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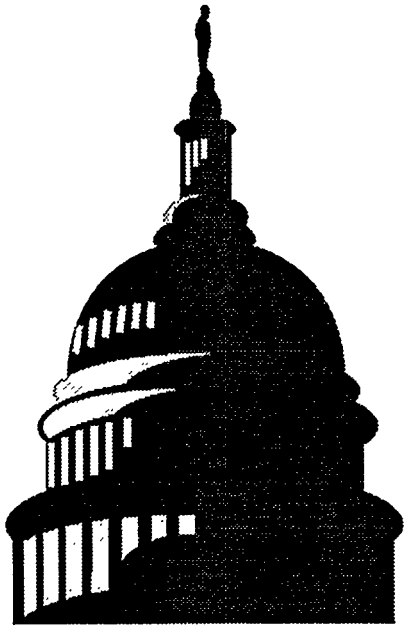

1998 Federal Technical Standards Workshop Proceedings

August 4–6, 1998
Loews L'Enfant Plaza Hotel
Washington, D.C.

Standards Management—A World of Change and Opportunities

Cosponsors: Department of Energy (host)
National Institute of Standards and Technology
Environmental Protection Agency
National Aeronautics and Space Administration
Food and Drug Administration
Partnership in Reliability, Maintainability & Supportability Standards (RMS Partnership)

DISCLAIMER

Department of Energy
Washington, DC 20585

September 23, 1998

Distribution

1998 Federal Technical Standards Workshop – Proceedings

A copy of the proceedings from the 1998 Federal Technical Standards Workshop is enclosed for your information and reference.

These proceedings provide a record of the significant activities that took place during the workshop from August 4–6, 1998, in Washington, D.C.

Any questions or comments may be directed to me at (301) 903-2856.

Sincerely,

Richard J. Serbu
Manager, DOE Technical Standards Program

Enclosure

Distribution: Workshop participants

Table of Contents

Table of Contents (continued)

1998 Federal Technical Standards Workshop

On August 4–6, 1998, the first-ever Federal Technical Standards Workshop was held at the Loews L'Enfant Plaza Hotel in Washington, D.C. Federal agencies and departments sponsoring the workshop included the Department of Energy (DOE—workshop host), the National Institute of Standards and Technology (NIST), the Environmental Protection Agency (EPA), the National Aeronautics and Space Administration (NASA), and the Food and Drug Administration (FDA). Also, the Partnership in Reliability, Maintainability, and Supportability (RMS) Standards (frequently referred to as the "RMS Partnership"), a communication-educational consortium of professional societies, industrial associations, and government agencies working together to help implement acquisition/standardization reform, served as a cosponsoring entity for the workshop.

The theme for the 1998 workshop was "Standards Management—A World of Change and Opportunities." The workshop's goal was to further the implementation of the National Technology Transfer and Advancement Act of 1995 (Public Law 104-113) through the sharing of standards management success stories, "lessons learned," and emerging initiatives within the Executive Branch of the Federal Government. The target audience for this workshop included agency/department and contractor personnel and representatives of standards developing organizations that either used technical standards in their work for the Federal Government or participated in standards writing/management activities in support of the missions and programs of Federal agencies/departments. As with previous standards workshops sponsored by the DOE, views on the technical subject areas under the workshop theme were solicited from and provided by agency Standards Executives and standards program managers, voluntary standards organizations, and the private sector.

Over 200 individuals representing a broad spectrum of Federal agencies/departments (including those sponsoring the workshop), voluntary standards organizations, and the private sector attended one or more of the workshop's technical sessions and/or related meetings held in conjunction with the workshop. There were a number of technical highlights, including the following:

- On Tuesday, August 4, the workshop participants were treated to a pair of insightful opening presentations by Mr. Peter Brush, the Acting Assistant Secretary for Environment, Safety and Health for DOE and the workshop keynote speaker, and Dr. Robert Hebner, the Acting NIST Deputy Director. Mr. Brush and Dr. Hebner both emphasized the importance of proactive standards management programs in supporting the diverse missions of each organization and adapting to the evolving Federal program management environment.
- The realities and expectations of the "world of change" facing Federal program managers and line personnel were highlighted by Carl DeMaio, Congressional Institute (need for performance measures/standards under the Government Performance and Results Act); Don Marlowe, FDA (challenges facing FDA in implementing the Food and Drug Modernization Act); and Gordon Elley, Department of Defense (DoD – standardizing and streamlining DoD processes/methods through the Single Process Initiative).
- The standards management infrastructures (at a company, national, and global level) adopted for making the most of the "world of opportunities" were described by Henry Line, AMP, Inc. (role and influence of standards in the global marketplace); Jane Schweiker, American

National Standards Institute (ANSI – ANSI's role in the national standards infrastructure), and Michael Gorman, Ameritech, Inc. (savings through the strategic use of standards).

- On Wednesday, August 5, Federal agency expectations and initiatives related to the implementation of the revised OMB Circular A 119, *Federal Participation in the Development and Use of Voluntary Consensus Standards and in Conformity Assessment Activities*, were explored in two technical sessions organized and moderated by Krista Johnsen Lueteritz, NIST. Presentations on agency perspectives and activities were given by Virginia Huth, OMB; Dr. Belinda Collins, NIST; Eric Wilkinson, EPA; John Craig, Nuclear Regulatory Commission (NRC); Richard Weinstein, NASA, Richard Serbu, DOE; and Greg Saunders, DoD.

- Bob Walsh, Advance Action Associates, and Diego Betancourt, Polaroid Corporation, provided insights on how an organization or agency can take a more strategic approach to its standards management activities. It must be noted that through the participation of Mr. Walsh, Mr. Betancourt, Mr. Line, and Mr. Gorman, the workshop participants heard from many of the leading national experts on the application of principles of strategic standards management.

- Parallel technical sessions were conducted on (1) the activities of voluntary standards organizations of relevance to Federal agencies/departments, and (2) impact of acquisition reform on voluntary standards participation (technical session organized by Dr. Russell Vacante, Director of the RMS Partnership). Presentations were given by Dan Smith, American Society for Testing and Materials (ASTM); Tony O'Neill, National Fire Protection Association (NFPA); Gerry Eisenberg, American Society for Mechanical Engineers (ASME); Paul Orr, Underwriters Laboratories (UL); Jim Moore, MITRE Corp. (representing the Software Engineering Standards Committee of the Institute of Electrical and Electronics Engineers, IEEE), Jean-Paul Emard, Electronics Industry Alliance (EIA), Greg Saunders, DoD; Dennis Hoffman, Raytheon Systems (representing the Society of Automotive Engineers, SAE); Dr. Ken LaSala, National Oceanographic and Atmospheric Administration (NOAA, representing IEEE); and Curtis DeVries, Polaroid Corporation (representing the American Society for Quality, ASQ).

- A separate DOE track of technical presentations was held on Thursday, August 6. The opening presentation for the DOE track was given by Jim Lapping, Occupational Safety and Health Administration (OSHA). Technical presentations were focused in the following subject areas.

  - <u>DOE technical standard "hot topics"</u>, including the new DOE-EM technical standards project on storage of plutonium residue materials (Gary Roberson, DOE/Albuquerque Operations Office); activities of the DOE Construction Safety and Hoisting & Rigging Topical Committees (Lynn Holt, Idaho National Engineering and Environmental Laboratory, INEEL); and Savannah River Site's certification to ISO 14001 (Ron Peterson, DOE/Savannah River Operations, and Victor Dorbu, Bechtel Savannah River).

  - <u>Crosscutting DOE initiatives related to the identification and use of technical standards</u>, including external regulation of DOE nuclear facilities (Dr. John Austin, NRC); Laboratory Accreditation (Dr. Richard Pettit, Sandia National

Laboratories); and Application of "Integrated Safety Management" and "Work-Smart" Standards Processes for the Safety Regulation of the Richland Tank Waste Remediation System (TWRS) Privatization Initiative (Dr. Clark Gibbs, DOE/Richland Operations Office).

- Other DOE "technical standards" of interest (i.e., DOE technical standards activities beyond the purview of the Technical Standards Program), including information architecture standards (Carol Blackston, DOE-HR); decommissioning handbook and resource manual (Stephan Warren, DOE-EM); facility deactivation guide (Andrew Szilagyi, DOE-EM); and the Multi-Agency Radiation Survey and Site Investigation Manual, MARSSIM (Dorsey Edwards, DOE/National Environmental Training Office).
- Continuous Improvement in the Implementation of the Technical Standards Program (TSP), including improvements made to the TSP home page (Madelyn Wilson, DOE-OSTI), TSP procedures (Don Williams, Oak Ridge National Laboratory), and TSP requirements and guidance documents (Richard Serbu, DOE/EH-31).

Based on the feedback received, the workshop participants found the first-ever Federal Technical Standards Workshop to be an effective medium for communicating information to all organizations and disciplines within the Executive Branch of the Federal Government on technical standards activities and related standardization initiatives. In summary, the workshop was an interesting and informative experience.

Additional copies of these proceedings may be obtained by contacting Lori Lane, Oak Ridge National Laboratory, at (423) 574-7886 (lj8@ornl.gov).

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Agenda

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Agenda

Monday, August 3, 1998

9:00A–5:00P: **Department of Energy (DOE) Technical Standards Managers' Committee (TSMC) meeting** *(NOTE: meetings among representatives of other Federal agencies may take place during this period)*

3:00P–5:00P: **Workshop Registration**

Tuesday, August 4, 1998

8:30A–2:00P: **Workshop Registration**

8:30A–11:30A: **TSMC Meeting – Conduct of Technical Standards Program (TSP) Tutorial**

8:30A–12:00P: **DOE Meeting – TSP Interface Issues with Standards Developing Organizations and DOE Topical Committees**

9:00A–12:00P: **Meeting – RMS Partnership**

9:30A–11:30A: **Meeting – Interagency Committee on Standards Policy**

12:00P–1:00P: **Lunch (on your own)**

1:00P: *Workshop plenary session convenes*

1:00P–1:45P:

- Opening remarks: **Richard Serbu**, Manager, Technical Standards Program, Office of Environment, Safety and Health, DOE
- Introduction of keynote speaker: **Richard Black**, Standards Executive and Director, Office of Nuclear Safety Policy and Standards, Office of Environment, Safety and Health, DOE
- Keynote Speaker: **Peter Brush**, Acting Assistant Secretary for Environment, Safety and Health, DOE
- Special Presentation: **Robert Hebner**, Acting Deputy Director, National Institute of Standards and Technology (NIST) – *invited*

1:45P–3:15P: Session 1: *Standards Management—A World of Change* — The rate of change in our global village is unprecedented and continues to accelerate. Like the private sector, the Federal Government has been challenged to adapt and respond to the new culture of "change management." Standards management practices can and must play a role in this response. The speakers in this session will discuss some of the changes being experienced by and responses employed for the government business paradigm and the benefits derived or expected.

Moderator, **Jeff Feit**, Office of Environment, Safety and Health, DOE.

Agenda

- **Carl DeMaio,** Congressional Institute – "Reinventing Government" Initiatives
- **Don Marlowe,** Food and Drug Administration (FDA) – Implementation of the Food and Drug Modernization Act
- **Gordon Elley,** Department of Defense (DoD) – Application of the "Single Process Initiative"

3:15P–3:30P: **Break**

3:30P–5:00P: **Session 2:** ***Standards Management—A World of Opportunities*** — The new culture of change management provides many opportunities for success in national and international markets. The chances for success increase when standards management is part of your business' strategic vision and work infrastructure. The speakers in this session will discuss how a proactive standards management strategy directly relates to their company's (and our Nation's) success.

Moderator, **Jeanette Helfrich,** Office of the General Council, DOE.

- **Henry Line,** AMP, Inc. – The role and influence of standards in the global marketplace
- **Jane Schweiker,** American National Standards Institute (ANSI) – ANSI's role in a national standards strategy and other critical national standards infrastructure elements
- **Michael G. Gorman,** Ameritech, Inc. – Savings realized through the strategic use of standards

5:00P–6:00P: **Reception (hosted by Lockheed Martin Corporation)**

Wednesday, August 5, 1998

8:30A–10:00A: **Session 3:** ***OMB Circular A-119 Implementation*** — The February 10, 1998, revision to OMB Circular A-119 provides formal guidance to Federal agencies and departments on the implementation of the standards management provisions of Public Law 104-113. The speakers in this session will discuss the new guidance in the revised circular and expected agency/department actions.

Moderator, **Krista Johnsen Leuteritz,** Office of Standards Services, NIST.

- **Virginia Huth,** Office of Management and Budget (OMB) – New OMB Circular A-119
- **Belinda Collins,** NIST – NIST implementation plan for OMB Circular A-119
- **Eric Wilkinson,** Environmental Protection Agency (EPA) – EPA's implementation of OMB Circular A-119

Agenda

- **John Craig,** Nuclear Regulatory Commission (NRC) – NRC's implementation of OMB Circular A-119

10:00A–10:15A: **Break**

10:15A–11:45A: **Session 4:** ***OMB Circular A-119 Implementation (continued)*** — Agency presentations on OMB Circular A-119 implementation will continue in this session. At the close of the presentations, a general Q&A session will be conducted with all speakers from Sessions 3 and 4.

- **Richard Weinstein,** National Aeronautics and Space Administration (NASA) – NASA's implementation of OMB Circular A-119
- **Richard Black,** DOE – DOE's implementation of OMB Circular A-119
- **Greg Saunders,** Department of Defense (DoD) – DoD's implementation of OMB Circular A-119

11:45A–1:00P: **Lunch (on your own)**

1:00P–2:30P: **Session 5:** ***Strategic Standardization*** — "Best in Class" is not a random chance occurrence. Similar to other business processes, the standards management activity is most effective when its role is recognized in company or organization business plans and supported through active senior management involvement. The speakers in this session will discuss example situations of searching for or applying a strategic approach to standards management.

Moderator, **Bob Girton,** Lockheed Martin Idaho Technologies Company.

- **Bob Walsh,** Advance Action Associates LLC – Benchmarking of standards management processes
- **Diego Betancourt,** Polaroid Corporation – Standards management systems and the influence of strategic standardization

2:30P–2:45P: **Break**

2:45P–5:00P: **Session 6A:** ***Voluntary Standards Activities of Interest to Federal Agencies*** — Representatives of voluntary standards developing organizations will discuss voluntary consensus standards activities and initiatives that are relevant to Federal agency missions and programs and, as such, need agency participation and involvement.

Moderator, **Don Spellman,** Oak Ridge National Laboratory (ORNL).

- **Dan Smith,** American Society for Testing and Materials (ASTM)
- **Tony O'Neill,** National Fire Protection Association (NFPA)

Agenda

- **Gerry Eisenberg**, American Society for Mechanical Engineers (ASME)
- **Paul Orr**, Underwriters Laboratories (UL)
- **Jim Moore**, MITRE Corp., Institute for Electrical and Electronics Engineers (IEEE) Software Engineering Standards
- **Jean-Paul Emard**, Electronic Industries Alliance (EIA)

2:45P–5:00P: **Session 6B:** *RMS Partnership / Acquisition Reform* — Representatives from government, industry and standards developing organizations will discuss the RMS Partnership and the impact that acquisition reform has had on organizational standards activities.

Moderator, **Russell Vacante**, RMS Partnership.

- **Greg Saunders**, Department of Defense (DoD)
- **Dennis Hoffman**, Society of Automotive Engineers (SAE)
- **Kenneth LaSala**, Institute for Electrical and Electronics Engineers (IEEE)
- **Curtis DeVries**, American Society for Quality (ASQ)

5:00P: *Workshop plenary session adjourns*

Thursday, August 6, 1998

Track 1: **Department of Energy** (Coordinator: Don Williams, ORNL)
(Note: Other tracks to be organized by Agency representatives, as needed.)

8:30A–9:00A: **Session convenes:** Opening speaker – **Jim Lapping**, Occupational Safety and Health Administration

9:00A–10:15A: **Session A:** *Key Technical Standards Activities* — The speakers in this session will discuss recent activities related to the development and use of voluntary standards and DOE technical standards and the establishment of DOE "topical" committees for addressing technical standards development/use issues.

Moderator, **Kevin Greenaugh**, Office of Defense Programs, DOE.

- **Gary Roberson**, DOE/Albuquerque Operations Office – New EM Standard on Storage of Plutonium Materials
- **Lynn Holt**, Lockheed Martin Idaho Technologies Company – Construction Safety and Hoisting & Rigging Topical Committees

Agenda

- **Ron Peterson**, DOE/Savannah River Operations Office and **Victor Dorbu**, Westinghouse Savannah River Company – Savannah River Site Certification to ISO 14001

10:15A–10:30A: Break

10:30A–12:00P: Session B: ***Crosscutting DOE Initiatives Related to the Identification and Use of Technical Standards*** — Issues such as integrated safety management, work smart standards, external regulation, and laboratory accreditation are hot topics within DOE, and technical standards are or will be an important part of the success of these initiatives. The speakers in this session will provide the session participants with perspectives and insight on these activities, including the role of technical standards identification/use.

Moderator, **George Detsis**, Office of Environment, Safety and Health, DOE.

- **John Austin**, NRC – External regulation of DOE nuclear facilities

- **Richard Pettit**, Sandia National Laboratories – Laboratory Accreditation

- **Clark Gibbs**, DOE/Richland Operations Office – Application of the "Integrated Safety Management" and "Work-Smart" standards processes for Safety Regulation of the Richland Tank Waste Remediation System (TWRS) Privatization Initiative

12:00P–1:00P: Lunch (on your own)

1:00P–2:30P: Session C: ***Other DOE "Technical Standards" of Interest*** — A number of standards management and standardization activities within or applicable to DOE programs are handled outside of the Technical Standards Program and Department Directives System. The speakers in this session will discuss some examples of these activities and the resulting guidance documents.

Moderator, **Merle Jackson**, Fluor Daniel Hanford.

- **Carol Blackston**, Office of Human Resources, DOE – Information architecture standards

- **Stephen Warren**, Office of Environmental Management, DOE – Decommissioning handbook and resource manual

- **Andrew Szilagyi**, Office of Environmental Management, DOE – Facility deactivation guide

- **Dorsey Edwards**, National Environmental Training Office, DOE – Multi-agency Radiation Survey and Site Investigation Manual (MARSSIM)

2:30P–3:00P: Break

Agenda

3:00P–4:30P: **Session D:** ***Continuous Improvement in the Implementation of the Technical Standards Program (TSP)*** — The TSP continues to respond to the challenges of meeting customer needs with fewer resources concurrent with realizing "just-in-time" process improvements. TSP personnel will discuss the program's response to these challenges and current initiatives.

Moderator, **Richard Serbu**, Office of Environment, Safety and Health, DOE

- **Madelyn Wilson**, Office of Scientific and Technical Information, DOE – TSP information management issues
- **Don Williams**, ORNL – TSP procedural issues
- **Richard Serbu**, DOE – TSP programmatic issues

4:30P: ***Workshop adjourns***

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1998 Federal Technical Standards Workshop
Final List of Attendees

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1998 Federal Technical Standards Workshop
Final List of Attendees

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Final List of Attendees

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Presentation Materials

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Tuesday, August 4, 1998

Keynote Address

Speaker: Peter Brush

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Standards Management At The Department of Energy
The Path to the Future

Peter N. Brush, Acting Assistant Secretary
Office of Environment, Safety and Health
Department of Energy
Presented at the Federal Technical Standards Workshop
August 4, 1998

Good afternoon and welcome on behalf of the Department of Energy. We are pleased to be able to meet with so many of you from different Departments and Agencies. We are eager to listen and learn about your efforts in standards management, as well as the efforts of industry and standards development organizations.

First, let me give you a bit of background on the Department of Energy to help put things in perspective. DOE is one of the largest land owner in the United States, with acreage equal to the combined size of Delaware, Rhode Island, and Washington, D.C. We have major sites in 13 states. Most of our facilities were built in the 1940s and 1950s, and thus are now aging and decrepit, some even have been said to be "abandoned-in-place." For example, there are 26 metric tons of plutonium not in weapons, millions of gallons of contaminated groundwater, and 350,000 cubic meters of high level radioactive waste.

To help you form a mental picture of these vast quantities, note that only 4,000 cubic meters will fill the Capitol Dome here in Washington.

The Department of Energy's management of its facilities is also unique. The agency does not directly control day-to-day activities at its sites, but assigns these duties to contractor

managers, who are ultimately responsible for the work being done and are expected to carry out main responsibilities for the safety of our workers, the public, and the environment. Our contractors include many of the industry "heavyweights", such as Westinghouse, Lockheed Martin, Bechtel, and AlliedSignal, as well as first-rank academic institutions such as the University of California. This delegated style of management, as you can imagine, creates certain complexities. It certainly requires that DOE set broad mandates for success, including standards for things such as environment, safety, and health. At the same time it envisions that decisions on how best to meet them rests with our managers in the Field. Ultimate responsibility and accountability rests with Federal managers and with the Secretary of Energy.

The Department manages a wide array of activities, ranging from building and maintaining nuclear weapons to establishing standards for energy efficiency. DOE's National Laboratories, for instance, are world renown for their research, technical innovation, and inventiveness. The Department conducts fundamental research in everything from coal to cures for disease. Products are invented and produced that advance America's positions in areas such as computer technology, energy and transportation, and human health. DOE is also responsible for electric power distribution and other energy-related matters.

One of the most important tasks we have ahead of us is cleaning up fifty years of accumulated waste -- both nuclear and non-nuclear -- resulting from the Department's activities during the Cold War. The transition from bomb-building to environmental clean-up

was, in a very literal sense, abrupt. It has had a profound effect on nature of work at DOE sites. DOE's work has changed from a more stable routine involving well-understood functions -- for instance, chemical work involving making and testing nuclear warheads -- to cleanup work that is extremely dynamic, unpredictable, as well as inherently dangerous, due to the variety and uncertainty of hazards.

As you can imagine, with such diverse activities, establishing common requirements and standards is a daunting task. Trying to establish a management system that enables our contractors to succeed using their own management and standards systems, but yet conform to government requirements and expectations, is even more challenging. The need to improve *how* we manage also becomes more and more important as we must accomplish more with decreasing money and personnel.

We must ensure that work gets done safely in this complicated atmosphere. But at the same time, DOE must not impose layers of bureaucratic requirements that stifle the creativity and work ethic of our contractors.

Federal and Congressional requirements and policy, including the National Technology Transfer and Advancement Act and mandates such as "Reinventing Government", have challenged us to change how we manage, becoming more effective and efficient. By sharing our experience and knowledge, we can find those processes and standards that enhance communication, help make government more responsive, and help U.S. industry become more

competitive in world markets. We see many opportunities for Federal agencies, industry, and standards-developing organizations to work together on many common policies, processes, and standards for conducting our missions and managing our work.

We at DOE truly understand that standards management is "A World of Change and Opportunity." The past few years have seen sweeping changes in the way we manage DOE's regulatory and procurement responsibilities. Our most basic management systems are vastly different than they were a few years ago. I'd like to highlight a few of the things we've done at DOE.

First, we have consciously moved toward developing a standards-based culture within the Department. We began by creating a set of "Criteria" that reflect what DOE should look like under this type of culture. We did this by inviting the participation of people from all across DOE -- experts in management, standards, and standards management -- including both Federal and contractor personnel. This gave us a strong "bottoms-up" perspective on standards management from the people who actually do the Department's work.

We then established a DOE-wide standards program that coordinates among all our key Federal and contractor organizations and involves senior managers. Both the political and career managers in key Headquarters organizations provided strong personal leadership, commitment, and resources to foster the effort.

A "Department Standards Committee" was then formed, consisting of senior DOE managers. The Committee was charged with three basic responsibilities: 1) help establish DOE standards policy; 2) help identify barriers to establishing a DOE-wide Standards Program; and 3) assist DOE organizations in removing barriers and implementing the Department Standards Program. The Committee and its working groups have been important and effective, and some rather daring concepts have been developed, tested, and implemented. I'll talk about some of these concepts in a little more detail later.

In addition, we are implementing what we call "Integrated Safety Management." It is intended to coordinate all the processes and infrastructure that are necessary to safely and effectively manage our diverse missions.

Safety Management institutionalizes a formal, organized process whereby people plan, perform, assess, and improve the safe conduct of work throughout the Department of Energy. The system applies to DOE and its contractors, and is applicable at all levels of management, from multi-million dollar research and development efforts, to basic environmental cleanup work. Integrated Safety Management has been strongly supported by managers and workers alike and is yet another way we empower those who actually do DOE's work.

One outcome of the Department Standards Committee activities is in the area of selecting requirements and standards to define and control DOE's work. We developed a formalized process -- "WorkSmart" Standards -- that enables DOE contractors to select those standards

that best suit their needs for the particular work that they do. Using WorkSmart, DOE and its contractors agree upon a set of standards that accomplish several goals, including: 1) the standards fully address the work and its unique hazards; 2) they meet DOE expectations; and 3) the standards best meet the contractor's business needs in the broader arena outside DOE.

Until recently, DOE had rather extensive and well-defined sets of requirements for our contractors that often specified "how" they were to do business. Let me share an example. DOE shares many of its contractors with the Department of Defense and NASA, and these contractors in turn compete in private industry in both U.S. and world markets. Previously, contractors were required to maintain several sets of procedures for doing business with this diverse array of customers, simply because our requirements were different. This turned out to be very expensive and inefficient in today's business environment.

WorkSmart helped address this problem. Processes were developed and formalized. The sets of consensus standards that result from WorkSmart help us define missions and expectations, and greatly support performance-based contracting. We've also allowed local re-design of many of our requirements to be performance-based, rather than prescriptive.

In some areas where the Federal government is sharing experience and establishing common goals, such as Laboratory Accreditation, Environmental Management Systems, and Standards Management, we have established DOE-wide topical committees to coordinate our internal efforts, and coordinated closely with the Federal efforts underway. This Workshop is an

example of coordination between the DOE Technical Standards Program and the Interagency Committee on Standards Policy -- the ICSP -- Standards Management Working Group. Please let me take a brief moment to express DOE's support for the efforts of the ICSP, chaired by Dr. Belinda Collins, for serving as a focus for U.S. standards policy and Federal standards management activities. In other interagency venues, we are working with the Nuclear Regulatory Commission, OSHA, and the EPA on matters related to possible transition to external regulation of all DOE activities.

We have also established formal mechanisms to manage our Directives. DOE directives include DOE policies, regulations, requirements, guides, and technical standards.

Just like all other Federal agencies that use contractors to conduct work, we must manage that work to make sure that it is done in conformance with our expectations. DOE expectations are expressed generally in DOE Directives and more specifically in contract provisions. DOE has rewritten its Directives in recent years to make them better -- largely by replacing DOE standards with non-government standards. This will help ensure that Directives are not overly bureaucratic or burdensome.

The DOE Directives System allows extensive internal review of proposed DOE requirements and standards by all affected DOE and contractor organizations. The System includes a needs justification for initiating any new standards.

Furthermore, DOE has implemented performance-based contracting to clearly define DOE's expectations. Much of what I've already described helps sustain DOE's performance-based contracting. Contract provisions include requirements for our contractors to use Integrated Safety Management as an essential part of doing business with DOE. The baseline DOE requirements and rules have been rewritten to be outcome-oriented and performance-based.

Later in the workshop, you will hear more details about these and other DOE standards management activities. You can also contact the DOE Workshop representatives that you'll be meeting for more information.

The reason you are all here is to learn from others. You also have experiences to impart. Let's all take this opportunity to learn from each other, to help one another, and to share what our knowledge about standards management. Our thanks to the sponsoring agencies and organizations, including the National Institute of Standards and Technology, EPA, NASA, FDA, and, the Reliability, Maintainability, and Supportability Partnership, as well as my own Department of Energy, for their efforts in developing this workshop.

Thank you.

Tuesday, August 4, 1998

Special Presentation

Speaker: Robert Hebner

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Remarks by Robert Hebner, Acting Deputy Director
National Institute of Standards and Technology

August 4, 1998

Welcome to the 1998 Federal Technical Standards Workshop—the first one to include this variety of Federal agencies. I want to congratulate the Department of Energy, in particular, for leading this effort which we are pleased to cosponsor.

We are cosponsoring this event as part of our responsibilities under the National Technology Transfer and Advancement Act. The Act and the OMB Circular A-119 ask NIST to coordinate and assist agencies in carrying out their own responsibilities under that Act.

The theme for this workshop, *Standards Management—A World of Change and Opportunities*, is a fitting one since agencies are now in the process of implementing the revised OMB Circular A-119. As is the case with most things in Washington, this revision brings with it challenges of change and opportunities for better utilization of resources.

Implementing the revised Circular is an important and demanding job; but remember, Thomas Edison once said, "Opportunity is missed by most people because it is dressed in overalls and looks like work." And that is what you have before you today. Work that truly is an opportunity to change standards management for the better.

Among the duties that NIST has under OMB Circular A-119, is one to collate and create an annual report of agency activities in standards. NIST has transmitted to OMB the 1997 report on standards related activities.

I am pleased to relate to you that there was an increase in the number of voluntary standards used by agencies to 540, with an additional 180 Federal standards withdrawn. That is clearly a positive development, and one that reflects the goals of the OMB circular.

But not all the news is good. I am distressed to note a significant decrease in the number of Federal participants in voluntary standards committees—a decrease of almost 1500 people, down to just under 3300.

The largest decrease was reported by the Defense Department—with 1600 fewer employees participating in voluntary standards committees and leaving 600-plus DOD employees still involved with those committees. But other departments and agencies also reported significant declines, with the Transportation and Commerce Departments each reporting a drop of more than 100 employees participating.

At the same time, modest increases were reported by the Departments of Energy, Interior, and Veterans Affairs, General Services Administration and NASA.

So what's happening here?

It's tempting to assume that our numbers are bad. This is not the first time these data have been compiled, so you would think that they are pretty reliable. But this is the first report prepared since the OMB circular was revised, and the revision does make it clear how important this topic is—so perhaps agencies took the assignment more seriously.

It's also quite possible that we are seeing the effects of downsizing, both in terms of the total Federal employment and in budgets which are squeezing the funds available to pay for employee participation in standards committees meetings. In some cases, we know that agencies are not replacing retiring employees, and those retirees may have unique expertise which made their participation on standards committees invaluable.

And some people are speculating that the drop-off reflects concerns about the appropriateness, from a legal standpoint, of Federal employees taking part in these forums. That just doesn't make sense to me because the OMB circular made it clearer than ever that Federal agencies should "rely on voluntary standards whenever feasible and consistent with the law and regulations pursuant to the law." Furthermore, the circular encourages Federal employees to participate when voluntary standards activities ". . . are in the public interest, and when it is compatible with the agency's missions, authorities, priorities, and budget resources."

If the numbers of participating employees represent a declining level of effort, we have real cause for concern. We are at a critical juncture in the global structure and systems for developing standards and ensuring their appropriate use in trade. I'll have more to say about that shortly. We can ill afford to lose the technical capabilities that so many Federal standards experts possess just when the debates over international standards are heating up.

Moreover, the Federal government has strong interests as a major consumer and user of voluntary standards, and it would be detrimental to the public's interest for the government to lose its voice in these committees.

So what do we do about the apparent decline? NIST will, of course, continue to work with you to increase the use of voluntary standards to meet agency goals and to reverse the decline in Federal participation. But what specifically can you do now?

You'll notice that I cited the Commerce Department as one of the agencies reporting a decline in employee participation. That hasn't gone unnoticed at NIST, which includes the bulk of the Department's standards-participating employees. We have begun the process of asking ourselves some hard questions. When employees report that they are no longer involved in standards committees, we are following up and asking for an explanation. Was the work completed? Was it no longer relevant to the employee's current assignments? Was it due to lack of funding to directly participate in the standards committees? Was management less supportive of their involvement?

But even more broadly, we have started to develop a strategic standards management plan for NIST. We want to have a very clear policy and refined goals for our investment in voluntary standards committees. We want our technical experts to leverage our resources in the best possible way, and we want to identify those areas of technical activity where we should either increase or decrease or involvement in standards matters. And we want to know why.

I urge each of you to take back to your organizations the idea of developing a strategic standards management plan. It doesn't have to be massive—in fact, it should not be ponderous—but it should help you to put a proper focus on your standards-related activities. It also should help to raise awareness within your agencies about why Federal employees participate in standards committees, and I suspect it may well raise the positive profile of your efforts.

I know that the heads of most Federal departments and agencies don't have voluntary standards matters anywhere near the top of their very full agendas. And we all know that some of our colleagues too often roll

their eyes or express sighs of boredom when we start talking about standards committees and standards in general. Somehow, we have got to find a way to break through that standards barrier and explain in clear, simple English just how important these activities are. If we can't do that, we will simply not gain the support that is needed to maintain or expand our involvement in the voluntary standards process. The end result would be a less effective, less well represented standards system in the United States.

I assure you that NIST will work with you to help elevate standards policy planning, something we are doing through the Interagency Committee on Standards Policy, or ICSP, which is chaired by Dr. Belinda Collins, Director of NIST's Office of Standards Services. The goal of this group is to help Federal agencies to develop and implement consistent Federal policies for standards and conformity assessment activities. Dr. Collins will tell you more about the ICSP activities later on in the workshop.

I can tell you that at NIST, we have raised the visibility and importance of voluntary standards activities. We have the mission of promoting economic growth by working with industry to develop and apply technology, measurements and standards—and we take that assignment seriously. Ray Kammer, the NIST Director, and I have spent extraordinary amounts of time in the past year working to convey the importance of standards matters to a variety of audiences, some of which had standards issues on the backburner or nowhere in sight. We are going to keep up the drumbeat.

That's because standardization activities in the United States are broad, complex and decentralized. Let me talk about that a bit, and in a context much broader than most Federal agencies typically take into account.

The U.S. standardization community obviously includes: government and nongovernment standards developing organizations; affected interests that participate in the development and approval of standards; and organizations which disseminate standards and information about standards.

At the national level, the United States currently maintains about 93,000 standards in active status—49,000 in the private sector. Major nongovernmental standards developers include: Aerospace Industries Association, Society of Automotive Engineers International, U.S. Pharmacopeial Convention, and American Society for Testing and Materials to name just a few of the largest.

The National Research Council report, "Standards, Conformity Assessment and Trade for the 21st Century," pointed out that the decentralization of the U.S. standards system is not serving industry needs well for the global market.

It is clear to many of us that the United States needs an effective national standards strategy if we are to compete effectively in the global market. And we don't have one yet.

International standards for products, processes and services are increasingly important to the U.S. economy due to the quickening pace of technological innovation and the globalization of trade.

The U.S. standards community needs to work together more effectively to resolve our differences with one another to achieve a unified U.S. approach in the international standards setting arena. Our current domestic standards system is not succeeding well enough at the international level even though we have made good progress in the last five years.

We know that Federal agency participation and expertise is an important part of the whole and is sorely needed in the creation of our national standards strategy.

This workshop today will help you to learn more about standards management at the facility or agency level.

Yet there is another level at which we need to think about this topic—at the national level.

I challenge each of you to listen and learn over the next few days and to think of ways that can assist the entire United States in its own standards management strategy—because you will soon be able to contribute to the current thinking at the national level on this topic.

NIST is cosponsoring, with the American National Standards Institute, a Standards Summit on World Standards Day, September 23rd, "Toward a National Standards Strategy to Meet Global Needs," in the Ronald Reagan International Trade Center.

The meeting is the beginning of an important dialogue on issues in developing, supporting, and using national and international standards that significantly affect U.S. manufacturers and exporters. Representatives from standards developing organizations, industry, government, consumers and other stakeholder groups are invited to attend and participate in the discussions.

We are currently accepting white papers on the subject. The primary objective of the summit is to open a discussion and to solicit ideas for a more effective national strategy that will meet the needs of both the private sector and the government.

The Summit will have three Roundtable discussions: identifying U.S. needs for domestic, regional, and international standardization; getting the best of U.S. technology into standards; and funding the process. There are brochures for this event outside on the tables. You can also get more information, and register on-line, from NIST's web page.

I applaud your working together to tackle some of the issues you have addressed and I am impressed by your willingness to learn from each other. You are hearing from OMB, NIST and other agencies during this conference, and I am certain that you will come away from this workshop with a better understanding of the challenge we all face. I know this information will work to your advantage. A world of change is before us and we must seize opportunities in the standards management arena.

Again, I challenge you to apply what you learn here today and tomorrow not only at the facility or agency level but also at the national level. Help us shape a national standards strategy to meet our global needs well into the 21st century. As Sun Tzu once said, "Opportunities multiply as they are seized." Thank you.

Tuesday, August 4, 1998

Session 1: *Standards Management—*
A World of Change

Speakers: Carl DeMaio
Don Marlowe
Gordon Elley

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Changing the way Washington works

Implementing the Results Act and other performance-based initiatives

Carl D. DeMaio

Congressional Institute

So you *really* want to reinvent government?

It's about more than answering the phones and processing the paperwork.

A world-wide movement

A world-wide revolution in public-sector management and budgeting is occurring with three key elements.

- Focus on Results
  - Understanding whether your program is having the right kind of impact
- Do more, with Less
  - Thinking "outside-the-box" for the most innovative and cost effective approaches for producing results
- Accountability, with Flexibility
  - Be clear on what performance is expected; then let managers manage!

Questions facing government

- Do we have a sound business case for existing?
  - Why am *I* here?
  - What **value** does this program provide the taxpayer?
  - Is that **value** relevant and important to the taxpayer?
  - "If we weren't already doing this today, would we start doing it tomorrow?"

Really Reinventing Government

- Producing Better Results
  - Lives saved: the U.S. Coast Guard
  - Crime-rates reduced: NYPD
- Getting out of the business others can do better (Applying criteria of GE's Jack Welch!)
  - New Zealand Privatization Reforms
  - U.S. Postal Service: Out-sourcing self-adhesive stamps; giving FMS duties to an accounting firm
- Put your money--and duties--where your mouth is
  - Compete government against private and social sector entities (e.g. Freedom from Government Competition Act)

The Washington Mindset

"Who worries about results? Nobody seems to care as long as we spend the money."

--A Federal Manager

June 1997 meeting on Results Act

The Government Performance and Results Act

The Results Act is a tool Congress created to focus the budget process on **results**, rather than merely good **intentions**.

It tells taxpayers what they *are* and *are not* getting for their money--an audit of the government by Congress, as the advocate of the taxpayer.

