**STATUS OF CONVERSION OF DOE STANDARDS TO
NON-GOVERNMENT STANDARDS**

Performance Assurance Project Office

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CONTENTS

	<u>Page</u>
FOREWORD	v
1. INTRODUCTION	1
2. CONVERSION PROCESS	1
2.1 Criteria to Identify Standards Eligible for Conversion	2
2.2 Preparation of Plans to Implement Conversion	3
2.3 Development of a System to Monitor Conversion Activities	3
3. STATUS OF CONVERSION OF DOE STANDARDS TO NON-GOVERNMENT STANDARDS	4

FOREWORD

One major goal of the Department of Energy (DOE) Technical Standards Program is to utilize a proven method for transferring DOE's program experience and technology to the private sector for commercial use. The proven method utilized by the Performance Assurance Project Office (Lead Standardization Activity for DOE) is the "conversion" of DOE standards to non-Government standards (NGSs) when practicable. This method meets the policy and guidance established in OMB Circular No. A-119, *Federal Participation in the Development and Use of Voluntary Standards*, October 27, 1982 and the objectives of DOE Order 1300.2A, *Department of Energy Technical Standards Program*, May 19, 1992.

DOE standards were and are specifically designed to meet the needs of certain Department facilities, programs, and projects and, thus, are based on the highest level of DOE expertise and experience available at the time the standards are developed. Modifications to the standards are made as experience is gained within DOE through application of the standards. Often, experience in the private sector provides the incentive to incorporate some or all requirements of specific Department standards into NGSs. This is the process referred to as "conversion."

1. INTRODUCTION

One major goal of the DOE Technical Standards Program is to convert existing DOE standards into NGSs, where possible. This means that a DOE standard may form the basis for a standards-writing committee to produce a standard in the same subject area using the non-Government standards consensus process. This report is a summary of the activities that have evolved to effect conversion of DOE standards to NGSs, and the status of current conversion activities. In some cases, all requirements in a DOE standard will not be incorporated into the published non-Government standard because these requirements may be considered too restrictive or too specific for broader application by private industry. If requirements in a DOE standard are not incorporated in a non-Government standard and the requirements are considered necessary for DOE program applications, the DOE standard will be revised and issued as a supplement to the non-Government standard. The DOE standard will contain only those necessary requirements not reflected by the non-Government standard. Therefore, while complete conversion of DOE standards may not always be realized, the Department's technical standards policy as stated in Order 1300.2A has been fully supported in attempting to make maximum use of the non-Government standard.

2. CONVERSION PROCESS

All conversion efforts undertaken to date by DOE as detailed in this report involve standards developed under the DOE Nuclear Energy (NE) Standards Program. The NE Working Group on Standards developed three basic steps in managing the conversion effort.

1. Establish criteria to identify NE standards eligible for conversion.
2. Prepare action plans to implement conversion.
3. Develop a system to monitor conversion activities.

2.1 CRITERIA TO IDENTIFY STANDARDS ELIGIBLE FOR CONVERSION

Early in the effort to establish criteria for standards to be converted, it was recognized that the need for a non-Government standard in a particular subject area should be the determining factor in evaluating the need to pursue conversion of an existing NE standard. Focusing on the aspect of need, the following criteria were established.

1. Current need	Is there a current (and continuing) need for the standard?
2. Future need	Is significant future application of the standard by private industry anticipated?
3. Past use	Does experience gained from previous application of the standard demonstrate a need for a non-Government standard?
4. Scope and applicability	Can the scope of applicability be converted to the needs of private industry?
5. Special requirements	Is there validity and justification for the requirements in private industry application?
6. Quality assurance requirements	For example, can ASME NQA-1 be applied instead of NE F 2-2 or NE F 2-4?

The criteria was applied in two steps.

1. If an individual NE standard met either criterion 1, 2, or 3, the need for the NE standard was established.
2. If the NE standard then met criteria 4, 5, and 6, the NE standard should be selected as a candidate for conversion to a non-Government standard.

