CFR Parts 1213, 1500, and 1513 [Incorporated: 2000]**

**Voluntary Standard**

ASTM F1427-96

**Rationale**

The CPSC rule goes beyond the provisions of the ASTM voluntary standard to provide increased protection to children from the risk of death and serious injury from entrapment.

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**Government Standard: FR/Vol. 68, No. 75/Friday, April 18, 2003, pp. 19142-19147, Metal-Cored Candlewicks Containing Lead and Candles With Such Wicks [Incorporated: 2003]**

**Voluntary Standard**

Voices of Safety International (VOSI) standard on lead in candle wicks

**Rationale**

The U.S. Consumer Product Safety Commission found that the VOSI standard is technically unsound, and thus would not result in the elimination or adequate reduction of the risk, and that substantial compliance with it is unlikely. See FR/Vol. 68, No. 75/Friday, April 18, 2003, pp. 19145-19146, paragraph H2, Voluntary Standards for further information on this finding.

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**Agency: Department of Labor (DOL)**

**Government Standard: Electric Motor-Drive Equipment Rule [Incorporated: 2001]**

**Voluntary Standard**

IEEE Standard 242-1986 Recommended Practice for Protection and Coordination of Industrial and Commercial Power Systems (IEEE Buff Book) and NFPA 70 - national Electric Code

**Rationale**

The MSHA rule is a design-specific standard. The NFPA and IEEE standards were used as a source for the rule; however, the exact requirements of the rule were tailored to apply specifically to electric circuits and equipment used in the coal mining industry.

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**Government Standard: Exit Routes, Emergency Action Plans, and Fire Prevention Plans, 29 CFR 1910, Subpart E [Incorporated: 2003]**

**Voluntary Standard**

Life Safety Code, NFPA 101-2000

**Rationale**

The OSHA standard addresses only workplace conditions whereas the NFPA Life Safety Code goes beyond workplaces. However, in the final rule OSHA stated that it had evaluated the NFPA Standard 101, Life Safety Code, (NFPA 101-2000) and concluded that it provided comparable safety to the Exit Route Standards. Therefore, the Agency stated that any employer who complied with the NFPA 101-2000 instead of the OSHA Standard for Exit Routes would be in compliance.

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**Government Standard: Fire Protection for Shipyards, 29 CFR Part 1915, Subpart**

**P [Incorporated: 2004]**

**Voluntary Standard**

NFPA 312-2000 Standard for Protection of Vessels During Construction, Repair, and Lay-Up

NFPA 33-2003 Standard for Spray Application Using Flammable or Combustible Materials

**Rationale**

Many consensus standards were relied on for various provisions in OSHA's final rule, including 15 consensus standards that are incorporated by reference. However, OSHA and its negotiated rulemaking committee determined that there was no, one consensus standard available that covered all the topics in the rule.

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**Government Standard: Sanitary Toilets in Coal Mines, 30 CFR 71, Subpart E [Incorporated: 2003]**

**Voluntary Standard**

Non-Sewered Waste Disposal Systems-- Minimum Requirements, ANSI Z4.3-1987

**Rationale**

The ANSI standard was not incorporated by reference because certain design criteria allowed in the ANSI standard, if implemented in an underground coal mine, could present health or safety hazards. For instance, combustion or incinerating toilets could introduce an ignition source which would create a fire hazard. For certain other design criteria found in the ANSI standard, sewage could seep into the groundwater, or overflow caused by rain or run-off could contaminate portions of the mine.

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**Government Standard: Steel Erection Standards [Incorporated: 2002]**

**Voluntary Standard**

ANSI A10.13 - Steel Erection; ASME/ANSI B30 Series Cranes Standards

**Rationale**

Many consensus standards were relied upon for various provisions in the final rule, but there was no one consensus standard available that covered all of the topics covered by OSHA's final rule.

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**Agency: Department of Transportation (DOT)**

**Government Standard: 63 FR 17976; April 13, 1998 - Product Safety Signs and Labels [Incorporated: 1998]**

**Voluntary Standard**

ANSI Z535.4 - ANSI Requirements for Color Coded Header Messages for the Different Levels of Hazard

**Rationale**

NHTSA explained in the NPRM that the American National Standard Institute (ANSI) has a standard<sup>4</sup> for product safety signs and labels (ANSI Z535.4) that identifies a hierarchy of hazard levels ranging from extremely serious to moderately serious and specifies corresponding hierarchies of signal words, i.e., "danger," "warning," and "caution," and of colors. For the header, the ANSI standard specifies a red background with white text for "danger," an orange background with black text for "warning," and a yellow background with black text for "caution."

The ANSI standard specifies that pictograms should be black on white, with occasional uses of color for emphasis, and that message text should be black on white. The agency noted in the NPRM that when it earlier updated the requirements for air bag warning labels to require the addition of color and pictograms, it had chosen not to adopt the colors specified in the ANSI standard. NHTSA chose to use yellow instead of orange in the

background of the heading for the air bag warning label, even though the word “warning” was used, because of overwhelming focus group preference for yellow. Only two of the 53 participants preferred orange. Participants generally stated that yellow was more eye-catching than orange. Participants also noted that red (stop) and yellow (caution) had meaning to them, but not orange.

NHTSA asked for comment on three color options for the revised utility vehicle rollover warning label. Proposed label 1 used the ANSI color format with the heading background in orange with the words in black. The remainder of the label had a white background with black text and drawings. Proposed label 2 used a color scheme like the air bag warning labels, which is the same as the ANSI color format except that the background color for the heading in the label is yellow. Proposed label 3 employed the color scheme used in the focus groups - the heading area had a red background with white text. The graphic areas had a yellow background with black and white drawings. The text area had a black background with yellow text.

Despite focus group preference for the signal word “danger,” the agency proposed the use of the word “warning” as more appropriate to the level of risk. The agency also noted that the word “warning” is used in the air bag warning label.

Recognizing that it might encounter additional conflicts between focus group preferences and the ANSI standard in future rulemakings, NHTSA requested comments in the NPRM on the extent to which any final choice regarding colors and signal words should be guided by the focus group preferences instead of the ANSI standard. NHTSA also requested comments on the broader issue of the circumstances in which it would be appropriate for agency rulemaking decisions to be guided by focus group results or other information when such information is contrary to a voluntary consensus standard such as the ANSI standard.

At this time (February 22, 1999), a final decision is still pending regarding its proposal to upgrade the rollover warning label. As to the general questions it posed in the NPRM, NHTSA recognizes that ANSI’s mission differs somewhat from that of the agency’s focus groups with respect to the labeling of hazardous situations. ANSI’s mission is to develop and maintain a standard for communicating information about a comprehensive hierarchy of hazards, while the focus groups’ mission is to design an effective label for a specific hazard. The agency recognizes further that, given the difference in their missions, their conclusions about the appropriate manner of communication might differ on occasion.

Since agency labeling decisions are highly dependent on the facts regarding the specific hazard being addressed, NHTSA anticipates making case-by-case determinations of the extent to which it should follow voluntary standards versus information from focus groups and other sources. NHTSA will rely on its own expertise and judgment in making determinations under the NTTAA and the

statutory provisions regarding vehicle safety standards.

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**Government Standard: Air Bag Warning Label (1997) [Incorporated: 1997]**

**Voluntary Standard**

ANSI ISO

**Rationale**

The Air Bag Warning Label uses yellow as the background color, instead of orange, in accordance with an ANSI standard and uses a graphic developed by Chrysler Corporation to depict the hazards of being too close to an air bag, instead of the graphic recommended by the ISO. These decisions were based on focus group testing sponsored by the agency which strongly indicated that these unique requirements would be far more effective with respect to safety than the industry standards.