The Results Act is Different

- It's the law. Statutory requirement.
- Not just nice idea--it's an imperative
  - Budgetary Constraints
  - Public cynicism
- Culture Change: focus on Results, <u>continually</u> test and refine program logic
- First time planning structure integrated into budget structure
- Involve stakeholders; consult with Congress

Building a Results-Oriented Agency

Mission

↓

Outcome Goals

↓

Strategy

↓

Program Alignment

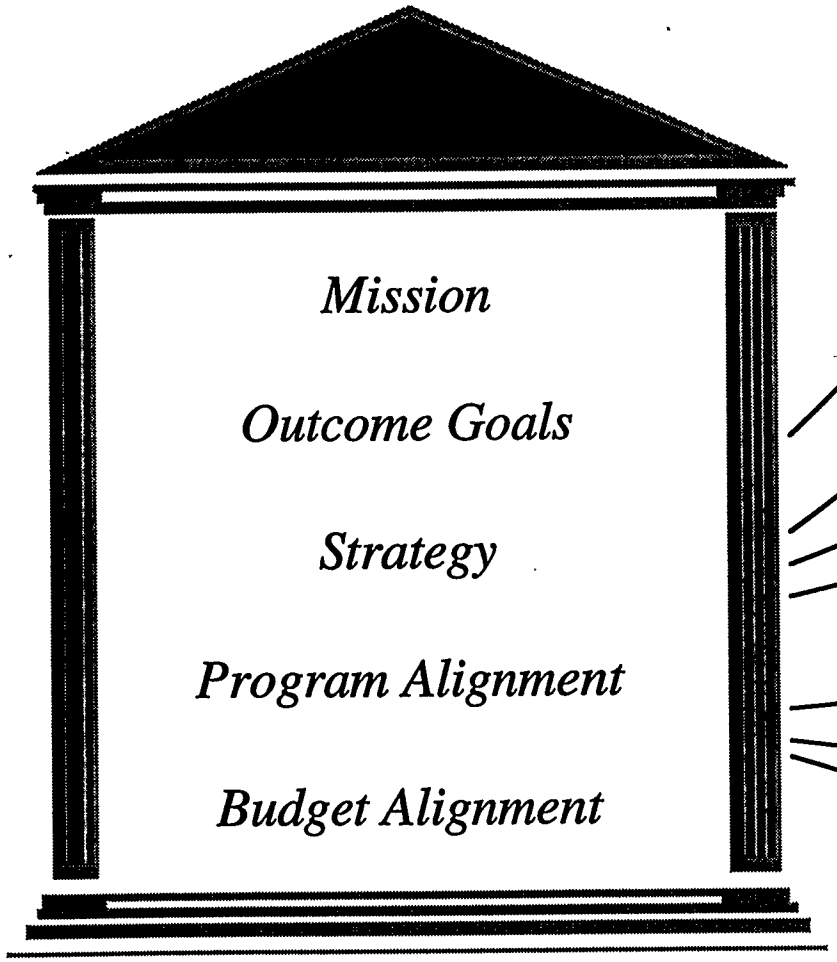
↓

Budget Alignment

The Results Act Process

- Strategic Plans
  - Establishes strategic logic
    - » What outcomes do we seek? What are our strategies?
  - Establishes program logic
    - » How do our program activities fit within the strategy?
  - Is the basis for an ongoing policy dialogue
- Annual Performance Plans with the Budget
  - Tactical implementation of the Strategic Plan
- Measure and Report Performance
  - Performance information generated
  - Validates or invalidates strategic and/or program logic

The 21st Century Government Framework



The Results Act

Employee Accountability and Incentives

Information Technology

Devolution

Deregulation, in favor of partnerships with industry

Performance-based Contracting

Privatization

Partnerships with religious/civic institutions

Goals and Measures: Compliance

- All program activities are covered: Each program activity of the budget is linked to at least one performance goal and measure; no expenditures fall outside the goals
- Goals expressed in definitive terms: Each goal has a specific/numeric performance target
- Performance can be measured: If not self-contained within the goal, performance measures are included to track outcomes, as well as activities and outputs
- Clear linkages to results: clear relationship between the activities funded, outputs produced, and the outcomes attained
- Based on statute: The goals and measures are consistent with statutory authority

Goals and Measures: Quality

- Results-oriented: each major activity of the agency is justified by a goal and measure that track a tangible benefit for the taxpayer
- Seek appropriate results: The goals and measures capture the primary purpose of the program activity; the selection of these particular goals and targets are justified
- Include baselines: shows previous and current performance
- Give proper focus: is consistent with the statutory authority of the program; gives the right incentives (e.g. IRS!!!)

Goals and Measures: Quality, cont.

- Are unique: goals and measures for any cross-cutting programs capture the agency's unique contribution--in relation to other programs--to achieving an outcome
- Address Management issues: The agency has set specific targets to address all major management deficiencies

Definitions of Key Terms, with example measures for a job training program

INPUT	OUTPUT	OUTCOME
"Amount of resources devoted to a program activity," *Examples:* *$1,000,000 broken down by object class* *50 FTE, broken down by position grades*	"Tabulation, calculation, or recording of activity or effort, expressed in a quantitative or qualitative manner." *Examples:* *50 courses will be offered* *10,000 people will complete the courses* *Exit tests of participants will demonstrate they are competent in at least 85% of skills taught in the training courses*	"Assessment of the results of a program activity compared to its intended purpose." *Examples:* *8000 people--trained by program--will land and keep their jobs more than 6 months* *90% of those who land jobs will earn the same or more in their new job as in their old one* *75% of those with jobs will report via survey that the skills they learned were important factors in getting the job*

Areas where agencies are comfortable

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Donald E. Marlowe
U.S. Food and Drug Agency

Abstract

Implementation of the Food and Drug Modernization Act

The 1997 Food and Drug Administration Modernization Act authorized, for the first time, the FDA to accept declarations of conformity to FDA recognized consensus standards as part of applications for marketing clearance for medical devices. This presentation will describe the process by which FDA recognizes standards, the systems by which FDA determines what areas of new standards development are most useful to our regulatory processes, and our message to standards development organizations regarding the value added for the development of performance standards. Mr. Marlowe will also present data on FDA's successes in standards recognition and use.

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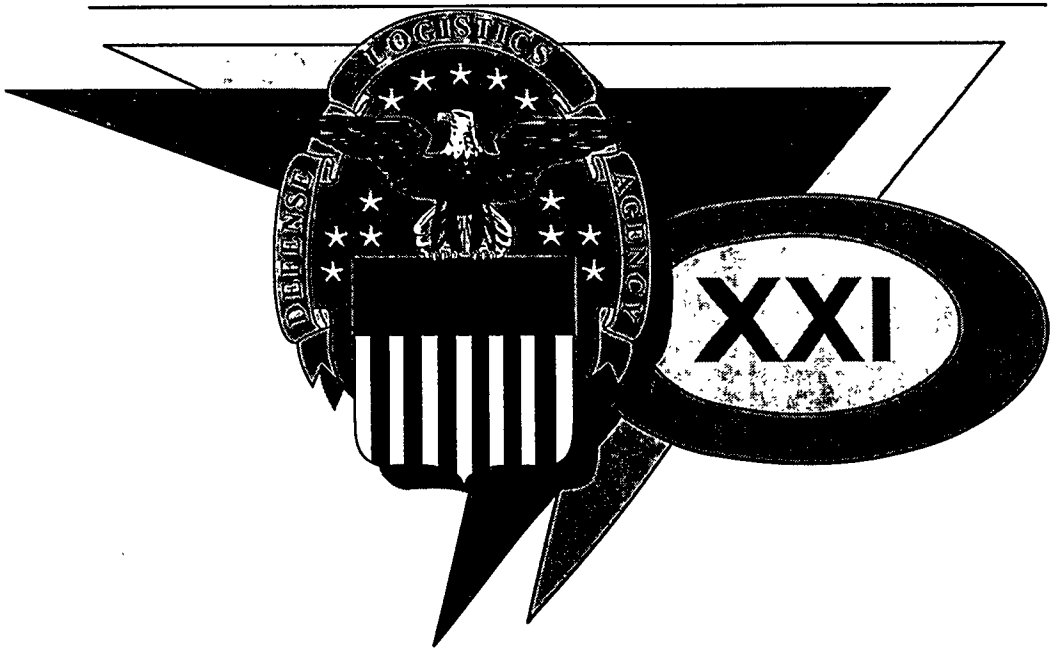
Defense Contract Management Command



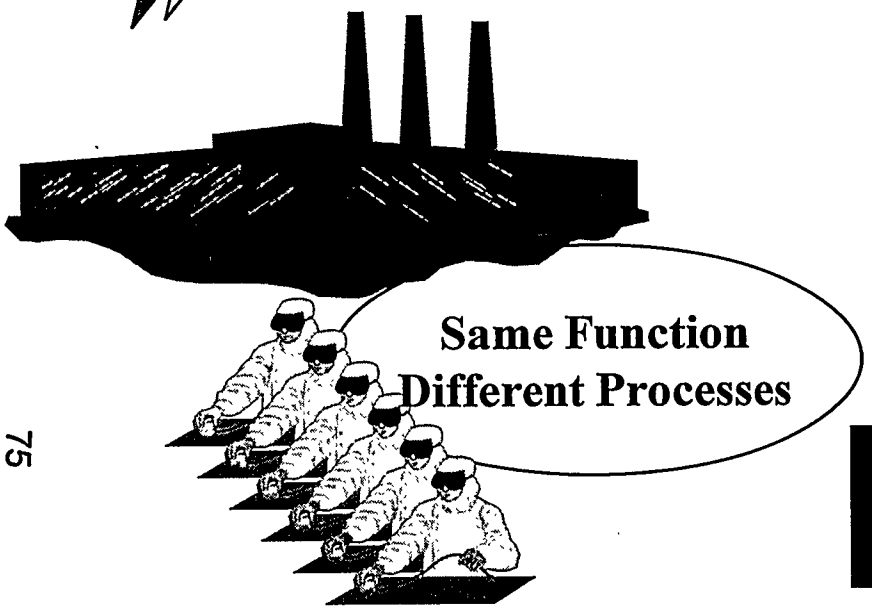
Single Process Initiative
Federal Technical Standards Workshop
August 4, 1998

Gordon Elley
HQ SPI Team

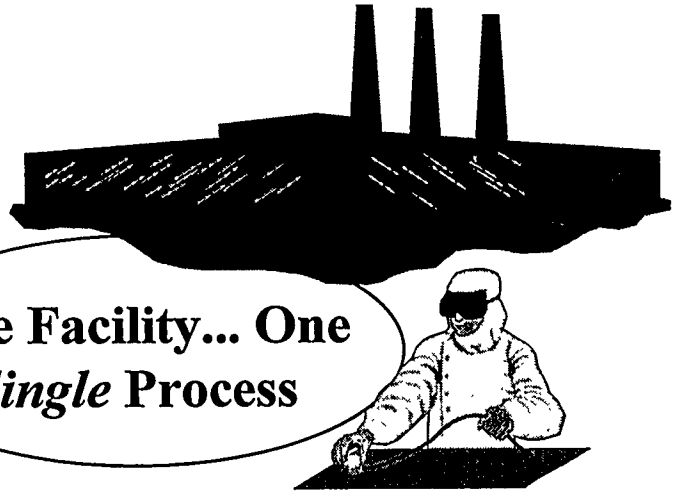
Agenda

- What is SPI?
- Why SPI?
- SPI Value and Progress
- What's the Latest?

SPI Concept



Existing DoD + Existing Commercial



Common Process for Commercial *and* DoD

Effective Communication Critical to Success!
The Local Management Council Makes This Possible

Why SPI?

[redacted]

- SecDef memo, Jun 29, 1994, requires DoD to use performance specs or non-Government stds on *NEW* contracts
- SecDef memo, Dec 6, 1995, commissions SPI as vehicle for replacing Mil specs/stds on *EXISTING* contracts

[redacted]

- Highlighted redundant and burdensome requirements that drove cost and complexity of manufacturing DoD products and systems
- Asked for vehicle to unify or lessen requirements and operate commercially

Value of SPI

- Fosters Conversion, Consolidation, and Modernization
- Positions Industry for PBBE
- Leaner & Cheaper Industrial Output
- Key to Civil and Military Integration

SPI Progress

Data as of July 29, 1998

Contractor Facilities	294
Processes Submitted	1460
Processes Modified	999
Average Cycle Time	138 days
Negotiated Savings	$30.1M
Estimated Cost Avoidance	$434.1M

SPI Progress

- 200 facilities converted to ISO 9000
- 20 facilities converted to commercial Earned Value Management System
- 22 Facilities converted to commercial Parts Management Practices
- 42 Facilities converted to commercial Soldering Standard
- 27 Facilities converted to commercial Calibration Standard

SPI Facilitates
Civil-Military Integration

Top 10 Cost Reducers

Data as of July 29, 1998

Process Type	Combined Cost Avoidance & Negotiated Savings
Manufacturing-Management	$60M
Quality-Calibration	$50M
Testing	$42M
Engineering-Configuration Mgmt	$38M
Business-General	$34M
Manufacturing-Soldering/Welding	$28M
Logistics-Parts/Materiel Mgmt	$28M
Software	$28M
Manufacturing-Wiring	$27M
Business-Subcontracting	$18M

High Payoff SPI

Hardware Variability Control SPI

- Provides state-of-the-art manufacturing processes to the Apache Helicopter production line
- Uses MIL-STD-1528A "for guidance only"
- Engineering & drawings based on functional usage
- Uses statistical process control and simulation to improve design and manufacturing processes
- Value
  - Multiyear 1.... $18 million (savings)
  - Follow-on Multiyears.... $40 million (avoidance)

Boeing Aircraft & Missile Systems, Helicopter Systems, Mesa, AZ

What's The Latest?

- Renewed DoD Commitment to SPI
- Corporate or Sector (Segment) Management Councils
- SPI Council

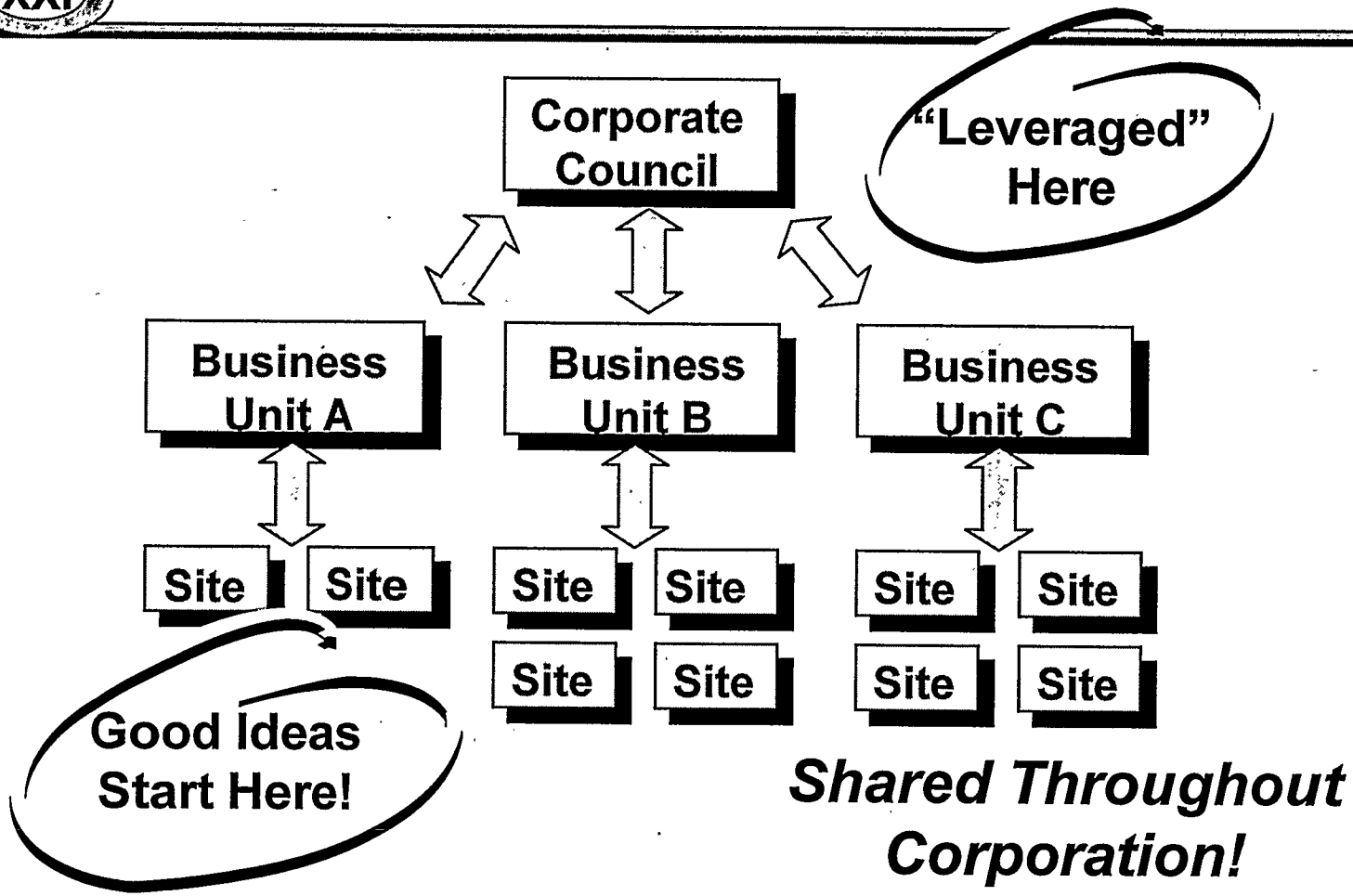
Renewed DoD Commitment

USD(A&T) June 3 Memo
The Single Process Initiative - A Long Term Perspective

- Block Change Mods to be written in Performance Language wherever possible
- Move Primes and Suppliers to Performance Based Business Environment
- Support Corporate Approaches to Expedite Reform to Entire Corporations
- PEOs to Commit Resources to Support SPI
- PDUSD(A&T) to Chair an SPI Council with Industry Representation

"My objective is for the SPI to achieve the integration of commercial and military facilities."

Corporate or Segment-Level Councils



AlliedSignal, Boeing, Lockheed Martin and Raytheon Using Corporate or Segment-Level Approach

SPI Council

- Chaired by Mr. Oliver, PDUSD(A&T)
- Membership--CAEs, DUSD(L)
- DCMC to be Executive Secretariat
- Industry to Participate as Invited
  - Corporate Council Representatives
  - Industry Association Representatives
- Meet Quarterly--First Meeting, Sep 11

Need More Information?

Visit Our Home Page

http://www.dcmc.hq.dla.mil

Select "Centers"

Tuesday, August 4, 1998

Session 2: *Standards Management—*
A World of Opportunities

Speakers: Henry Line
Jane Schweiker
Michael Gorman

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HIGHER
AMP

— 1998 Federal Technical Standards Workshop —

Standards Management - A World of Opportunities

Tuesday, 4 August 1998

"How One Global Company Views the Role and Influence of Standards in the Global Marketplace"

Henry Line
Vice President, Global Product Standards
AMP Incorporated

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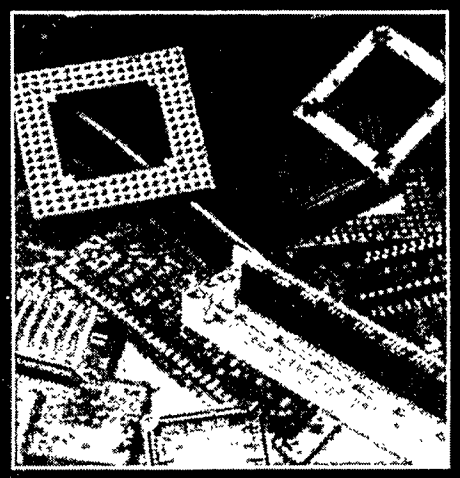
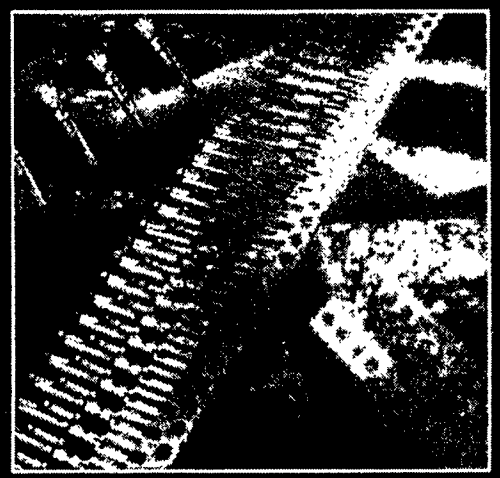
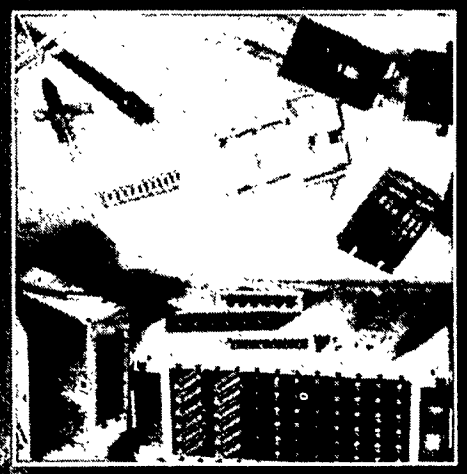
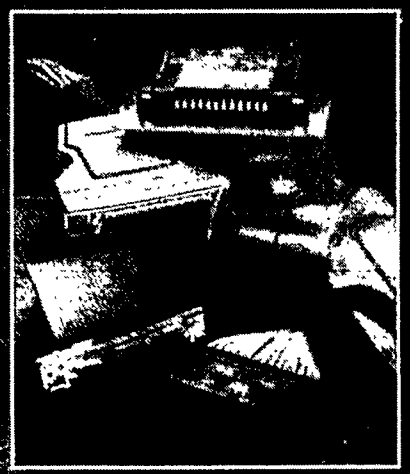
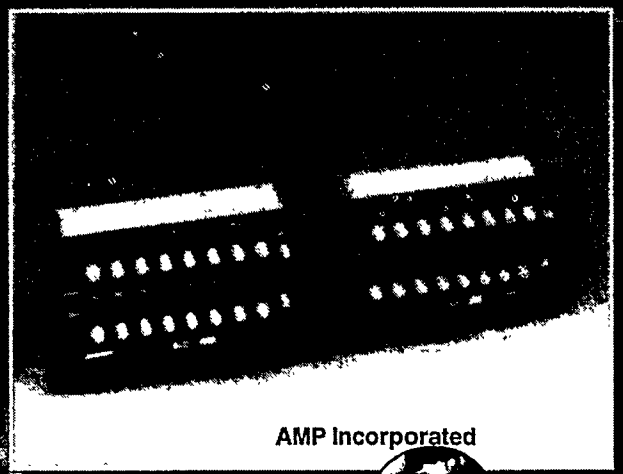
Electrical & Electronic Interconnection Devices











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GLOBAL PRODUCT STANDARDS

08-98 98-90 DOE

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Over 46,500 Employees in 53 Countries Worldwide

FACILITIES WORLDWIDE:

- 330 Locations
- 160 Manufacturing and Warehousing Locations
- 17.1 Million Square Feet

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GLOBAL PRODUCT STANDARDS

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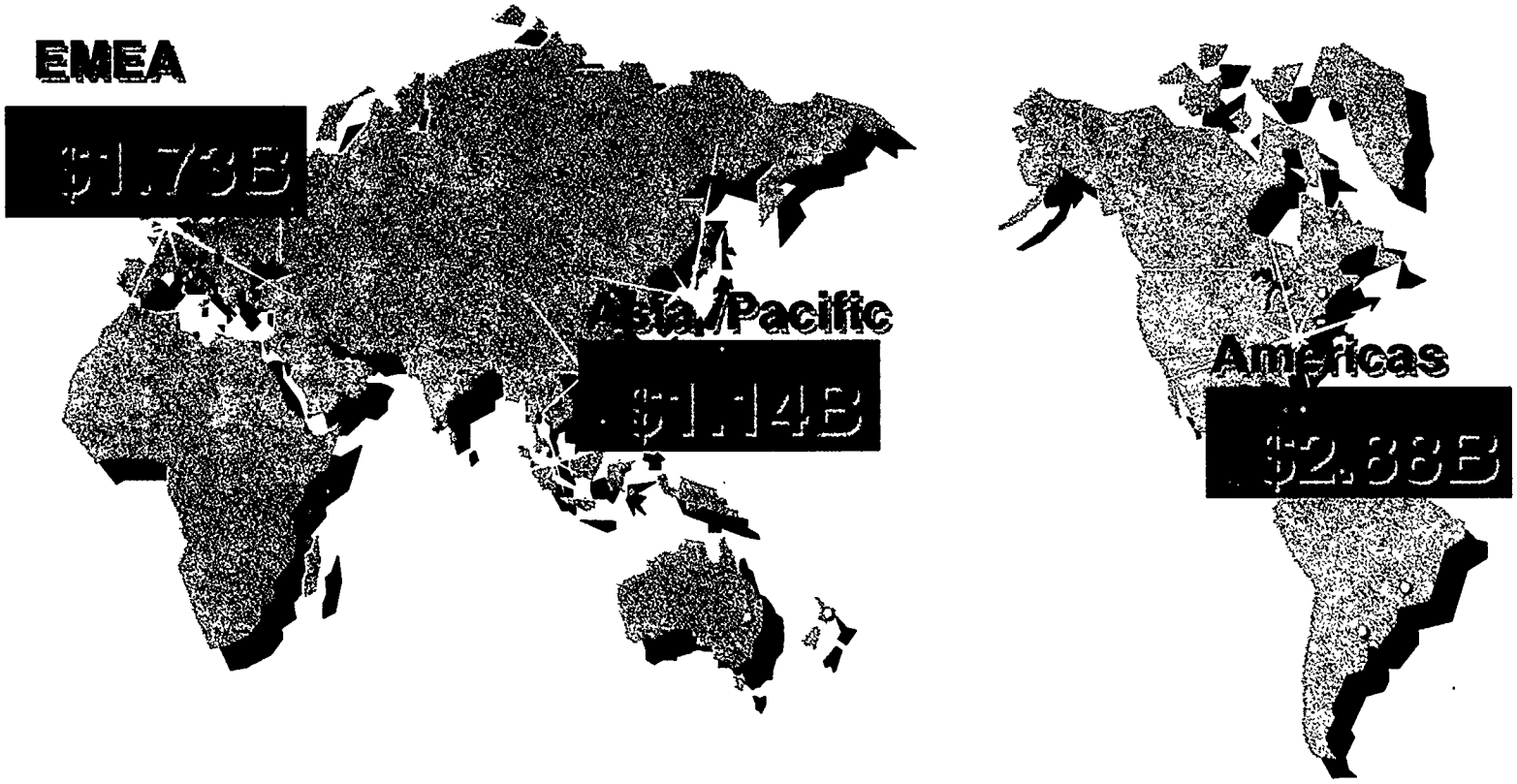
1997 AMP WORLDWIDE PERFORMANCE
$5.75 BILLION - SALES BY REGION



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GLOBAL PRODUCT STANDARDS

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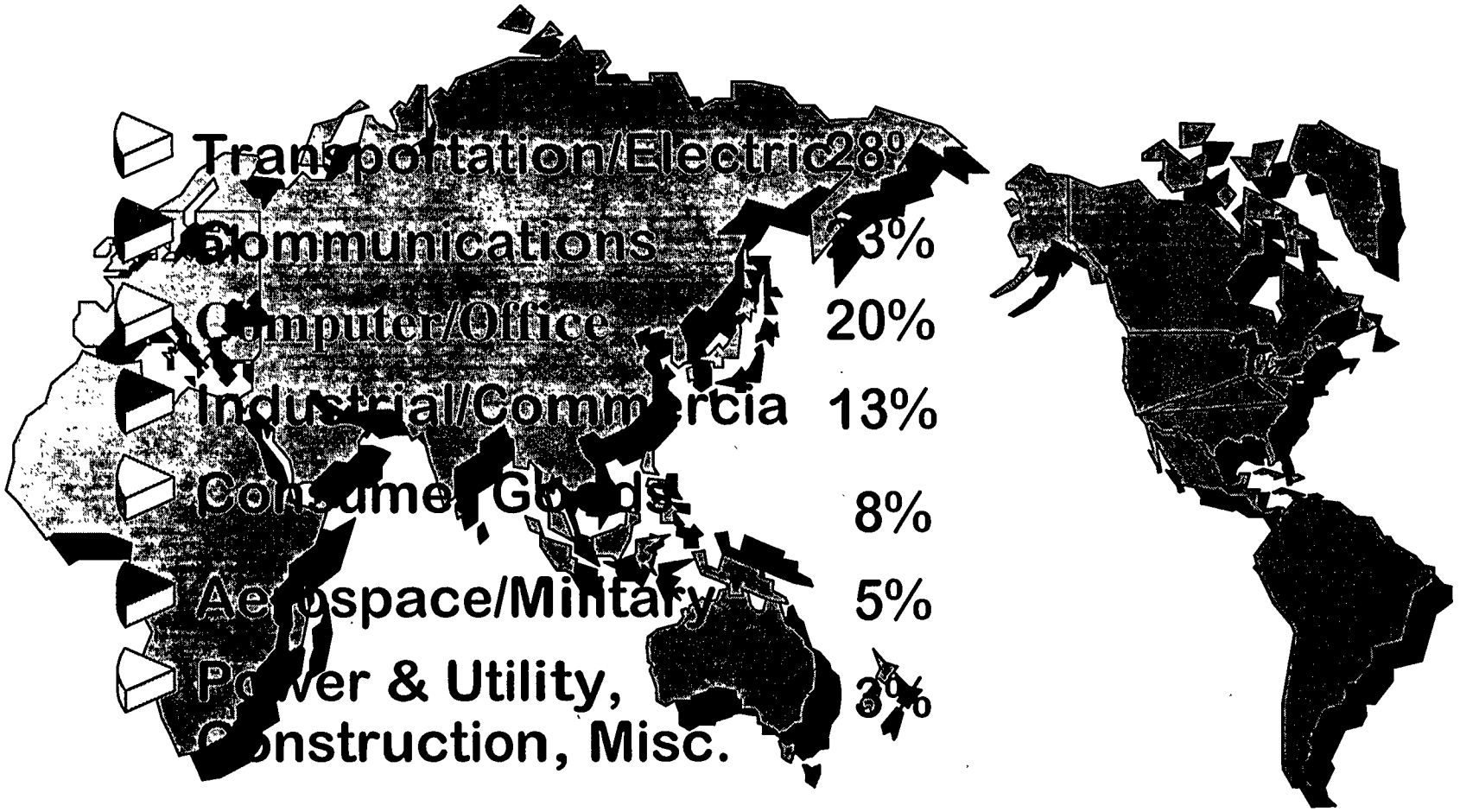
GLOBAL MARKETS - 1997



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Connecting at a HIGHER level. AMP

— 1998 Federal Technical Standards Workshop —

"The Role and Influence of Standards in the Global Marketplace"

Agenda

- The Standards Mandate
  - — Industry Product Standards
  - — Conformity Assessment
- AMP Involvement
- Conclusions

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The Standards Imperative

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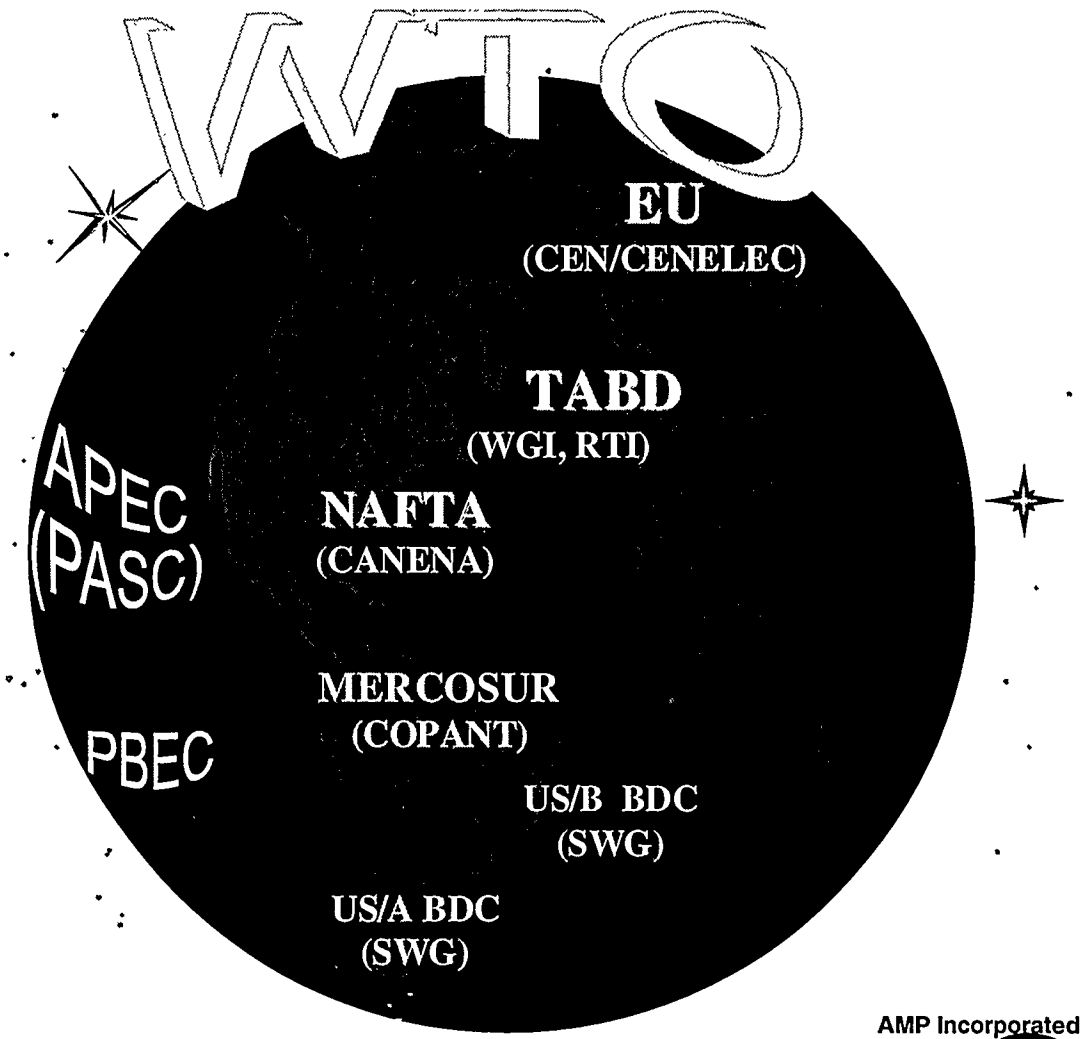
STANDARDS


WTO
EU
(CEN/CENELEC)
TABD
(WGI, RTI)
APEC
(PASC)
NAFTA
(CANENA)
MERCOSUR
(COPANT)
PBEC
US/B BDC
(SWG)
US/A BDC
(SWG)

The Key Global Issues

- Common standards
- Mutual recognition ("Tested once, accepted globally.")
- Regulatory cooperation
- Transparency, participation, and non-discrimination
- Use of functional-based standards ("What, not how.")
- Supplier's Declaration of Conformance (SAC)
- Political commitment to reforming standards, certification, and regulatory policy

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Market Forces of the 1990's

- Globalization of markets
- Pervasive implementation of technology
- Economic and technological convergence
- Regulatory and procurement reform

Demands

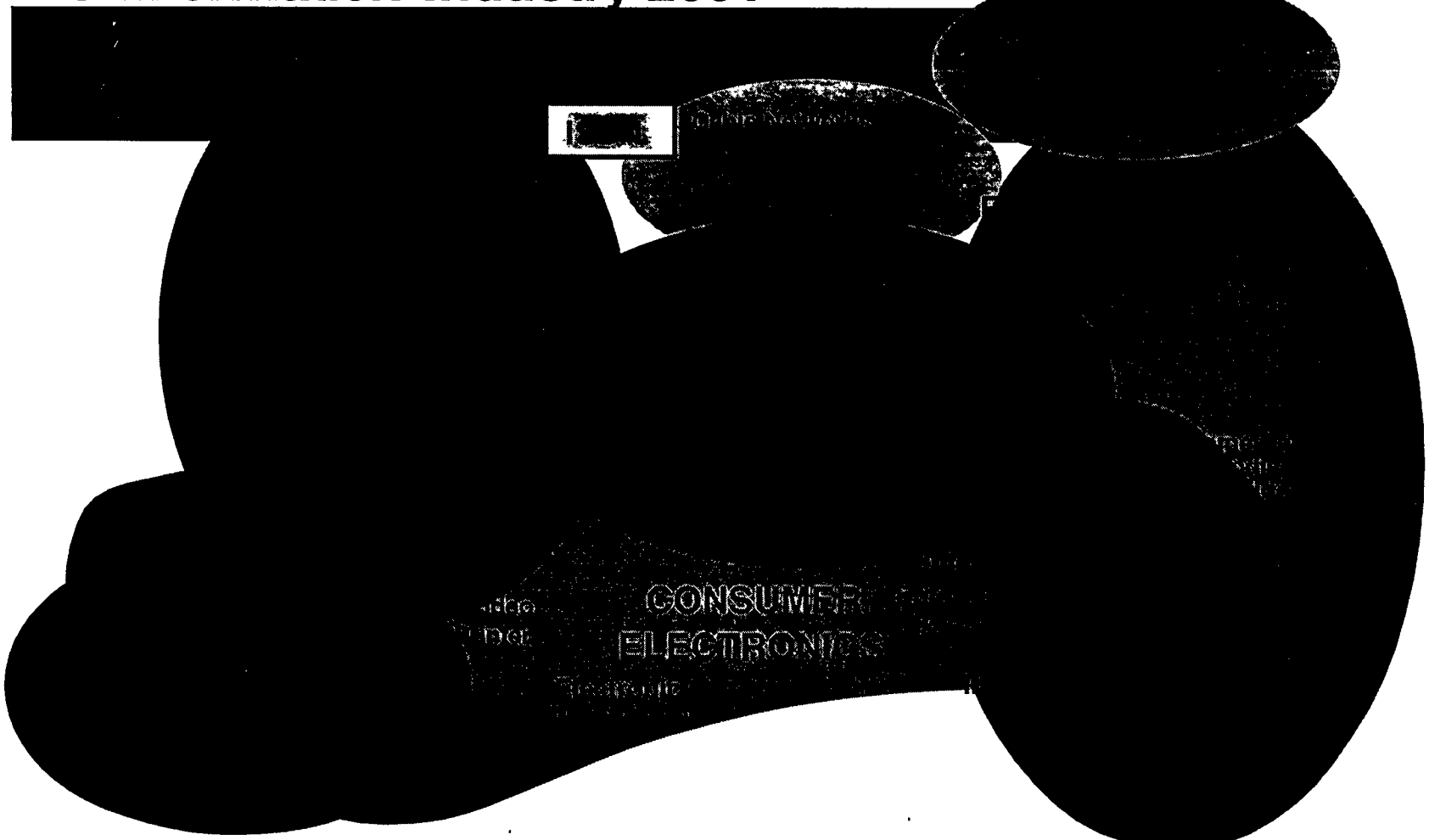
- Compatibility
- Interoperability
- Interconnectability
- Confirmation
  - Products
  - Markets
- Cost Reduction

Results

Global Standards

AMP

The Information Industry 2001



SOURCE: Apple Computer

THE ECONOMIST, 27 FEBRUARY 1993

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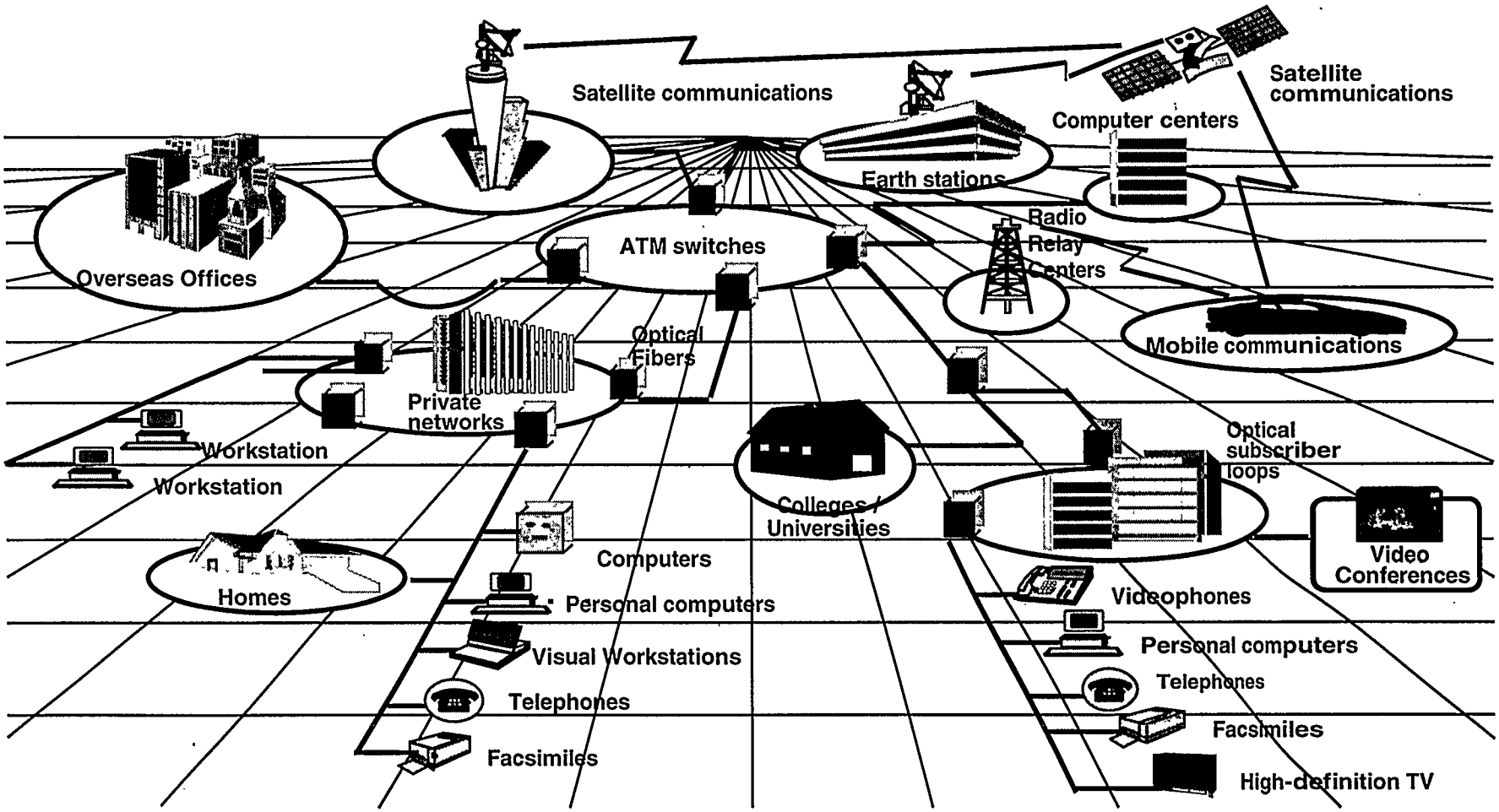
The Global Village of the Information Age