Any DOE standard that is requested by a non-Government standards body (NGSB) for use in developing a non-Government standard will be made available to the requesting organization. The status of that effort will be included in this report, *Status of Conversion of DOE Standards to Non-Government Standards*, which is to be issued periodically by the Performance Assurance Project Office, (PAPO) as the Lead Standardization Activity for DOE.

2.2 PREPARATION OF PLANS TO IMPLEMENT CONVERSION

When a DOE standard is identified as a candidate for conversion to a non-Government standard, PAPO solicits information (from non-Government standards bodies and standards listings/data bases) on non-Government standards that appear to be similar in nature or scope to the DOE standard. Based on the information obtained, PAPO develops a plan for conversion of the DOE standard. Such a plan generally identified the non-Government standards body to be contacted, recommends an approach to the conversion effort (either develop a new non-Government standard or revise an existing non-Government standard), and PAPO's proposed level of involvement. Conversion efforts follow these plans, which are updated continuously to reflect ongoing activities.

2.3 DEVELOPMENT OF A SYSTEM TO MONITOR CONVERSION ACTIVITIES

The status information in this report has been developed to monitor the conversion activities in progress. Information provided by representatives of the non-Government standards bodies on progress achieved with development of the NGS, is incorporated, and the current status of conversion is reflected by appropriate entries.

The status of conversion has five parts: Part I reflects the number and title of the standard recommended for conversion; Part II consists of the DOE standard status; Part III identifies the non-Government standards bodies, committees, and contacts; Part IV is the non-Government standards number, title, and status; and Part V is the chronology of the project.

3. STATUS OF CONVERSION OF DOE STANDARDS TO NON-GOVERNMENT STANDARDS

To date, thirty DOE-NE standards have been converted to non-Government standards. There are nineteen standards presently in the conversion process. The status of these 19 conversion activities is summarized in the following pages.

**CONVERSION OF DOE STANDARDS TO NON-GOVERNMENT STANDARDS (NGS)
JULY 1992**

LEGEND for chronology of Project: (1) Identified for conversion, (2) DOE approval to submit to a Non-Government Standards Body (NGSB) for consideration, (3) Information package prepared, (4) to NGSB, (5) NGS begun, (6) NGS published, (7) NE Standard and NGS compared to determine degree of conversion and status of NE Standard.

NE Standard Recommended for Conversion	NE Standard Status	Non-Government Standard Organization, Committee, and Contract	Non-Government Standard Number, Title, and Status	Chronology of Project (Mo/Yr)
10500 A 1-5T Purity Requirements for Operating Sodium Reactor Systems (6-81) NE Status: Published. WHC W. F. Brehm AMO-FFTFOD/ D. M. Collado	Latest Action: NE Standard resubmitted to ASTM C26.02 Committee for consideration of conversion to an ASTM standard.	Organization: ASTM Committee Number: C26.02 Subcommittee on Fuel and Fertile Materials Committee Contact: Thomas A. Thornton, B&W, Chairman NE Standard Org. Contact: J. D. McGaugh Jr., ORNL	Number: Title: Status: C26.02 has not taken any action. The committee will consider at July 1992 meeting and advise PAPO on intent.	1) 1981 2) 1981 3) 1988 4) 1988 5) 6) 7)
60200 C 1-2T Recommended Practice for High-Temperature Strain Measurement (10-85) NE Status: Discontinued	Latest Action: Approved to discontinue. ASTM E1319-89 is available. Conversion is considered complete.	Organization: ASTM Committee Number: E28.14 Committee Contact: G. Moran, Chairman of ASTM E28.14 NE Standard Org. Contact: H. L. Moseley, ORNL	Number: ASTM E1319-89 Title: High-Temperature Strain Measurement Status: ASTM approved and issued as E1319-89.	1) 1985 2) 1985 3) 1985 4) 1985 5) 1986 6) 1989 7) 1991
121700 C 7-17T Platinum Resistance Thermometer (4-75) NE Status: Published. WHC S. H. Crow AMO-FFTFOD/ D. M. Collado	Latest Action: NE standard used as input. The ASTM standard does not replace C 7-17T. New draft will eventually replace C 7-17T.	Organization: ASTM Committee Number: E20 Committee Contact: R. L. Shepard, ORNL NE Standard Org. Contact: J. O. Dittmer, WHC	Number: E20 D-30 Title: Standard Specifications for Industrial Platinum Resistance Thermometers Status: Negative comments being resolved within E20 (4/92).	1) 1980 2) 1980 3) 1981 4) 1981 5) 1982 6) 7)