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**Government Standard: Brake Performance, 49 CFR 393.52 - FMCSA's Performance-Based Brake Testers (PBBTs) Requirement [Incorporated: 2002]**

**Voluntary Standard**

SAE J667 - Brake Test Code Inertia  
Dynamometer (cancelled February 2002)

SAE J1854 - Brake Force Distribution  
Performance Guide - Trucks and Buses

**Rationale**

FMCSA used government-unique standards in lieu of voluntary consensus standards when it implemented its final rule to allow inspectors to use performance-based brake testers (PBBTs) to check the brakes on large trucks and buses for compliance with federal safety standards and to issue citations when these vehicles fail (67 FR 51770, August 9, 2002). The FMCSA evaluated several PBBTs during a round robin test series to assess their functional performance and potential use in law enforcement. The standard, a specific configuration of brake forces and wheel loads on a heavy-duty vehicle, was used to evaluate the candidate PBBTs and their operating protocols. The agency's rationale for use of the government-unique standards was to verify that these measurements and new technology could be used by law enforcement as an alternative to stopping distance tests or on-road deceleration tests. PBBTs are expected to save time and their use could increase the number of commercial motor vehicles that can be inspected in a given time. Only PBBTs that meet specifications developed by the FMCSA can be used to determine compliance with the Federal Motor Carrier Safety Regulations. The final rule represents a culmination of agency research that began in the early 1990s.

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**Agency: Environmental Protection Agency (EPA)**

**Government Standard: 40 CFR 89 - Control of Emissions from New and In-Use Non-Road Compression Ignition Engines [Incorporated: 1999]**

**Voluntary Standard**

ISO 8178 - Reciprocating Internal Combustion  
Engines, Exhaust Emission Measurement

**Rationale**

Procedures would be impractical because they rely too heavily on reference testing conditions. Agency decides instead to continue to rely on procedures outlined in 40 CFR Part 90.

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**Government Standard: 40 CFR 90 - Control of Emission from Non-Road Spark Ignition**

**Engines at or below 19KV [Incorporated: 1999]**

**Voluntary Standard**

ISO 8178 - Reciprocating Internal Combustion Engines, Exhaust Emission Measurement

**Rationale**

Procedures would be impractical because they rely too heavily on reference testing conditions. Agency decides instead to continue to rely on procedures outlined in 40 CFR Part 90.

---

**Government Standard: 40 CFR 92 - Control of Air Pollution from Locomotives and Locomotive Engines [Incorporated: 1999]**

**Voluntary Standard**

ISO 8178 - Reciprocating Internal Combustion Engines, Exhaust Emission Measurement

**Rationale**

Procedures would be impractical because they rely too heavily on reference testing conditions. Agency decides instead to continue to rely on procedures outlined in 40 CFR Part 90.

---

**Government Standard: EPA Method 1 – Traverse Points, Stationary Sources [Incorporated: 2001]**

**Voluntary Standard**

ASTM D3154-00, Standard Method for Average Velocity in a Duct (Pitot Tube Method)

**Rationale**

1. The standard appears to lack in quality control and quality assurance requirements. It does not include the following: (1) Proof that openings of standard pitot tube have not plugged during the test; (2) if differential pressure gauges other than inclined manometers (e.g., magnehelic gauges) are used, their calibration must be checked after each test series; and (3) the frequency and validity range for calibration of the temperature sensors. 2. They are too general, too broad, or not sufficiently detailed to assure compliance with EPA regulatory requirements.

ASTM D3154-91 (1995), Standard Method for Average Velocity in a Duct (Pitot Tube Method)

Is too general, too broad, or not sufficiently detailed to assure compliance with EPA regulatory requirements.

---

**Government Standard: EPA Method 10 - Carbon Monoxide, NDIR [Incorporated: 1999]**

**Voluntary Standard**

ASTM D3162 (1994) Standard Test Method for Carbon Monoxide in the Atmosphere (Continuous Measurement by Non-dispersive Infrared Spectrometry)

**Rationale**

This ASTM standard, which is stated to be applicable in the range of 0.5-100 ppm CO, does not cover the range of EPA Method 10 (20-1,000 ppm CO) at the upper end (but states that it has a lower limit of sensitivity). Also, ASTM D3162 does not provide a procedure to remove carbon dioxide interference. Therefore, this ASTM standard is not appropriate for combustion source conditions. In terms of non-dispersive infrared instrument performance specifications, ASTM D3162 has much higher maximum allowable rise and fall times (5 minutes) than EPA Method 10 (which has 30 seconds).

CAN/CSA Z223.21-M1978, Method for the Measurement of Carbon Monoxide: 3—Method of Analysis by Non-Dispersive Infrared Spectrometry

1. This standard is lacking in the following areas: (1) Sampling procedures; (2) procedures to correct for the carbon dioxide concentration; (3) instructions to correct the gas volume if CO<sub>2</sub> traps are used; (4) specifications to certify the calibration gases are within 2 percent of the target concentration; (5) mandatory instrument

performance characteristics (e.g., rise time, fall time, zero drift, span drift, precision); (6) quantitative specification of the span value maximum as compared to the measured value: The standard specifies that the instruments should be compatible with the concentration of gases to be measured, whereas EPA Method 10 specifies that the instrument span value should be no more than 1.5 times the source performance standard. 2. Is too general, too broad, or not sufficiently detailed to assure compliance with EPA regulatory requirements.

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**Government Standard: EPA Method 101 - Mercury Emissions, Chlor-Alkali Plants (Air) [Incorporated: 2001]**

**Voluntary Standard**

ASTM D6216-98 - Standard Practice for Opacity Monitor Manufacturers to Certify Conformance with Design and Performance Specifications.

**Rationale**

The EPA is incorporating ASTM D6216 (manufacturers certification) by reference into EPA Performance Specification 1, Sect. 5 & 6 in another rulemaking. ASTM D6216 does not address all the requirements specified in PS-1.

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**Government Standard: EPA Method 101a - Mercury Emissions Sewer/Sludge Incinerator [Incorporated: 2001]**

**Voluntary Standard**

ASTM D6216-98 - Standard Practice for Opacity Monitor Manufacturers to Certify Conformance with Design and Performance Specifications.

**Rationale**

The EPA is incorporating ASTM D6216 (manufacturers certification) by reference into EPA Performance Specification 1, Sect. 5 & 6 in another rulemaking. ASTM D6216 does not address all the requirements specified in PS-1.

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**Government Standard: EPA Method 10A – Carbon Monoxide for Certifying CEMS [Incorporated: 2001]**

**Voluntary Standard**

CAN/CSA Z223.21-M1978, Method for the Measurement of Carbon Monoxide: 3—Method of Analysis by Non-Dispersive Infrared Spectrometry.

**Rationale**

1. It is lacking in the following areas: (1) Sampling procedures; (2) procedures to correct for the carbon dioxide concentration; (3) instructions to correct the gas volume if CO<sub>2</sub> traps are used; (4) specifications to certify the calibration gases are within 2 percent of the target concentration; (5) mandatory instrument performance characteristics (e.g., rise time, fall time, zero drift, span drift, precision); (6) quantitative specification of the span value maximum as compared to the measured value: The standard specifies that the instruments should be compatible with the concentration of gases to be measured, whereas EPA Method 10 specifies that the instrument span value should be no more than 1.5 times the source performance standard. 2. Is too general, too broad, or not sufficiently detailed to assure compliance with EPA regulatory requirements.