Adapted from "Global Telecommunications: layered networks' layered services" by R. K. Heldman

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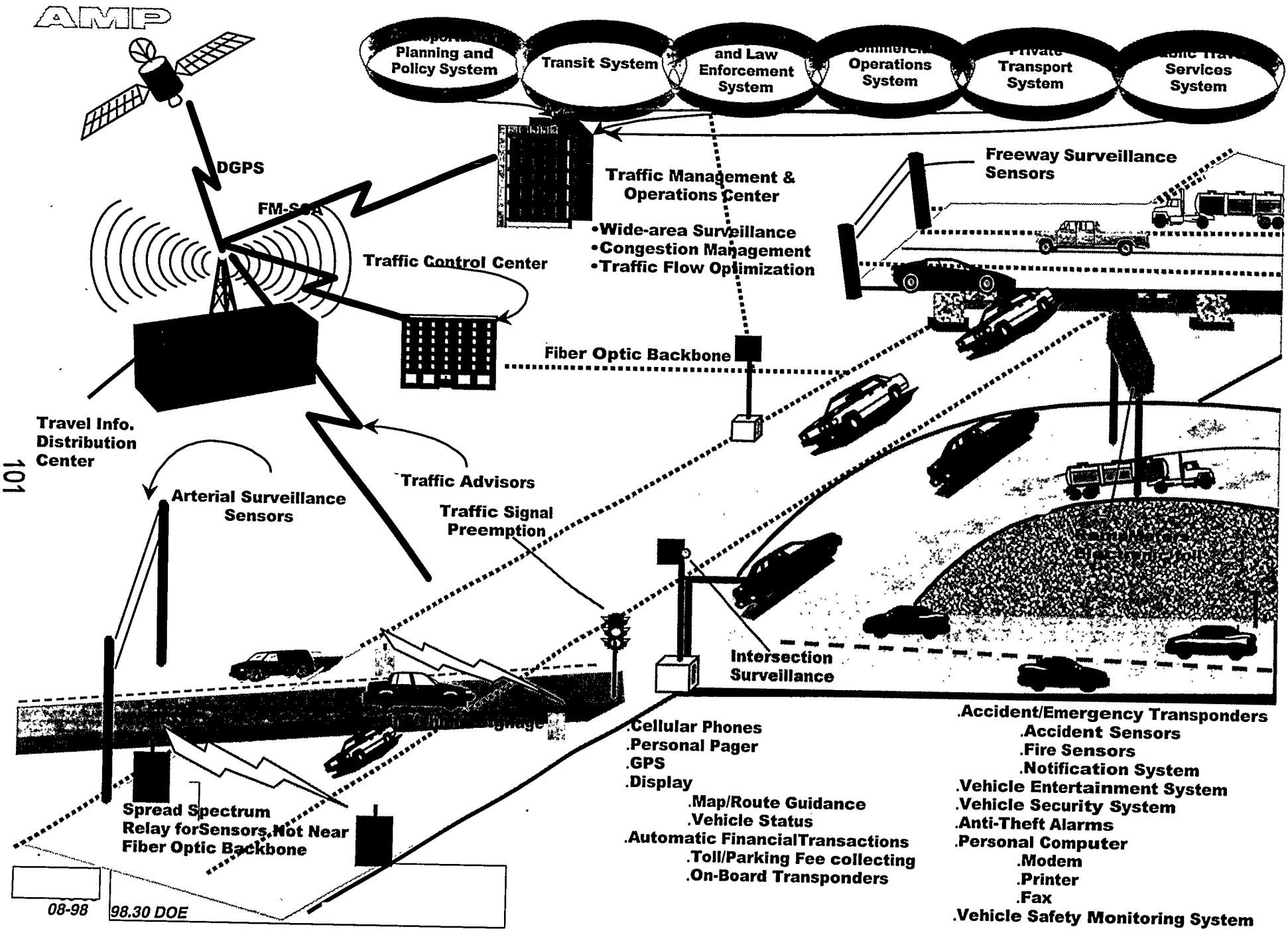
AMP
Planning and Policy System
Transit System
and Law Enforcement System
Operations System
Transport System
Services System
DGPS
FM-SCA
Traffic Management & Operations Center
•Wide-area Surveillance
•Congestion Management
•Traffic Flow Optimization
Freeway Surveillance Sensors
Traffic Control Center
Fiber Optic Backbone
Travel Info. Distribution Center
Traffic Advisors
Arterial Surveillance Sensors
Traffic Signal Preemption
Intersection Surveillance
Spread Spectrum Relay forSensors Not Near Fiber Optic Backbone
.Cellular Phones
.Personal Pager
.GPS
.Display
.Map/Route Guidance
.Vehicle Status
.Automatic FinancialTransactions
.Toll/Parking Fee collecting
.On-Board Transponders
.Accident/Emergency Transponders
.Accident Sensors
.Fire Sensors
.Notification System
.Vehicle Entertainment System
.Vehicle Security System
.Anti-Theft Alarms
.Personal Computer
.Modem
.Printer
.Fax
.Vehicle Safety Monitoring System
08-98
98.30 DOE

The convergence of technologies and markets will dramatically increase global competition and accelerate the rate of technological change.

In this environment, the company that best employs strategic standardization management has the competitive advantage.

- *The ultimate advantage will go to those suppliers who lead the way in standards committees and who are first to market with the required new products.*

The growing threat of global horizontal standards, in particular the conformity assessment schemes.

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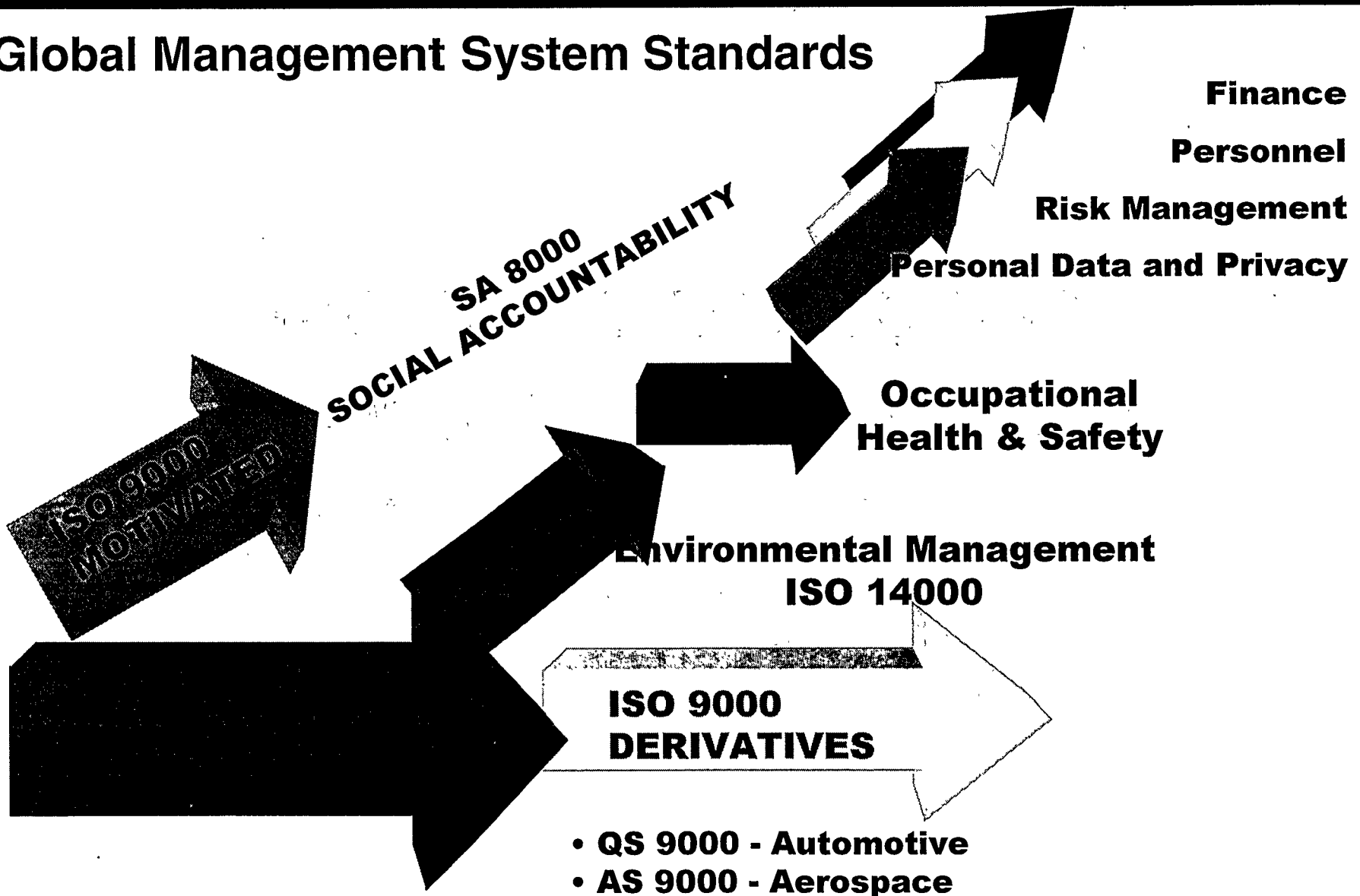
Global Management System Standards



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The Value of Management Systems Standards (MSS)

- Provide guidance to companies that don't have MSS already in place.
- Assure a consistent approach throughout all facilities - worldwide.
- Help eliminate non-value-adding processes already in place.
- Satisfy "preconditions" for doing business globally.
- Consistent, documented processes for HR - hiring, promoting, terminating, . . .

Standards vs. Conformity Assessment

The issue most often isn't the standard, but the requirements for demonstrating conformance to it.

The concern is over the costs of conformance that add no value to the product - a "tax" that the manufacturer may or may not be able to pass on to the consumer.

- **Preparation**
- **Record keeping**
- **Third party certification**

Connecting at a HIGHER level. AMP

A Natural Law of Business

$$\text{Competitiveness} \propto \frac{1}{\text{Non-Value-Adding Costs}}$$

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Connecting at a HIGHER level.
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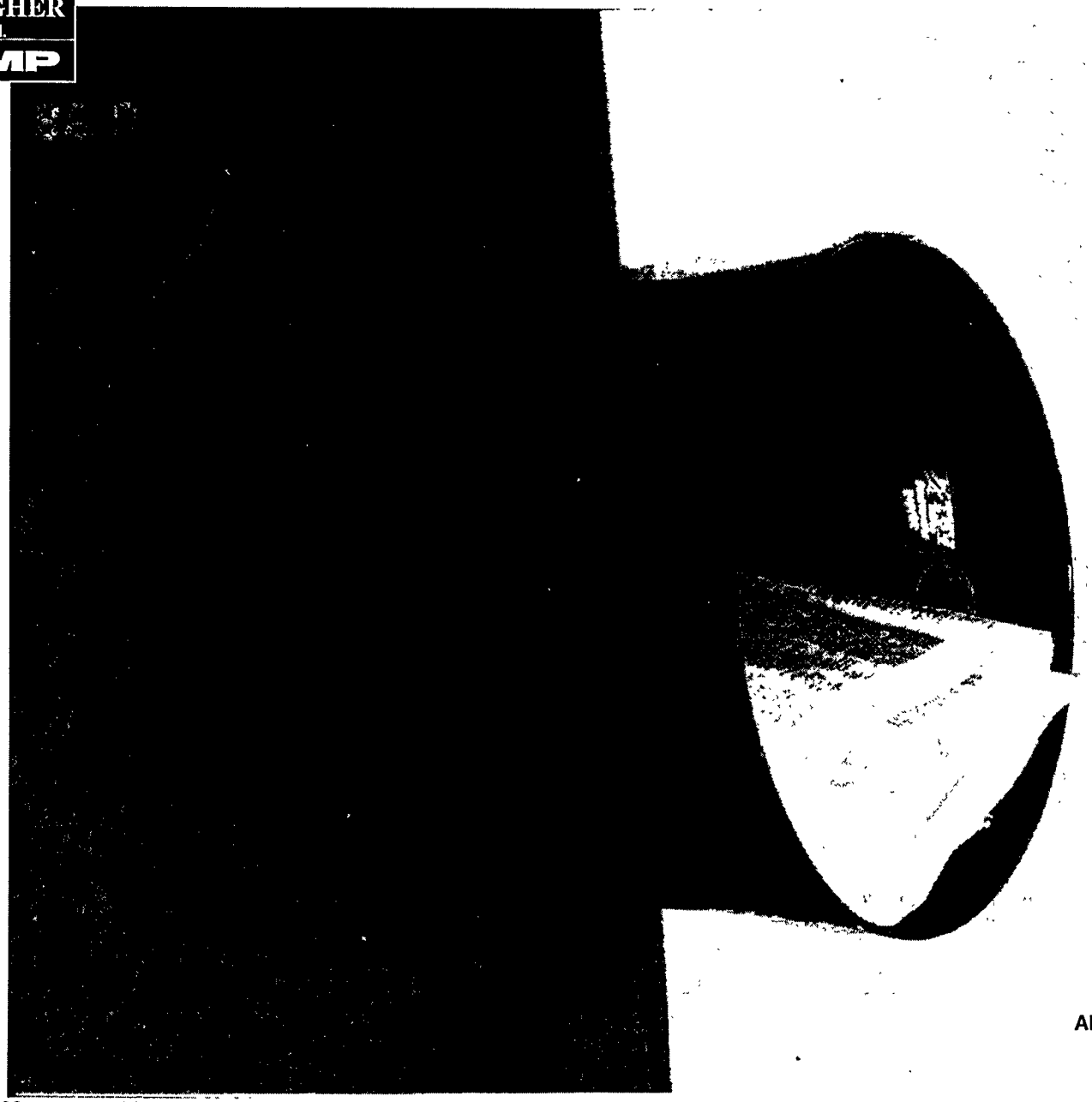

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The Problem with Horizontal Standards

- Hugely expensive — preparation, certification/re-certification, record keeping.
- Requirements often redundant with those in place.
- Usually require third-party certification.
- No guarantee that they'll do what they say they'll do.
- Intellectual property can be at risk.
- Intrusion into sensitive company management practices.
- Non-value adding costs.
- Limiting their scope can be a problem.
- There is the threat that the standard could lead to regulation.

Concerns about the future direction of certification -

- Third party certification still does not produce a guarantee for product quality and performance, only the supplier can provide such a warranty.
- Pressures for third party product conformance requirements seem to be mounting. Except for safety issues and regulated industries, this should be avoided.
- In such matters, the suppliers' declaration of conformance should prevail.
- The AMP position is to oppose all global management system standards that are not value adding, satisfy clear market need, or mandate third party certification.
- It is generally true, when a perceived need arises, that it is always best addressed on a sectoral basis.

INDUSTRY COOPERATION ON STANDARDS & CONFORMITY ASSESSMENT

RECENT RESOLUTIONS ...TED BY THE ICSCA

l standards when regional or
milar requirements.
ent system standards that would
or end users or that would
cation.
tion of conformity as the
ting conformance, while
fication for those suppliers who

te sector consensus standards as
government agency developed

es, especially for personal
but not by global management
es.
one standard—one test and the
ity worldwide.
single symbol effort.
l the ITU to undergo aggressive
themselves for satisfying
ements.
ctronic exchange of data, e.g., an

tric-only labeling in the absence of

COMPANIES ACTIVE IN ICSA INCLUDE:

ABB
AEEMA, Australian Electrical and Electronics Manufacturers Association
Aerospatiale
Alcatel Cable
AMP Incorporated
Ansaldo
BDI, Bundesverband der Deutschen Industrie
Becton Dickinson
Boeing
Bosch-Siemens Haushaltsgeräte GmbH
Case Corporation
Caterpillar, Inc.
Daimler-Benz Aerospace
Deere & Co.
Digital Equipment
Ericsson
Ford Motor Company
GEC Alsthom
General Motors Corporation
Group Schneider
GTW Associat
Hewlett-Packa
IBM Corporati
IrDA, Infrared Data As
ITI, Information Techno
Kodak
Lucent Techn
Mercer
Microsoft, by GT
Motorola
NAM, National Associ
Philips N.V.
Polaroid Corp
Pratt & Whitn
Raychem
Rockwell
Siemens AG
Siemens Stron
Sun Microsyst
Unisys
UPS
United Tech./H Standard
Vickers
Xerox

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Fax +49 89 636 4070
guido.guertler@mch

RECENT RESOLUTIONS ADOPTED BY THE ICSCA INCLUDE:

- To promote the use of global standards when regional or national standards embrace similar requirements.
- To oppose global management system standards that would either add no value to products or end users or that would mandate third party certification.
- To affirm supplier's declaration of conformity as the preferred method of demonstrating conformance, while preserving third party certification for those suppliers who require it.
- To promote voluntary private sector consensus standards as preferred alternatives to government agency developed standards or regulations.
- To affirm that privacy issues, especially for personal data privacy must be addressed but not by global management system certification schemes.
- To support the principle of one standard—one test and the suppliers declaration of conformity worldwide.
- To support the ISO/CASCO single symbol effort.
- To encourage ISO, IEC, and the ITU to undergo aggressive reengineering to better equip themselves for satisfying today's global standards requirements.
- To oppose any tax in the electronic exchange of data, e.g., an Internet "bit tax".
- To oppose mandates for metric-only labeling in the absence of clear market demand for it.

Connecting
at a
HIGHER
level.
AMP

Product Standards...

AMP's Approach to Strategic Standards Management

Strategic Standardization Management:

"Linking, with standards as a catalyst, the company's product and marketing strategies with customer and market requirements."

Standards as a strategic issue for the company --

"What influence will these activities have on the business...

- Product design and mix?
- Operating costs?
- Global impact?"

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COUNTRIES

UNITED STATES | FRANCE | GERMANY | HOLLAND | ITALY | SPAIN | GREAT BRITAIN | JAPAN

GLOBAL BUSINESSES

Automotive

Global Communication

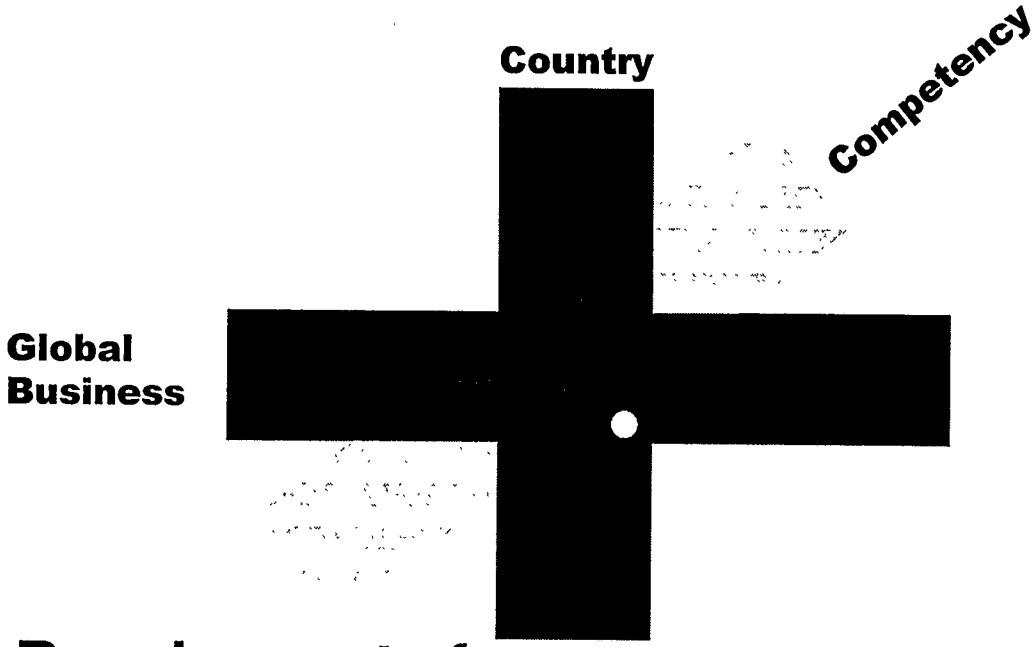
Global Personal Computer

Global Power Technology

Global Consumer & Industrial

Global Product Standards

Success is defined as: Assuring Complete Coverage at Each Node . . .



. . . Of all Requirements for:

- Industry Standards Committees and Associations
- Customer Relationships vis-à-vis Standards
- Government Agency Liaison
- National Committee Activities

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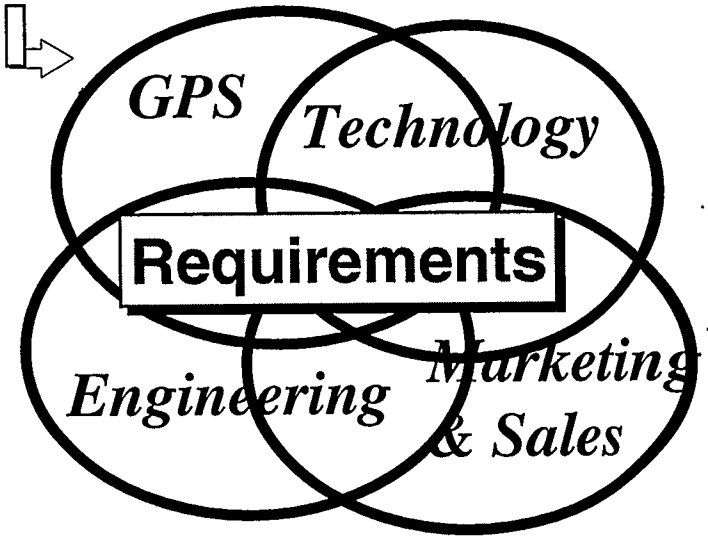
SSM... One Implementation

GPS

- Identify Need/Opportunity



- Determine Strategy
- Implement
- Audit Progress
- Redirect as Necessary
- Conclusion

Marketing

- Exploit Market Opportunities Provided by the Standard

Operations

- Implement Standard in Manufacturing Facilities

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GLOBAL PRODUCT STANDARDS

Examples of Major U.S. Accredited Standards Developers

ASTM

ARINC®

ITI

UL®

ELECTRONIC INDUSTRIES ASSOCIATION EIA

SAE

NFPA®

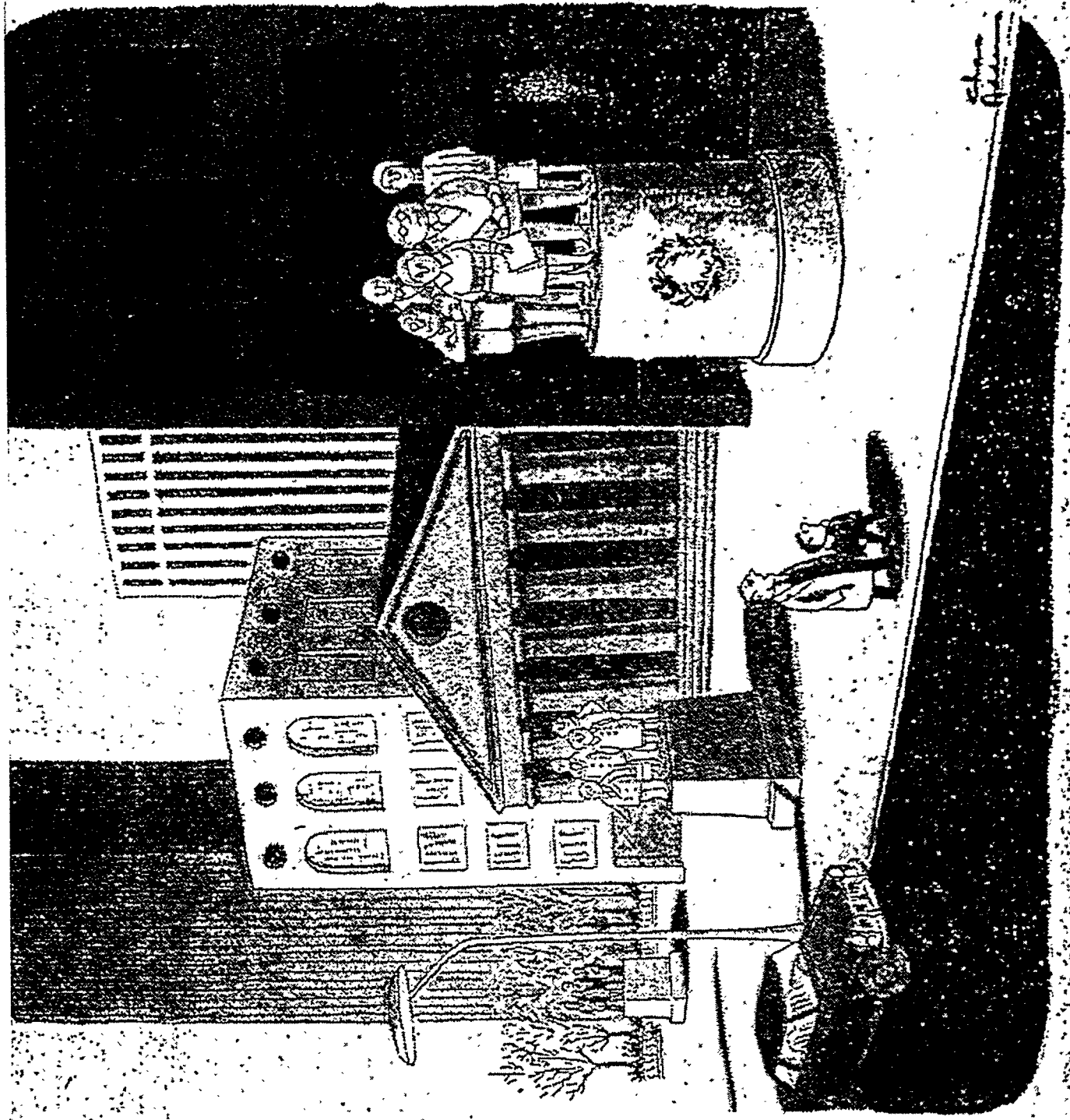
The Institute of Electrical and Electronic Engineers, Inc.

IPC

Bellcore
Bell Communications Research

SMPTE

NEMA

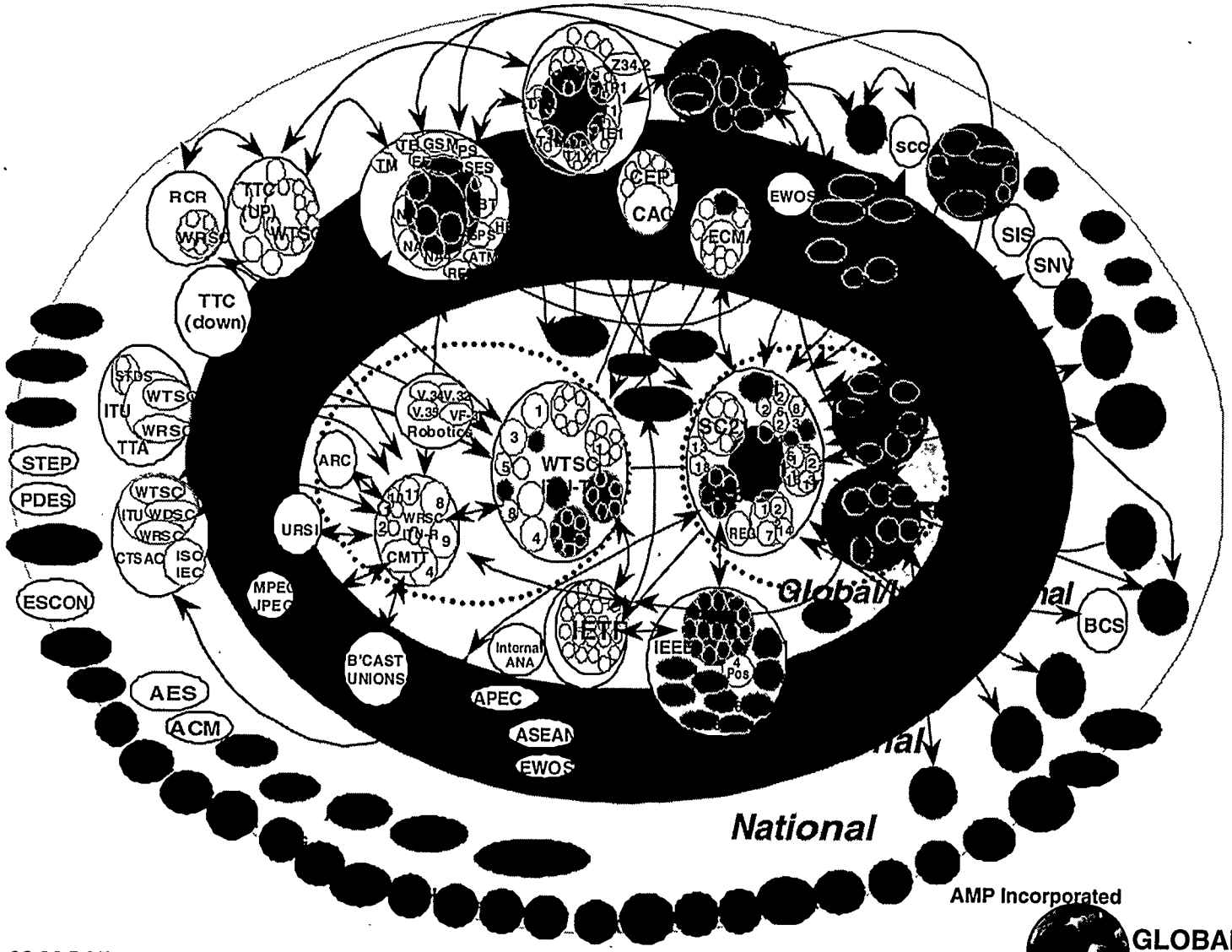


DRAWING BY CHAS. ADDAMS; © 1975 THE NEW YORKER MAGAZINE INC

"Thank God I'm not in your debt."

AMP

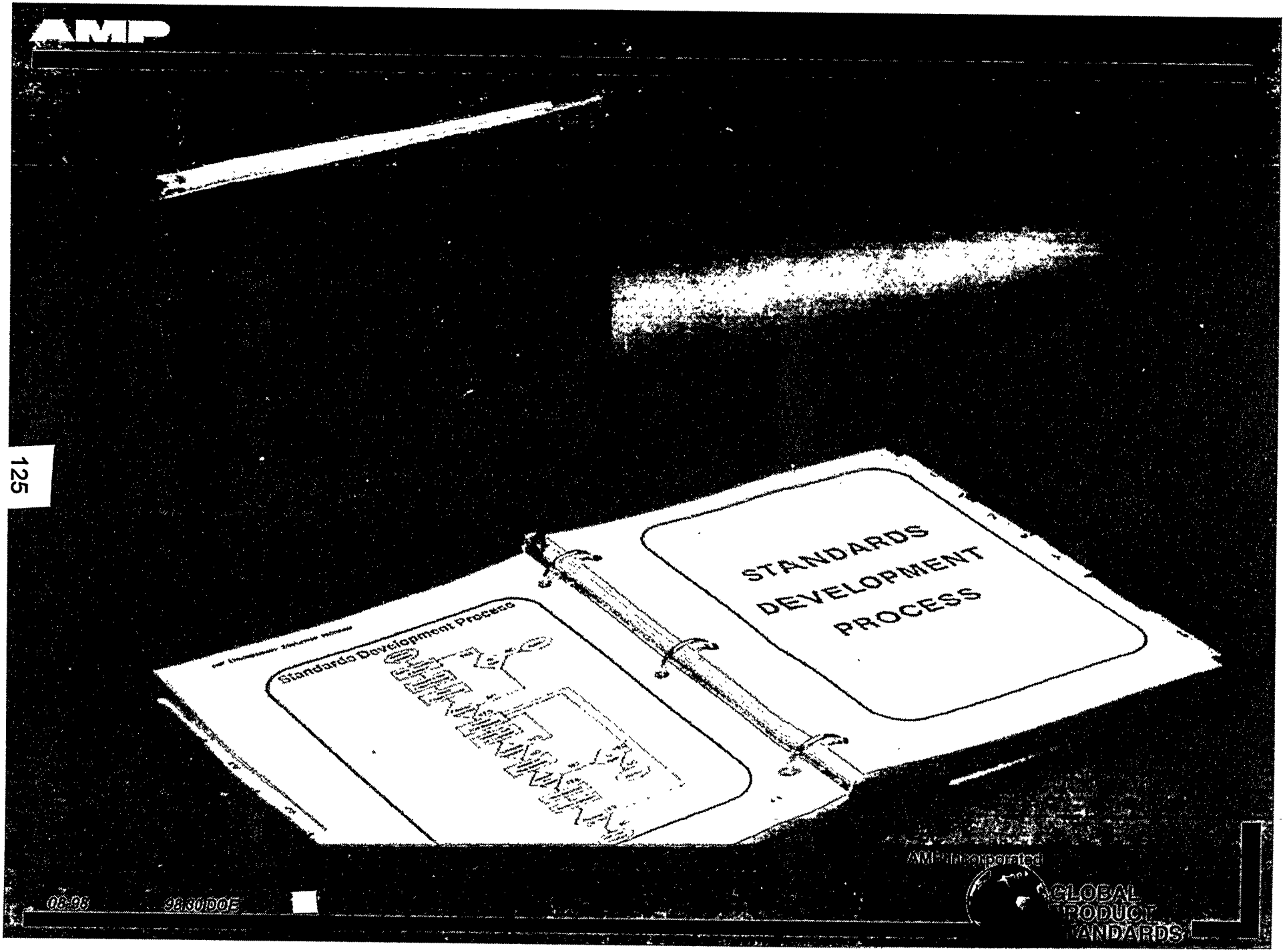
Information Technology - Standards Making Architecture



AMP Incorporated

GLOBAL PRODUCT STANDARDS

Global coordination is a critical requirement of the strategic standardization process.


AMP
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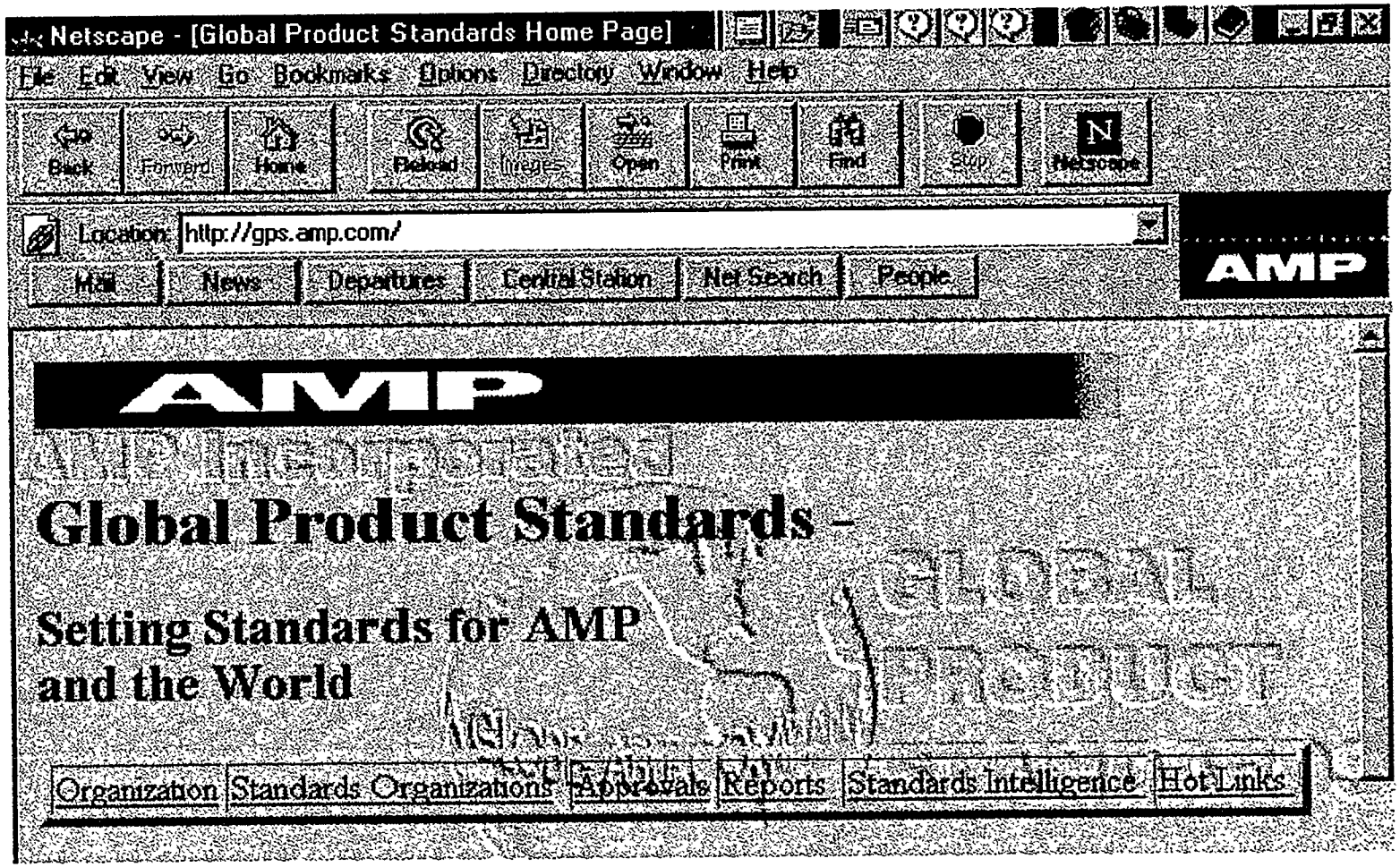
DEVELOPMENT
PROCESS
Standards Development Process
AMP Incorporated
GLOBAL
PRODUCT
STANDARDS
06-98
98-30 DOE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Setting Standards for AMP and the World
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Connecting at a HIGHER level AMP

Evidence of Growing Role and Influence of Standards in the Global Marketplace

- National and Regional Standards Strategies
- Greater Use by Governments of Private Sector Standards
- Support for Global Standards
- Incorporation of Standards Issues in Global Trade Initiatives
- Efforts by Standards Developers - including ISO & IEC - to Develop Standards Faster, Better, and at Less Cost
- Growth in Industry Consortia
- Alliances of Multi-National Companies to Address Global Standards Issues
- Delivery of Standards in Electronic Form

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GLOBAL PRODUCT STANDARDS

- Product standards are having a growing influence on every market segment that has been targeted for our growth.
- The strategies that are developed to maximize our results in each segment must address the role of these standards.
- To ignore standards places these strategies in peril.

Each of these developments has an economic basis and associated set of threats or opportunities.

It is imperative that U.S. companies are involved in the efforts to influence the course of these events.