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NE Standard Recommended for Conversion	NE Standard Status	Non-Government Standard Organization, Committee, and Contract	Non-Government Standard Number, Title, and Status	Chronology of Project (Mo/Yr)
220500 C 17-5T Metal-sheathed, Mineral-Insulated Cable Bulk Material (2/73) NE Status: Published. ETEC F. L. Fletcher	Latest Action: Additional standard information was supplied from ETEC. Further action is pending availability of a DOE expert to participate in the ASTM Committee.	Organization: ASTM Committee Number: D9.14 Committee Contact: S. Acres, D9.14 NE Standard Org. Contact: ETEC	Number: Title: Status: Task Group has been formed to determine the need for this effort.	1) 1985 2) 1986 3) 1989 4) 1989 5) 6) 7)
230100 C 18-1T Ceramic Electrical Insulators (8-74) NE Status: Published ETEC F. L. Fletcher	Latest Action: Additional standard background information was supplied from ETEC. Further action is pending availability of a DOE expert to participate in the ASTM Committee.	Organization: ASTM Committee Number: ASTM D9.94 and D9.5 Committee Contact: Howard Raymars, D9 NE Standard Org. Contact: ETEC	Number: Title: Status: Pending committee action.	1) 1985 2) 1986 3) 1989 4) 1989 5) 6) 7)
420400 E 12-4T Shielded Shipping Cask for Spent Reactor Fuel Elements (8-73) NE Status: Published. ORNL H. L. Moseley	Latest Action: No action has been taken.	Organization: INMM - Institute of Nuclear Materials Management Committee Number: INMM N14, Packaging and Transportation of Fissile and Radioactive Materials Committee Contact: J. W. Arendt, Chairman, N14 NE Standard Org. Contact: H. L. Moseley, ORNL	Number: Title: Status: Standard is to be coordinated with ASME/NUPAC Committee. A peer review panel has been appointed to review DOE requirements and decide if a standard is required since there is only one customer. Panel will operate outside normal INMM activities and funds will be provided by DOE for some participants. Committee is inactive at this time.	1) 1980 2) 1981 3) 1981 4) 1981 5) 6) 7)