---

**Government Standard: EPA Method 12 – Inorganic Lead, Stationary Sources [Incorporated: 2000]**

**Voluntary Standard**

ASTM D4358-94 (1999), Standard Test

**Rationale**

These ASTM standards do not require the use of glass

Method for Lead and Chromium in Air Particulate Filter Samples of Lead Chromate Type Pigment Dusts by Atomic Absorption Spectroscopy

fiber filters as in EPA Method 12 and require the use of significantly different digestion procedures that appear to be milder than the EPA Method 12 digestion procedure. For these reasons, these ASTM standards cannot be considered equivalent to EPA Method 12. Also, the subject ASTM standards do not require the use of hydrogen fluoride (HF) as in EPA Method 29 and, therefore, they cannot be used for the preparation, digestion, and analysis of Method 29 samples. Additionally, Method 29 requires the use of a glass fiber filter, whereas these three ASTM standards require cellulose filters and other probable non-glass fiber media, which cannot be considered equivalent to EPA Method 29.

ASTM E1741-95 (1995), Standard Practice for Preparation of Airborne Particulate Lead Samples Collected During Abatement and Construction Activities for Subsequent Analysis by Atomic Spectrometry

These ASTM standards do not require the use of glass fiber filters as in EPA Method 12 and require the use of significantly different digestion procedures that appear to be milder than the EPA Method 12 digestion procedure. For these reasons, these ASTM standards cannot be considered equivalent to EPA Method 12. Also, the subject ASTM standards do not require the use of hydrogen fluoride (HF) as in EPA Method 29 and, therefore, they cannot be used for the preparation, digestion, and analysis of Method 29 samples. Additionally, Method 29 requires the use of a glass fiber filter, whereas these three ASTM standards require cellulose filters and other probable non-glass fiber media, which cannot be considered equivalent to EPA Method 29.

ASTM E1979-98 (1998), Standard Practice for Ultrasonic Extraction of Paint, Dust, Soil, and Air Samples for Subsequent Determination of Lead

These ASTM standards do not require the use of glass fiber filters as in EPA Method 12 and require the use of significantly different digestion procedures that appear to be milder than the EPA Method 12 digestion procedure. For these reasons, these ASTM standards cannot be considered equivalent to EPA Method 12. Also, the subject ASTM standards do not require the use of hydrogen fluoride (HF) as in EPA Method 29 and, therefore, they cannot be used for the preparation, digestion, and analysis of Method 29 samples. Additionally, Method 29 requires the use of a glass fiber filter, whereas these three ASTM standards require cellulose filters and other probable non-glass fiber media, which cannot be considered equivalent to EPA Method 29.

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**Government Standard: EPA Method 15 - Hydrogen Sulfide/Carbon Disulfide/Carbon Sulfide [Incorporated: 1999]**

**Voluntary Standard**

ASME C00031 or PTC 19-10-1981 - Part 10 Flue and Exhaust Gas Analyses

**Rationale**

Too broad to be useful in regulatory sense. Covers Methods 3, 6, 7, and 15 with variants.

ASTM D4323-84 (1997) - Standard Test Method for Hydrogen Sulfide in the Atmosphere by Rate of Change of Reflectance

ASTM D4323 only applies to concentrations of H<sub>2</sub>S from 1 ppb to 3 ppm without dilution. Many QC items are missing, such as calibration drift and sample line losses. The calibration curve is determined with only one point.

**Government Standard: EPA Method 1650 - Organic Halides, Absorbable (AOX) [Incorporated: 1998]**

**Voluntary Standard**

ISO, DIN, SCAN, and Standard Methods (SM 5320)

**Rationale**

EPA decided to use EPA Method 1650. This Method was developed by drawing on various procedures contained in the methods of voluntary consensus standards bodies and other standards developers, such as ISO, DIN, SCAN, and Standard Methods (SM 5320). However, none of these more narrowly focused voluntary consensus standards contained the standardized quality control and quality control compliance criteria that EPA requires for data verification and validation in its water programs. Therefore, EPA found none of these VCS standing alone to meet EPA's needs.

---

**Government Standard: EPA Method 17 - Particle Matter (PM) In Stack Filtration [Incorporated: 2001]**

**Voluntary Standard**

ASME C00049

**Rationale**

EPA looked at this standard for both Pulp and Paper Hazardous Air Pollutant rules and for the Small Municipal Waste Combustion rule. Contains sampling options beyond which would be considered acceptable for Method 5.

ASTM D3685/3685M-95 - Standard Test method for Sampling and Determination of Particle Matter in Stack Gases

EPA looked at this standard for both Pulp and Paper Hazardous Air Pollutant rules and for the Small Municipal Waste Combustion rule. Contains sampling options beyond which would be considered acceptable for Method 5.

---

**Government Standard: EPA Method 18 - VOC/GC [Incorporated: 1999]**

**Voluntary Standard**

ASTM D6060-96 (in review 2000) - Practice for Sampling of Process Vents with a Portable Gas Chromatography

**Rationale**

This standard lacks key quality control and assurance that is required for EPA Method 18. For example: lacks acceptance criteria for calibration, details on using other collection media (e.g. solid sorbents), and reporting/documentation requirements.

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**Government Standard: EPA Method 180.1 - Turbidity Nephelometric [Incorporated: 1999]**

**Voluntary Standard**

ISO 7027 - Water Quality Determination of Turbidity

**Rationale**

EPA has no data upon which to evaluate whether the separate 90 degrees scattered or transmitted light measurement evaluations according to the ISO 7027 method would produce results that are equivalent to results produced by the other methods.

---

**Government Standard: EPA Method 2 – Velocity and S-type Pitot [Incorporated: 1999]**

**Voluntary Standard**

ASTM 3796-90 (1998), Standard Practice for Calibration of Type S Pitot Tubes

**Rationale**

They are too general, too broad, or not sufficiently detailed to assure compliance with EPA regulatory requirements.

ASTM D3154-00, Standard Method for Average Velocity in a Duct (Pitot Tube Method)

1. The standard appears to lack in quality control and quality assurance requirements. It does not include the following: (1) Proof that openings of standard pitot tube have not plugged during the test; (2) if differential pressure gauges other than inclined manometers (e.g., magnehelic gauges) are used, their calibration must be checked after each test series; and (3) the frequency and validity range for calibration of the temperature sensors. 2. They are too general, too broad, or not sufficiently detailed to assure compliance with EPA regulatory requirements.

ASTM D3154-91 (1995), Standard Method for Average Velocity in a Duct (Pitot Tube Method)

Is too general, too broad, or not sufficiently detailed to assure compliance with EPA regulatory requirements.

ASTM D3464-96 (2001), Standard Test Method Average Velocity in a Duct Using a Thermal Anemometer

Applicability specifications are not clearly defined, e.g., range of gas composition, temperature limits. Also, the lack of supporting quality assurance data for the calibration procedures and specifications, and certain variability issues that are not adequately addressed by the standard limit EPA's ability to make a definitive comparison of the method in these areas.

ISO 10780:1994, Stationary Source Emissions-- Measurement of Velocity and Volume Flowrate of Gas Streams in Ducts

The standard recommends the use of an L-shaped pitot, which historically has not been recommended by EPA. The EPA specifies the S-type design, which has large openings that are less likely to plug up with dust.

---

**Government Standard: EPA Method 21 - Volatile Organic Compound (VOC) Leaks [Incorporated: 2003]**

**Voluntary Standard**

ASTM E1211-97 - Standard Practice for Leak Detection and Location Using Surface-Mounted Acoustic Emission Sensors

**Rationale**

This standard will detect leaks but not classify the leak as VOC, as in EPA Method 21. In addition, in order to detect the VOC concentration of a known VOC leak, the acoustic signal would need to be calibrated against a primary instrument. Background noise interference in some source situations could also make this standard difficult to use effectively.

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**Government Standard: EPA Method 23 – Dioxin and Furan (PCDD and PCDF) [Incorporated: 1999]**

**Voluntary Standard**

European Committee for Standardization (CEN) EN 1948-3 (1997), Determination of the Mass Concentration of PCDD'S/PCDF'S--Part 3: Identification and Quantification

**Rationale**

Is too general, too broad, or not sufficiently detailed to assure compliance with EPA regulatory requirements.