The alternative is to risk being casualties of them in the ongoing struggle for Global competitiveness.

A Brief Review of the Alternatives

- If we don't do it, other ***COUNTRIES*** will.
- If we don't do it, the ***GOVERNMENT*** will.
- If we don't do it, our ***COMPETITORS*** will.

"You don't have to do any of this, because survival is not compulsory."

W. Edwards Deming

Merci

Takk

Danke

Thank You

Kiitos

Tack

ありがとう

Grazie

AMP Incorporated

GLOBAL PRODUCT STANDARDS

"Stakeholds Management—A Wealth of Opportunities"

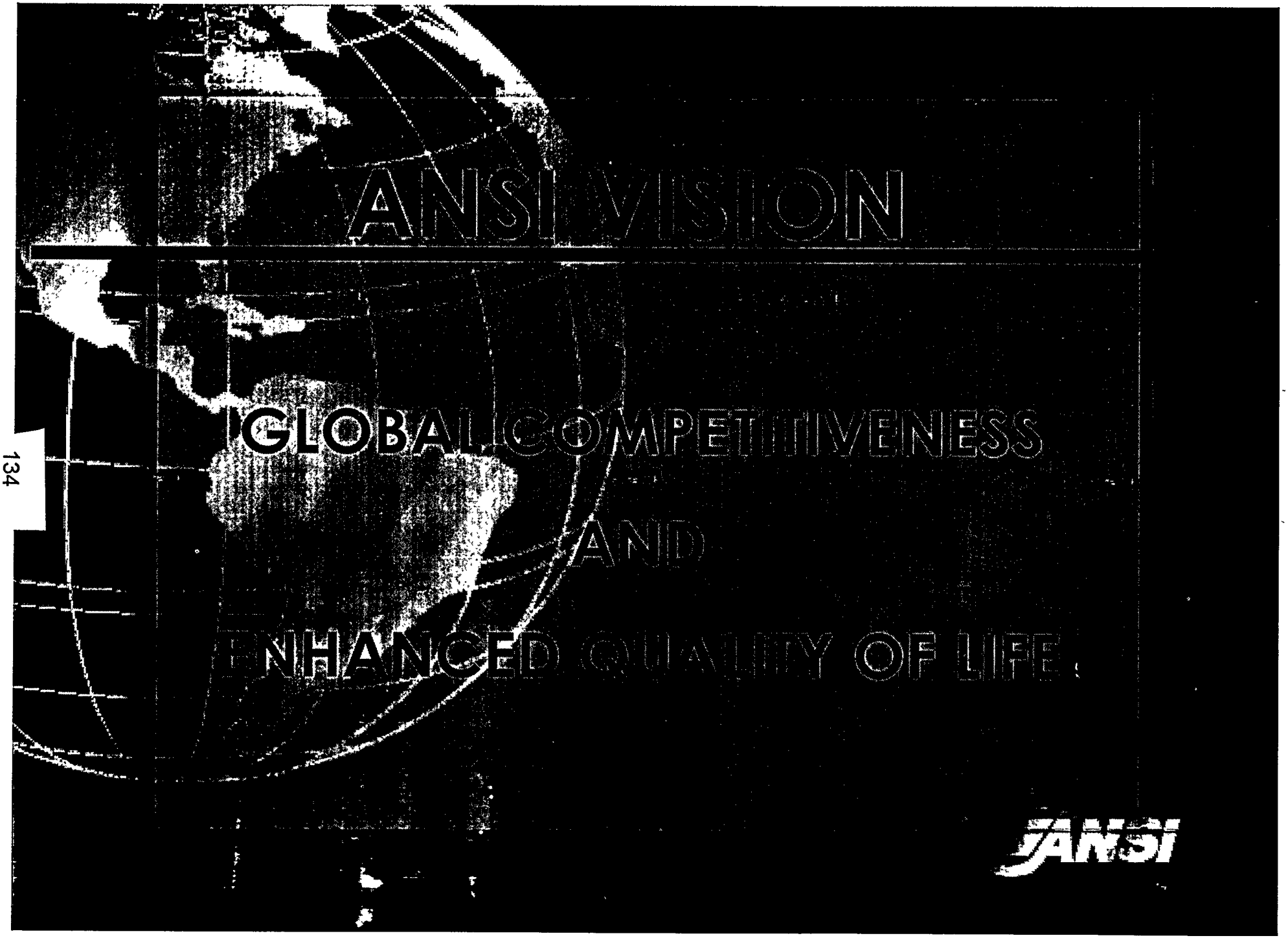
Panel Discussion

Jane Schweiker - ANSI

Federal Technology Roundtable Workshop

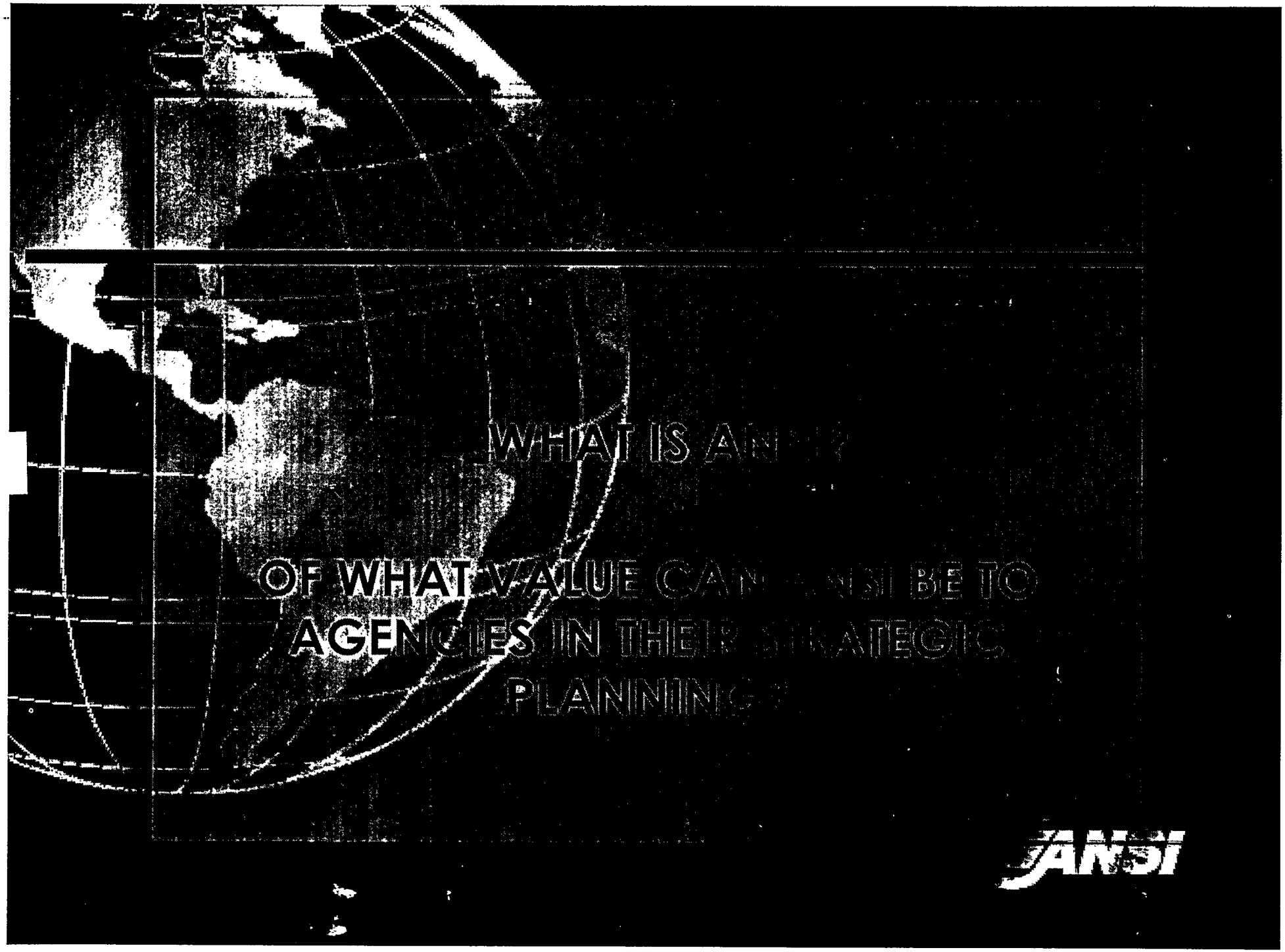
August 11, 1998

ANSI


ANSI VISION
GLOBAL COMPETITIVENESS
AND
ENHANCED QUALITY OF LIFE
ANSI

THE ROLE OF ANSI IN STANDARDS MANAGEMENT

ANSI


WHAT IS AN
OF WHAT VALUE CAN ANSI BE TO
AGENCIES IN THEIR STRATEGIC
PLANNING?
ANSI

WHAT IS THE ANSI FEDERATION?

- Public/Private sector partnership since [illegible]
- 1000+ Member companies
  - Revenue [illegible] billion
- 280+ Professional, trade, educational, consumer, or [illegible] organizations
- [illegible] Government agencies

ANSI

STRATEGIC BENEFITS TO GOV'T PARTICIPATION

- Optimum use of the commercial marketplace
- Access to state-of-the-art technology & information
- Broad stakeholder participation
- Increased interoperability & maintainability
- Reduced costs of development maintenance
- Compliance with FTS 2000 and OMB Circular A-119

ANSI

HOW CAN ANSI HELP GOVERNMENT AGENCIES?

- Optimum use of the commercial marketplace
- Access to state-of-the-art technology & information
- Broad stakeholder participation
- Increased interoperability and portability
- Reduced costs of development and maintenance
- Conformance with PL 104-113 and OMB Circular A-119

ANSI

STRATEGIC BENEFITS TO GOV'T PARTICIPATION IN ANSI

- Make optimum use of the commercial marketplace
- Have a voice in setting national standards and conformity assessment strategy & policies
- Have a voice in setting international standards and conformity assessment strategy & policies
- Leverage agency resources
- Comply with PL 104-113 and OMB Circular A-119

ANSI

COST REDUCTION THROUGH IMPLEMENTING STANDARDS

- Reduced time and costs in product development
  - ◇ focus on competitive advantages
  - ◇ faster time to market
- Reduced cost in component and materials acquisition
  - reduced procurement and inventory costs
  - ◇ greater leverage with suppliers

ANSI

WHAT DOES ANSI PROVIDE?

- A forum for developing national standardization policy
- The means to have a voice in and provide leadership to international standardization and conformity assessment organizations
- An accreditation process that assures that all stakeholders have an opportunity to participate

ANSI

A Forum for Policy Development

- National Issues Committee
- Government Member Council
- Board Committee on Conformity Assessment

ANSI

WHAT DOES ANSI PROVIDE?

- A focal point for developing national standardization policy
- U.S. leadership in international standardization and conformity assessment organizations
- Accreditation of standards developers

ANSI

STRATEGIC OPPORTUNITIES VIA ANSI

- Influence U.S. standards and conformity assessment policies
- Influence international standards and conformity assessment policies
- Take leadership role in dialogs between government and industry

ANSI

ANSI'S ROLE – DOMESTIC

- Facilitate US standardization policy development
- Promote US standardization policy globally

ANSI

STANDARDS INTEGRITY

- Open systems
- Due process
  - Transparency
  - Appeals
- Consensus
- Enlightened self-interest
- State-of-the-art technologies
- Availability of information

ANSI

ANSI's GOVERNANCE
Constituency Councils

ANSI

ANSI GOVERNANCE

Policy Committee of the Board

ANSI

PROMOTE US STANDARDIZATION POLICIES GLOBALLY

- GOAL: Global standards that reflect US' interests
  - US standards used abroad
  - US positions (policy and technical) accepted in international and regional standards organizations
  - International standards adopted as national standards where these meet the needs of the user community

ANSI

REPRESENTATION TO NON-TREATY STANDARDS ORGANIZATIONS

ANSI'S PARTNERSHIP WITH US GOVT IN STANDARDS AND TRADE

ANSI	US GOVT
ISO & IEC	WTO
COPANT	FTAA
PASC	APEC
CEN/CENELEC/ETSI	NAFTA
ITU-T	US-EU MRA

ANSI

ANSI PARTICIPATION (ISO)

- ISO (Geneva, Switzerland)
  - 130 Member Countries
- ANSI one of
  - 5 permanent members to the Council of ISO
  - 4 permanent members on the Technical Management Board
- ANSI and its members
  - participate in 70% of Technical Committees
  - administer 14% of Secretariats

ANSI

ANSI PARTICIPATION [illegible] (THROUGH USNC)

- IEC - General Switzerland
  - 5 [illegible] Committees ([illegible] of [illegible] Countries
- US National Committee
  - one of 5 permanent members [illegible] council board of 15
  - participates in 80% of [illegible] committees
  - assigned Secretariats [illegible] Secretariats
  - [illegible] President of all IEC [illegible]

ANSI

US INTERNATIONAL PARTICIPATION

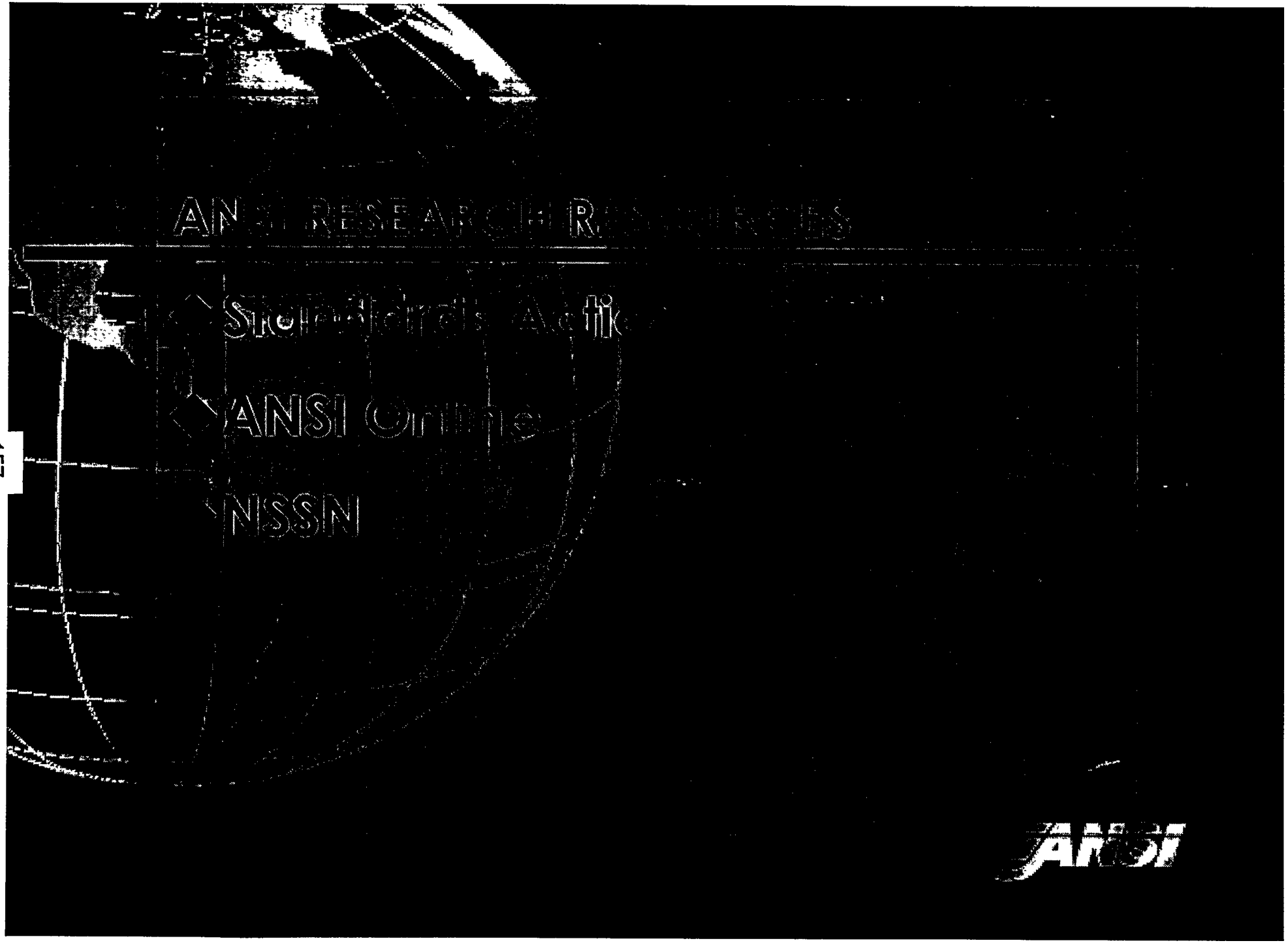
- Accredit US technical advisory groups (TAGs)
- Appoint US technical advisors (TAs)
- Delegate TAG and US held international secretariat administration

ANSI

US INTERNATIONAL PARTICIPATION (Continued)

- Allows affected parties to participate in ISO or IEC standardization activities
- Provides for due process, openness, and consensus
- Ensures support of affected parties
- Ensures administration for TAG
- Ensures the integrity of the process

ANSI


ANSI RESEARCH RESOURCES
Standards Action
ANSI Online
NSSN
ANSI

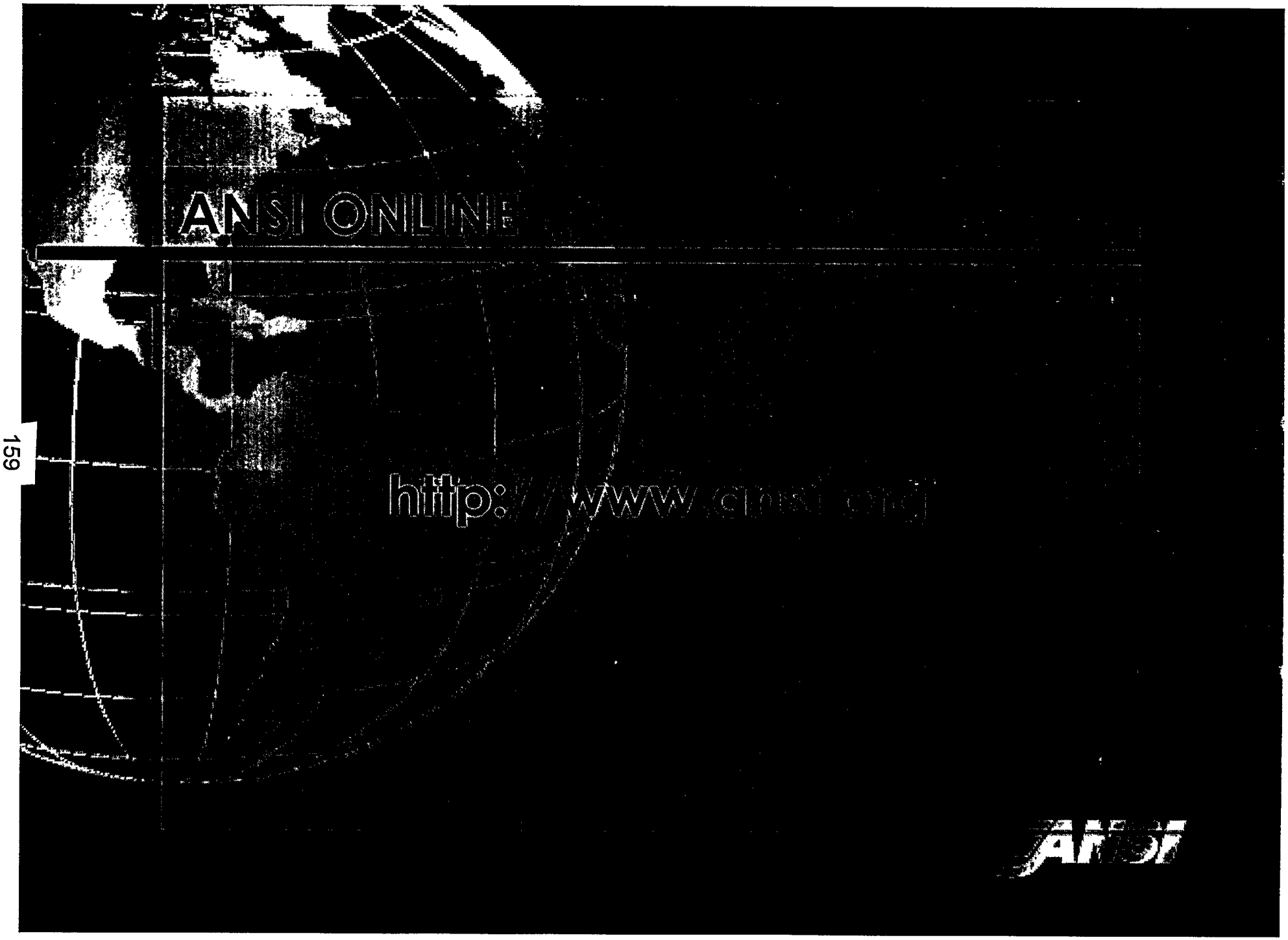
STANDARDS ACTION

- Public notification of proposed new American National Standards, consensus proposals to revise, reaffirm, or withdraw approval of ANSI

- Published bi-weekly

- Available online via ANSI Web site

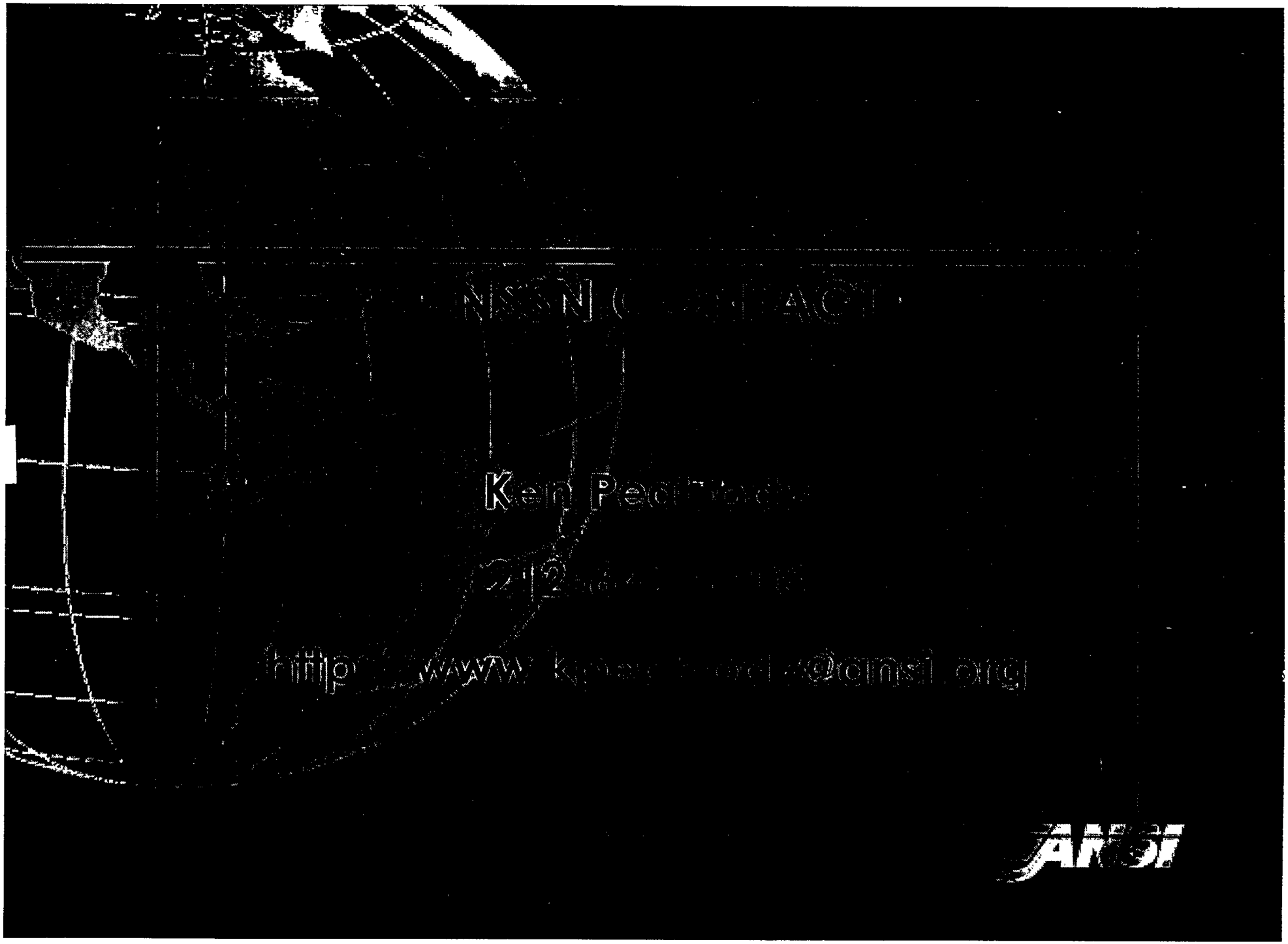
ANSI


ANSI ONLINE
http://www.ansi.org

NSSN

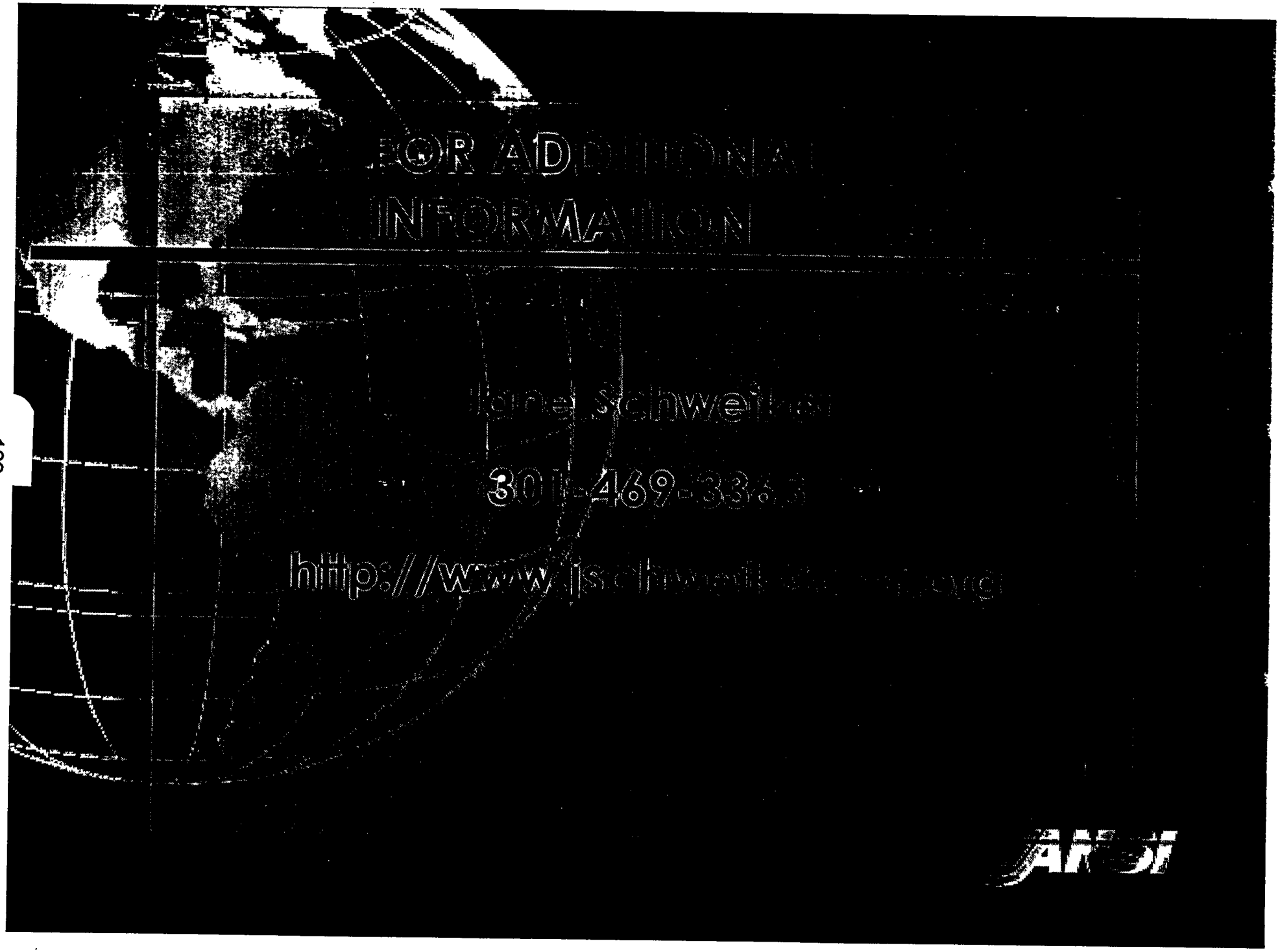
- Search: Bibliographic data on 250 standards, 500 developers worldwide
- Alert:
  - Set up a profile on the NSSN
  - Track standards as they move through the development cycle
- Access to text of some documents
  - Now--250 ANSI ISO standards
  - Soon--ASTM, IEEE, others

ANSI


Ken Pedrotti
http://www.kenpedrotti.ansi.org
ANSI

BENEFITS OF PARTICIPATING IN ANSI

- Influence what standards are written and how they are written
- A major source of information and expertise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INFORMATION
301-469-3363
http://www.jschwell
ARSI

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Federal Technical Standards Workshop

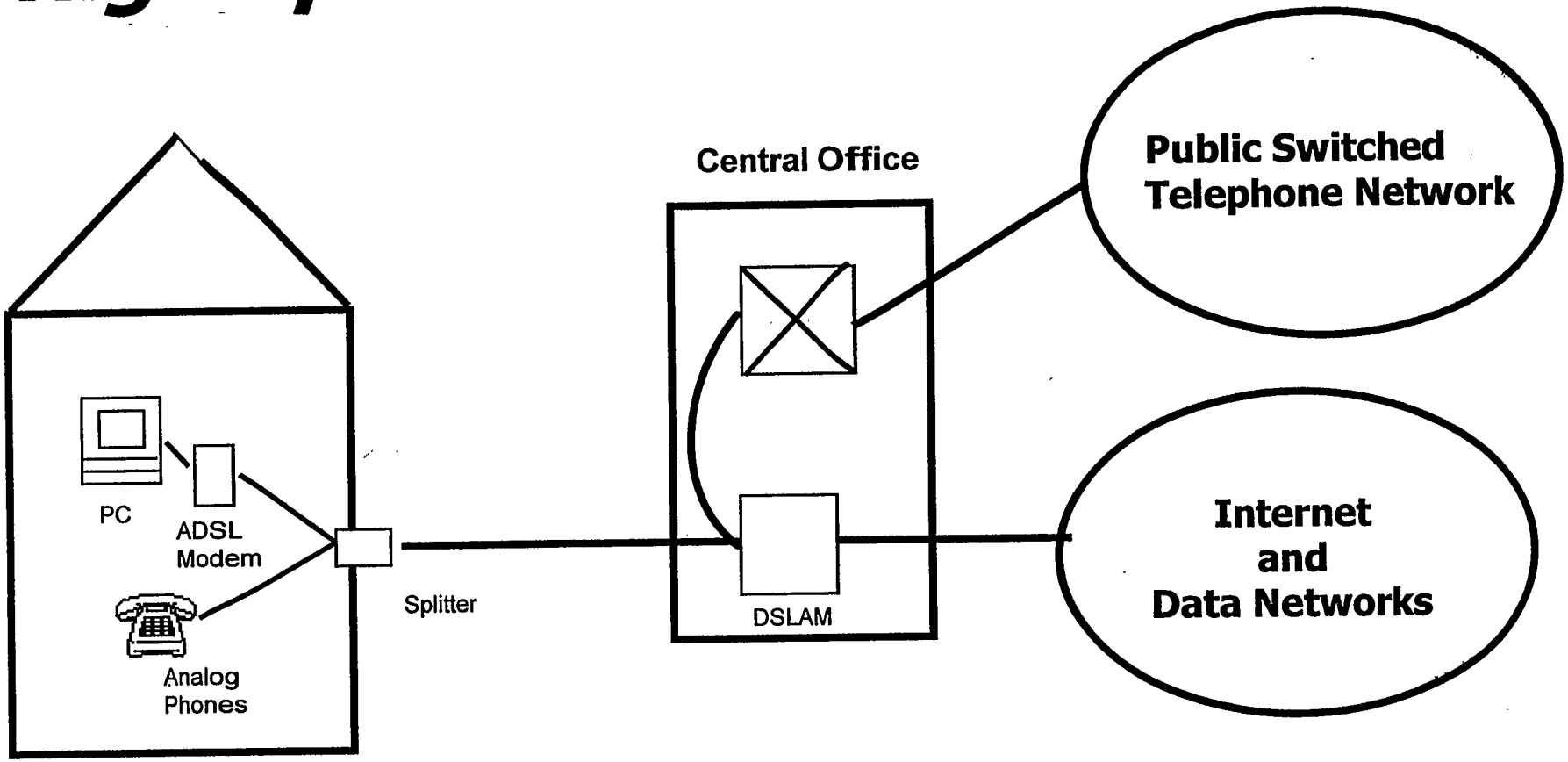
From "Bake-Off" to "Blast-Off"
The ADSL Story

August 4, 1998

Michael G. Gorman
Ameritech, Inc.
Vice President - Strategic Standards Management

Ameritech®

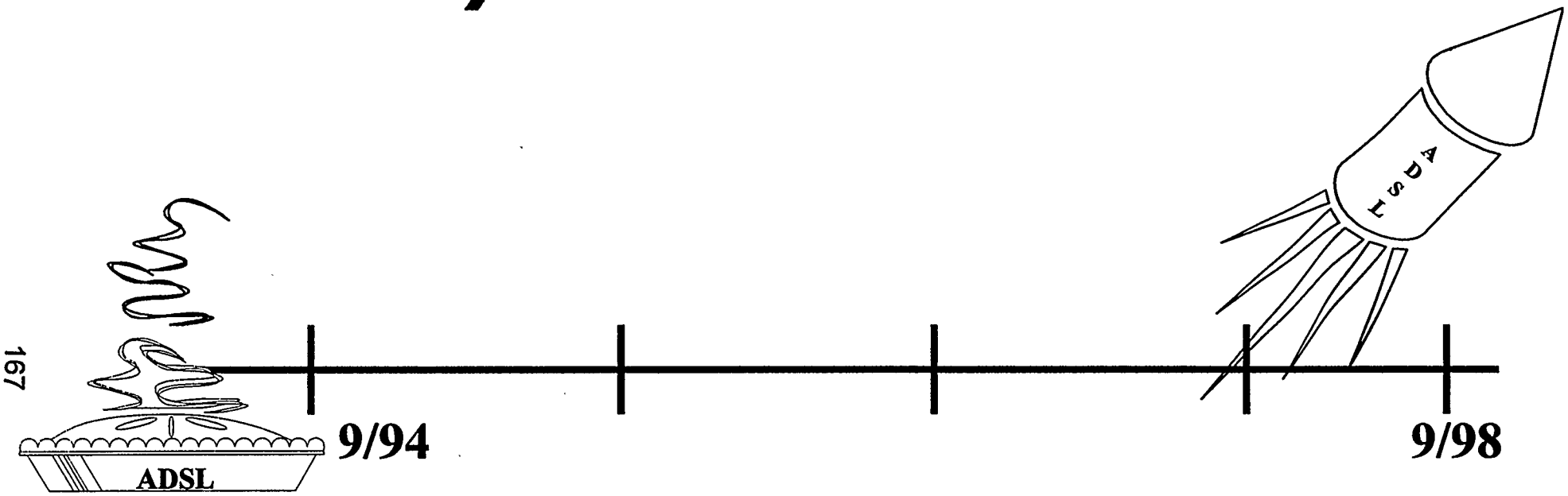
High Speed Data Access Via *ADSL



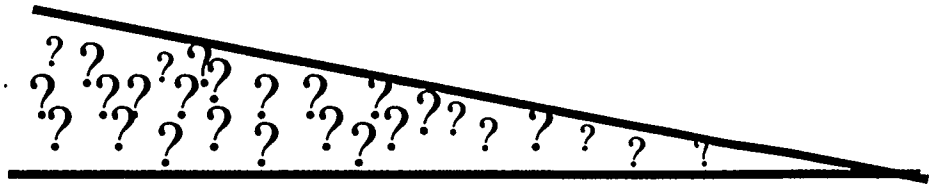
*Asymmetric Digital Subscriber Line

Ameritech®

The Journey To A True ADSL Standard



Poised for another Beta Vs. VHS in absence of true interoperable standards.