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NE Standard Recommended for Conversion	NE Standard Status	Non-Government Standard Organization, Committee, and Contract	Non-Government Standard Number, Title, and Status	Chronology of Project (Mo/Yr)
420500 E 12-5T Operating Manuals for Fuel Shipping containers (1-75) NE Status: Discontinued.	Latest Action: NE Standard has been approved for discontinuance. ANSI N14.29-1988 is available. Conversion is considered complete.	Organization: INMM Committee Number: N14, Packaging and Transportation of Fissile and Radioactive Material Committee Contact: J. W. Arendt, Chairman N14 J. W. Arendt, Coordinator R. T. Waite, Chairman, N14.29 NE Standard Org. Contact: H. L. Moseley, ORNL	Number: ANSI/INMM, N14.29 (N679) Title: Guide for Writing Operating Manuals for Radioactive Materials Packaging Status: ANSI N14.29-1988 has been published (6/90)	1) 1976 2) 1981 3) 1981 4) 1981 5) 1980 6) 1990 7) 1991
420700 E 12-7T Inspection and Preventive Maintenance of Fuel Shipping Containers (1-75) NE Status: Published. ORNL H. L. Moseley	Latest Action: No activity has been undertaken.	Organization: INMM Committee Number: INMM N14, Packaging and Transportation of Fissile and Radioactive Materials Committee Contact: J. W. Arendt, Chairman, N14; J. W. Arendt, Coordinator NE Standard Org. Contact: H. L. Moseley, ORNL	Number: ANSI/INMM N14.26 Title: Guidance on Quality Control Activities as They Relate to the Inspection, Preventive Maintenance, and Post-Incident Testing of Packages Used for the Shipment of Radioactive Material. Status: Committee has been formed. Scope is to be prepared.	1) 1980 2) 1981 3) 1981 4) 1981 5) 6) 7)
430200 E 13-2T Ceramic Grade Uranium Dioxide (1/84) NE Status: Published. WHC J. O. Dittmer AMO-FFTFOD/ D. M. Collado	Latest Action: NE Standard has been reviewed within WHC against the revision to the ASTM Standard. Cognizant engineer recommended retention and inactivation of the NE Standard.	Organization: ASTM C26 Nuclear Fuel Cycle Committee Committee Number: ASTM C26.02 Subcommittee on Fuel and Fertile Materials Committee Contact: Thomas A. Thornton, B&W, Chairman, ASTM C25.02. NE Standard Org. Contact: H. L. Moseley, ORNL	Number: ASTM C753 Title: Standard Specification for Nuclear-Grade, Sinterable Uranium Dioxide Powder. Status: The ASTM Standard has been revised and received C26 and ASTM approval. Revised ASTM standard does not address all requirements of the NE E 13-2T standard.	1) 1986 2) 1986 3) 1986 4) 1987 5) 1987 6) 1988 7)

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520900 F 2-9T Reliability Assurance (6-74) NE Status: Published. AESD F. A. Lijewski NE-84 E. F. Bjoro	Latest Action: Draft revision of standard used in developing NGS.	Organization: IEEE Committee Number: SC-5 Committee on Reliability Committee Contact: Wil Gangloff, Westinghouse NOD, Chairman, SC-5 Joseph Fragola, Chairman, SC-5.1. NE Standard Org. Contact: G. F. Flanagan, ORNL F. A. Lijewski, AESD	Number: IEEE P933 Title: Guide for the Definition of Reliability Program Plans for Nuclear Power Generating Stations Status: Balloting is not completed.	1) 1980 2) 1981 3) 1981 4) 1981 5) 1985 6) 7)
534100 F 3-41T In-Place Testing of HEPA Filter Systems by the Single-Particle, Particle-Size Spectrometer Method (12-81) NE Status: Published. Limited coordination standard. LANL PM/ORNL H. L. Moseley WGC/LANL J. Ortiz RCC/HEHF B. D. Reinert DP-20 J. F. Leonard	Latest Action: ASTM conversion effort is in progress.	Organization: ASTM Committee Number: F21.20, Gas Filtration Subcommittee Committee Contact: W. T. Davis, Chairman, ASTM F21 John Ortiz, Task Group, Chairman, LANL NE Standard Org. Contact: B. D. Reinert, LANL	Number: Title: Status: Negative ballots were received. Resolution of negatives is continuing.	1) 1981 2) 1982 3) 1982 4) 1986 5) 1987 6) 7)
560200 F 6-2T Welding of Reactor Core Components and Test Assemblies (7-73) NE Status: Published. WHC T. A. Delucchi AMO-FFTFOD/ D. M. Collado	Latest Action: No action pending completion of the review by AWS.	Organization: The American Welding Society is reviewing the standard. Committee Number: Committee Contact: H. Glenn Ziegenfuss, AWS NE Standard Org. Contact: H. L. Moseley, ORNL	Number: Title: Status: The American Welding Society staff is continuing to review the standard with the responsible Technical Committee.	1) 1985 2) 1985 3) 1986 4) 1986-87 5) 6) 7)