---

**Government Standard: EPA Method 24 – Surface Coatings, Volatile Matter Content [Incorporated: 1998]**

**Voluntary Standard**

ISO 11890-1 (2000) part 1, Paints and Varnishes--Determination of Volatile Organic Compound (VOC) Content-Difference Method

**Rationale**

Measured nonvolatile matter content can vary with experimental factors such as temperature, length of heating period, size of weighing dish, and size of sample. The standard ISO 11890-1 allows for different dish

weights and sample sizes than the one size (58 millimeters in diameter and sample size of 0.5 gram) of EPA Method 24. The standard ISO 11890-1 also allows for different oven temperatures and heating times depending on the type of coating, whereas EPA Method 24 requires 60 minutes heating at 110 degrees Celsius at all times. Because the EPA Method 24 test conditions and procedures define volatile matter, ISO 11890-1 is unacceptable as an alternative because of its different test conditions.

ISO 11890-2 (2000) Part 2, Paints and Varnishes--Determination of Volatile Organic Compound (VOC) Content-Gas Chromatographic Method

ISO 11890-2 only measures the VOC added to the coating and would not measure any VOC generated from the curing of the coating. The EPA Method 24 does measure cure VOC, which can be significant in some cases, and, therefore, ISO 11890-2 is not an acceptable alternative to this EPA method.

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**Government Standard: EPA Method 25 – Gaseous Nonmethane Organic Emissions [Incorporated: 2001]**

**Voluntary Standard**

EN 12619:1999 Stationary Source Emissions--Determination of the Mass Concentration of Total Gaseous Organic Carbon at Low Concentrations in Flue Gases--Continuous Flame Ionization Detector Method

**Rationale**

The standards do not apply to solvent process vapors in concentrations greater than 40 ppm (EN 12619) and 10 ppm carbon (ISO 14965). Methods whose upper limits are this low are too limited to be useful in measuring source emissions, which are expected to be much higher.

ISO 14965:2000(E) Air Quality--Determination of Total Nonmethane Organic Compounds--Cryogenic Preconcentration and Direct Flame Ionization Method

The standards do not apply to solvent process vapors in concentrations greater than 40 ppm (EN 12619) and 10 ppm carbon (ISO 14965). Methods whose upper limits are this low are too limited to be useful in measuring source emissions, which are expected to be much higher.

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**Government Standard: EPA Method 25A – Gaseous Organic Concentration, Flame Ionization [Incorporated: 2001]**

**Voluntary Standard**

EN 12619:1999 Stationary Source Emissions--Determination of the Mass Concentration of Total Gaseous Organic Carbon at Low Concentrations in Flue Gases--Continuous Flame Ionization Detector Method

**Rationale**

The standards do not apply to solvent process vapors in concentrations greater than 40 ppm (EN 12619) and 10 ppm carbon (ISO 14965). Methods whose upper limits are this low are too limited to be useful in measuring source emissions, which are expected to be much higher.

ISO 14965:2000(E) Air Quality--Determination of Total Nonmethane Organic Compounds--Cryogenic Preconcentration and Direct Flame Ionization Method

The standards do not apply to solvent process vapors in concentrations greater than 40 ppm (EN 12619) and 10 ppm carbon (ISO 14965). Methods whose upper limits are this low are too limited to be useful in measuring source emissions, which are expected to be much higher.

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**Government Standard: EPA Method 26 – Hydrogen Chloride, Halides, Halogens Emissions [Incorporated: 1999]**

**Voluntary Standard**

EN 1911-1,2,3 (1998), Stationary Source Emissions-- Manual Method of Determination of HCl--Part 1: Sampling of Gases Ratified European Text--Part 2: Gaseous Compounds

**Rationale**

Part 3 of this standard cannot be considered equivalent to EPA Method 26 or 26A because the sample absorbing solution (water) would be expected to capture both HCl and Cl<sub>2</sub> gas, if present, without the ability to distinguish

Absorption Ratified European Text-- Part 3:  
Adsorption Solutions Analysis and Calculation

between the two. The EPA Methods 26 and 26A use an acidified absorbing solution to first separate HCl and Cl<sub>2</sub> gas so that they can be selectively absorbed, analyzed, and reported separately. In addition, in EN 1911 the absorption efficiency for Cl<sub>2</sub> gas would be expected to vary as the pH of the water changed during sampling.

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**Government Standard: EPA Method 26A – Hydrogen Halide and Halogen, Isokinetic [Incorporated: 1999]**

**Voluntary Standard**

EN 1911-1,2,3 (1998), Stationary Source Emissions-- Manual Method of Determination of HCl--Part 1: Sampling of Gases Ratified European Text--Part 2: Gaseous Compounds Absorption Ratified European Text-- Part 3: Adsorption Solutions Analysis and Calculation

**Rationale**

Part 3 of this standard cannot be considered equivalent to EPA Method 26 or 26A because the sample absorbing solution (water) would be expected to capture both HCl and Cl<sub>2</sub> gas, if present, without the ability to distinguish between the two. The EPA Methods 26 and 26A use an acidified absorbing solution to first separate HCl and Cl<sub>2</sub> gas so that they can be selectively absorbed, analyzed, and reported separately. In addition, in EN 1911 the absorption efficiency for Cl<sub>2</sub> gas would be expected to vary as the pH of the water changed during sampling.

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**Government Standard: EPA Method 28 (Section 10.1) – Wood Heaters, Certificate and Auditing [Incorporated: 2003]**

**Voluntary Standard**

ASME Power Test Codes, Supplement on Instruments and Apparatus, part 5, Measurement of Quantity of Materials, Chapter 1, Weighing Scales

**Rationale**

It does not specify the number of initial calibration weights to be used nor a specific pretest weight procedure.

ASTM E319-85 (Reapproved 1997), Standard Practice for the Evaluation of Single-Pan Mechanical Balances

This standard is not a complete weighing procedure because it does not include a pretest procedure.

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**Government Standard: EPA Method 29 – Metals Emissions from Stationary Sources [Incorporated: 2001]**

**Voluntary Standard**

ASTM D4358-94 (1999), Standard Test Method for Lead and Chromium in Air Particulate Filter Samples of Lead Chromate Type Pigment Dusts by Atomic Absorption Spectroscopy

**Rationale**

These ASTM standards do not require the use of glass fiber filters as in EPA Method 12 and require the use of significantly different digestion procedures that appear to be milder than the EPA Method 12 digestion procedure. For these reasons, these ASTM standards cannot be considered equivalent to EPA Method 12. Also, the subject ASTM standards do not require the use of hydrogen fluoride (HF) as in EPA Method 29 and, therefore, they cannot be used for the preparation, digestion, and analysis of Method 29 samples. Additionally, Method 29 requires the use of a glass fiber filter, whereas these three ASTM standards require cellulose filters and other probable non-glass fiber media, which cannot be considered equivalent to EPA Method 29.

ASTM E1741-95 (1995), Standard Practice for Preparation of Airborne Particulate Lead Samples Collected During Abatement and

These ASTM standards do not require the use of glass fiber filters as in EPA Method 12 and require the use of significantly different digestion procedures that appear to

Construction Activities for Subsequent Analysis by Atomic Spectrometry

be milder than the EPA Method 12 digestion procedure. For these reasons, these ASTM standards cannot be considered equivalent to EPA Method 12. Also, the subject ASTM standards do not require the use of hydrogen fluoride (HF) as in EPA Method 29 and, therefore, they cannot be used for the preparation, digestion, and analysis of Method 29 samples. Additionally, Method 29 requires the use of a glass fiber filter, whereas these three ASTM standards require cellulose filters and other probable non-glass fiber media, which cannot be considered equivalent to EPA Method 29.