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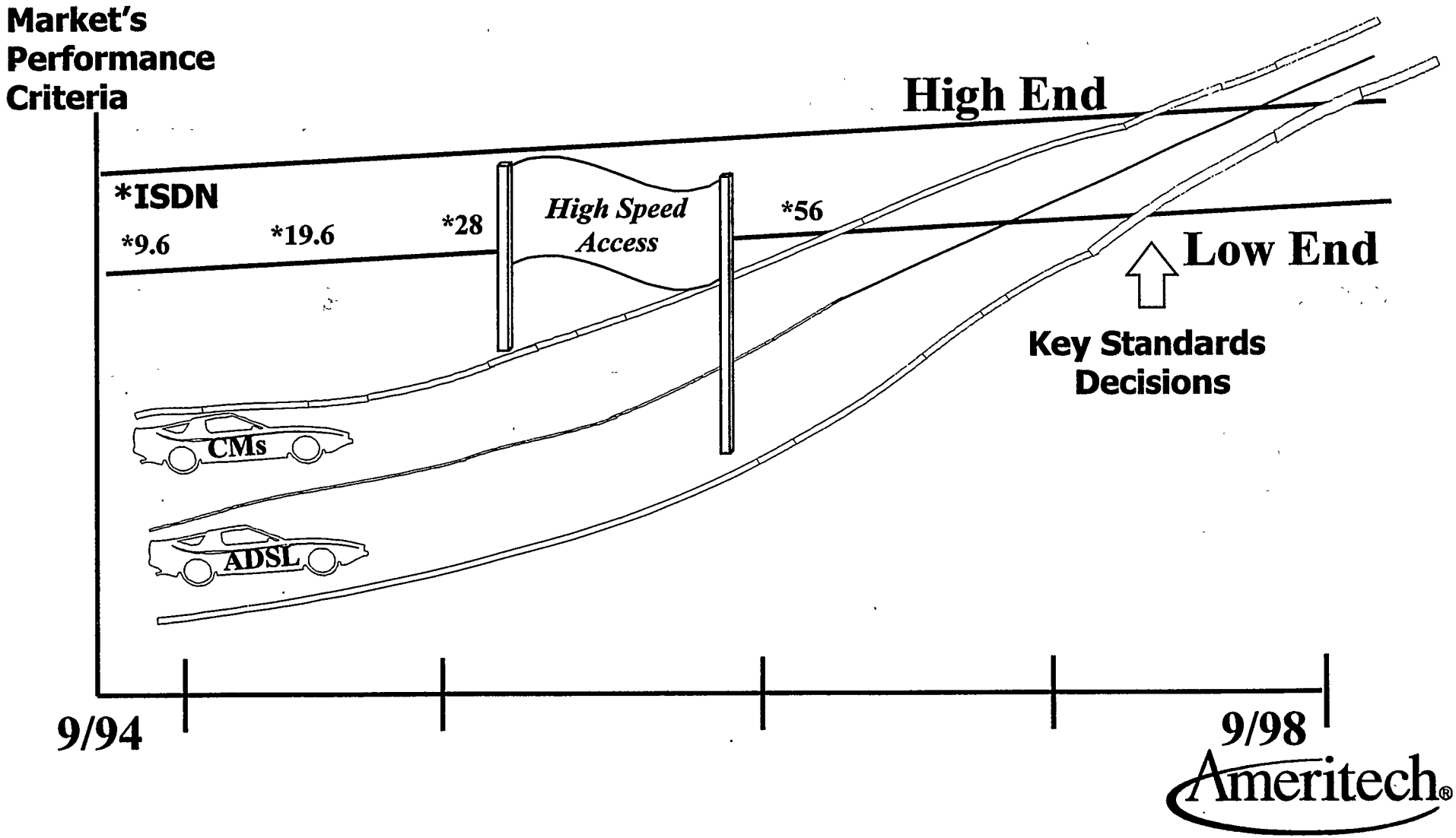
The Competitive Landscape



The Key Drivers for Strategic Standards Management (SSM)

- Customer demand for High Speed Access
- Competition - cable modems, wireless access, satellite technology
- Need for one standard to achieve lower cost (volume), market acceptance (interoperability)

Ameritech®

SSM Approach

- Agree on drivers and place value on outcomes.
- Focus:
  - Complete due diligence to determine technical solutions which meet market needs
  - Rally around industry convergence
  - Establish consortia of concerned, like minded stakeholders
  - Develop and share white papers to support position
  - Actively lead in standards fora debate, contributions and lobby efforts.
  - Align all resources to support (Executive through Procurement)
  - Pursue international alignments
  - Implement, implement, implement

Ameritech®

Countdown to Blast-off...Issues and Impedances

- Operational - new and complex...
- Plug and play capability...keep it simple and easy for the customer
- Ubiquity - reach and coverage...
- Regulatory - legacy regulatory rules in a data centric world...resale, unbundling, LATA restrictions
- Marketplace education and awareness

Ameritech®

The Value of the SSM Effort for ADSL

- Cycle time to market
- Cost
  - Development
  - Production
  - Operational
  - Distribution
  - Support

- Revenue
- Market Acceptance & Adoption
- Brand Identity
- Competitive Positioning

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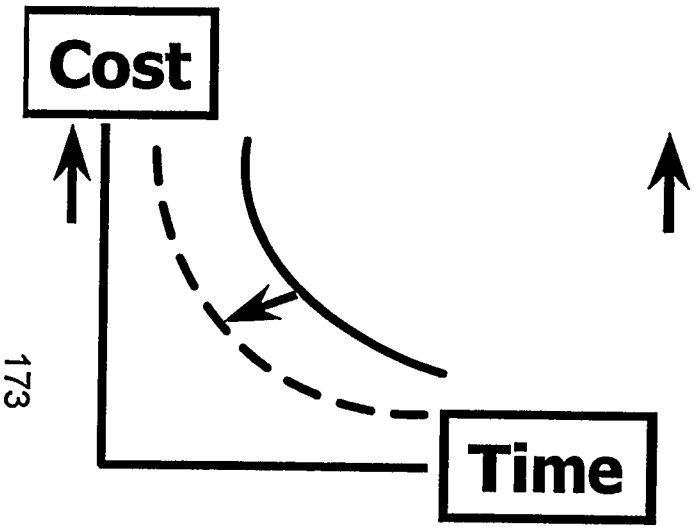
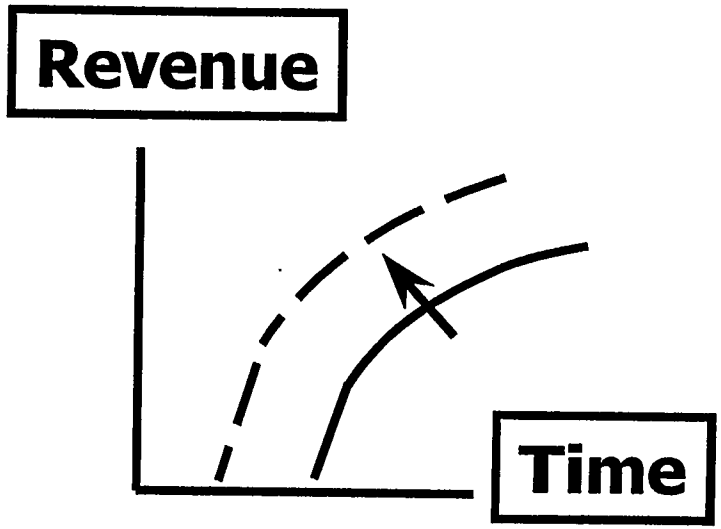
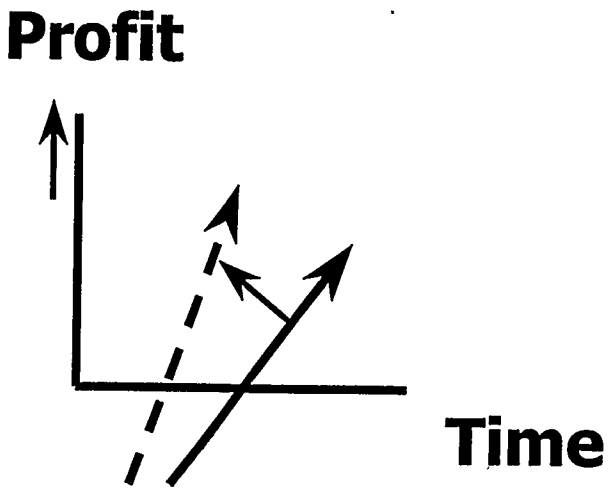
Value of Strategic Standardization Management ($$M)







Legend	
Status Quo	———
SSM Applied	- - - -

Ameritech®

Summary

- Strategic Standards Management leads to a clear prioritization of standards related issues based upon their overall values.
- Alignment of appropriate resources can drive significant results.
- To pull it off - you must be involved in the process!

Ameritech®

Wednesday, August 5, 1998

Session 3: *OMB Circular A-119 Implementation*

Speakers: Virginia Huth
Belinda Collins
Eric Wilkinson
John Craig

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Virginia A. Huth
Office of Management and Budget

Abstract

Overview of A-119

The long-awaited final revision to OMB Circular A-119 was published on February 19, 1998. This revision was in response to Section 12(d) of the "National Technology Transfer and Advancement Act of 1996" (P.L. 104-113). The intent of this law was to codify and strengthen current policies in this area—specifically, to promote the use of voluntary consensus standards within the Federal government as well as to promote consultation with voluntary, private sector, consensus standards bodies and appropriate participation with them in developing such standards. The law also clarified that the policy was to include both procurement and regulation.

In a change from the previous policy, however, the law now requires agencies to report when they used a government-unique standard in lieu of a voluntary consensus standard. Accordingly, the final version of A-119 establishes guidance for developing a Standards Management System by which agencies can manage their use of standards in procurement and regulation in order to be able to report properly. In response to extensive agency comment, the Circular grants agencies great flexibility in developing such a system.

Report to Congress

The most recent report prepared by the National Institute of Standards and Technology is based on information provided by the agencies prior to the final publication of the Circular. It reports that in the last reporting period, 543 voluntary consensus standards were adopted by agencies while 187 voluntary consensus standards were substituted for government-unique standards. It also reports only six uses of government-unique standards in lieu of voluntary consensus standards. With the final version now in place, agencies should be well underway in their efforts to refine their Standards Management Systems.

The report to Congress also highlights the abrupt decline in Federal participation in voluntary consensus standards bodies, from 5200 to 3276. This is of particular concern because the law and Circular state that it is the policy of the Federal government to participate in such bodies when such participation is in the public interest. We are working with interested parties to resolve this issue.

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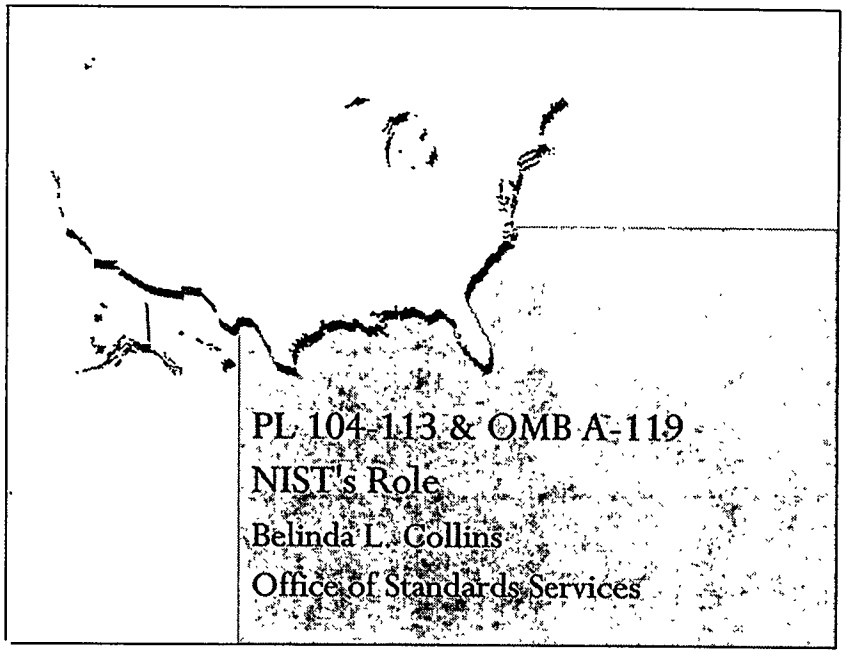


Historical Standardization

- Emperor Qin -- unified China 221 BC
- Standardized
  - Weights and measures
  - Axle widths - cart & chariot axles in mud ruts
  - Law
  - Currency
  - Chinese Script
  - Calendar
  - Musical scale

The U.S. Standards System - Unique in the World

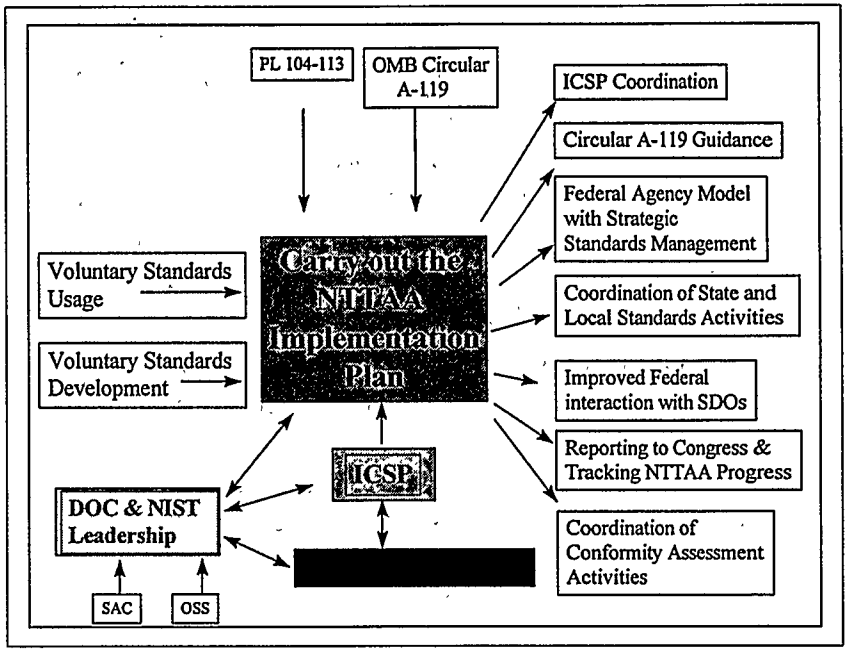
- Primarily private and voluntary
  - Worked well in the past for domestic issues
- Consensus, transparency, openness, due process
- Issues
  - No single responsible entity
  - Many participants (~600 SDOs)
  - Coordination difficult
  - No Federal recognition or financing

Background

- NRC Report on Standards, Conformity Assessment and Trade for the 21st Century
- U.S. standards and conformity activities are decentralized, often competitive, and a mixture of public and private activities.
  - Increases product cost, time to market, wastes staff resources, and hinders exports
- Need for national infrastructures for standards and conformity assessment to support global trade

Public Law and the Circular Direct:

- Federal Agencies to rely on voluntary standards
  - identify agency needs and applicable voluntary standards
  - compare voluntary standards with agency standards
  - participate in development of voluntary standards
- NIST to coordinate with Federal, state and local agencies and with private sector on standards and conformity assessment activities
- NIST will create an annual report
  - Federal participation is down significantly.
- NIST submitted Implementation Plan to Congress



NIST's Leadership and Guidance

- Providing Federal leadership and guidance on standards and conformity assessment policies
  - Held Several workshops on OMB Circular A-119
  - Chairs Interagency Committee on Standards Policy (ICSP)
  - Created NTTAA Web Site
  - Getting its own house in order Standards Advisory Committee
  - ICSP re-chartered
  - Secretariat to many ICSP Working Groups
  - Created annual report to OMB on agencies activities
- Standards Summit with ANSI in September

Federal Agencies' Interagency Committee on Standards Policy

- NIST Chair Coordinates activities
  - canvass method debate
  - SDO presentations
  - implementation issues (reporting)
  - OMB Circular comments
  - Strategic Standardization
  - Ethics/Participation Issues
  - Working groups
    - Regulatory Working Group - EPA's Rule Writer's Guidance

Federal Agencies and NIST are:

- Working with ANSI and standards developing organizations (SDOs) to address:
  - proliferation and overlap of standards
  - speed of standards development
  - effective use of standards by Federal agencies
- Learning from each other as we implement the Circular
- Developing procedures for timely notification to Federal agencies of proposed new standards
- Developing mechanisms for coordinating with ANSI and other SDOs on international standards issues

NIST Standards Activities

- Standards Advisory Committee
  - Creating NIST-wide Policy on Standards
  - Database for standards participation now on-line
  - Overview of Strategic Standardization at NIST
  - NIST template created for standards to assist each Operating Unit in their work
  - Policy on TAG fees being created.
  - Updating Guidelines for NIST standards committee participation

Conformity Assessment

- Includes product certification, accreditation of testing and calibration laboratories, and management system registration (quality and environment)
- NACLA - U.S. is developing national strategies for coordinated systems for conformity assessment
- NIST will perform policy analysis of costs of duplication to government agencies and industry
- NIST is working with private sector conformity assessment bodies to obtain international acceptance
- NIST is creating draft of conformity assessment policy per OMB Circular A-119

Laboratory Accreditation

- NIST has helped to create NACLA - now incorporated as a 501-C6
- NIST will continue National Voluntary Laboratory Accreditation Program
  - Accredit calibration laboratories to ensure necessary traceability to national standards
  - Accredit testing laboratories as mandated by Congress or requested by other Federal Agencies

Conclusions - NIST Policy Activities

- NIST is exhibiting leadership in implementing its Plan
- Coordination among Federal agencies is increasing
- Standards Summit
  - NIST is coordinating activities with ANSI, SDOs, and others to build workable systems for standards and conformity assessment to meet the needs of U.S. industry and government in a global market

Keep up the Good Work

- We must not, in trying to think about how we can make a big difference, ignore the small daily differences we can make which, over time, add up to big differences that we often cannot foresee. Marian Wright Edelman
-
- Technology Services Website is: http://ts.nist.gov/

The U.S. Environmental Protection Agency's Implementation of OMB Circular A-119

Eric Williamson,

EPA's Voluntary Standards Network

August 1998

Presentation Overview

- Background
- The Plan
- Accomplishments
- International Trade Obligations

Background

EPA's already using voluntary consensus standards in regulatory and other programs

Nearly 500 EPA employees are participating in approximately 11 Voluntary Consensus Standards Bodies.

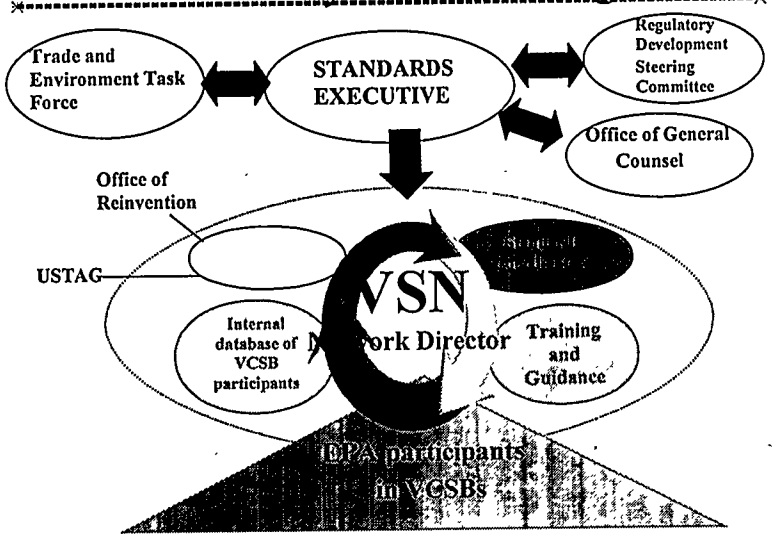
Now, however, there are new obligations and challenges for EPA.

THE PLAN

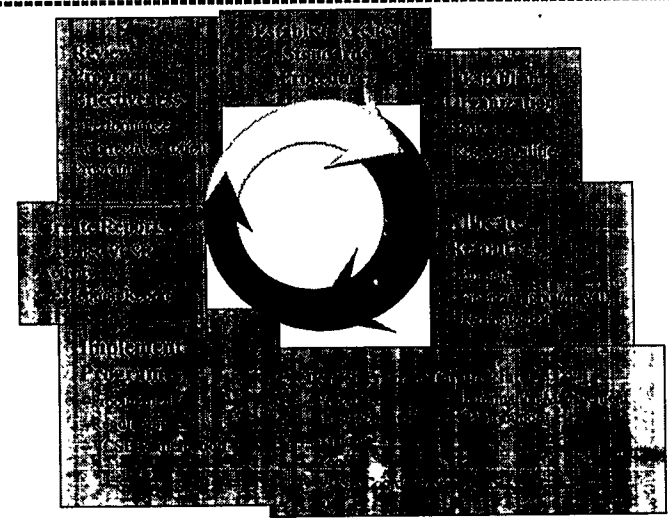
Core Elements

- Standards Executive
- Voluntary Standards Network

EPA Voluntary Standards Program



Management of EPA's Voluntary Standards Program



ACCOMPLISHMENTS TO DATE

- An interoffice working group has drafted a comprehensive "EPA Rule Writer's Guide to the NTTAA." It is now in the final draft stage.

- Participation Guide under development

- Annual reports to Congress have been submitted for the last three years. 1998 Report in progress with electronic tracking system under development.

- Tools
  - ANSI's NSSN -- National Standards Service Network
  - Electronic database of EPA participants in Voluntary Consensus Standards Bodies and/or rules containing voluntary standards

INTERNATIONAL OBLIGATIONS

- INTERFACE BETWEEN TRADE AGREEMENT RULES, NTTAA, AND OMB CIRCULAR A-119
- AFFECT OF INTERNATIONAL TRADE AGREEMENTS ON EPA
  - WTO and NAFTA Rules
  - International Standards

NRC USE OF CONSENSUS STANDARDS

Presented at
1998 Federal Technical Standards Workshop:
August 5, 1998

John W. Craig, Director
Division of Regulatory Applications
Office of Nuclear Regulatory Research
U.S. Nuclear Regulatory Commission

INTRODUCTION

- Consensus standards have been an integral part of the NRC regulatory process for almost three decades

- NRC is evaluating various options for integrating NRC's mission with future use and participation in the development of consensus standards.

  - New Federal requirements placed increased emphasis on government staff participation and use of standards

  - Strategic Assessment and Rebaselining initiative

WHY CONSENSUS STANDARDS ARE IMPORTANT TO THE NRC

- Complement NRC's broad General Design Criteria
- Form a basis for NRC requirements and guidance documents
- Incorporate many years of accepted good engineering practice and reflect state-of-the-art technology
- Provide for efficient use of NRC resources

STAFF PARTICIPATION ON SDOs

Standards Developing Organization	Staff
American Society of Mechanical Engineers	47
American Nuclear Society	39
Institute of Electrical and Electronic Engineers	26
Health Physics Society	12
American Society of Testing and Materials	11
Institute of Nuclear Materials Management	6
American National Standards Institute	5
American Concrete Institute	4
American Society of Civil Engineers	4
Other	12

STAFF PARTICIPATION ON SDOS ACROSS NRC OFFICES

Office	Staff
Nuclear Reactor Regulation	71
Nuclear Materials Security and Safeguards	21
Nuclear Regulatory Research	34
Analysis and Evaluation of Operational Data	6
Regions	9

REGULATORY FRAMEWORK FOR IMPLEMENTATION OF CONSENSUS STANDARDS

- Public Law 104-113
- OMB Circular A-119
- Regulations
- Regulatory Guides
- Other Regulatory Documents

IMPLEMENTATION ISSUES

- Expectations
- Time required to endorse
- Status of "endorsed standard"
- Perpetual changes
- Resources to participate

NRC STRATEGIC ASSESSMENT AND REBASELINING

- Foundation for future direction and decision making; initiated 1995
- Direction Setting Issues (DSIs) address major aspects of NRC functions
- DSI-13, "Role of Industry" encompasses use of consensus standards

DSI-13, "ROLE OF INDUSTRY"

- Commission Final Decision
  - Streamline and simplify NRC's internal process for endorsing consensus standards
  - Implement P.L. 104-113 and supporting OMB Circular A-119

- Stakeholder Meetings
  - Internal meeting on consensus standards; July 7, 1998
  - External meeting; September 1, 1998, in Chicago

- Agency Procedures for SDO Participation
  - Nomination
  - Participation
  - Reporting

BREAKOUT SESSION
CODES AND STANDARDS
September 1, 1998

- Actions NRC is taking to implement PL 104-113
- Options for NRC participation in development of consensus standards
- Whether the NRC should make greater use of available consensus standards in its regulations and regulatory guides,
- Options for endorsement/use of consensus standards, including potential changes regarding requirements for licensees to upgrade every 120-months to the latest ASME Code edition and addenda incorporated by reference in § 50.55a,
- Options for a process to interact with standards development organizations to discuss potential needs for new standards
- Impediments to the adoption of updated consensus standards.

PROS AND CONS OF OPTIONS

Option	Pros	Cons
Discontinue participation	Reduced travel expense and time away from office; saves most up-front resources	Loss of staff development and training at committee meetings
	Review of standard as topical may be fee recoverable	No direct input to development of standard; more exceptions
Higher level committees	Saves resources	Far-term resources high
	Staff could provide input at main committees and above	Negative comments cause delay in developing standard
Select committees	Saves NRC resources	Loss of continuity in committee process
	Focuses on regulatory needs	No influence on nonnuclear areas that may benefit nuclear
Continue present process		Requires most up-front resources
	Broad committee coverage	Does not focus on specific regulatory needs

SUMMARY

- The NRC will continue to rely on the use of consensus standards, and to consult with SDOs on standards needs

- The manner in which NRC uses and participates in the development of codes and standards may change as it evaluates options to continue to achieve its mission while maximizing the use of available resources

Agenda
The Role Of Industry
Public Stakeholder Meeting
The Hyatt Regency O'Hare Hotel
Rosemont, Illinois 60018

August 31, 1998

5:00 - 8:00 pm	Early Registration

September 1, 1998

7:00 - 8:00 am	Registration
8:00 - 8:15 am	Opening and Welcome
8:15 - 9:00 am	Introductory Remarks on: – Codes and Standards – Industry Initiatives as Substitutes for Regulatory Action – Improvements to the Regulatory Framework
9:20 - 11:30 am	Breakout sessions on each of above topics
1:00 - 3:40 pm	Breakout sessions continued
4:00 - 500 pm	Summary

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Wednesday, August 5, 1998

Session 4: *OMB Circular A-119 Implementation (continued)*

Speakers: Richard Weinstein
Richard Serbu
Greg Saunders

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NASA Implementation of OMB Circular A-119

Presented at the
Federal Technical Standards Workshop
August 4-6, 1998

Richard H. Weinstein
NASA
Office of the Chief Engineer

Background and Context

- NASA is a Procurement agency which uses technical standards to design/build/operate state of the art, one of a kind systems requiring high reliability
- In the past, "standards" built around specific programs and organizations; Agency-wide standards were limited to
  - safety, mission assurance,
  - electronic parts, and
  - construction of facilities
- Establishment of an Agency-wide standards program and use of Voluntary Consensus Standards (VCS) was accelerated by
  - Downsizing of programs, budget limitations
  - Increased cooperation between Centers and w/industry
  - OMB Circular A-119

NASA TECHNICAL STANDARDS PROGRAM STRUCTURE

- **Office of the Chief Engineer** (Headquarters)
  - Standards policy, program oversight; engineering standards approval
  - External Liaison (Government , voluntary standards bodies)
- **Engineering Management Council** (Directors of Engineering, Field Centers)
  - Concurrence on projects and standards
  - Resolve Program issues
  - » **NASA Technical Standards Program** (Lead - Marshall Space Flight Center)
    - › Program Direction
    - › Program Management and Coordination
  - » **Engineering Standards Steering Council** (Field Center Representatives)
    - › Field Center interface
    - › Program Guidance
    - › Discipline Committees, Task Working Groups (Field Center Technical Experts)
    - › Project priority Identification
    - › Standard Development

CRITERIA FOR ADOPTING VOLUNTARY CONSENSUS STANDARDS

Proposed Voluntary Consensus Standards shall meet one or more of the following criteria to be considered for adoption:

- Be technically relevant to specific NASA mission needs
- Be applicable to multiple programs within the Agency
- Have applicability to future or continuing programs
- Permit the replacement/consideration/retirement of existing NASA or other Government standards in use by NASA.

OFFICE OF PRIMARY RESPONSIBILITY (OPR)

Responsible For:

- Maintaining contact with the preparing organization for standards adopted by NASA. Includes monitoring the maintenance of the standard and representing NASA's position in subsequent updates of the standard by the Voluntary Consensus Standards body.
- Providing the NASA Standardization Program Office notice of updates (revisions, editorial changes, cancellations, etc.) on NASA adopted standards.

Not Responsible For:

- The technical content of the adopted standards or for responses to technical questions pertaining to the standard.

NASA Center OPR Assignments

PREPARING ORGANIZATION	NUMBER OF STANDARDS
AFS	3
AIAA	1
AIIM	4
ASHRAE	2
ASME	5
ASTM	178
AWS	12
AWS	5
CABO	1
CGA	2
CPIA	1
EIA	1
IEEE	7
IHS	1
IPC	28
ISO	9
NCSL	1
NEMA	3
NFPA	2
NSC	1
SAE	147
TOTAL	*414*

Center	No. of Stds
GSFC	35
JPL	91
JSC	72
KSC	28
LaRC	60
MSFC	128
TOTAL TO DATE	**414**

A111 Report - 1997

Agency Participation in VCS Bodies (155 participants in 47 Org.)

	ARC	DFRC	GSFC	HQ	JPL	JSC	KSC	LaRC	LeRC	MSFC	SSC
Reps.	9	11	28	3	44	5	14	9	19	11	2
Comm.	12	11	21	5	86	12	32	11	17	9	3

No. of VCSs agency has adopted

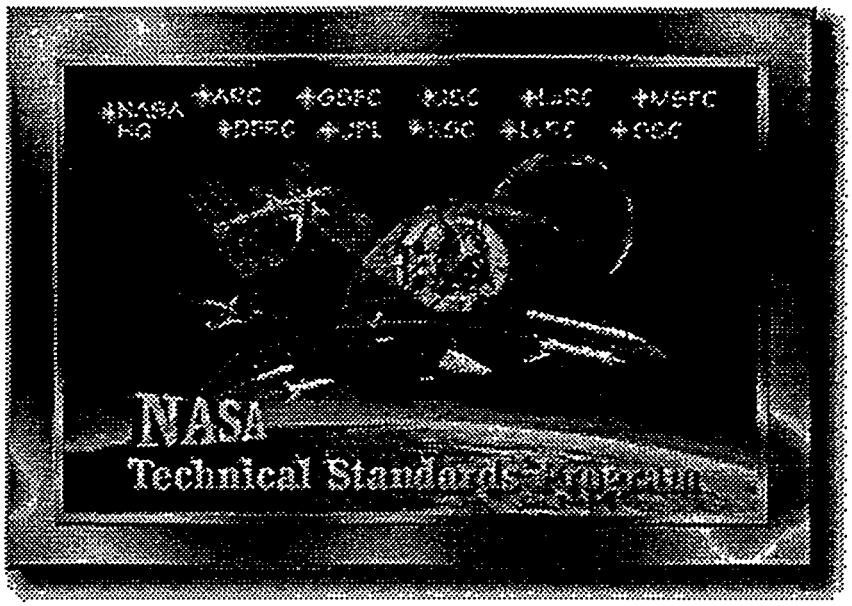
- Identification of 414 candidate VCSs as potential for adoption by the Agency

No. of VCSs substituted for Government Unique Standards

- KSC has canceled and/or replaced 92 Government documents with VCSs
- JPL has eliminated 300 internal standards and 100 additional Gov't standards; VCSs replacements being sought.

Standards replacement reporting

- NASA has chosen a "Categorical" (Standards Management System) approach for Reporting use and exceptions to use of VCSs.



New Information

Program Overview

NASA Preferred Technical Standards

NASA Technical Standards Under Development

Standards Products Pending Adoption

Search For Standards Products

NASA Participation in Standards Developing Organizations

Other Standards Developing Organizations

Supporting Documents

OMB Circular No. A-119
NASA Policy Directive 8070.6a

NASA Homepage

Comments

Welcome to the NASA Technical Standards Program website. This website is sponsored by the Office of the Chief Engineer as a common access point for preferred standards developed by NASA and those adopted for use on NASA programs. Adopted standards are those Types of Standards Products developed by other government, national, and international organizations. The primary emphasis is placed on the use of **"preferred"** standards which have been selected, via the NASA Engineering Standards Steering Council, based on a consensus of the NASA Centers.

NASA developed standards are available on line from this site and without charge. A listing of NASA adopted voluntary consensus standards is also available from this site, but the standards must be obtained from the sponsoring organizations, which generally impose a charge. Additional information on voluntary consensus standards is available at the respective website for the sponsoring organization.

Contacts:
Program Manager (Dr. Gabriel Wallace)
Program Coordinator (Paul Gill)
Curator (David Wood)
Responsible Official for Web Site (Steve Deutschendorf)
Last modified on 7/9/98

NASA Technical Standards Homepage

http://standards.nasa.gov

Contents Summary

- New Information
- Background on Program Development and Scope
- Master List of NASA Preferred Standards
- NASA Technical Standards Under Development
- National and International Voluntary Consensus Standards Pending Adoption
- Search for Standards Products
- NASA Participation in VCS Organizations
- Other Standards Organizations Links

What's Next

- **Increase use of Voluntary Consensus Standards (VCS).**
  - Recommend additional VCS products for adoption
  - Identify Government standards, including individual NASA Center level documents, for replacement with VCSs.
  - Realign participation in VCS development to confirm relevance to NASA needs, and to improve coordination .
- **Continue Selective Development of NASA Technical Standards**
  - Where VCSs do not exist or are not practical for use (such as safety, NASA-unique,etc.)
  - To capture "lessons learned" - e.g. as transition documents
  - For use on "in-house" activities (such as ICDs)
- **Implement NASA-wide Awareness Program on VCS**

OMB CIRCULAR A-119 IMPLEMENTATION

STANDARDS MANAGEMENT ACTIVITIES AT THE U.S. DEPARTMENT OF ENERGY

Richard L. Black, Director
Office of Nuclear Safety Policy and Standards
Office of Environment, Safety and Health
U.S. Department of Energy

Richard J. Serbu, Manager
DOE Technical Standards Program
Office of Nuclear Safety Policy and Standards
Office of Environment, Safety and Health
U.S. Department of Energy

Presented at the Federal Technical Standards Workshop
L'Enfant Plaza Hotel
Washington, D.C.

August 5, 1998

OMB CIRCULAR A-119 IMPLEMENTATION

STANDARDS MANAGEMENT ACTIVITIES AT THE U.S. DEPARTMENT OF ENERGY

When President Clinton signed the National Technology Transfer and Advancement Act (NTTAA) into law in March of 1995, the Department of Energy was already well into establishing a solid basis for the use of voluntary consensus standards across the Department. Further reinforcement came from the revision of OMB Circular No. A-119, with its "plain language" policy and guidance on implementing the NTTAA. The Department of Energy has already undertaken a number of initiatives directed at promoting the use of voluntary consensus standards by DOE, its laboratories and other contractors, and establishing a standards-based culture within the Department. These actions extend through the Department's regulatory, management, and procurement standards and activities, and include:

* **Integrated Safety Management** - a Department-wide system for identifying and managing work and hazards related to work. ISM applies to DOE and its contractors at all levels of management and for all levels of work. A Standards Management Integration Team (SMIT) is guiding the effort. The five essential functions of ISM include:

- Define Work
- Analyze Hazards
- Establish Controls
- Perform Work
- Feedback and Improvement

* **Department Standards Program** - a department-wide effort to establish standards as the basis for work, based on the work hazards. The DSC home page with Program information is viewable at URL: **http://www.dsc.doe.gov/**

* **Criteria for the Department's Standards Program** - criteria that describe what the Department will look like when we reach our goals (DOE/EH/-0416, August 1994)

* The **Department Standards Committee** - a standards policy body composed of senior DOE managers that crosscuts all major DOE organizations and is chartered to:

- establish DOE standards policy
- identify barriers to a standards-based culture
- work with DOE organizations to help remove barriers and implement the Department Standards Program

* **Work Smart/Necessary and Sufficient Process** - a decision making and closure process to identify and specify the standards that apply to a given activity and reach agreement on their adequacy

* **DOE Directives System** - a hierarchy of standards consisting of Policy, Requirements, Guides, and Technical Standards, used to develop internal guidance for DOE. DOE Directives are viewable at URL:

http://www.doe.explorer.gov

* **Technical Standards Program (TSP)** - DOE-wide system for identifying suitable voluntary consensus standards or developing necessary internal technical standards, participating and coordinating with Standards Development Organizations, and tracking participation in non-government standards activities. This Program provides the means for meeting the requirements of the NTTAA and the policy of OMB A-119. DOE's TSP Procedures, program information, and technical standards are posted in readable and printable format at URL:

http://apollo.osti.gov/html/techstds/techstds.

***DOE Topical Committees** - DOE has established a number of topical committees in various technical areas (e.g., fire protection, EMS, Metrology, Lab Accreditation) to coordinate technical standards development in these areas and work with other Federal agencies and SDOs on technical standards activities.

* **Requirements Reduction (Policy/Standards-Process Improvement Team)** - DOE identified, extracted, and consolidated requirements in government documents, rewrote key sets of requirements (orders and rules)

* **Conversion of DOE Orders to Rules** - converts contractual requirements to performance-based regulatory requirements to provide a stable and predictable platform for the importation of requirements

* **Implementation Plans** - enforceable plans to connect performance-based requirements to technical standards, processes, and methods on how to achieve performance expectations

* **Regulation Writer's Handbook** - provides general guidelines regarding the Department's rulemaking process and how to plan, write, coordinate and publish a rule, and handle public participation.

OMB CIRCULAR A-119 IMPLEMENTATION

STANDARDS MANAGEMENT ACTIVITIES AT THE U.S. DEPARTMENT OF ENERGY

* Integrated Safety Management

* Department Standards Program (http://www.dsc.doe.gov/)

    * Criteria for the Department's Standards Program

    *Department Standards Committee

* Work Smart/Necessary and Sufficient Process

* DOE Directives System (http://www.doe.explorer.gov)

* Technical Standards Program (TSP)

    (http://apollo.osti.gov/html/techstds/techstds)

*DOE Topical Committees

* Requirements Reduction
    (Policy/Standards-Process Improvement Team)

* Conversion of DOE Orders to Rules

* Implementation Plans

* Regulation Writer's Handbook

Gregory E. Saunders
U.S. Department of Defense

Abstract

MIL SPEC Reform—Preparing for the Next Century

Mr. Saunders will briefly describe the results of MIL SPEC Reform since it began in 1994, highlighting a few success stories. He will also discuss the new organizational changes in the standardization program, the outlook for the new Defense Standardization Council, and the process being used to develop a clear stratigic direction for standardization for the future. The Defense Standardization Program will be directing much more attention to helping to make good, business-based standardization decisions. Five areas have been identified for making dramatic improvements in integrating standardization into the acquisition process—these will be discussed along with what some of the potential improvements might include.

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Wednesday, August 5, 1998

Session 5: *Strategic Standardization*

Speakers: Bob Walsh
Diego Betancourt
Don Williams

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1998
Federal Technical Standards Workshop

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Presentation Outline

- Subject as defined in the Agenda
- Why is it important?
  - **Real World**
- How you can approach the subject
- Why should your management believe it is important?
- Where do you go from here?
  - **"Best in Class" model for comparison or T.I.**
    - **Tedious Improvement**
- Strategic Standardization
  - **Examples**
  - **Success stories**

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Subject as Defined in the Agenda

"Best in Class is not a random chance occurrence. Similar to other business processes, the standards management activity is most effective when its role is recognized in company or organization business plans and supported through active senior management involvement. The speakers in this session will discuss example situations of searching for or applying a strategic approach to standards management."

Subject Defined in the Agenda

Components

- Best in Class
- Business Process/Standards Management
- Role in Organizational Plans (and) Processes
- Support through Active Senior Management Involvement
  - **Senior and Mid Management**
    - **Senior - Great**
    - **Mid - Not enough time and travel money**
- Strategic Approach to Standards Management
  - **Examples**

Why is it Important?

Strategic Standardization and Best in Class

- Who has succeeded?
  - **Speakers (H. Line and M. Gorman)**
    - **Mega examples:**
      Ray Kroc
      Sam Walton
      Bill Gates
- Where does it work?
  - **Any organizational function**
    - **Speakers example: Strategic Planning, R&D, Marketing**
- How do you start?
  - **Think Best Practices/Rethink**
    - **Consortia example**

How Do You Approach the Subject?

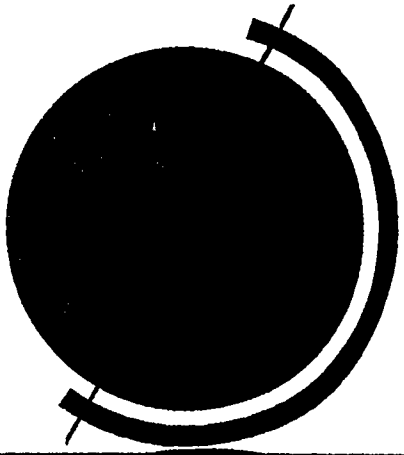
Background

1) Standards are good/bad
2) Standardization is good/bad
3) Strategic standardization is good/bad

Bottom Line:

Three tools that can only be judged by how they are used

(Walton, Kroc, Gates examples)



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How Do You Approach the Subject?

Action

Begin on neutral ground with a need driven base

A) Define the needs

B) Define the advantages of meeting these needs:
- Quantitatively
- Qualitatively

C) Identify how A & B fit into the organization's current "hot buttons" and needs profile (and your group(s)).

D) Develop a plan to make it happen!
- Utilize the "Best Practices" approach as a key part of the plans (Remember T.I.)

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Why Should Your Management Believe It Is Important?

- You have developed a solid case to move the initiative forward, including:
  - **Agency Specific (Horizontal Best Practices)**
  - **Needs and Benefits Driven**
  - **Integrated into Major "Hot Buttons" and Programs**
  - **Pre-wire a "Godfather's Support and Support Team**
  - **Introduce an "Outside" Influence (Einstein Complex)**
  - **Clearly Define Who Does What, When, the Costs and Deliverables**

Where Do You Go From Here?

- Define what needs your organization has that strategic standardization may help
- Define what advantages and benefits could be gained
  - **Qualitative**
  - **Quantitative**
- Evaluate whether
  - **Strategic standardization can help (think of the opposite)**
  - **Best Practices can help (Better practices & tedious improvement can be deadly)**
- Let's look further - - -

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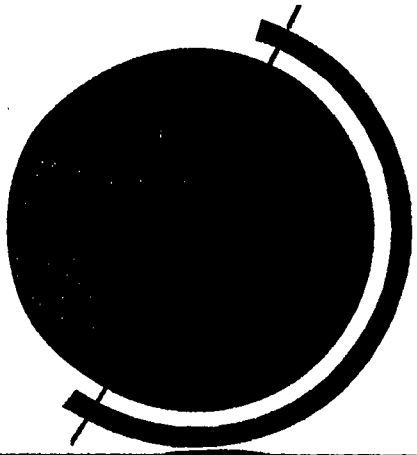
Where Do You Go From Here?