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570200 F 7-2T Packaging, Packing, and Marking of Components for Shipment and Storage (9/75) NE Status: Published. Conversion proposed, submitted to ASTM. WHC D. W. Smith EM-421 J. W. Wagoner	Latest Action: Information package completed and forwarded to ASTM for consideration as basis of new ASTM standard.	Organization: ASTM Committee Number: ASTM C26.02 Committee Contact: Thomas A. Thornton, B&W, NE Standard Org. Contact: J. D. McGaugh Jr.	Number: Title: Status: NE Standard still being considered for conversion. The Committee will recheck status at July 1992 meeting.	1) 1979 2) 1983 3) 1984 4) 1984 5) 1984 6) 7)
570300 F 7-3T Marking of Components and Parts (6/75) NE Status: Published. WHC D. W. Smith EM-421 J. W. Wagoner	Latest Action: Information package completed and forwarded to ASTM for consideration as basis of new ASTM standard.	Organization: ASTM Committee Number: ASTM C26.02 Committee Contact: Thomas A. Thornton, B&W NE Standard Org. Contact: J. D. McGaugh Jr.	Number: Title: Status: NE Standard still being considered for conversion. The Committee will recheck status at July 1992 meeting.	1) 1979 2) 1983 3) 1984 4) 1984 5) 1984 6) 7)
580600 F 8-6T Hoisting and Rigging of Critical Components and Related Equipment (11-85) NE Status: Published. Limited coordination standard. PM/ORNL H. L. Moseley EM-421 J. W. Wagoner	Latest Action: Information package completed and forwarded to ASME for consideration as basis of new ASME standard.	Organization: ASME Committee Number: Main Committee on Cranes for Nuclear Facilities Committee Contact: W. Berger, ASME NE Standard Org. Contact: H. L. Moselev, ORNL	Number: Title: Status: Certain portions of the standard will be addressed in the future. Committee is not active, therefore conversion activity will be extended.	1) 1988 2) 1988 3) 1988 4) 1988 5) 6) 7)

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580900 F 8-9T Design Basis for Fuel and Irradiations Experiment Resistance to Shock and Vibration in Truck Transport (2/75) NE Status: Published. ORNL H. L. Moseley	Latest Action: F 8-9T was used as the basis for development of N14.23.	Organization: INMM Committee Number: N14 Committee Contact: J. W. Arendt, Chairman N14 R. Haelsig, Coordinator; D. Ahlbeck, Chairman N14.23. NE Standard Org. Contact: H. L. Moseley, ORNL	Number: INMM N14.23 Title: Design Basis for Resistance to Shock and Vibration of Radioactive Material Packages Greater than One Ton in Truck Transport Status: N14.23 has been published for trial use and comment.	1) 1979 2) 1980 3) 1980 4) 1980 5) 1984 6) 7)
581100 F 8-11T Fuel Shipping Container Tiedown for Truck Transport (1-75) NE Status: Published. ORNL H. L. Moseley	Latest Action: Conversion proposed, submitted to INMM.	Organization: INMM Committee Number: N14.2 Subcommittee Committee Contact: J. W. Arendt, Chairman N14; J. Lee, Coordinator; R. E. Glass, Chairman N14.2. NE Standard Org. Contact: H. L. Moseley, ORNL	Number: INMM N14.2 Title: Tiedowns for Transport of Fissile and Radioactive Material Containers Greater than One-Ton Truck Transport Status: Writing group preparing schedule and progress report for N14 Chairman.	1) 1980 2) 1981 3) 1981 4) 1981 5) 1984 6) 7)
581200 F 8-12T Fuel Shipping Container Tiedown for Rail Transport NE Status: Development withheld.	Latest Action: Development withheld. Requirements submitted to ANSI-INMM for consideration (11/88).	Organization: INMM Committee Number: N14 Committee Contact: J. W. Arendt, Chairman N14; Chairman for N14.25 needed. NE Standard Org. Contact: H. L. Moseley, ORNL	Number: ANSI INMM N14.25 Title: Tiedowns for Rail Transport of Fissile and Radioactive Material Status: Activity to be considered after completion of truck tiedowns (Reference conversion action on NE F 8-11T).	1) 1980 2) 1981 3) 1981 4) 1981 5) 1985 6) 7)