ASTM E1979-98 (1998), Standard Practice for Ultrasonic Extraction of Paint, Dust, Soil, and Air Samples for Subsequent Determination of Lead

These ASTM standards do not require the use of glass fiber filters as in EPA Method 12 and require the use of significantly different digestion procedures that appear to be milder than the EPA Method 12 digestion procedure. For these reasons, these ASTM standards cannot be considered equivalent to EPA Method 12. Also, the subject ASTM standards do not require the use of hydrogen fluoride (HF) as in EPA Method 29 and, therefore, they cannot be used for the preparation, digestion, and analysis of Method 29 samples. Additionally, Method 29 requires the use of a glass fiber filter, whereas these three ASTM standards require cellulose filters and other probable non-glass fiber media, which cannot be considered equivalent to EPA Method 29.

CAN/CSA Z223.26-M1987, Measurement of Total Mercury in Air Cold Vapour Atomic Absorption Spectrophotometric Method

It lacks sufficient quality assurance and quality control requirements necessary for EPA compliance assurance requirements.

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**Government Standard: EPA Method 2C – Velocity and Flow Rate, Standard Pitot [Incorporated: 1999]**

**Voluntary Standard**

ASTM D3154-00, Standard Method for Average Velocity in a Duct (Pitot Tube Method)

**Rationale**

1. The standard appears to lack in quality control and quality assurance requirements. It does not include the following: (1) Proof that openings of standard pitot tube have not plugged during the test; (2) if differential pressure gauges other than inclined manometers (e.g., magnehelic gauges) are used, their calibration must be checked after each test series; and (3) the frequency and validity range for calibration of the temperature sensors. 2. They are too general, too broad, or not sufficiently detailed to assure compliance with EPA regulatory requirements.

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**Government Standard: EPA Method 3 – Molecular Weight Carbon Dioxide, Oxygen [Incorporated: 1999]**

**Voluntary Standard**

ASME C00031 or PTC 19-10-1981--part 10, "Flue and Exhaust Gas Analyses"

**Rationale**

Is too general, too broad, or not sufficiently detailed to assure compliance with EPA regulatory requirements.

ASTM D3154-00, Standard Method for Average Velocity in a Duct (Pitot Tube Method)

1. The standard appears to lack in quality control and quality assurance requirements. It does not include the following: (1) Proof that openings of standard pitot tube

have not plugged during the test; (2) if differential pressure gauges other than inclined manometers (e.g., magnehelic gauges) are used, their calibration must be checked after each test series; and (3) the frequency and validity range for calibration of the temperature sensors. 2. They are too general, too broad, or not sufficiently detailed to assure compliance with EPA regulatory requirements.

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**Government Standard: EPA Method 306 - Chromium Emissions, Electroplating and Anodizing [Incorporated: 2002]**

**Voluntary Standard**

ASTM D4358-94 (1999) - Standard Test Method for Lead and Chromium in Air Particulate Filter Samples of Lead Chromate Type Pigment Dusts by Atomic Absorption Spectroscopy

**Rationale**

This MACT standard (Petroleum Refineries) only cites Method 29. Therefore, the following EPA comment is only applicable for Method 29 not Method 12 and 306: Method 29 requires the use of hydrofluoric acid (HF) in its process of digestion of the sample. ASTM D4358-94 (1999) does not require the use of HF; therefore, it cannot be used in the preparation, digestion, and analysis of Method 29 samples. Additionally, Method 29 requires the use of a glass fiber filter, whereas the subject ASTM standard requires cellulose filters and other probable non-glass fiber media, and this further negates their use as Method 29 equivalent methods. (Same comment as provided for ASTM E1741 and ASTM E1979).

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**Government Standard: EPA Method 306a - Chromium Emissions, Electroplating -- Mason Jar [Incorporated: 2002]**

**Voluntary Standard**

ASTM D4358-94 (1999) - Standard Test Method for Lead and Chromium in Air Particulate Filter Samples of Lead Chromate Type Pigment Dusts by Atomic Absorption Spectroscopy

**Rationale**

This MACT standard (Petroleum Refineries) only cites Method 29. Therefore, the following EPA comment is only applicable for Method 29 not Method 12 and 306: Method 29 requires the use of hydrofluoric acid (HF) in its process of digestion of the sample. ASTM D4358-94 (1999) does not require the use of HF; therefore, it cannot be used in the preparation, digestion, and analysis of Method 29 samples. Additionally, Method 29 requires the use of a glass fiber filter, whereas the subject ASTM standard requires cellulose filters and other probable non-glass fiber media, and this further negates their use as Method 29 equivalent methods. (Same comment as provided for ASTM E1741 and ASTM E1979).

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**Government Standard: EPA Method 320 – Vapor Phase Organic and Inorganic Emissions, FTIR [Incorporated: 1999]**

**Voluntary Standard**

ASTM D6348-98, Determination of Gaseous Compounds by Extractive Direct Interface Fourier Transform (FTIR) Spectroscopy

**Rationale**

Suggested revisions to ASTM D6348-98 were sent to ASTM by the EPA that, would allow the EPA to accept ASTM D6348-98 as an acceptable alternative. The ASTM Subcommittee D22-03 is currently undertaking a revision of ASTM D6348- 98. Because of this, we are not citing this standard as an acceptable alternative for EPA Method 320 in the final rule today. However, upon successful ASTM balloting and demonstration of technical equivalency with the EPA FTIR methods, the revised

ASTM standard could be incorporated by reference for EPA regulatory applicability. In the interim, facilities have the option to request ASTM D6348-98 as an alternative test method under 40 CFR 63.7(f) and 63.8(f) on a case-by-case basis.

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## **Government Standard: EPA Method 3A – Carbon Dioxide and Oxygen Concentrations, IAP [Incorporated: 1999]**

### **Voluntary Standard**

ASTM D5835-95, Standard Practice for Sampling Stationary Source Emissions for Automated Determination of Gas Concentration

### **Rationale**

1. They lack in detail and quality assurance/quality control requirements. Specifically, these two standards do not include the following: (1) Sensitivity of the method; (2) acceptable levels of analyzer calibration error; (3) acceptable levels of sampling system bias; (4) zero drift and calibration drift limits, time span, and required testing frequency; (5) a method to test the interference response of the analyzer; (6) procedures to determine the minimum sampling time per run and minimum measurement time; and (7) specifications for data recorders, in terms of resolution (all types) and recording intervals (digital and analog recorders, only). 2. Is too general, too broad, or not sufficiently detailed to assure compliance with EPA regulatory requirements.

CAN/CSA Z223.2-M86(1986), Method for the Continuous Measurement of Oxygen, Carbon Dioxide, Carbon Monoxide, Sulphur Dioxide, and Oxides of Nitrogen in Enclosed Combustion Flue Gas Stream

1. It does not include quantitative specifications for measurement system performance, most notably the calibration procedures and instrument performance characteristics. The instrument performance characteristics that are provided are nonmandatory and also do not provide the same level of quality assurance as the EPA methods. For example, the zero and span/calibration drift is only checked weekly, whereas the EPA methods requires drift checks after each run. 2. Is too general, too broad, or not sufficiently detailed to assure compliance with EPA regulatory requirements.

ISO 10396:1993, Stationary Source Emissions: Sampling for the Automated Determination of Gas Concentrations

1. They lack in detail and quality assurance/quality control requirements. Specifically, these two standards do not include the following: (1) Sensitivity of the method; (2) acceptable levels of analyzer calibration error; (3) acceptable levels of sampling system bias; (4) zero drift and calibration drift limits, time span, and required testing frequency; (5) a method to test the interference response of the analyzer; (6) procedures to determine the minimum sampling time per run and minimum measurement time; and (7) specifications for data recorders, in terms of resolution (all types) and recording intervals (digital and analog recorders, only). 2. Is too general, too broad, or not sufficiently detailed to assure compliance with EPA regulatory requirements.