Considerations:

1. a) What do I need?
   b) Who does it best?
   c) How do I find out?
   d) How do I adapt and integrate the Best Practices?
   e) How do I find out what I need that I don't know I need?

2. - Best in Class (Modular)
   - Best Practices

3. - Benchmarking
   - Comparative Study
   - "Commercial Tourism"



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Standards
&
Competitive Advantage

Presented by
Diego Betancourt
Polaroid Corporation
at the
Federal Technical Standards Workshop
Washington, D.C.
August 5, 1998

Agenda

Theory

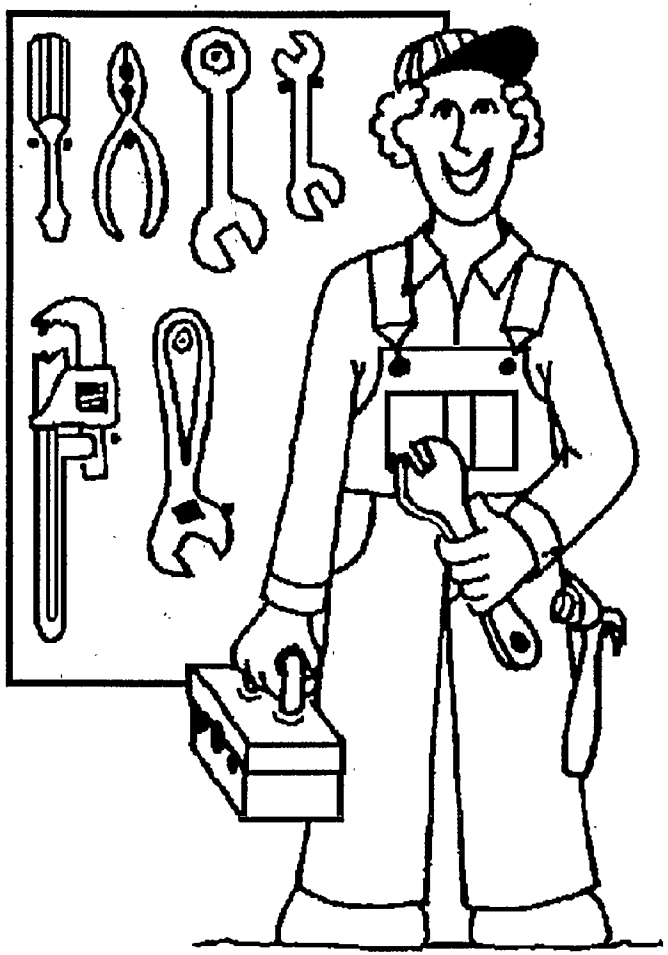
- Premises and definitions
- Competitive Advantage Big Picture
- Global Trends in Conformity Assessment
- Conformity Assessment & Standards
- Business Considerations
- Suggested Strategic Approach
- Steps to Success

Practice

Premise #1

Running a profitable business is the first priority.

Premise #2



Standards are business tools. They must be used appropriately and for their intended purpose.

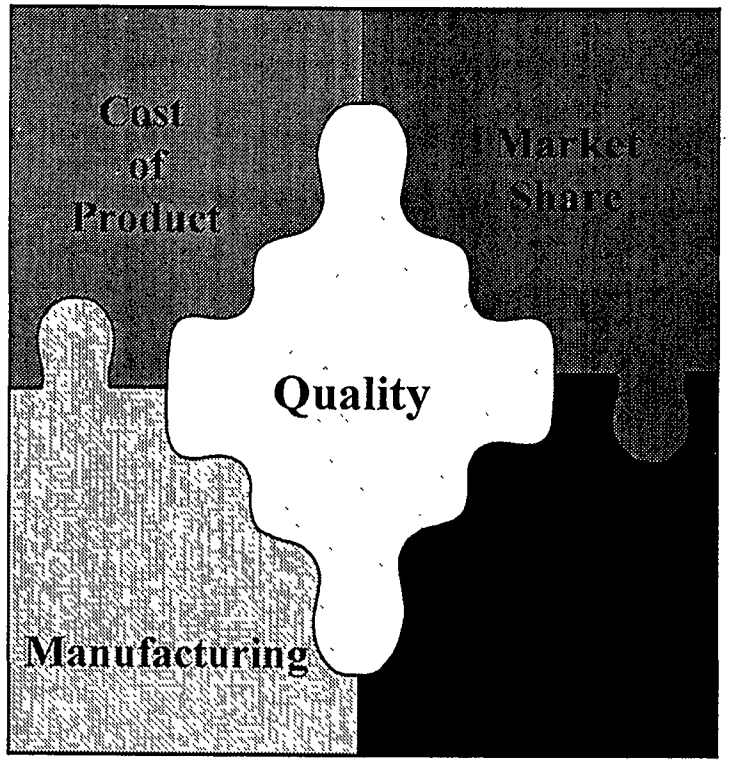
Competitive Advantage

Having an advantage, relative to competitors, in a number of areas such as management capabilities, resources, technology, manufacturing, distribution channels, product cost, differentiation and quality, financial position, brand image, market share, etc.

The appropriate use of standards has a significant role in an organization's ability to enhance or maintain its competitive advantage.

Premise #3

Competitive Advantage



Standards and standardization have a direct relationship with many elements of strategic competitive advantage.

"World Class" performance is a moving target

Therefore...

> **"Tomorrow's competitive advantage has to be different than today's.**
>
> **We are still working with the tools of the 80's in the 90's."**
>
> Hamel & Prahalad - *Competing for the Future*

"New" Global Philosophy

There is a growing trend and emphasis for assessing conformity to requirements specified in standards...

as in product standards, i.e. UL, CE Mark, etc.

and

a global trade policy trend towards 3rd-party management system registrations like ISO 9000

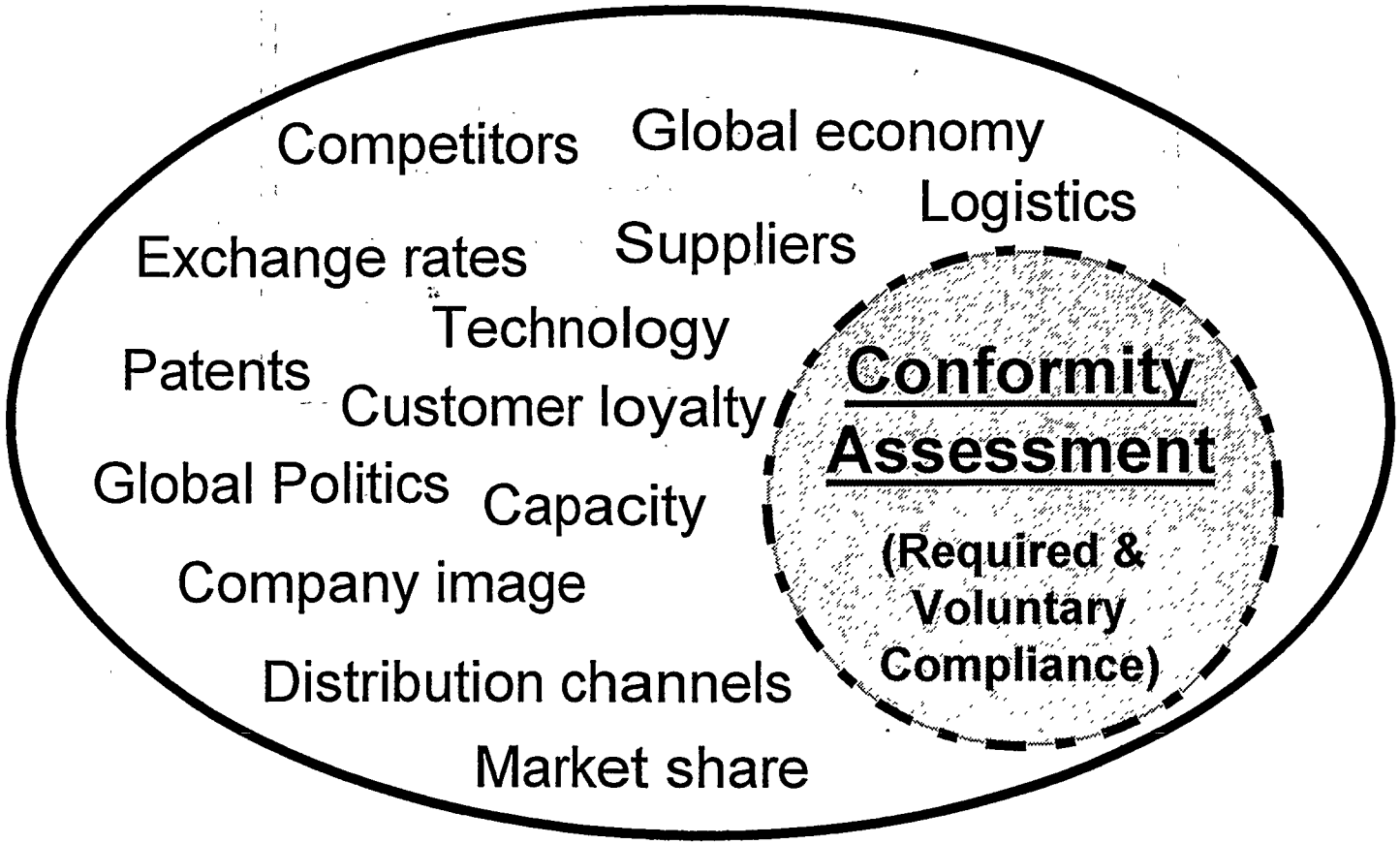
Do you think these trends affect competitive advantage?

Let's take a look

What are the big picture issues that have the potential to affect your company's...

- profitability?
- competitive position?
- business operations ?
- facilities/plants?
- people/community?
- public relations/perception?

Some Areas that Affect Competitive Advantage



and others...

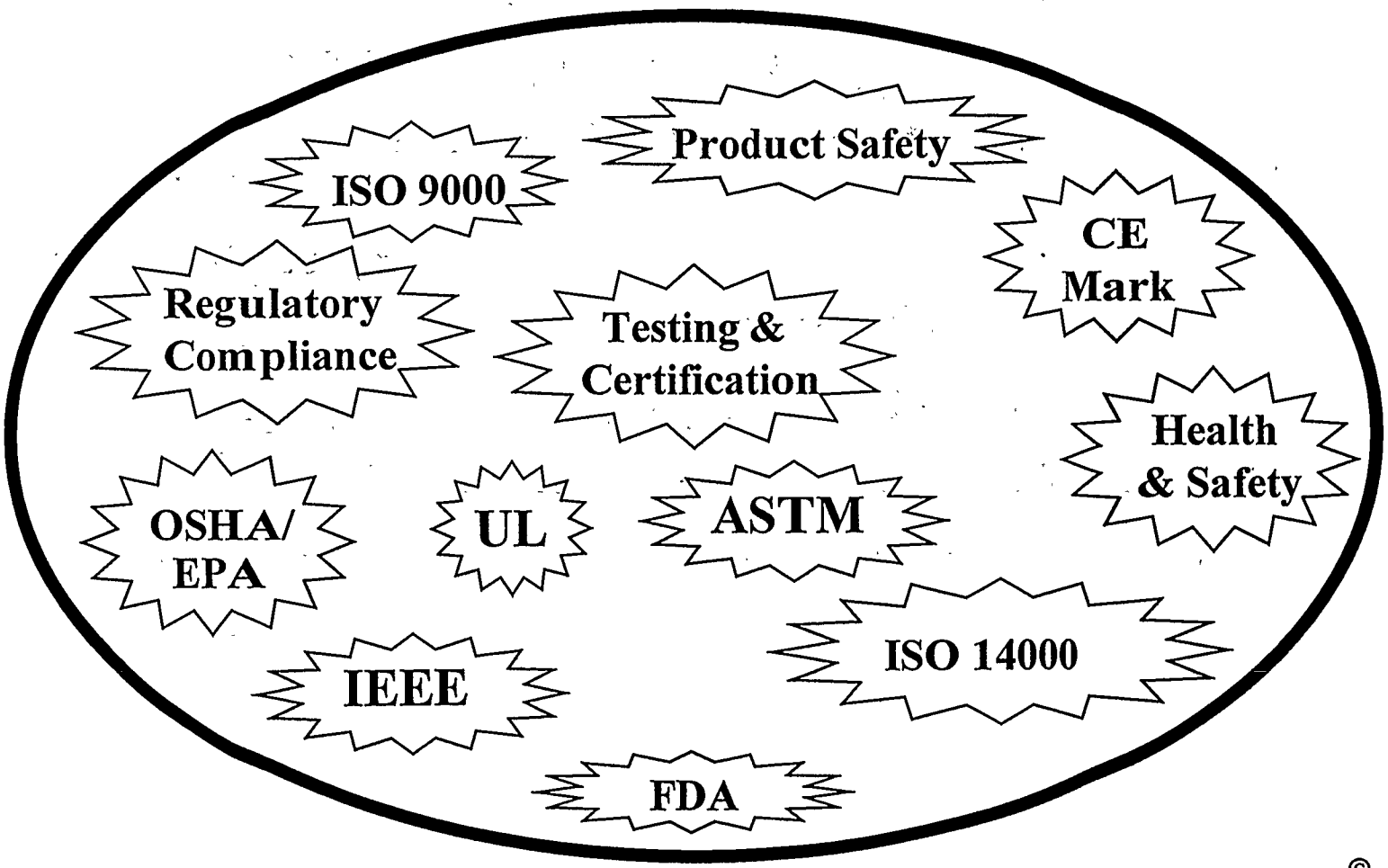
Conformity Assessment

The term industry uses to define all procedures to assess and determine whether a product or process conforms to a specified standard, regulation, or directive.

For example, UL listing, USFDA, the CE Mark, TUV, and ISO 9000 are all forms of Conformity Assessment

Conformity Assessment

(Required & Voluntary Compliance)



ISO 9000

Testing & Certification

Regulatory Compliance

CE Mark

Product Safety

You can call them anything you want...
<u>but they are all based on standards</u>!!

UL

Health & Safety

OSHA/ EPA

IEEE

ASTM

ISO 14000

FDA

Conformity Assessment

There are two very different perspectives...

Customer:

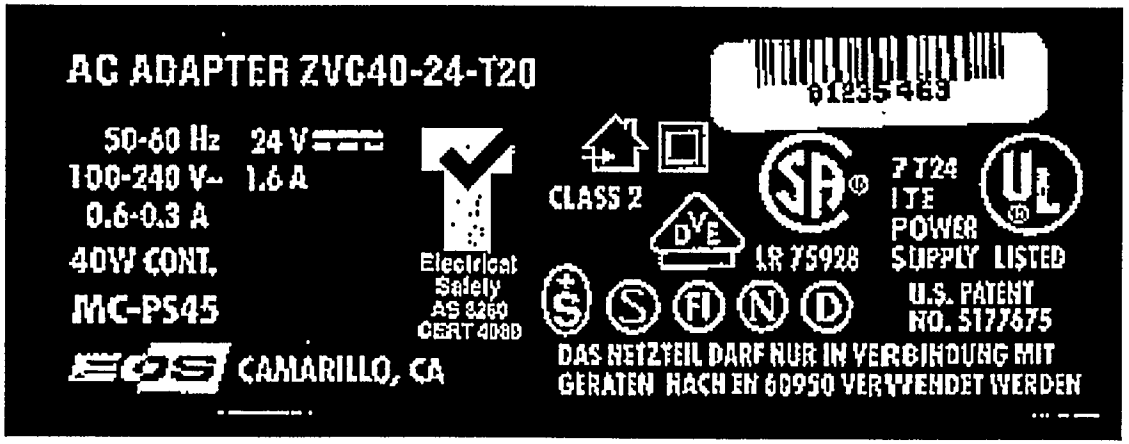
- Do they care?
- Will it influence the decision to buy or not buy?

Company:

- Required or voluntary?
- Benefits vs. penalties?
- Cost of doing vs. not doing?

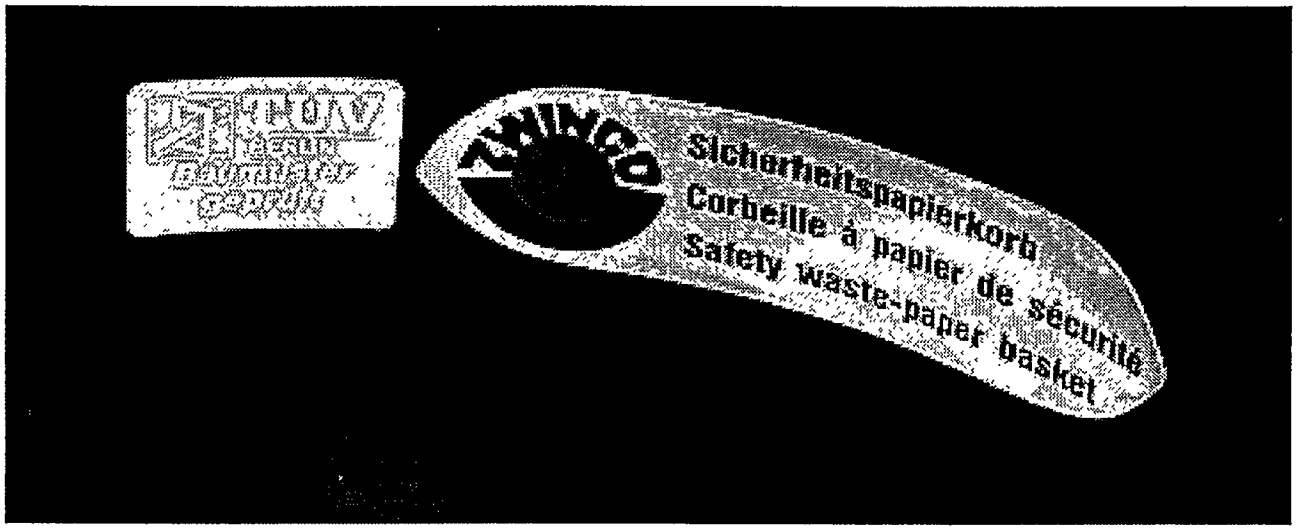
For example...

- Does the customer know what all this means?
- Does the user of the product care about the labels?
- Do these marks influence the decision to buy?
- Is this a smart use of Conformity Assessment?



Conformance "Marks" on a laptop power adapter magnified 200% for easier viewing.

Is this a smart use of Conformity Assessment?



TUV "Certified" Safety Waste Basket used by a German Hotel

CE Marked. Tested to the toy directive.

Does the company care?

- It must!!!
- A company cannot be exposed where there are regulatory, legal, or trade requirements.
- And it must have a coordinated strategy to minimize the cost of conformity assessment.

How does it affect Competitive Advantage?

If you must conform,

you should do it smartly!

Because...

the real issue is enhancing competitive advantage and operating efficiencies

Does any one know the total cost of conformity assessment for a product your organization sells?

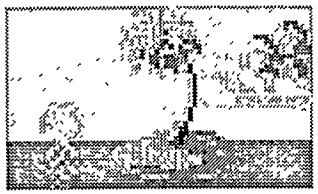
- One-time?
- Recurring?
- Internal?
- Third-party?
- Manpower?
- Administrative
- Auditing?

Danger!!

Conformity Assessment schemes are costly to begin with, specially if implemented through fragmented strategies.

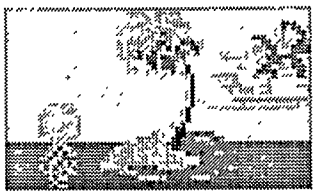
The more diverse the business is, the greater the danger of incongruous implementations, with significant additional costs. Non harmonized implementation strategies can result in missed opportunities due to non-conformance.

How are these managed in your organization?

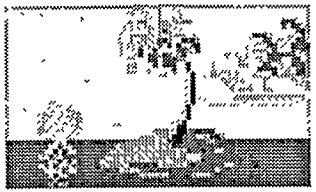


ISO 9000

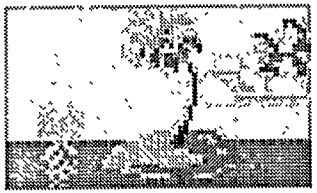
Standards



CE Mark

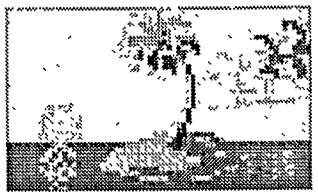


Product Safety



Quality

Testing & Certification



ISO 14000

The Strategic and Proactive Management of these Issues is More Critical Than Ever!!

A Suggested Strategy

Vision (Moving Towards World Class/ best practices)

Integrate and coordinate conformity to global voluntary and required standardization schemes with a unified strategy that is linked with other business activities in a way that enhances competitive advantage.

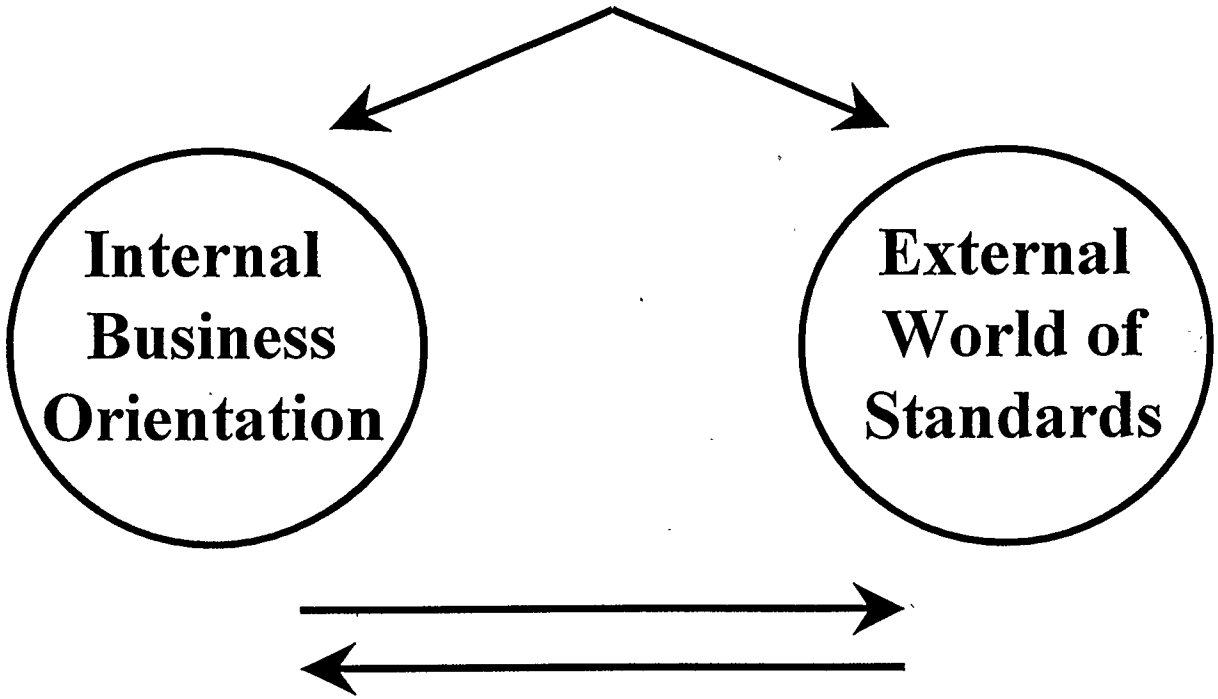
Objective

Enhance operating and cost efficiencies by leveraging resources, skills, and funds for all similar conformity schemes.

Strategic Premises

- A recognition that the global business environment is continuously changing in the area of conformity assessment.
- Proactively looking 3-5 years out to identify emerging best practices to achieve a competitive edge. This is a necessary activity required to position an organization at the forefront of future major global developments. (Proactive vs. reactive mode)
- Recognition of the added operational value when issues of corporate significance and dollars are strategically managed through an appropriate infrastructure.
- Implement solutions that support the coordination of previously fragmented responsibilities and implementation strategies.

Two-Prong Strategic Focus



Coordination of corporate business strategy with standardization activities to enhance competitive advantage

Two-Prong Strategic Focus

Internal
Business Orientation

Implementation through:

- Compliance with regulations
- Conformance to standards
- Quality standards
- Health & safety standards
- Environmental standards
- Education and awareness
- Manufacturing
- Product delivery process

External
World of Standards

Participating and monitoring:

- Global standardization trends
- Standards Developing Organizations
  - ISO, ANSI, ASTM, consortia, etc.
- Regulatory & legislative standards
  - Health, Safety & Environmental
  - CE Mark
  - UL, CSA, GS, TUV, etc.
- Governance of standards bodies

Strategic coordination of activities for maximum efficiencies to help meet business objectives

Steps to Success

- Take time to understand what's at stake.
- Identify and prioritize critical issues.
- Focus on a long term solution.
- Define the strategy and objectives.
- Integrate the strategy with the business plan.
- Establish metrics for deliverables.
- Actively participate in industry associations and standards developing fora to monitor developing trends.

It's easier to make decisions when you know what's going on!

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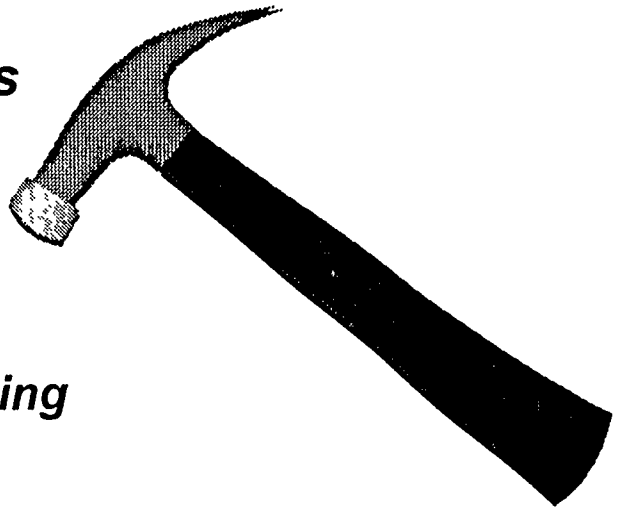
How Federal Agencies Could Take A More Strategic Approach To Standards Management

Presented at the 1998
Federal Technical Standards Workshop

Don Williams, Oak Ridge National Laboratory
August 5, 1998

Path Forward

- White House endorsement of value to Federal agencies of strategic approach to standards management
  - Executive Order or NPR/GPRA initiative
  - Tasked to agency executives
  - Reflect in strategic/business plans
  - NIST to lead through ICSP
- Next "best" opportunity
  - September 1998
    - National Standards Strategy meeting
    - World Standards Day

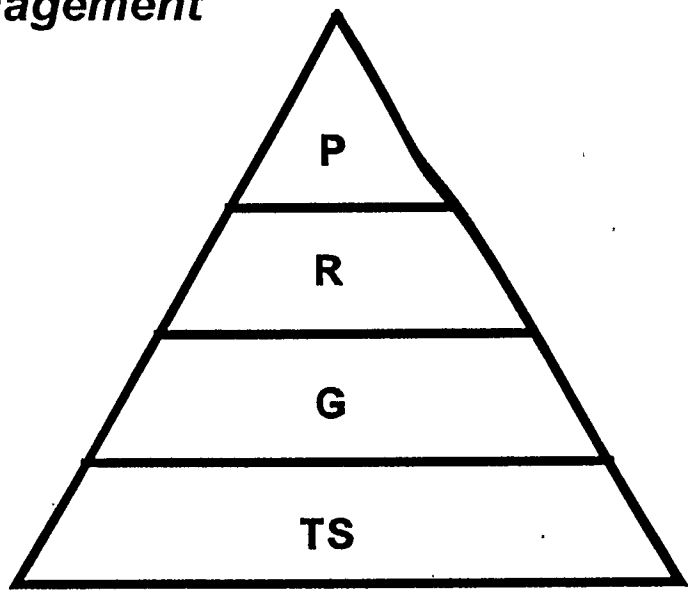


Path Forward (continued)

Adopt DOE model of directives

- Reengineer rules/regulations
  - Move to plain language/performance-based documents
- Drive technical requirements down in hierarchy
  - Handle through standards management

  - P = Policy documents
  - R = Requirements documents
    - rules, orders, regulations
  - G = Guidance documents
  - TS = Technical Standards



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Wednesday, August 5, 1998

Session 6A: *Voluntary Standards Activities of Interest to Federal Agencies*

Speakers: Dan Smith
Tony O'Neill
Gerry Eisenberg
Paul Orr
Jim Moore
Jean-Paul Emard

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ASTM
A World of Opportunity

Daniel Smith
Staff Manager, ASTM

ASTM

- 132 Technical Committees
- 10,000 Full Consensus Standards
- 34,000 Members
- 100 Countries

Federal Government & ASTM

- **Over 3,000 ASTM Standards Referenced**
- **1500 Government Reps**

Who's Participating?

- DOD (420)
- NIST (235)
- HHS (88)
- EPA (76)
- DOI (69)
- DOE (24)
- FTC (2)
- VA (11)
- NRC (12)
- NASA (72)
- DOT (74)
- USDA (64)
- Treasury (31)
- CPSC (21)
- GSA (9)
- Labor (10)
- HUD (5)
- Postal Serv (5)
- Justice (4)

DOE Participation - 24 Members

- Nuclear Technology
- Steel
- Concrete
- Nuclear Fuel Cycle
- Advanced Ceramics
- Petroleum
- Coal
- Soil and Rock
- Water
- Electrical Insulating
- Computerized Systems
- Electrical Protective Equipment

and more.....

NRC Participation - 12 Members

- Nuclear Fuel Cycle
- Nuclear Technology
- Fatigue and Fracture
- Geosynthetics
- Security Systems
- Composites
- Water
- Activated Carbon

NASA Participation - 72 Members

- Fatigue and Fracture
- Advanced Ceramics
- Corrosion
- Compatibility & Sensitivity of Materials in Oxygen Enriched Atmospheres
- Mechanical Testing
- Composites
- Aerospace and Aircraft
- Nondestructive Testing
- Metallography
- Filtration
- Petroleum Products

FDA Participation - 69 Members

- F-4 Medical and Surgical Devices
- Rubber
- Flexible Barrier Materials
- Nuclear Technology
- Anesthetic and Respiratory
- Ceramic Whitewares
- Conformity Assessment
- Emergency Medical
- Protective Clothing
- Plastics
- Mechanical Testing
- Biotechnology
- ...and more

EPA Participation - 76 Members

- Environmental Assessment
- Biological Effects and Environmental Fate
- Soil and Rock
- Waste Management
- Water
- Paint
- Petroleum Products and Lubricants
- Sampling and Analysis of Atmospheres
- Pesticides
- Performance of Buildings
- ...And more

HUD Participation - 5 Members

- E-6 Performance of Buildings
- Solar, Geothermal and other Energy Sources
- Environmental Risk Management
- Vacuum Cleaners

Federal Highway Participation - 10 Members

- E-17 on Vehicle Pavement Systems
- D-4 on Road and Paving
- F-16 on Fasteners
- A-1 on Steel
- D-18 on Soil and Rock
- C-9 on Concrete
- E-43 on SI Practice
- F-17 on Plastic Pipe

Session 6A: Voluntary Standards Activities of Interest to Federal Agencies

1998 FEDERAL TECHNICAL STANDARDS WORKSHOP

August 4-6, 1998

Washington, D.C.

Tony O'Neill
National Fire Protection Association

NFPA®

Introduction

Anthony R. O'Neill
Vice President, Government Affairs
National Fire Protection Association
703-516-4346 (Office)/703-516-4350 (Fax)
Email: wdc@NFPA.org

NFPA

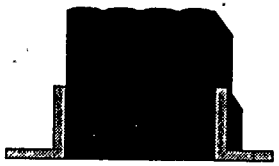
WHAT IS NFPA?

- National Fire Protection Association
- Founded in 1896
- Private, Non-Profit, Voluntary Codes and Standards Developer
- ANSI Accredited Organization
- Membership Organization - 69,000
  - Members in U.S. and 79 Nations

NFPA®

WHAT IS NFPA? Cont'd

- Codes and Standards



- Public Education

- Research

- Mission - "...To Reduce the Burden of Fire on the Quality of Life..."
- Focus - Fire Safety, Electrical Safety, and Related Hazards

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NFPA Codes and Standards

- Subject Areas:
  - Electrical Installation
  - Building Fire Protection and Life Safety
  - Fire Protection Systems and Equipment
  - Special Occupancies and Equipment
  - Chemicals and Hazardous Materials
  - Fire Service Equipment, Safety and Health
  - Participate in Other Codes and Standards Activity: ANSI, IEC, ISO, ASTM, ASME, CEC, Model Building Codes, etc.

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NFPA Codes and Standards

- Recognized State-of-the-Art, Timely Input of New Technology
- Codes - "When and Where" (e.g. National Electrical Code®, Life Safety Code®)
- Standards - "How" (e.g. Automatic Sprinklers, Liquefied Petroleum Gases)
- Most NFPA Codes and Standards Relate to the Built Environment.

U.S. Codes and Standards System

- Driven by Private Sector Voluntary Codes and Standards Organizations

- Adoption and Enforcement of Codes and Standards at three levels:
  - Federal
  - State
  - Local - City, County, Town...

NFPA

Why Voluntary Private Sector Codes and Standards?

- Cost Effective - Little or No Cost to Public
- Revised Periodically - State-of-the-Art
- Process Accessible to All
- Process Attracts Participation of All Interests - Public and Private
- Focused on Participants' Technical Interests
- Reduced Liability For Local Jurisdictions

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NFPA Codes and Standards Adopted and Used By:

- Federal Government
  - HHS - Health and Human Services Admin.
  - OSHA - Occupational Safety & Health Admin.
  - GSA - General Services Administration
  - DOD - Department of Defense
  - FAA - Federal Aviation Administration
- States, Counties, Cities, and Towns
- Architects, Engineers, and Designers
- Building Code Organizations
- Insurance
- Industry

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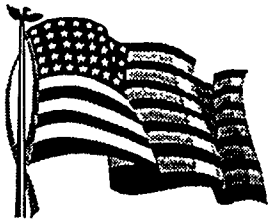
Federal Regulations



- Public Health & Safety
- Inter-State Activities
- Examples:
  - Environmental Protection Agency
  - Federal Aviation Administration
  - National Transportation Safety Board
  - Occupational Safety and Health Admin.
  - Nuclear Regulatory Commission
- Many Based Upon Voluntary, Private Sector Codes and Standards

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NFPA Codes and Standards Adopted and Used Internationally

- Governments
- Corporations - Multinationals
- Insurers - U.S. and non-U.S. based
- Architects, Engineers and Designers
- International Organizations

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NFPA Codes and Standards Process

- Open Consensus Process - Encourages Innovation, Accessible to All
- Broad Based Committee Membership
- International Participation in Process
- Technically Skilled Staff Oversee Process and Support Users with Handbooks, Training, and Advice

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NFPA Codes and Standards Process

- Member of ANSI - American National Standards Institute
- Accredited Consensus Process:
  - ~5400 Committee Members
  - 210 Committees
  - 290 Documents
  - 1/3 Balance by Interest Category
  - 2/3 Consensus to Change Document

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NFPA Codes and Standards Process Cont'd

- Categories of Interest
  - Users
  - Manufacturers
  - Enforcers
  - Testing/Research
  - Special Experts
  - Insurance
  - Installer/Maintainer
  - Consumer
  - Labor

NFPA Codes and Standards Process Cont'd

- Staff Liaison
  - Technical Expert
  - Administrator
- Steps in Process
  - Enter Revision Cycle
  - Call for Proposals
  - Committee Acts on Proposals
  - Publish Actions on Proposals - ROP
  - Call for Comments
  - Committee Acts on Comments
  - Publish Actions on Comments - ROC

NFPA Codes and Standards Process Cont'd

- Adopted at NFPA Meetings
  - Two Per Year
  - Floor Debate
  - Voted on By Membership
- Released by Standards Council
- Cycle Time - 22 Months

- Disputes
  - Standards Council

Federal Use of Private Sector Standards

- OMB A-119 (since 1983)
  - Federal Government Staff Participation in Private Sector Standards Development <u>and</u> Urges Adoption of Standards for Carrying Out Public Policy.
- P.L. 104-113 "Technology Transfer Act"
  - Codifies OMB A-119
  - Directs "All Federal Agencies and Departments Shall use Technical Standards that are Developed or Adopted by Voluntary Consensus Standards Bodies, Using such Technical Standards as a Means to Carry Out Policy Objectives..."

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Federal Participation in NFPA Projects

- HHS, GSA, OSHA - Life Safety Code®

- EPA, DOT - Hazardous Materials
- FAA - Aviation Facilities

- MSHA - Mining
- DOE - Nuclear Facilities
- Coast Guard, OSHA - Marine

- OSHA, CPSC - National Electrical Code®
- DOD - Various

Projects Requested by Federal Regulators

- OSHA
  - NFPA 70E - Electrical Safety Requirements for Employee Workplaces
- EPA
  - NFPA 2001 - Clean Agent Fire Extinguishing Systems
- Coast Guard
  - NFPA 301 - Merchant Vessel Fire Protection
- CPSC
  - NFPA 720 - CO Detector Installation

How Can You Participate?

- Join a Committee
- Submit Proposals
- Submit Comments on Committee Actions on Proposals
- Attend Committee Meetings
  - Discuss Submittals
  - Present New Research/Problems
- Follow Activity in ROP's and ROC's

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How Can You Participate? cont.

- Attend NFPA Semi-Annual Association Meetings
  - Move Proposals and Comments
  - Participate in Floor Debate
  - Vote (Members)
- Appeals Process
- Recommend New Projects

NFPA

Electronic Access to NFPA

- NFPA's Homepage: www.NFPA.org
- Contains
  - News, press releases, product information, fire investigation reports, calendar of events, staff directory and E-mail addresses, ROP's and ROC's, membership information, hot links to other organizations
- ROP's and ROC's Browseable via Adobe Acrobat
- Proposals and Comments can be Viewed and Submitted Electronically

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Presentation at 1998 Technical Standards Workshop

August 5, 1998

ASME NUCLEAR CODES AND STANDARDS: SCOPE OF COVERAGE AND CURRENT INITIATIVES

G. M. Eisenberg
Director, Nuclear Codes and Standards
The American Society of Mechanical Engineers

ASME
Codes and Standards Development

- Council on Codes and Standards
- More than 600 Published Codes and Standard and Guides
- More than 120 Main Committees (consensus bodies)
- Nearly 4000 volunteers
- Government Supported Members
- ASME Engineering Staff Support

ASME
Board on Nuclear Codes and Standards

Manages codes and standards activities of:

- Committee on Qualification of Mechanical Equipment In Nuclear Power Plants (QME)
- BPV Subcommittee BPV on Nuclear Power (SC III)
- Joint ACI/ASME Committee on Concrete Pressure Components (BPV III-2)
- BPV Subcommittee on Nuclear Service Inspection (SC XI)
- Committee on Operation and Maintenance of Nuclear Power Plants (O&M)
- Committee on Nuclear Quality Assurance for Nuclear Facilities (NQA)
- Committee on Nuclear Air & Gas Treatment (CONAGT)
- Committee on Cranes for Nuclear Facilities (CNF)
- Committee on Nuclear Risk Management (CNRM)

Consensus Process

- Openness
- Balance of Interest

  manufacturers of Pressure equipment

  manufacturErs of materials

  federal, state and lOcal jurisdictions and regulations

  authorized insPection agencies

  genera L interest

  ownEr user

- Due Process

Qualification of Active Mechanical Equipment Used in Nuclear Power Plants

- QME-1-1997
  - Confirm adequacy of equipment to function over range of service conditions
  - Currently covers pump and valve assemblies

BPV Section III

Rules for Construction of Nuclear Power Plants Components

- Covers components and supports
- Scope: new construction
- Considers stresses due to cyclic operation
- Division 1 - Subsections for Classes 1,2,3, MC Components, Components Supports, Core Support Structures
- Division 2 - Concrete Reactor Vessels and Containments
- Division 3 - Containment System for Nuclear Spent Fuel or High Level Waste Transport Packaging

BPV Subcommittee on Nuclear Inservice Inspection (SC XI)

- Rules for Inservice Inspection of Nuclear Power Plant Components - Section XI
  - Coverage: examination, inservice inspection, repair and replacement of NPP components and systems
  - Mandatory program of scheduled activities required to demonstrate safety
  - Two Divisions in one Volume
    - Division 1 - Light Water Cooled
    - Division 3 - Liquid Metal Cooled

[Division 2 - High Temperature Gas Cooled ref: 1992 edition]

O&M Committee

◆ ASME Documents Produced

- 1998 Code: IST Pumps, Valves, Dynamic Restraints LWR Plants
- 1997 Standards and Guides Standards

Standards

* Perf. Testing - Closed Cooling Water Systems and ECCS
* Vibration Testing - Piping Systems
* IST Electric Motor Operators on Valves
* Loose - Part Monitoring
* Perf. Testing/Monitoring PORV Assemblies
* IST/Maintenance of Diesel Drives
* Inservice Perf. Testing of Heat Exchangers

* Guides
* Inservice Monitoring - Core Support Barrel Axial Preload - PWRs
* Thermal Expansion Testing - Piping Systems
* Vibration Testing - Heat Exchangers
* Vibration Monitoring - Rotating Equipment

Nuclear Quality Assurance

- **NQA-1-1997 QA Program Requirements for Nuclear Facilities**
  - Covers requirements for siting, design construction, operation and decommissioning
  - QA program compliance with NQA-1 will also meet ISO 9001
  - Encompasses old NQA-2 (now Part II)

- **NQA-3-1989**
  - Activities affecting collection of information for site characterization of High Level Waste Repositories

Nuclear Air and Gas Treatment

- **AG-1 1997 Code on Nuclear Air and Gas Treatment**
  - Covers requirements for nuclear safety related air and gas treatment systems
  - Rules for performance, design, construction and testing
  - Covers broad range of Ventilation Air Conditioning and Cleaning Equipment

CRANES

- NOG - 1 - 1989
- Rules for Construction of Overhead and Gantry Cranes
  - Multiple girder with top running bridge and trolley
  - Specific to nuclear facilities

Committee on Nuclear Risk Management

- Will Develop and Maintain Standards and Guides on Risk Management Techniques Supporting PRA Applications and Performance Based Applications Within ASME Nuclear Codes and Standards
- Project Team Developing New Standards

Public/Private Sector Partnership: Advantages of Consensus Process

- Government participation in the process
- Wide Acceptance of Standard by Public, Industry, Government Agencies
- Interaction/Balance of Interest/Quality of Product
- Standards Continuously Maintained

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CONVERTING GOV'T SPECS AND STANDARDS TO UL STANDARDS

PAUL ORR

Underwriters Laboratories Inc.