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NE Standard Recommended for Conversion	NE Standard Status	Non-Government Standard Organization, Committee, and Contract	Non-Government Standard Number, Title, and Status	Chronology of Project (Mo/Yr)
770400 M 12-4T Reflective Insulation (1/72) NE Status: Published. ORNL D. Yarbrough AMO-FFTFOD/ D. M. Collado	Latest Action: Pending issue of ASTM C667.	Organization: ASTM Committee Number: ASTM C16.21 Reflective Insulation Committee Contact: F. J. Powell, chairman; André Desjarais, Secretary; D. Yarbrough, Chairman C16.21; George Barnett, ASTM C667. NE Standard Org. Contact: David Yarbrough, ORNL	Number: C335-84, C1033-85 Title: Standard Test Method for Steady-State Heat Transfer Properties of Horizontal Pipe Insulation. (C335-84) Standard Test Method for Steady-State Heat Transfer Properties of Pipe Insulation Installed Vertically. (C1033-85) Status: C335-84, C691-84, and C1033-85 have been issued. C691-84 will be withdrawn since the latest revision of C335-84 covers all information now in C691. A new draft of C667 that covers material properties was accepted by C16.21. The C667-89 draft received negative votes on the C16 committee ballot. Negative votes are being resolved.	1) 1979 2) 1979 3) 1979 4) 1979 5) 1980 6) 7)
790100 M 14-1T Sodium Cover Gas - Purchase Specifications (7/72) NE Status: Published. WHC W. J. Schuck AMO-FFTFOD D. M. Collado	Latest Action: Review of M 14-1 and ASTM C1143 for degree of conversion has been completed. All of the NE Standard requirements are not covered in the ASTM Standard. DOE project authorization will be initiated to determine the next action.	Organization: ASTM Committee Number: ASTM C26.02 Committee Contact: Thomas A. Thornton, B&W NE Standard Org. Contact: H. L. Moseley, ORNL	Number: ASTM C1143 Title: Standard Specification for Helium for Use as a Cover Gas for Liquid Sodium. Status: New ASTM Standard has been published.	1) 1979 2) 1984 3) 1984 4) 1984 5) 1987 6) 1989 7) 1991

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<p>810100 M 16-1T Gas-Phase for Trapping Radioactive Iodine and Iodine compounds (10/81)</p> <p>NE Status: Published. ORNL S. D. Clinton AMO-FFTFOD/ D. M. Collado</p>	<p>Latest Action:</p> <p>Parts of M 16-1T covered by ASTM Standard except inorganic. Revision of M 16-1T needed to cover noncarbonaceous absorbents. A DOE Project Authorization will be initiated.</p>	<p>Organization: ASTM Committee Number: ASTM D28.04 Subcommittee Gas Phase Committee Contact: A. Turk, Chairman NE Standard Org. Contact: R. A. Lorenz</p>	<p>Number: ASTM D3802, D3803, D3838, and D4069 Title: Standard Test Method for Ball-Pan Hardness of Activated Carbon. (D3802) Standard Test Method for Nuclear-Grade Activated Carbon. (D3803) Standard Test Method for pH of Activated Carbon. (D3838) Standard Specification for Impregnated Activated Carbon Used to Remove Gaseous Radio- Iodines From Gas Streams. (D4069) Status: ASTM D3802-79, D3803-86, D3838-80, and D4069-86 have been revised and reviewed against the NE Standard. Drafts were balloted simultaneously by the D28.04 Committee and the D28 Committee. The revisions factor in the EG&G report. Negative comments received on D3803. Negative comments addressed at the October 1988 meeting and reballoted. Revisions to D3803-86 and D4069-86 have been issued (6/90).</p>	<p>1) 1975 2) 1976 3) 1977 4) 1977 5) 1978 6) 1981 7)</p>

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