ISO 12039:2001, Stationary Source Emissions-- Determination of Carbon Monoxide, Carbon Dioxide, and Oxygen-- Automated Methods

This ISO standard is similar to EPA Method 3A, but is missing some key features. In terms of sampling, the hardware required by ISO 12039:2001 does not include a 3-way calibration valve assembly or equivalent to block the sample gas flow while calibration gases are introduced. In its calibration procedures, ISO 12039:2001 only specifies a two-point calibration while EPA Method 3A specifies a three-point calibration. Also, ISO 12039:2001 does not specify performance criteria for

calibration error, calibration drift, or sampling system bias tests as in the EPA method, although checks of these quality control features are required by the ISO standard.

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**Government Standard: EPA Method 3B – Oxygen, Carbon Dioxide, Carbon Monoxide, Emission Rate Correction Factor [Incorporated: 1999]**

**Voluntary Standard**

ASTM D3154-00, Standard Method for Average Velocity in a Duct (Pitot Tube Method)

**Rationale**

1. The standard appears to lack in quality control and quality assurance requirements. It does not include the following: (1) Proof that openings of standard pitot tube have not plugged during the test; (2) if differential pressure gauges other than inclined manometers (e.g., magnehelic gauges) are used, their calibration must be checked after each test series; and (3) the frequency and validity range for calibration of the temperature sensors. 2. They are too general, too broad, or not sufficiently detailed to assure compliance with EPA regulatory requirements.

ASTM D3154-91 (1995), Standard Method for Average Velocity in a Duct (Pitot Tube Method)

Is too general, too broad, or not sufficiently detailed to assure compliance with EPA regulatory requirements.

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**Government Standard: EPA Method 4 – Moisture Content in Stack Gases [Incorporated: 1999]**

**Voluntary Standard**

ASTM D3154-00, Standard Method for Average Velocity in a Duct (Pitot Tube Method)

**Rationale**

1. The standard appears to lack in quality control and quality assurance requirements. It does not include the following: (1) Proof that openings of standard pitot tube have not plugged during the test; (2) if differential pressure gauges other than inclined manometers (e.g., magnehelic gauges) are used, their calibration must be checked after each test series; and (3) the frequency and validity range for calibration of the temperature sensors. 2. They are too general, too broad, or not sufficiently detailed to assure compliance with EPA regulatory requirements.

ASTM D3154-91 (1995), Standard Method for Average Velocity in a Duct (Pitot Tube Method)

Is too general, too broad, or not sufficiently detailed to assure compliance with EPA regulatory requirements.

ASTM E337-84 (1996), Standard Test Method for Measuring Humidity with a Psychrometer (the Measurement of Wet- and Dry-Bulb Temperatures)

They are too general, too broad, or not sufficiently detailed to assure compliance with EPA regulatory requirements.

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**Government Standard: EPA Method 5 – Particulate Matter, Stationary Sources [Incorporated: 1999]**

**Voluntary Standard**

ASME PTC-38-80 R85 or C00049, Determination of the Concentration of Particulate Matter in Gas Streams

**Rationale**

It lacks sufficient quality assurance and quality control requirements necessary for EPA compliance assurance requirements.

ASTM D3685/D3685M-98, Test Methods for Sampling and Determination of Particulate Matter in Stack Gases

It lacks sufficient quality assurance and quality control requirements necessary for EPA compliance assurance requirements.

ISO 9096:1992, Determination of Concentration and Mass Flow Rate of Particulate Matter in Gas Carrying Ducts-- Manual Gravimetric Method

It lacks sufficient quality assurance and quality control requirements necessary for EPA compliance assurance requirements.

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**Government Standard: EPA Method 515.1 - Chlorinated Acids in Water by CC/ECD [Incorporated: 1998]**

**Voluntary Standard**

Standard Methods 6640B

**Rationale**

Standard Methods 6640B for acid herbicides was tentatively deemed impractical for EPA's needs because its sample preparation and quality control procedures were not similar enough to EPA Method 515.1 to ensure that there would not be underreporting of acid herbicide contamination. EPA plans to offer to work with the Standard Methods committee to resolve this issue prior to the next publication.

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**Government Standard: EPA Method 515.4 – Chlorinated Acids in DW by LL Fast CG/ECD [Incorporated: 2003]**

**Voluntary Standard**

ASTM D5317-98 -- Standard Test Method For Determination of Chlorinated Organic Acid Compounds in Water by Gas Chromatography With an Electron Capture Detector

**Rationale**

ASTM D5317-98 specifies acceptance windows for the initial demonstration of proficiency for laboratory fortified blank samples that are as small as 0 percent to as large as 223 percent recovery for picloram, with tighter criteria for other regulated contaminants. Therefore, this method permits unacceptably large control limits, which include 0 percent recovery.

Standard Method 6640 B for the chlorinated acids

The use of this voluntary consensus standard would have been impractical due to significant shortcomings in the sample preparation and quality control sections of the method instructions. Section 1b of Method SM 6640 B states that the alkaline wash detailed in section 4b2 is optional. The hydrolysis that occurs during this step is essential to the analysis of the esters of many of the analytes. Therefore, this step is necessary and cannot be optional. In addition, the method specifies that the quality control limits for laboratory-fortified blanks are to be based upon plus or minus three times the standard deviation of the mean recovery of the analytes, as determined in each laboratory. Therefore, this method permits unacceptably large control limits, which may include 0 percent recovery.

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**Government Standard: EPA Method 531.2 – N-Methylcarbamoylozimes/ates, Aqueous In/HPLC [Incorporated: 2003]**

**Voluntary Standard**

Standard Method 6610, 20th Edition

**Rationale**

Standard Method 6610, 20th Edition has recently been approved for compliance monitoring. Standard Method 6610, 20th Supplemental Edition permits the use of a strong acid, hydrochloric acid (HCL), as a preservative. The preservatives in all of the other approved EPA and Standard Methods procedures for these analytes are weak acids that adjust the pH to a specific value based upon the pKa of the preservative. The use of HCL would

require accurate determinations of the pH of the sample in the field and could be subject to considerable error and possible changes in pH upon storage. Although not specifically observed for oxamyl or carbofuran during the development of similar methods, structurally similar pesticides have been shown to degrade over time when kept at pH 3. Therefore, approval of this method is impractical because it specifies the use of a strong acid (HCL) when positive control of the pH is critical.

Standard Method 6610, 20th Supplemental Edition

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**Government Standard: EPA Method 5i - Low Level Particulate Matter, Stationary Sources [Incorporated: 2001]**

**Voluntary Standard**

ASTM D6331-98

**Rationale**

This standard does not have paired trains as specified in method 5 and does not include some quality control procedures specified in the EPA method and which are appropriate to use in this rule.

**Government Standard: EPA Method 6 - Sulphur Dioxide Emissions [Incorporated: 1999]**

**Voluntary Standard**

ASME C00031 or PTC 19-10-1981 - Part 10 Flue and Exhaust Gas Analyses

**Rationale**

Too broad to be useful in regulatory sense. Covers Methods 3, 6, 7, and 15 with variants.

ISO 11632:1998 - Stationary Source Emissions - Determination of the Mass Concentration of Sulfur Dioxide - Ion Chromatography

ISO 11632:1998 - Stationary Source Emissions - Determination of the Mass Concentration of Sulfur Dioxide - Ion Chromatography

ISO 7934:1998 - Stationary Source Emissions - Determination of the Mass Concentration of Sulfur Dioxide - Hydrogen Peroxide/Barium Perchlorate/ Thorin Method

This standard is only applicable to sources with 30 mg/m3 SO2 or more. In addition, this method does not separate SO3 from SO2 as does EPA Method 6; therefore, this method is not valid if more than a negligible amount of SO3 is present. Also, does not address ammonia interferences.