Vision Statement

- ALL FEDERAL AGENCIES AND DEPTS ARE IN THE PROCESS OF CONVERTING APPLICABLE MIL SPECS, MIL STANDARDS AND OTHER DOCS TO PERFORMANCE SPECS, CIDS, AND NON-GOVERNMENT STANDARDS BY THE YEAR 2000

Goal and Objective

- SUPPORT FED AGENCIES BY VOLUNTEERING RESOURCES TO CORRELATE UL STANDARDS WITH FEDERAL AGENCY DOCS SLATED FOR CONVERSION.
- WHERE APPLICABLE, AID WITH, AND RECOMMEND THAT GOV'T AGENCIES ADOPT UL'S NGS.

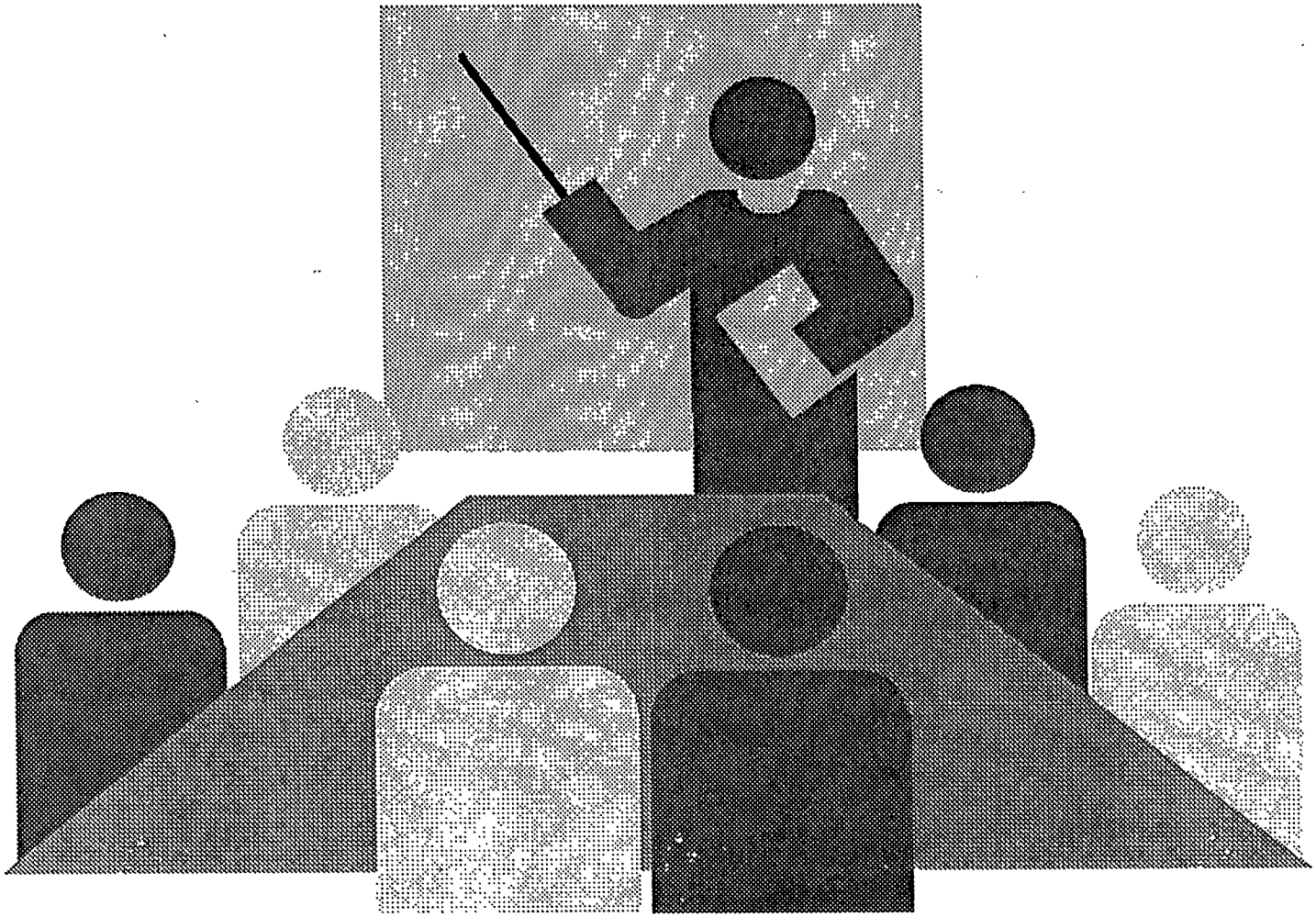
Today's Situation

- WORKING WITH DLA, NAVSEA, AND DEFENSE SUPPLY CENTER CONTRACTORS, SOME UL STANDARDS HAVE ALREADY BEEN ADOPTED AND OTHERS ARE IN THE PROCESS OF BEING ADOPTED AS NGS REPLACEMENT DOCS.

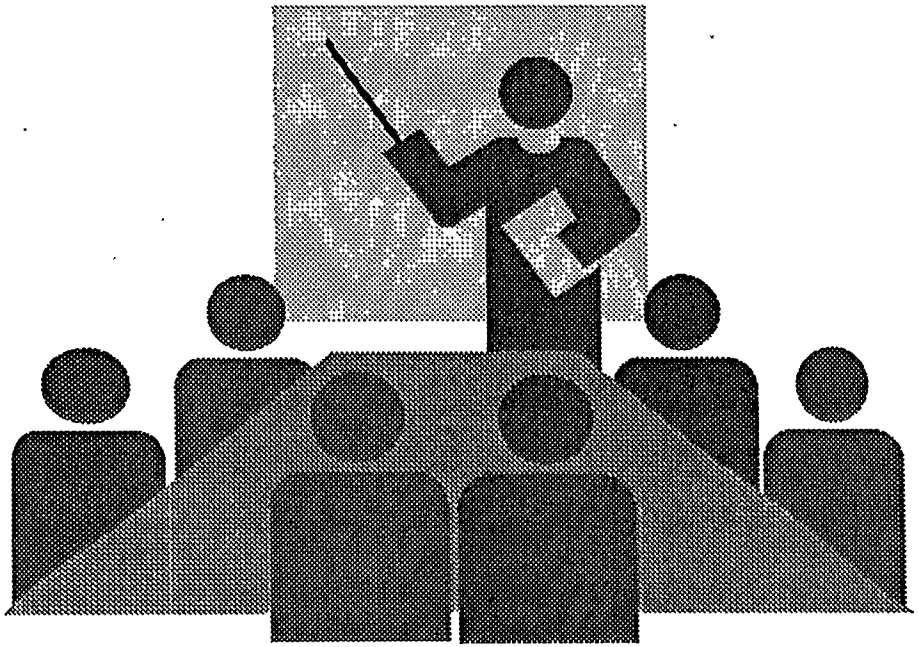
How Did We Get Here?

- UL'S REPUTATION FOR STANDARDS DEVELOPMENT (104 YEARS EXPERIENCE & OVER 700 UL STDS PUBLISHED)
- EXISTING UL/GOVERNMENT RAPPORT. SINCE THE EARLY 1970'S GOVERNMENT HAS ADOPTED OVER 200 UL STDS

Participation in the UL Stds Dev. Process



Government Participation



- ANSI Recognition
- Engineering Councils
- Electrical Council
- Fire Council
- Casualty Council
- Burglary Council
- Marine Council
- Industry Meetings
- Gov't Requests

Available Options

- ADOPT UL STANDARD AS IS, AS THE GOV'T SPEC REPLACEMENT
- DEVELOP A SUPPLEMENT TO THE UL STD FOR SPECIFIC AGENCY REQUIREMENTS (THEN ADOPT UL STD)
- UL WORK WITH APPLICABLE GOV'T AGENCY TO DEVELOP COMMERCIAL ITEM DESCRIPTION

Recommendation

- Locate your Standardization Point of Contact (using SD-1)
- Ask them to review the UL Stds Product Index **http//www.ul.com/info/standard.htm** to find a comparable UL Standard
- Contact UL: **Paul Orr (516)271-6200 Ext. 22596 or orrp@ul.com**

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FedTech - JWM - 980803

Voluntary Standards Activities of Interest to Federal Agencies:

IEEE Software Engineering Standards

For presentation at 1998 Federal Technology Standards Workshop

James W. Moore
The MITRE Corporation
August 1998
James.W.Moore@ieee.org

This presentation represents the opinion of the author and does not present positions of The MITRE Corporation or of the U.S. Department of Defense.

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Software Engineering Standards

- Concern the *responsible practice* of software engineering
- Usually deal with *process* rather than product ...
- ... although they sometimes deal with generic product characteristics or supporting resources
- Deal with subjects like *Configuration Management, Quality Assurance, Verification,* and *Validation*

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Importance of Software Engineering Standards

- They consolidate existing technology into a firm basis for introducing newer technology
- They increase professional discipline
- They protect the business
- They protect the buyer
- They improve the product

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Organizational Goals for Software Engineering Standards

- Improve and evaluate software competence
- Framework for two-party agreements
- Evaluation of software products
- Assurance of high integrity levels for software products

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Software Engineering Standards

- Approximately 315 software engineering standards, guides, handbooks, and technical reports are maintained by approximately 46 professional, sector, national, and international standards organizations. -- *[Magee97]*

- In 1981, IEEE had one software engineering standard. By year end 1997, the collection had grown to 44. -- *[SESC97a]*
- The 1994 edition of IEEE Standards Collection: Software Engineering is 1300 pages long. The 1998 edition will be in four volumes totaling 2400 pages.

Users need help in integrating all of this advice.

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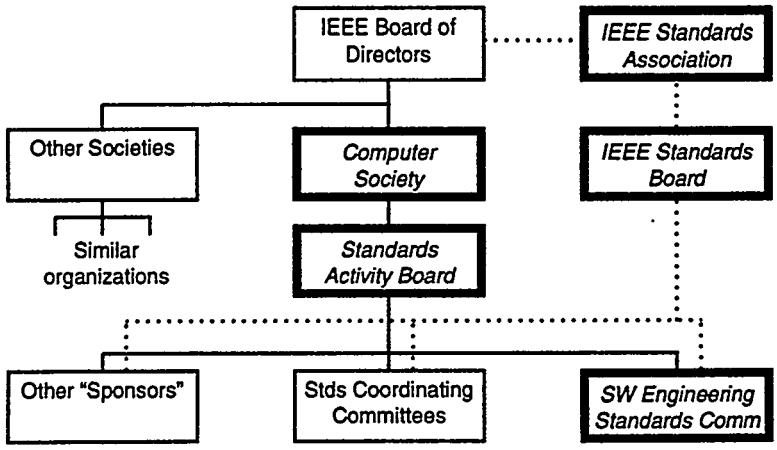
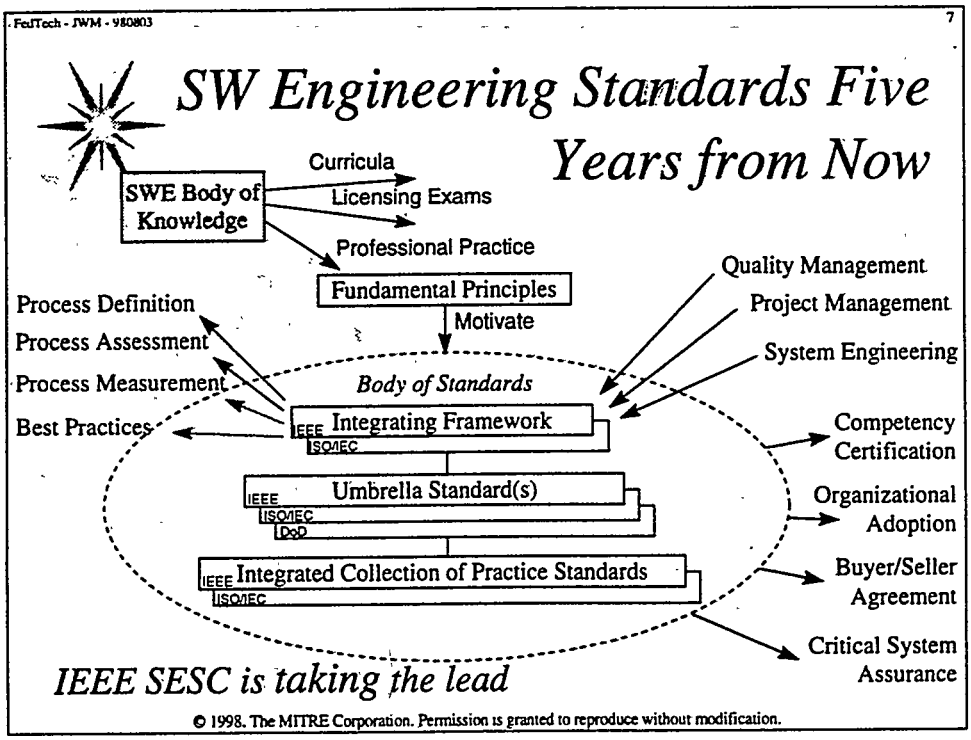
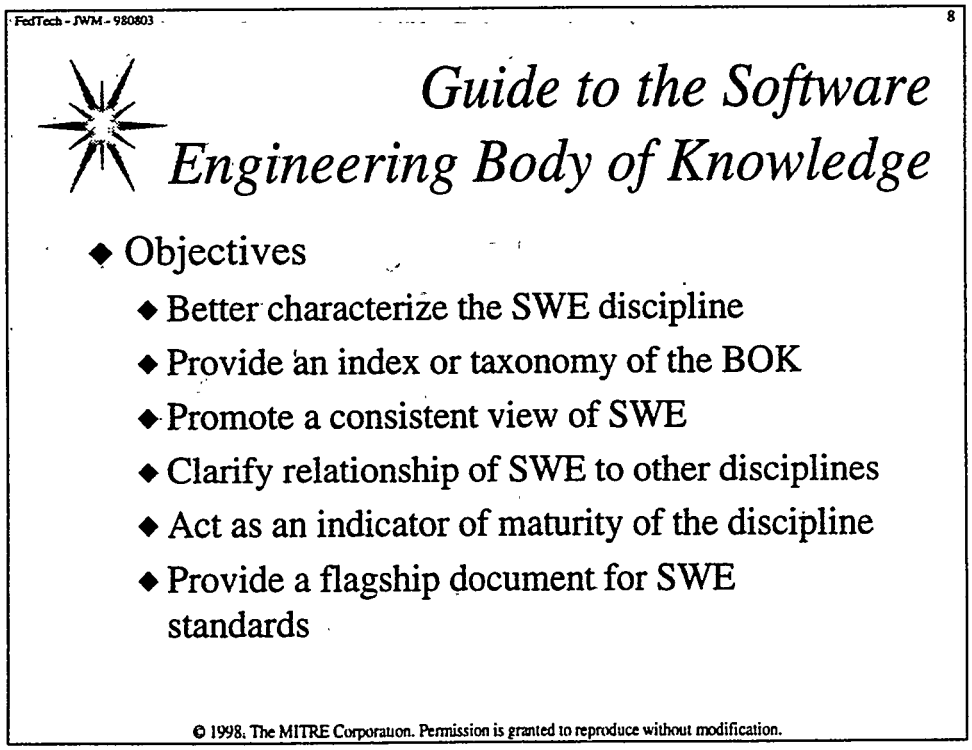
IEEE Computer Society SESC







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Guide to the Software Engineering Body of Knowledge

- Collaboration between IEEE CS and UQAM:
  - Executive Editors: external relationships
  - Project Editors: operations and coordination
  - Committee of Authorities: cohesion, completeness, selection criteria, subcommittee chair designation
  - Several Topic Subcommittees: selection of references and preparation of integrated narrative
- Schedule:
  - Mid-1998: alternative Tables of Contents
  - Mid-1999: selected Table of Contents annotated by references to books, articles, etc.
  - Mid-2001: integrated narrative

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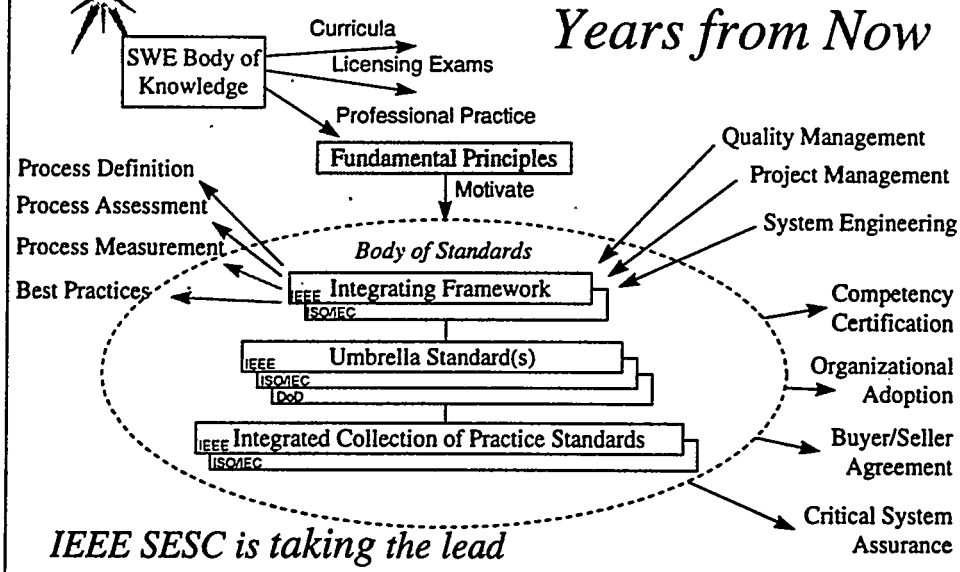
SW Engineering Standards Five Years from Now



IEEE SESC is taking the lead

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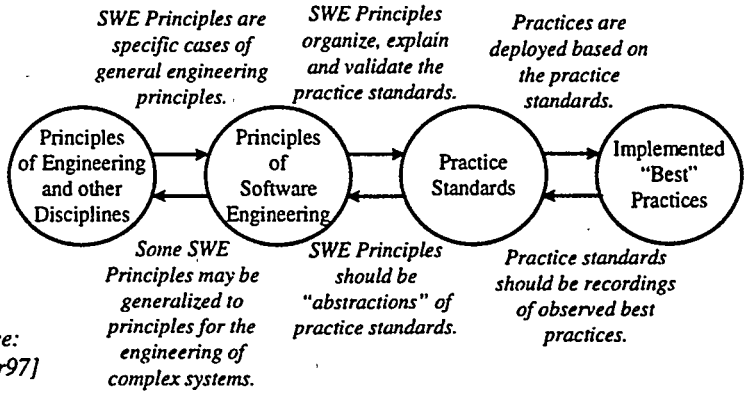
Principes fondamentaux du génie logiciel

- A collaboration between the IEEE Computer Society and the Université du Québec à Montréal.



Source: [Jabir97]

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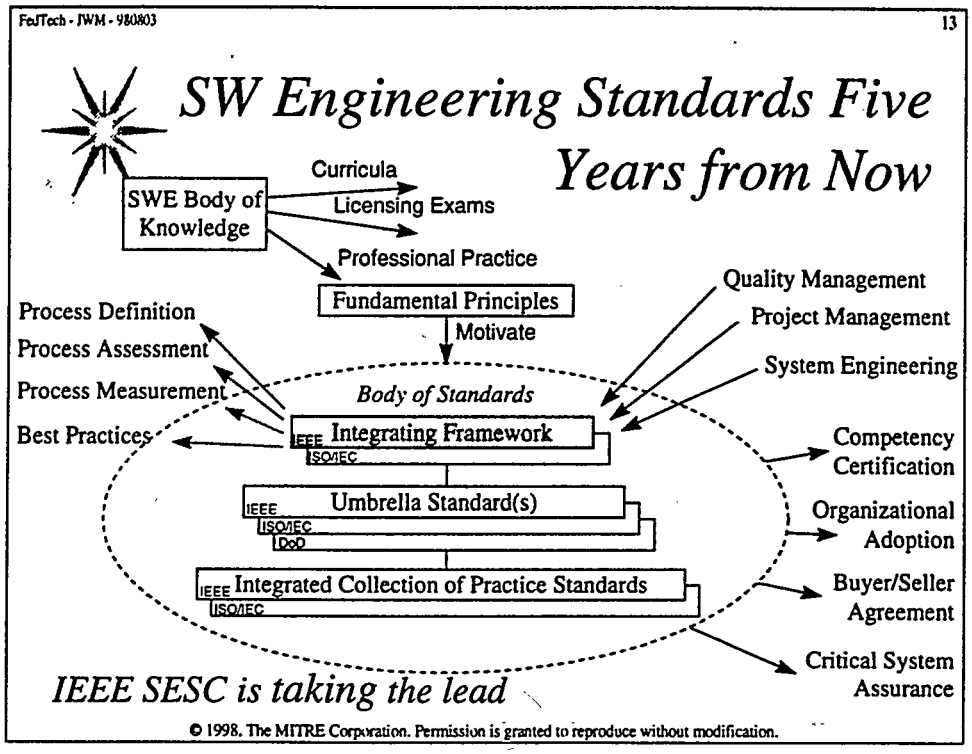
Examples of Fundamental Principles

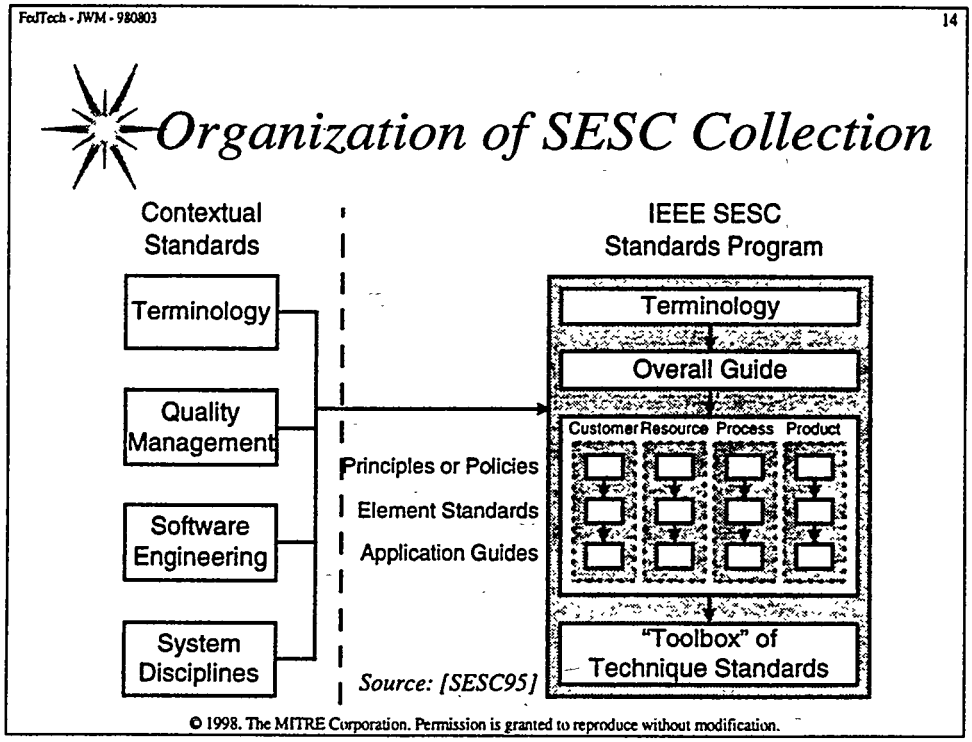
- Currently, 16 candidates. Examples are …
  - Since change is inherent in software, plan for it and manage it.

    Comme le logiciel est, de par sa nature même, sujet au changement, il faut planifier et gérer ce changement.
  - Since tradeoffs are inherent to SWE, make them explicit and document them.

    Les compromis étant inhérents au GL, il faut les rendre explicites et les documenter.

Source: [Dupuis97]





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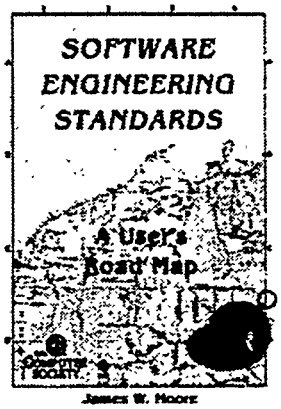
Overall Guide to the IEEE Collection

- Rather than developing a consensus document, IEEE SESC "commissioned" the writing of an overall guide to the collection.
- Relevant standards are "sliced and diced" by:
  - Context
  - Object
  - Normative intent
  - Provider and subject
- Relationships are explained, even between standards from different providers.
- Published by IEEE Computer Society Press. 328 pages. 6" x 9" Softcover. ISBN 0-8186-8008-3. $40.00 List



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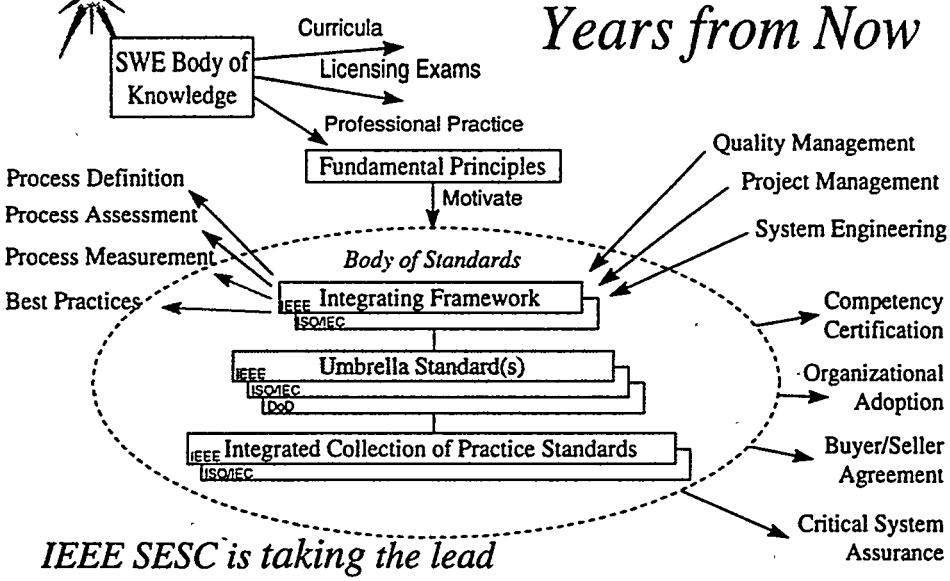
SW Engineering Standards Five Years from Now



IEEE SESC is taking the lead

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Key Concepts of IEEE/EIA 12207

- Defined at level of *processes* ... rather than procedures
- Prescribes *continuing responsibilities* ... rather than steps to be executed
- Prescribes *functions to be performed* ... rather than organizations to execute them
- Prescribes a *minimum systems context* ... rather than treating software in isolation

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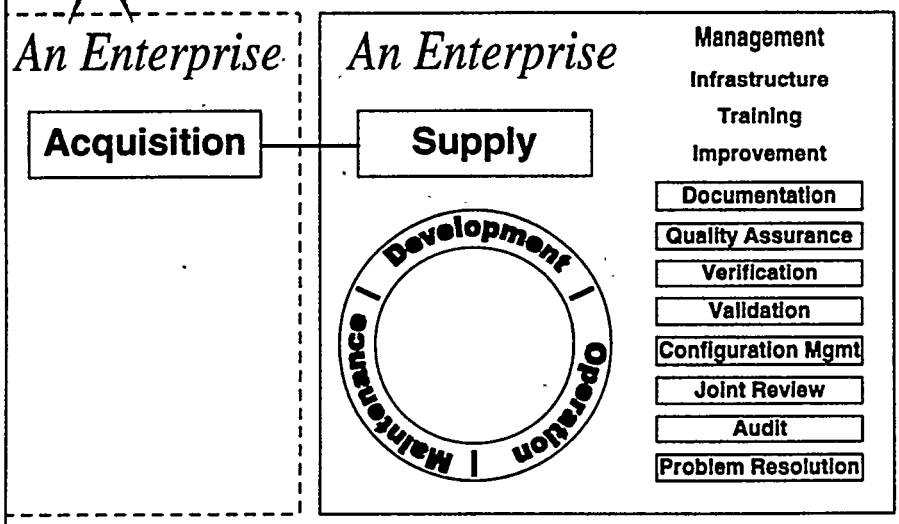
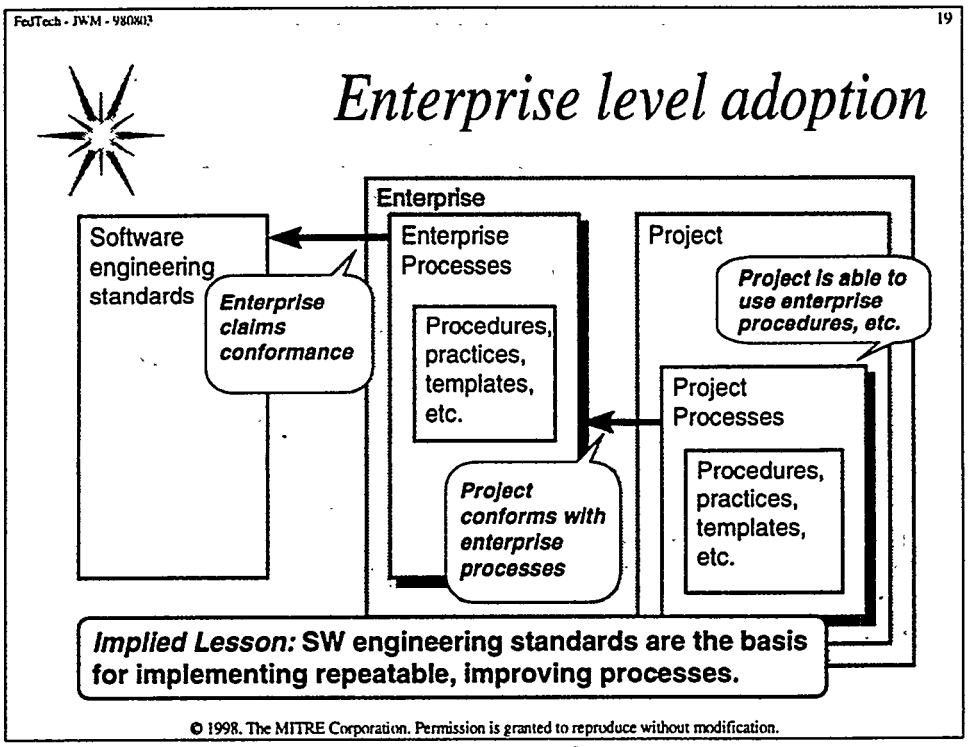
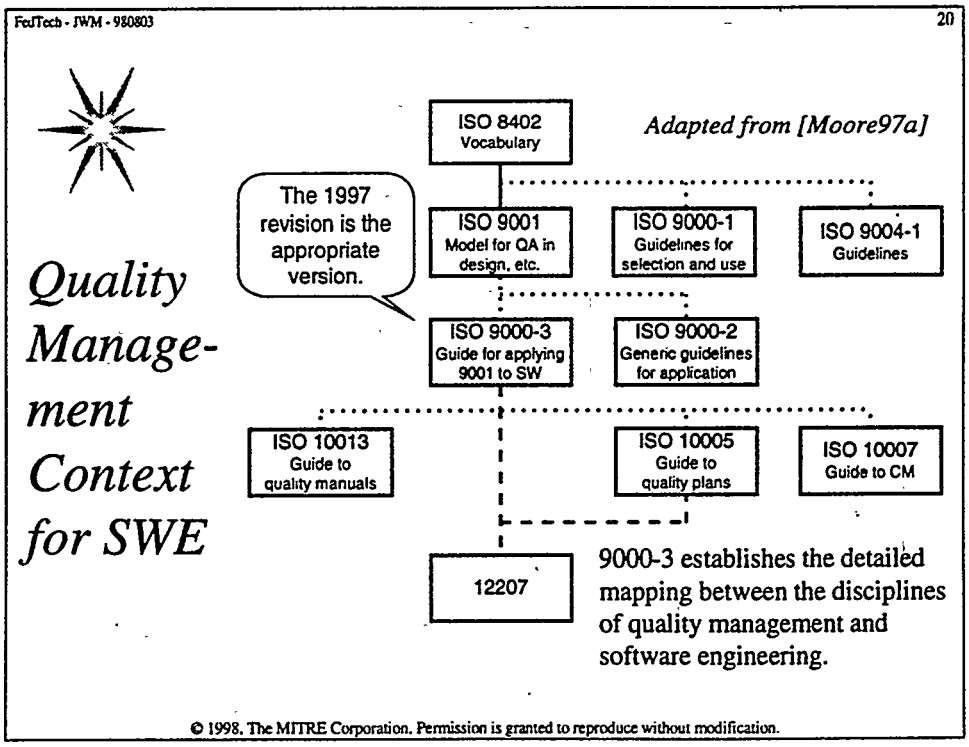
Example Use of 12207 Processes







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Detailed Relation-ship of QM and SWE

Source: [Moore97a]

9000-3 Clause	Title	Other ISO standards	Clauses of 12207	Useful IEEE Standards
4.2	Quality system	10013	6.3	
4.2.3	Quality planning	10005		730, 1061
4.3	Contract review		5.2.1, 5.2.6	
4.4	Design control			
4.4.1	General		5.2.5, 5.3	1074
4.4.2	Design and development planning		5.2.4	1058.1, 1045
4.4.3	Organizational and technical interfaces		5.2.6.1, 6.6.2	1028
4.4.4	Design input	9126	5.3.2, 5.3.4	830, 1233
4.4.5	Design output		5.3.3-10	1471, 1016, 1063
4.4.6	Design review		6.3.2.3, 6.6.3	1028
4.4.7	Design verification		5.3.9, 6.4	1012
4.4.8	Design validation		5.3.11, 6.5	1012
4.5	Document and data control		6.1	828
4.6	Purchasing		5.1	1062
4.8	Product identification and traceability	10007	6.2.1	828
4.9	Process control		7.1, 7.2	
4.10	Inspection and testing		5.3.5-5.3.11	829, 1008
4.11	Control of inspection, measuring and test equipment	10012		
4.13	Control of non-conforming product		6.8	1044
4.14	Corrective and preventive action		6.8, 7.3	1044
4.17	Internal quality audits	10011	6.7, 6.8, 7.3	
4.18	Training		7.4	
4.19	Servicing	9000-2	5.4.4, 5.5	1219