**Government Standard: EPA Method 6c - Sulphur Dioxide Emissions Stationary by IAP [Incorporated: 1999]**

**Voluntary Standard**

ASTM D5835-95 - Standard Practice for Sampling Stationary Source Emissions for Automated Determination of Gas Concentration

**Rationale**

Similar to Methods 3a, 6c, 7e, 10, ALT 004, CTM 022. Lacks in detail and quality assurance and quality control requirements. Very similar to ISO 10396.

CAN/CSA Z223.2-M86 - (1986) Method for the Continuous Measurement of Oxygen, Carbon Dioxide, Carbon Monoxide, Sulphur Dioxide, and Oxides of Nitrogen in Enclosed Combustion Flue Gas Streams

Too general. This standard lacks in detail and quality assurance/quality control requirements. Appendices with valid quality control information are not a required part of this method.

ISO 10396:1993 - Stationary Source Emissions: Sampling for the Automated Determination of Gas Concentrations

Duplicates Method 3a, 6c, 7e, 10, ALT 004, CTM 022. Lacks in detail and quality assurance plus quality control requirements. Similar to ASTM D5835.

**Government Standard: EPA Method 7 - Nitrogen Oxide Emissions Stationary Sources [Incorporated: 1999]**

**Voluntary Standard**

ASME C00031 or PTC 19-10-1981 - Part 10 Flue and Exhaust Gas Analyses

**Rationale**

Too broad to be useful in regulatory sense. Covers Methods 3, 6, 7, and 15 with variants.

**Government Standard: EPA Method 7e - Nitrogen Oxide, Instrumental [Incorporated: 1999]**

**Voluntary Standard**

ASTM D5835-95 - Standard Practice for Sampling Stationary Source Emissions for Automated Determination of Gas Concentration

**Rationale**

Similar to Methods 3a, 6c, 7e, 10, ALT 004, CTM 022. Lacks in detail and quality assurance and quality control requirements. Very similar to ISO 10396.

CAN/CSA Z223.2-M86 - (1986) Method for the Continuous Measurement of Oxygen, Carbon Dioxide, Carbon Monoxide, Sulphur Dioxide, and Oxides of Nitrogen in Enclosed Combustion Flue Gas Streams

Too general. This standard lacks in detail and quality assurance/quality control requirements. Appendices with valid quality control information are not a required part of this method.

ISO 10396:1993 - Stationary Source Emissions: Sampling for the Automated Determination of Gas Concentrations

Duplicates Method 3a, 6c, 7e, 10, ALT 004, CTM 022. Lacks in detail and quality assurance plus quality control requirements. Similar to ASTM D5835.

**Government Standard: EPA Method ALT 004 [Incorporated: 2002]**

**Voluntary Standard**

ASTM D5835-95 - Standard Practice for Sampling Stationary Source Emissions for Automated Determination of Gas Concentration

**Rationale**

Similar to Methods 3a, 6c, 7e, 10, ALT 004, CTM 022. Lacks in detail and quality assurance and quality control requirements. Very similar to ISO 10396.

ISO 10396:1993 - Stationary Source Emissions: Sampling for the Automated Determination of Gas Concentrations

Duplicates Method 3a, 6c, 7e, 10, ALT 004, CTM 022. Lacks in detail and quality assurance plus quality control requirements. Similar to ASTM D5835.

**Government Standard: EPA Method CTM 022 [Incorporated: 2002]**

**Voluntary Standard****Rationale**

ASTM D5835-95 - Standard Practice for Sampling Stationary Source Emissions for Automated Determination of Gas Concentration

Similar to Methods 3a, 6c, 7e, 10, ALT 004, CTM 022. Lacks in detail and quality assurance and quality control requirements. Very similar to ISO 10396.

ISO 10396:1993 - Stationary Source Emissions: Sampling for the Automated Determination of Gas Concentrations

Duplicates Method 3a, 6c, 7e, 10, ALT 004, CTM 022. Lacks in detail and quality assurance plus quality control requirements. Similar to ASTM D5835.

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**Government Standard: EPA Method GG – (Title not found in index) [Incorporated: 2003]**

**Voluntary Standard**

ASTM D3031-81 – Method of Test for Total Sulfur in Natural Gas (Hydrogenation), Withdrawn

**Rationale**

This method has been deleted from the final rule because it was discontinued by the ASTM in 1990 with no replacement. If the total sulfur content of the fuel being fired in the turbine is less than 0.4 weight percent, we are adding a provision that the following methods may be used to measure the sulfur content of the fuel: ASTM D4084-82 or 94, D5504-01, D6228-98, or the Gas Processors Association Method 2377-86. This provision is consistent with the provision in 40 CFR 60.13(j)(1) allowing alternatives to reference method tests to determine relative accuracy of CEMS for sources with emission rates demonstrated to be less than 50 percent of the applicable standard.

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**Government Standard: EPA Performance Specification 2 (nitrogen oxide portion only) [Incorporated: 2001]**

**Voluntary Standard**

ISO 10849:1996, Determination of the Mass Concentration of Nitrogen Oxides-- Performance

**Rationale**

Is too general, too broad, or not sufficiently detailed to assure compliance with EPA regulatory requirements.

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**Government Standard: EPA Performance Specification 2 (sulfur dioxide portion only) [Incorporated: 2001]**

**Voluntary Standard**

ISO 7935:1992, Stationary Source Emissions-- Determination of the Mass Concentration of Sulfur Dioxide--Performance Characteristics of Automated Measuring Methods"

**Rationale**

Is too general, too broad, or not sufficiently detailed to assure compliance with EPA regulatory requirements.

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**Government Standard: EPA Performance Specifications 11 - Particulate Matter Continuous Monitoring System [Incorporated: 1999]**

**Voluntary Standard**

ISO 10155:1995 - Stationary source emissions. Automated monitoring of mass concentration of particles - Performance characteristics, test methods and specifications.

**Rationale**

This international standard is only applicable on a site specific basis by direct correlation with the manual method ISO 9096 (which does not produce particulate matter measurements like EPA Method 5). This appears to be a PM CEMS performance specification similar to EPA Performance Specification 11, but does not contain detailed RATA procedures. Also, EPA doesn't have a final performance specification to compare this to.

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**Government Standard: GLI Method 2 [Incorporated: 1999]**

**Voluntary Standard**

ISO 7027 - Water Quality Determination of Turbidity

**Rationale**

EPA has no data upon which to evaluate whether the separate 90 degrees scattered or transmitted light measurement evaluations according to the ISO 7027 method would produce results that are equivalent to results produced by the other methods.

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**Government Standard: Standard Method 2130B [Incorporated: 1999]**

**Voluntary Standard**

ISO 7027 - Water Quality Determination of Turbidity

**Rationale**

EPA has no data upon which to evaluate whether the separate 90 degrees scattered or transmitted light measurement evaluations according to the ISO 7027 method would produce results that are equivalent to results produced by the other methods.

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**Government Standard: SW846-6010b [Incorporated: 2002]**

**Voluntary Standard**

ASTM C1111-98 (1998) - Standard Test Method for Determining Elements in Waste Streams by Inductively Coupled Plasma-Atomic Emission Spectrometers

**Rationale**

This standard lacks details for instrument operation QA/QC, such as optimizing plasma operating conditions; upper limit of linear dynamic range; spectral interference correction; and calibration procedures, which include initial and continuous calibration verifications. Also lacks internal standard and method of standard addition options for samples with interferences.

ASTM D6349-99 (1999) - Standard Test Method for Determining Major and Minor Elements in Coal, Coke, and Solid Residues from Combustion of Coal and Coke by Inductively Coupled Plasma-Atomic Emission Spectrometers

This standard lacks details for instrument operation QA/QC, such as optimizing plasma operating conditions, upper limit of linear dynamic range, spectral interference correction, and calibration procedures, that include initial and continuous calibration verifications. Also lacks details for standard preparation, and internal standard and method of standard addition options for samples with interferences.

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**Agency: Government Printing Office (GPO)**

**Government Standard: FED-STD 209 [Incorporated: 2000]**

**Voluntary Standard**

ISO 14644-1 & ISO 14644-2

**Rationale**

Quality Assurance. Second ISO standard not issued until end of FY 2000. Being phased out.

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**Government Standard: MIL-STD 105 [Incorporated: 2000]**

**Voluntary Standard**

ANSI/ASQC Z1.4

**Rationale**

Quality Assurance. Cited in small number of contracts due to editing errors. These are being corrected and phased out.

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**Government Standard: MIL-STD 1189 [Incorporated: 2000]**

**Voluntary Standard**

ANSI/AIM X5-2 & ANSI X3.182

**Rationale**

Quality Assurance. Cited in small number of contracts due to editing errors. These are being corrected and phased out.

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**Government Standard: MIL-STD 498 [Incorporated: 2000]**

**Voluntary Standard**

IEEE/EIA 12207.0, IEEE/EIA 12207.1, & IEEE/EIA 12207.2

**Rationale**

Quality Assurance. Cited in small number of contracts due to editing errors. These are being corrected and phased out.

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**Agency: General Services Administration (GSA)**

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**Government Standard: Federal Specification KKK-A-1822E - Federal Specification for Ambulances [Incorporated: 2003]**

**Voluntary Standard**

ASTM F2020 - Standard Practice for Design, Construction, and Procurement of Emergency Medical Services Ambulances

**Rationale**

The ASTM Standard Practice for Design, Construction, and Procurement of Emergency Medical Services (EMSS) Ambulances (ASTM F2020) is not practical for use, and therefore GSA uses the Federal Specification for Ambulances (KKK-A-1822E). GSA has determined the ASTM document is not practical for use for the following reasons:

1) GSA has determined that ASTM F2020 contains specific practices that are technically and economically impractical to use for the acquisition of commercial based vehicles because the document is financially burdensome and technically ineffective. Specifically at issue is the ASTM Standard Specification for Medical Oxygen Delivery Systems for EMS Ground Vehicles, F1949-99 which is inclusive to ASTM F2020.

2) GSA has determined that ASTM F2020 is impractical because it is defined as a standard practice which is ambiguous and an ineffective substitution for specifications or requirements for use in GSA contract documents. ASTM F1949-99, a Standard Specification for Medical Oxygen Delivery Systems for EMS Ground Vehicles is included in ASTM F2020. ASTM F1949-99 is defined as a "standard specification".

3) GSA has determined that ASTM F2020 is impractical because ASTM International does not provide interpretations and written guidance to their publications which is inadequate and less useful. ASTM members may only offer personal opinions. ASTM offers no mechanism to support timely resolution of conflicts between contractor and procurement organizations on technical subject matter. GSA provides interpretations, clarifications and engineering determinations when required. This is one of the most important concerns presented by the Ambulance Manufacturers Division (AMD).

4) The AMD has determined through consensus that it is

impractical to replace the Federal Specification for Ambulances, KKK-A-1822E with the ASTM Standard Practice, F2020. GSA initiated a survey to collect public responses from a wide range of constituent users of the Federal Ambulance Specification. The National Association of Emergency Medical Technicians (NAEMT), the International Association of Fire Chiefs (IAFC), the National Association of State EMS Directors (NASEMSD) and the National Association of EMS Physicians universally accept and support the continued use of the Federal Specification. The AMD and constituent users have determined that it is impractical to replace the Federal Specification for Ambulances, KKK-A-1822E with the ASTM Standard Practice, F2020 because rule promulgation is burdensome and costly. Staff and administration resources would need to be diverted in each state EMS office to implement the change in statutes, public health codes, rules and regulations.

5) GSA has determined that ASTM F2020 is impractical because it is burdensome to GSA procurement efforts. While the current ASTM document recites many of the requirements from the Federal Specification, a future ASTM document would likely have diverging requirements unacceptable to the Government. This was verified by a member of the ASTM F2020 subcommittee at the September 4, 2003 meeting of the Federal Interagency Committee on Emergency Medical Services.

**Government Standard: MIL-G-9954 - Glass Beads for Cleaning and Peening [Incorporated: 2000]**

**Voluntary Standard**

SAE/AMS 2431 - Peening Media, General Requirements

**Rationale**

This government-unique standard contains specific size & performance required for Air Force critical applications that are not present in the voluntary standards.

**Agency: Department of Health and Human Services (HHS)**

**Government Standard: FDA Guidelines on Aseptic Processing (2004) [Incorporated: 2004]**

**Voluntary Standard**

ISO 13408-1 Aseptic Processing of Health Care Products, Part 1, General Requirements

**Rationale**

FDA is not using the ISO standard because the applicability of these requirements is limited to only portions of aseptically manufactured biologics and does not include filtration, freeze-drying, sterilization in place, cleaning in place, or barrier-isolator technology. There are also significant issues related to aseptically produced bulk drug substance that are not included in the document

**Government Standard: FR Notice dated June 17, 1994 Tentative Final Monograph for Health Care Antiseptic Drug Products; Proposed Rule [Incorporated: 1997]**

**Voluntary Standard**

ASTM Standard E1115 - Test Method for Evaluation of Surgical Hand Scrub Formulations

**Rationale**

Sensitivity and bias of the ASTM Standard has not been established.

ASTM Standard E1173-93 - Standard Test Method of an Evaluation of Preoperative, Pre-catheterization, or Pre-injection Skin Preparations

Sensitivity and bias of the ASTM Standard has not been established.

ASTM Standard E1174-00 - Standard Test method for the Evaluation of the Effectiveness of Health Care Personnel or Consumer Handwash Formulations

Sensitivity and bias of the ASTM Standard has not been established.

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**Agency: Department of Housing and Urban Development (HUD)**

**Government Standard: 24 CFR 200.935 - Administrator qualifications and procedures for HUD building products and certification programs [Incorporated: 2000]**

**Voluntary Standard**

ANSI A119.1 N - Recreation Vehicles

**Rationale**

HUD Building-Product Standards & Certification Programs. HUD was required by legislation to “establish Federal construction and safety standards for manufactured homes and to authorize manufactured home safety research and development”. Recently, HUD retained a private consensus body (NFPA) to update and modernize the Manufactured Home Standards. At the conclusion of the development process, NFPA will submit the revised standard to HUD for regulatory adoption.

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**Government Standard: 24 CFR 3280 - Manufactured Home Construction and Safety Standards [Incorporated: 2000]**

**Voluntary Standard**

ANSI A119.1 - Recreation Vehicles and NFPA 501C - Standard on Recreational Vehicles

**Rationale**

HUD-Unique Manufactured Home Construction & Safety Standards. HUD was required by legislation to “establish Federal construction and safety standards for manufactured homes and to authorize manufactured home safety research and development”. Recently, HUD retained a private consensus body (NFPA) to update and modernize the Manufactured Home Standards. At the conclusion of the development process, NFPA will submit the revised standard to HUD for regulatory adoption.

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**Agency: National Archives and Records Administration (NARA)**

**Government Standard: NARA data standard [Incorporated: 2000]**

**Voluntary Standard**

Archives, Personal Papers, and Manuscripts (APPM);  
General International Standard Archival Description (ISAD(G));  
International Standard Archival Authority Record for Corporate Bodies, Persons, and Families (ISAAR(CPF));  
Encoded Archival Description (EAD);  
Machine Readable Cataloging (MARC)

**Rationale**

These voluntary standards do not meet the precise needs of the agency.