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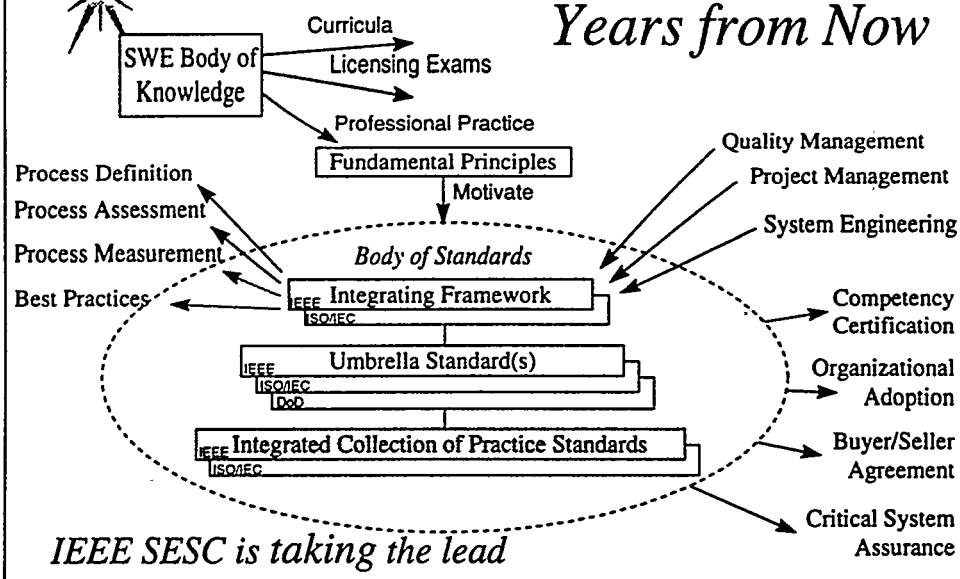
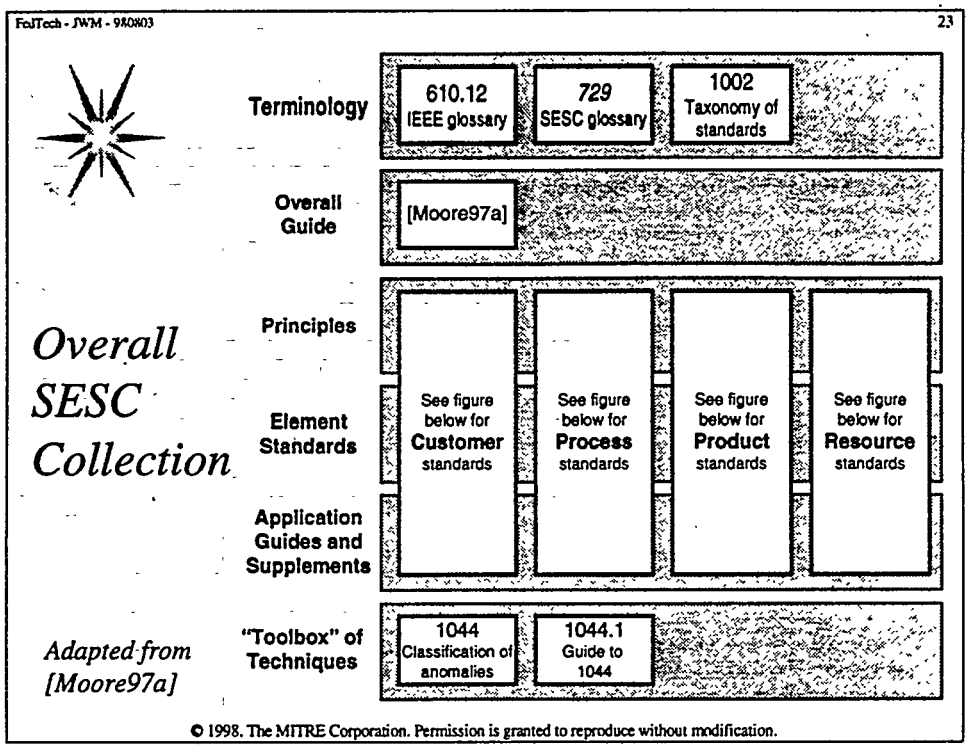
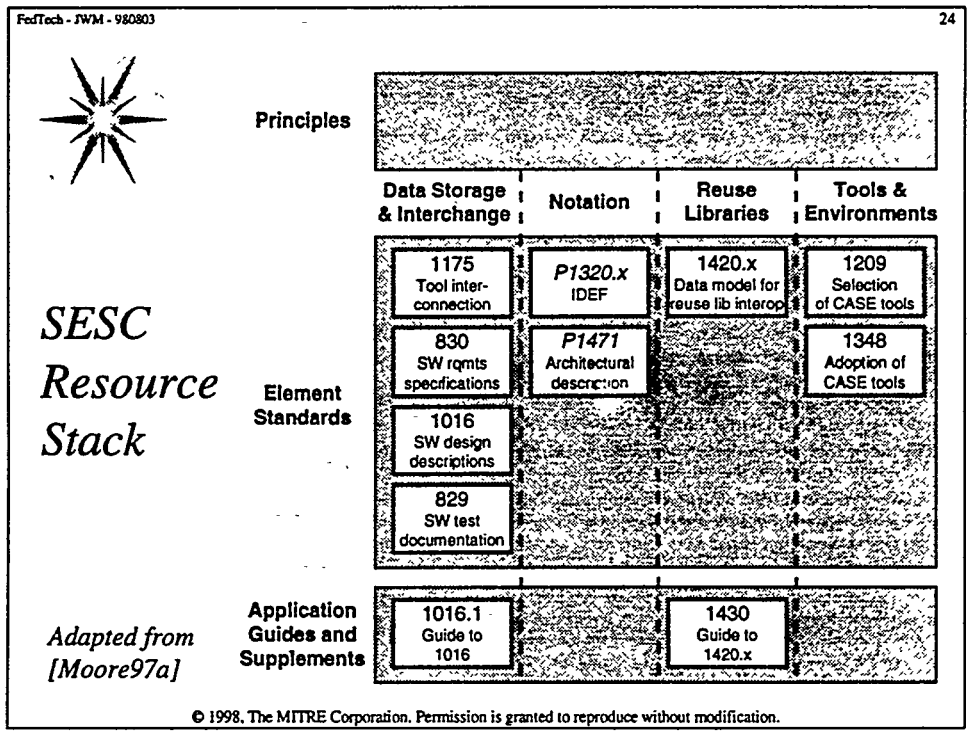
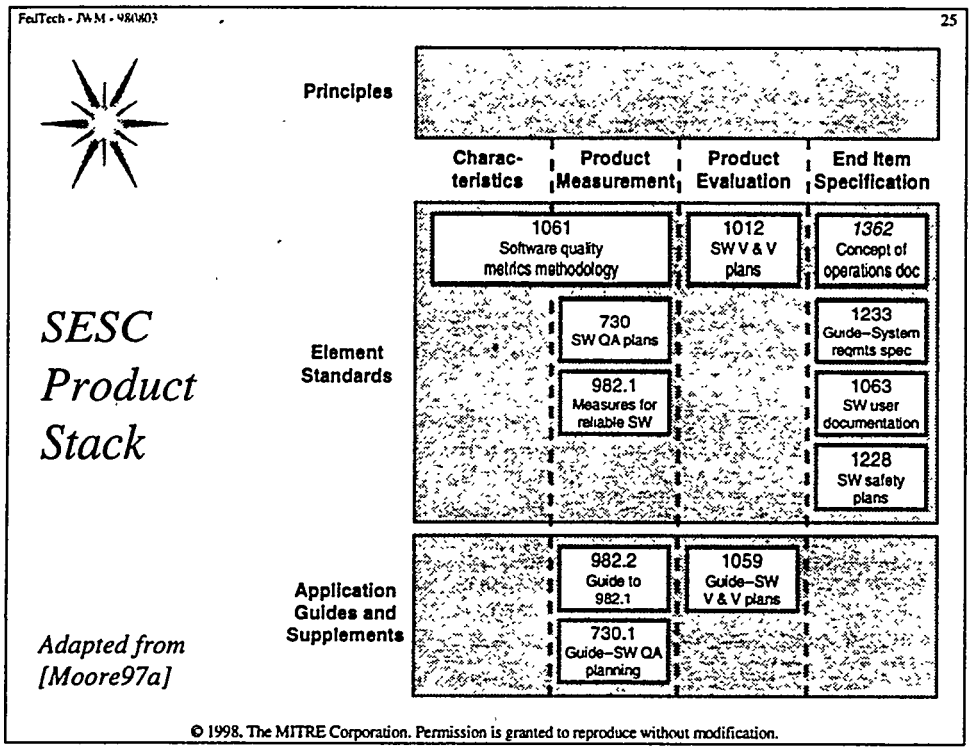
SW Engineering Standards Five Years from Now

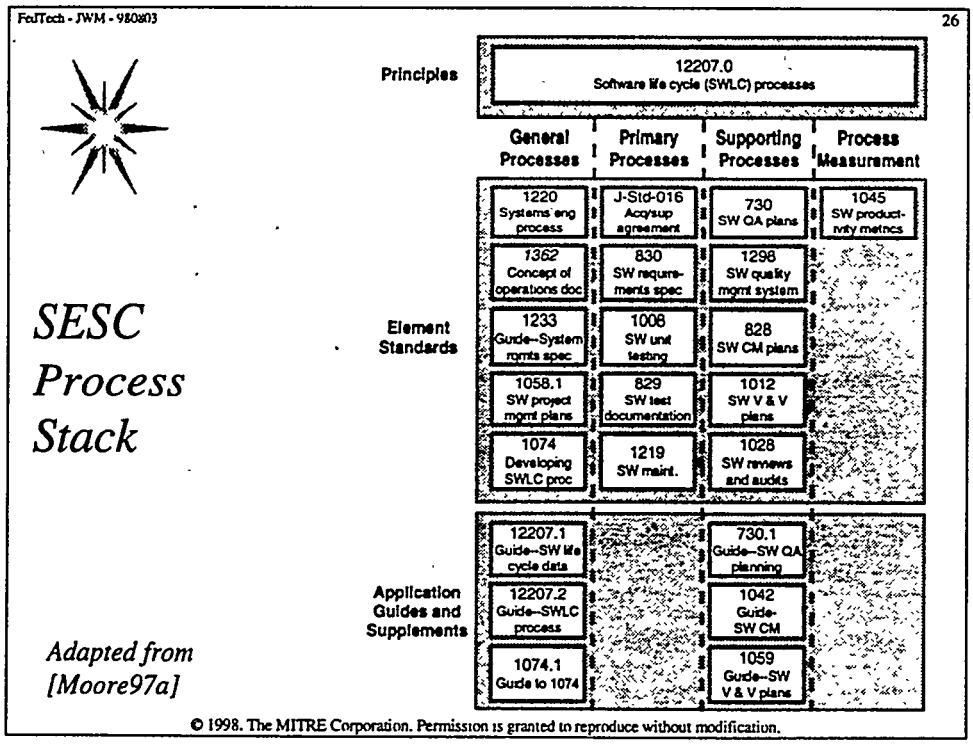


IEEE SESC is taking the lead

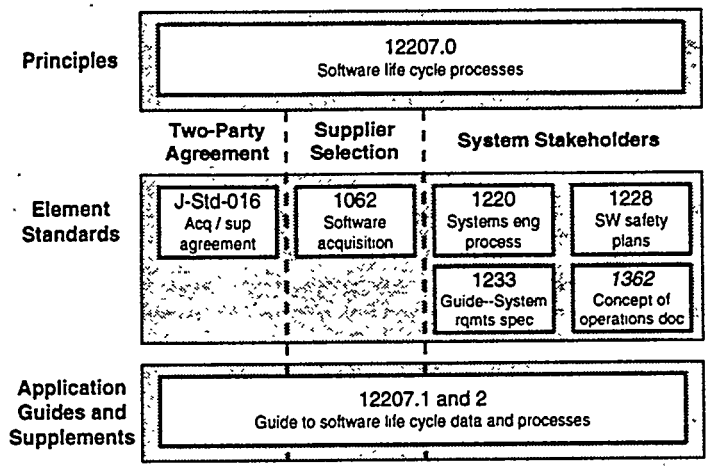








SESC Customer Stack



Adapted from [Moore97a]

Software Engineering Standards Users' Group (SESUG)

- Charter:
  - Provide a forum for the discussion of issues relevant to the use of software engineering standards.
  - Provide a mechanism for the distribution to users, of information regarding the effective use of software engineering standards.
  - Provide a mechanism for user feedback of user problems, issues and concerns to both standards-developing and regulatory organizations.
  - Provide a respository of lessons learned, case studies, and best practices.
- Contact:

Paul R. Croll, SESUG Chair
Computer Sciences Corporation
Phone: 540-371-2100
Fax: 540-371-7149
E-mail: pcroll@computer.org

References (1 of 2)

[Dupuis97] Robert Dupuis, Pierre Bourque, Alain Abran, and James Moore, <<Principes fondamentaux du génie logiciel: Une étude Delphi>> *Proceedings of GL 97--10èmes Journées Internationales--Le Génie Logiciel & ses Applications,* Paris, December 1997.

[Jabir97] Jabir [group], "A Search for Fundamental Principles of Software Engineering," *Computer Standards and Interfaces,* forthcoming.

[Magee97] Stan Magee and Leonard L. Tripp, *Guide to Software Engineering Standards and Specifications,* Artech House, Boston, MA, 1997.

[Moore95] James W. Moore and Roy Rada, "Organizational Badge Collecting," *Communications of the ACM,* August 1996, pp. 17-21.

References (2 of 2)

[Moore97a] James W. Moore, *Software Engineering: A User's Road Map,* IEEE Computer Society Press, Los Alamitos, CA, 1997.

[SESC93] SESC Long Range Planning Group, *Master Plan for Software Engineering Standards,* Version 1.0, December 1, 1993.

[SESC95] SESC Business Planning Group, *Vision 2000 Strategy Statement* (Final Draft), v0.9, SESC/BPG-002, August 20, 1995.

[SESC97a] SESC, *1997 Annual Report,* January 1998.

FedTech - JWM - 980803 31

Biography

James W. Moore is a twenty-eight-year veteran of software engineering and an nine-year veteran of software engineering standardization. With degrees from the University of North Carolina and Syracuse, he has worked in both the commercial and defense sectors for IBM and, now, The MITRE Corporation, where he is the corporate focal point for standardization activities. Currently, he serves as the chairman of the international standards committee for the Ada language, the chairman of the ACM Technical Standards Committee, a member of the Management Board of IEEE Software Engineering Standards Committee (SESC), and as the Vice-Chair of the U. S. delegation to the international standards committee responsible for software engineering. He was the founder of the Reuse Library Interoperability Group (RIG) and chaired the Reuse Planning Group for SESC. He served for four years as a member of the Defense Department's Federal Advisory Board on Ada. The IEEE Computer Society has recognized him as a Charter Member of their Golden Core. His book on software engineering standards was published in November 1997.

FedTech - JWM - 980803 32

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    Reston, VA 22090
- Electronic mail: James.W.Moore@ieee.org
- Phone numbers:
  - Office: +1.703.883.7396
  - Fax: +1.703.883.5432

Electronic Document Delivery: Plugging in EIA's Members into Standards Development

Presentation to the

Federal Technical Standards Workshop

Jean-Paul Emard

Staff Vice President, Standards & Technology

Electronic Industries Alliance

August 6, 1998

Plugging in EIA's Members...

- Electronic Document Delivery
  - meeting notices, agendas, minutes
  - contributions, drafts, and U.S. positions
  - final documents and international papers
- Electronic Balloting
  - ballot creation
  - voting online
  - vote tracking and summaries

Plugging in EIA's Members...

- Electronic Document Delivery
  - formatting the documents
  - member access
    - » at home and on-the-road
    - » fee vs. free
    - » security considerations
  - assisting those with "overloaded" circuitry

Plugging in EIA's Members...

- Electronic Balloting
  - creating the ballot
    - » templated ballot for sponsor generation
    - » staff support and quality assurance
  - voting on the ballot
    - » notificaiton
    - » casting a vote
  - tracking the ballot
    - » sponsor's tools (graphics, pass/fail, summaries)
    - » voter's tools (ballot log, open/closed ballots)

Plugging in EIA's Members...

- A Commercial Break
  - Need for continued Federal Government participation
  - Ease of access into SDOs' activities
  - Playing, paying partnerships
  - Need for Federal "members" to voice the need for their participation
  - Visit EIA at "http://www.eia.org"

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Wednesday, August 5, 1998

Session 6B: *RMS Partnership / Acquisition Reform*

Speakers: Dennis Hoffman
Kenneth LaSala
Curtis DeVries

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Reliability
Maintainability
Supportability
Logistics
Probabilistic Engineering

SAE The Engineering Society for Advancing Mobility Land, Sea, Air and Space
INTERNATIONAL

SAE / G-11

RESPONSE TO CHANGING NEEDS

Jerrell Stracener
Chairman, SAE / G-11 Division

Presented by Dennis Hoffman

August 5, 1998

AGENDA

- Overview
- Current Emphasis
- Major Initiatives

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SAE / G-11 OVERVIEW

SAE INTERNATIONAL
The Engineering Society for Advancing Mobility Land, Sea, Air and Space

WHAT SAE DOES

- NETWORKING
  - Over 75,000 members
  - Technical Committees - over 16,000 participants
  - Local Sections & Groups - more than 80 worldwide
- STANDARDS
  - Largest developer of technical standards for land, sea, air and space vehicles in the world
  - Major force in the international organization for standardization
- MEETINGS and EXHIBITS
  - Conferences
  - Workshops
  - Short Courses
- INFORMATION
  - Information Transfer - standards, specs, books & magazines
  - Electronic Publishing - 38,000 document database

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DIVISION ORGANIZATION STRUCTURE

SAE INTERNATIONAL
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SAE
TECHNICAL STANDARDS BOARD
JOHN KINSTLER
Wheel Engineering

G-11
CHAIRMAN
JERRELL STRACENER
Northrop Grumman Corp.
Commercial Aircraft Div.

NDIA
SYSTEMS ENGINEERING COMMITTEE
BOB RASSA
Raytheon Systems Co.

COMMUNICATIONS & LIAISON
RUSSELL VACANTE
U.S. Department of Army
Army Mgmt Staff College
DENNIS HOFFMAN
Raytheon Systems Co.

EXECUTIVE COMMITTEE
GEOFFREY WELLS
United Technologies Corp.
Sikorsky Aircraft Division

OPERATIONS
NED CRISCIMAGNA
IIT Research Institute
Maryland Technology Ctr

VICE CHAIRMAN
MIKE ZSAK
U.S. Dept of Defense
Office of Secretary of Defense

PROBABILISTIC METHODS
SUREN SINGHAL
Dynacs
Engineering Co., Inc.
ERIC FOX
United Technologies Corp.
Pratt & Whitney

RELIABILITY
DON MEENA
Lockheed Martin Corp.
Skunk Works
CARL CARLSON
General Motors Corp.
Mid-size Car Division

MAINTAINABILITY
WILL GREGORY
General Electric Co.
GE Aircraft Engines
BILL CARLSON
Chrysler Corp.
Technical Center

LIFE CYCLE INTEGRATION
TILAK SHARMA
Boeing Company
Commercial Airplane Grp
LOREN LONG
General Electric Co.
GE Aircraft Engines

SOFTWARE
DAVE PEERCY
Sandia
National Laboratories
JOE WHEATCROFT
U.K. Ministry of Defence
Royal Air Force

SUPPORTABILITY
TOM NONDORF
Boeing Company
McDonnell Aircraft & Missile Sys.
GEORGE DESIDERIO
DoD, Office of Secretary of Defense

LOGISTICS
GERARD IBARRA
United Parcel Service
Caterpillar

EDUCATION & TRAINING
JIM WASILOFF
Ford Motor Co.
Automatic Transmission Engrg
JOE MARCIANO
United Technologies Corp.
Sikorsky Aircraft Division

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G-11 IS AN INTERNATIONAL RMSL RESOURCE

SAE INTERNATIONAL
The Engineering Society for Advancing Mobility Land, Sea, Air and Space

- 1985 - Started With United States Aerospace & Defense Focus
- 1986 - First Meeting: February
- 1989 - First Annual RMS Workshop
- 1991 - Initiated International Partnership in RMS to Include Industry (Defense & Commercial), Government & Academia Participation in G-11
- 1993 - First Issue of Communications in *RMS Journal* Published
- 1993 - Formulated Concept for Partnership in RMS Standards
- 1995 - Expanded G-11 Scope to Include Logistics
- 1996 - G-11 Elevated to Division Level

SAE / G-11
CURRENT EMPHASIS

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CURRENT EMPHASIS

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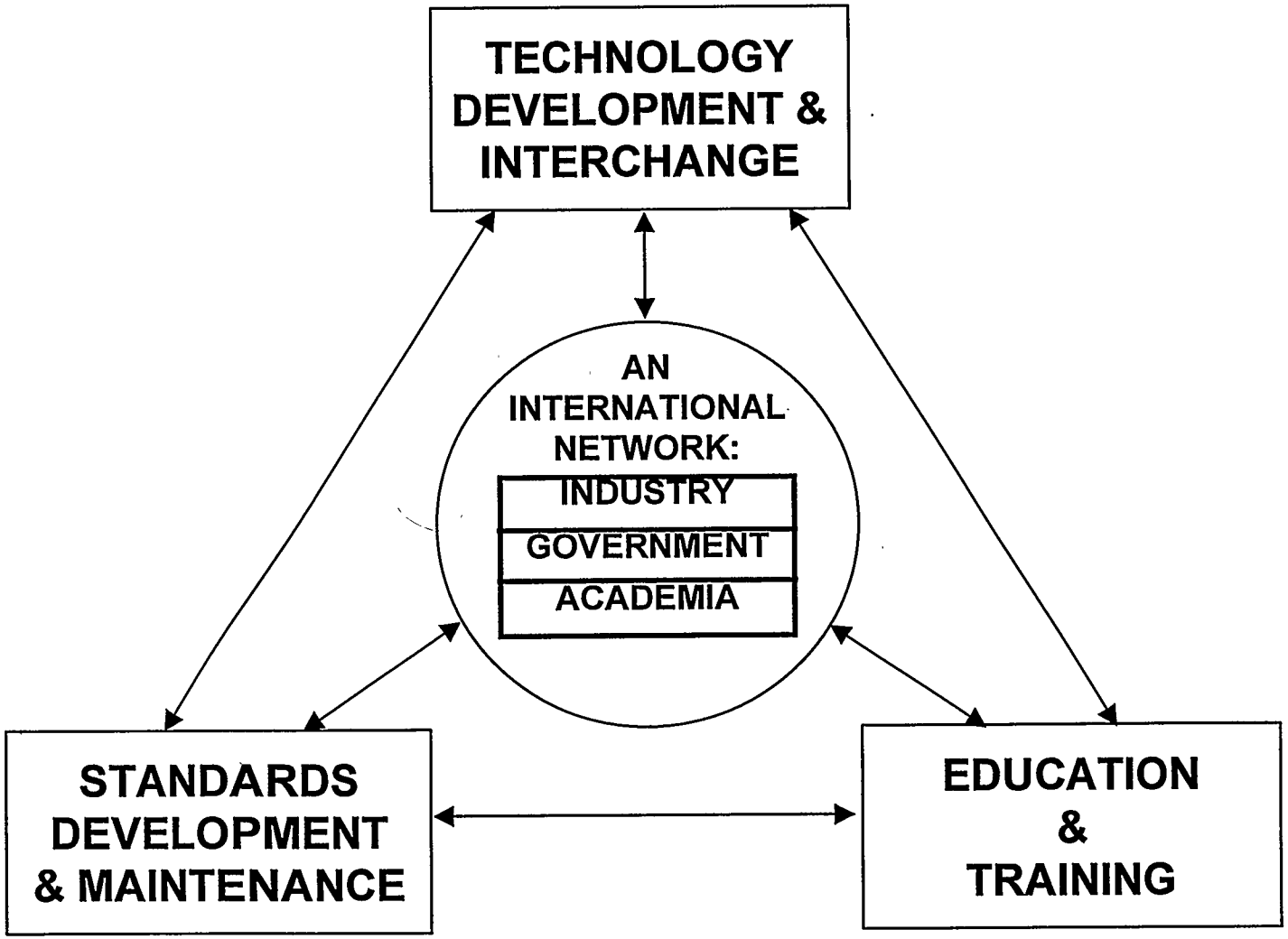

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G-11 PRODUCTS Published

SAE INTERNATIONAL
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Document	Publication Date	Team Leader
Probabilistic Design & Analysis Methods for Solid Rocket Boosters - Solid Rocket Booster Reliability Guidebook -- Vol. II - AIR 5006/2	June 1996	Ron Adib United Technologies Corp. Chemical Systems Division
Liquid Rocket Engine Reliability Certification - ARD 50009	April 1996	Eric Fox United Technologies Corp. Pratt & Whitney
Recommended RMS Terms & Parameters - AIR 4896	December 1995	Geoffrey Wells United Tehnologies Corp. Sikorsky Aircraft Division
The FMECA Process in the Concurrent Engineering Environment - AIR 4845	June 1993	Dave Saunders General Electric Co. G. E. Aircraft Engines
Solid Rocket Reliability Guidebook, Vol. 1 - AIR 50013	February 1991	Ron Adib United Technologies Corp. Chemical Systems Division
RMS Information Sourcebook - ARD 50046		
Survey Results: Computerization of Reliability, Maintainability, & Supportability (RM&S) in Design - AIR 4276	January 1990	Don Meena Lockheed Martin Corp. Skunk Works
Reliability, Maintainability & Supportability (RMS) Guidebook, 1st, 2nd, & 3rd Editions		
Communications in Reliability, Maintainability, Supportability & Logistics - An International Journal, Vol. 1, Nbr. 1 Vol. 1, Nbr. 2 Vol. 2, Nbr. 1 Vol. 2, Nbr. 2 Vol. 3, Nbr. 1	 January 1994 July 1994 January 1995 July 1995 January 1996	Joe Davis Lockheed Martin Corp. Vought Systems
Recommended ReliabilityTerms & Definitions -ARD 50010	July 1996	Geoffrey Wells United Tehnologies Corp. Sikorsky Aircraft Division
Integration of Probabilistic Methods into the Design Process - AIR 5080		Eric Fox United Technologies Corp. Pratt & Whitney
Software Supportability - An Overview - AIR5121	January-97	Joe Wheatcroft U. K. Ministry of Defence Royal Air Force
Reliability & Safety Process Integration	April-96	Dave Saunders General Electric Co. G. E. Aircraft Engines

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G-11 PRODUCTS In Work

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Document	Planned Publication Date	Team Leader
Recommended Best Practices for Failure Modes, Effects, and Criticality Analysis Procedures - ARP 5580	December 1998 (ballot)	John Bowles University of South Carolina
Supportability Program Standard	April 1999	Howard Hetrick Northrop Grumman Corp. Military Aircraft Systems Div.
Scheduled Maintenance Standard	December 1998	Tom Nondorf McDonnell Douglas Corp. McDonnell Douglas Aerospace
Reliability Program Standard - JA 1000	June 1998 (submitted)	Dave Etters United Technologies Corp. Automotive Division
Reliability Program Standard Implementation Guide - JA 1000-1	December 1998	Dave Etters United Technologies Corp. Automotive Division
Reliability Testing Standard	June 1998 (submitted)	Bill Grimes Raytheon Systems Co.
Maintainability Program Standard	December 1998 (1st draft)	Will Gregory General Electric Co. GE Aircraft Engines
Engineering Probabilistic Methods - AIR 5083	TBD	Dan Ghiocel Stevenson & Associates
Probabilistic Methods Applications - AIR 5109	October 1999	Carl Rousseau Bell Helicopter
Computational Probabilistic Methods Case Studies - AIR 5110	December 1998	Chad Hoffman United Technologies Corp. Pratt & Whitney
Computational Probabilistic Methods' Management Advocacy - AIR 5111	TBD	TBD
Assessment of Industry/ Government/ Academia Probabilistic Methods Needs/Goals - ARD 50047	TBD	Wayne Shade DoT/FAA Campus Bldg.
Probabilistic Methods Technology Transfer - AIR 5112	TBD	Tony D'Angelo Department of Army Picatinny Arsenal

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G-11 PRODUCTS In Work (continued)

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Document	Planned Publication Date	Team Leader
Probabilistic Methods Cultural Barriers - AIR5086	TBD	Chris Pomfret (ABDA) Department of Air Force Wright Lab
Probabilistic Methods Legal Issues - AIR5113	October 1998	Andrew Pickard Allison Engine Co.
Probabilistic Methods Liaisons & Resources - AIR5114	March 1999	Marlon Forest Chrysler Corp. Technical Center
How to Develop a Probabilistic Standard - AIR5115	March 2001	Johnny Adamson Pratt & Whitney
SAE RMS Technology Survey - ARD50043		
Software Reliability - An Overview - JA 1001	March 1999 (draft)	Dave Peercy Sandia National Labs
Software Reliability Program Standard - JA 1002	August 1998 (submitted)	Mike Wild U. K. Ministry of Defence Royal Air Force
Software Reliability Implementation Guide - JA 1003	March 1999 (draft)	Debra Herrmann CSS
Software Supportability Program Standard - JA 1004	August 1998 (submitted)	Joe Wheatcroft U. K. Ministry of Defence Royal Air Force
Software Supportability Implementation Guide - JA 1005	March 1999	Ramon Somoza CASA
Software Support Concept - JA 1006	December 1998 (ballot)	Ramon Somoza CASA

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ANNUAL RMSL WORKSHOP

SAE INTERNATIONAL
The Engineering Society for Advancing Mobility Land, Sea, Air and Space

- SAE Authorized Formation of RMS Committee, G-11 - 1985
- Education & Training Subcommittee Established at First G-11 Meeting - Feb. 1986
- G-11ET Conducted International RMS Education & Training Survey
- SAE International RMS Workshop Was Established in Response to Indicted Needs
  - First Annual Workshop Was Conducted - May 1989
  - First Ten Workshops conducted in Dallas/Fort Worth area
- Workshop will alternate between the Dallas/Fort Worth and the Detroit areas
  - 11th Annual Workshop, Auburn Hills, Michigan, May 10-12, 1999

SAE / G-11
MAJOR INITIATIVES

MAJOR INITIATIVES

- Establish and Maintain Strategic Alliances and Partnerships
  - Professional Societies
  - Industry Associations
- Strategic Planning
  - Transition to Proactive Mode of Operation
  - Focus on Industry Needs - Current and Forecast

ALLIANCE/PARTNERSHIP INITIATIVE

- Partnership in RMS Standards

  Founding Members - DoD, Air Force, Army, Navy and G-11.
  Meeting held in Washington, D.C. on December 1993
- Initiated liaison with ATA and EIA
- Accepted invitation to become affiliated with the National Defense Industrial Association (NDIA) Systems Engineering Committee along with the Electronic Industries Alliance (EIA), Aerospace Industries Association (AIA), the Institute of Electrical & Electronics Engineers (IEEE), the National Training Systems Association (NTSA), and the International Council of Systems Engineers (INCOSE)
- Accepted invitation to participate in the Aerospace Industries Association (AIA) Product Support Committee Executive Board meeting in Dallas on 28 & 29 September 1998 along with NDIA and other organizations. Projects that various associations are performing for DoD customers will be discussed.
- Initiated invitations to NDIA Systems Engineering Committee, AIA, EIA & ATA to participate in G-11 Meeting in Dallas on October 19-21, 1998

SUMMARY

The World Is Changing

- Industry Consolidation
- Global Marketplace - Increasing Competitiveness

This will shift RMS technology development and interchange leadership to professional societies

But industry consolidation & government downsizing will reduce professional society & industry association participation

The choice is wait & react

or

Respond to Change - the G-11 Option

Kenneth LaSala, Ph.D.
National Oceanic and Atmospheric Administration

Abstract

Dr. LaSala will discuss the following topics:

- introduction to the IEEE Reliability Society,
- the need for industry action on standards,
- standards as representatives of industry consensus,
- the IEEE standards process—highlighting inclusion and industry involvement,
- Reliability Society Standards projects—status, future directions, and
- discussion issue: unifying standards—IEEE, SAE, IEC and others. Challenge: why keep writing the same old stuff?

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US Standards Group On QEDS

US Standards Group on QEDS
Strategy for the Future

Curtis DeVries
Polaroid Corporation
Standards Group Communications Chair
Vice-Chair, ANSI ASC Z1

Agenda

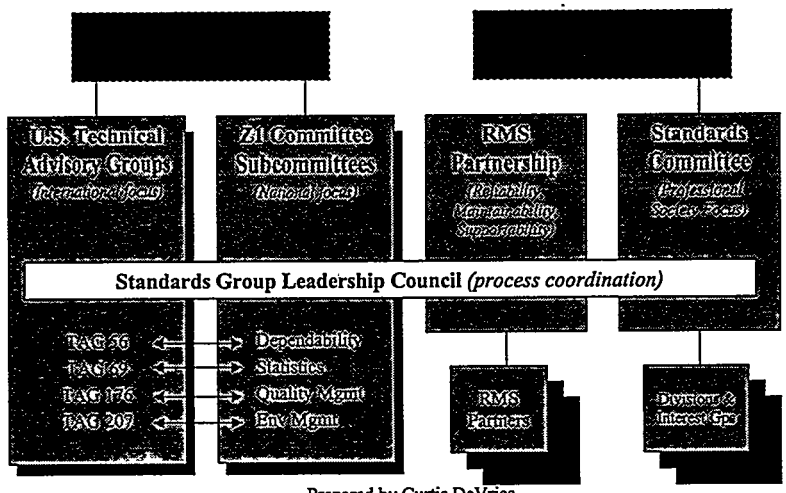
- What is the US Standards Group on QEDS and what does it do?
- Where is the US Standards Group going and how are we going to get there? (What does Acquisition Reform have to do with it?)

U.S. Standards Group Mission

To satisfy the generic and sector-specific needs of U.S. stakeholders related to quality, environment, dependability and statistics standards and their use, thereby contributing to U.S. competitiveness

Prepared by Curtis DeVries 3

U.S. Standards Group on QEDS



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U.S. Standards Group Vision

To be nationally recognized as
a leading provider of
leadership and customer support
for all aspects of standardization
related to quality, environment,
dependability and statistics,
by the year 2000

Prepared by Curtis DeVries 5

The Plan - Objectives

#1 - Identify our Customers and their needs and assess whether the needs are being met.

#2 - Develop, promote and deliver Products that are responsive to customer needs.

#3 - Attract, use and retain Resources efficiently and effectively.

#4 - Develop and deploy effective means to Communicate relevant information about the product portfolio with all stakeholders.

Prepared by Curtis DeVries 6

Strategic Planning Timeline

- 10/97 - Develop and Publish Mission, Vision, Objectives and Strategies (SGLC)
- 3/98 - Begin translation of Strategic Plan into Tactical Actions in Q, E, D & S
- 10/98 - Finish development of Tactical Actions
- Ongoing - Monitor Progress (SGLC)

Acquisition Reform Impact

- Customers
  - Creation of RMS Partnership helped focus on Customers and their needs
    - Contact RMSP to identify needs not being met
  - Increased Customer awareness of Standards Group

Acquisition Reform Impact

- Products in Dependability
  - 40+ existing IEC Pubs in Dependability (IEC Web Site)
  - 23 IEC Dependability Pubs being revised or developed
  - 8 ANSI/IEC/ASQ Pubs in Dependability

Dependability Standards

- IEC 60300 Series - Dependability Management
- IEC 60605 Series - Equipment Reliability Testing
- IEC 60706 Series - Guide on Maintainability of Equipment
- IEC 60812 - FMEA
- IEC 61025 - Fault Tree Analysis
- ANSI/IEC/ASQC D300-3-1&2 - Dependability Management
- ANSI/IEC/ASQC D1078 - Analysis Techniques for Dependability
- ANSI/IEC/ASQC D1123 - Reliability Testing
- ANSI/IEC/ASQC D1164 - Reliability Growth
- ANSI/IEC/ASQC D1165 - Application of Markov Techniques

Acquisition Reform Impact

- Other QEDS Products
  - 39 Statistics Application Standards
    - 16 Active Working Groups
  - 22 Quality Management Standards
    - 11 Active Working Groups
  - 14 Environmental Management Standards
    - 11 Active Working Groups

Statistics Standards

- ANSI/ASQC Z1.4 - Sampling Procedures and Tables for Inspection by Attributes
- ANSI/ASQC Z1.9 - Sampling Procedures and Tables for Inspection by Variables...
- ANSI/ASQC S1 - An Attribute Skip-Lot Program
- ANSI/ASQC S2 - Introduction to Attribute Sampling
- ANSI/ASQC Q3 - Sampling Procedures and Tables for Inspection of Isolated Lots by Attributes
- ANSI/ISO/ASQC A3534-1&2 - Statistics--Vocabulary and Symbols
- ISO 5725 Series - Accuracy of Measurement Methods and Results
- ISO 7870 - Control Charts--General Guide and Introduction
- ISO 7966 - Acceptance Control Charts
- ISO 8258 - Shewhart Control Charts

Quality Standards

- ANSI/ISO/ASQC Q9000-1 - QM and QA Standards - Guidelines for Selection and Use
- ANSI/ISO/ASQC Q9001 - Model for Quality Assurance in Design, Development, Production, Installation, and Servicing.
- ANSI/ISO/ASQC Q9004-1 - Quality Management and Quality System Elements -- Guidelines
- ANSI/ISO/ASQC A8402 - Quality Management and Quality Assurance--Vocabulary
- ANSI/ISO/ASQC Q10011 Series - Guidelines for Auditing Quality Systems
- ISO 10012-1 - Quality Assurance Requirements for Measuring Systems--Part 1 Metrological Confirmation System for Measuring Equipment

Environmental Standards

- ANSI/ASQC E4 - Specifications and Guidelines for Quality Systems for Environmental Data Collection and Environmental Technology Programs
- ANSI/ISO 14001 - Environmental Management Systems - Specifications with Guidance for Use
- ANSI/ISO 14004 - Environmental Management Systems - General Guidelines on Principles, Systems, and Supporting Techniques
- ANSI/ISO 14010,14011,14012 - Guidelines for Environmental Auditing
- ISO 14020 Series - Environmental Labels and Declarations
- ISO 14040 Series - Environmental Management--Life Cycle Assessment
- ISO 14050 - Environmental Management--Vocabulary

Acquisition Reform Impact

- Resources
  - RMS Partnership
  - Get involved in SDO(s), US Standards Group
    - At least 1 meeting per year on East Coast (Usually Washington, DC)
    - Electronic

Acquisition Reform Impact

- Communications
  - This meeting and ones like it
  - Electronic (Web Pages, List Servers & E-mail)
    - http://standardsgroup.asq.org

Summary

- The US Standards Group is ready, willing and able to help transition from MIL SPECs in the Q, E, D & S areas
- We can use your help to help YOU by furthering our Strategic Plan both as a proactive Customer and a Subject Matter Expert Resource
- To Join call ASQ at 1-800-248-1946 and tell them you want to join the Standards Group.

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Thursday, August 6, 1998

DOE Track

Session A: *Key Technical Standards Activities*

Speakers: Gary Roberson
Lynn Holt
Ron Peterson
Victor Dorbu

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New EM Standard on Storage of Plutonium Materials

An Application of the Systems Engineering Method to Standard Development

G.D. Roberson
Department of Energy
Albuquerque Operations Office

DOE AL

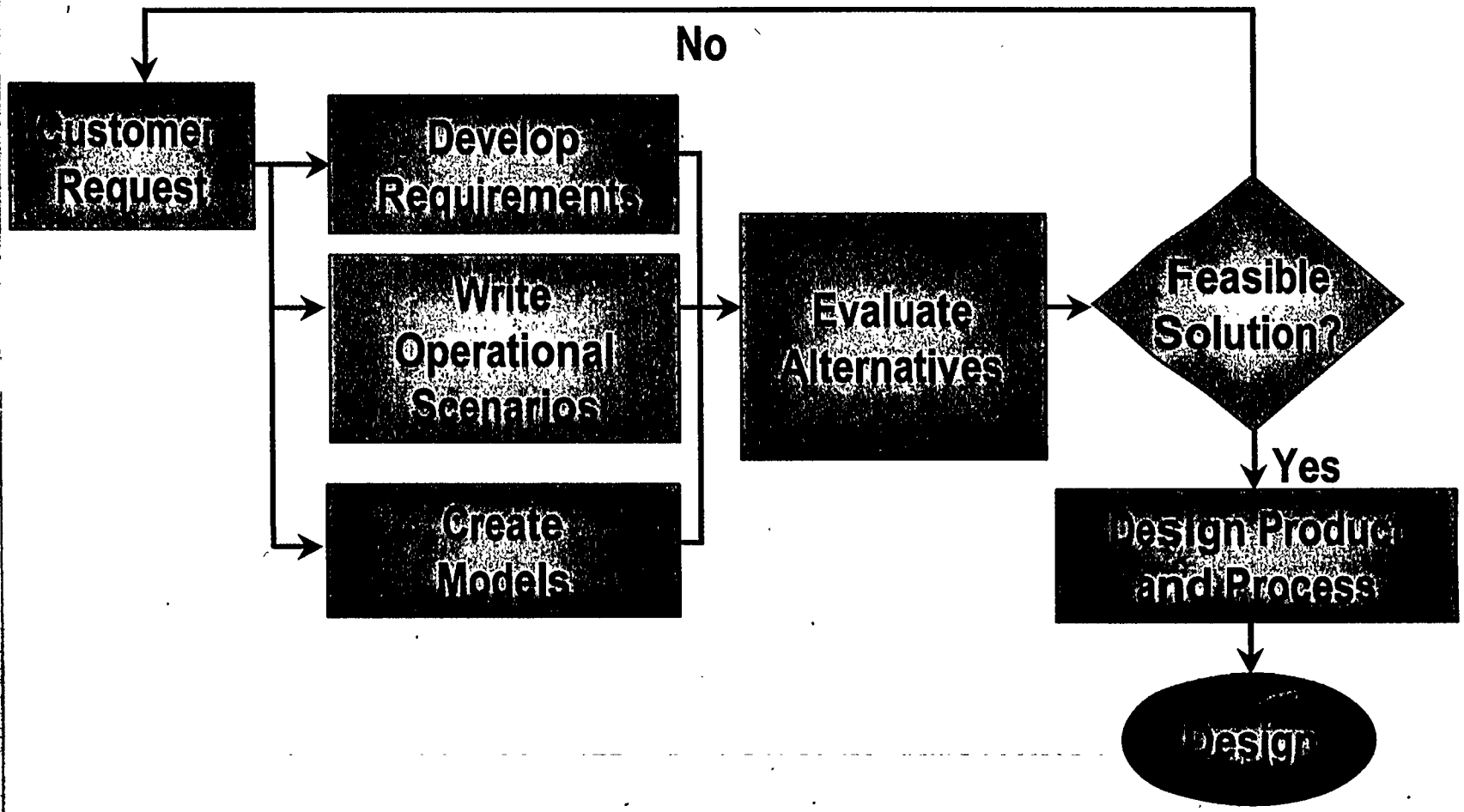
Manager
Technology/Technology Support

Agenda

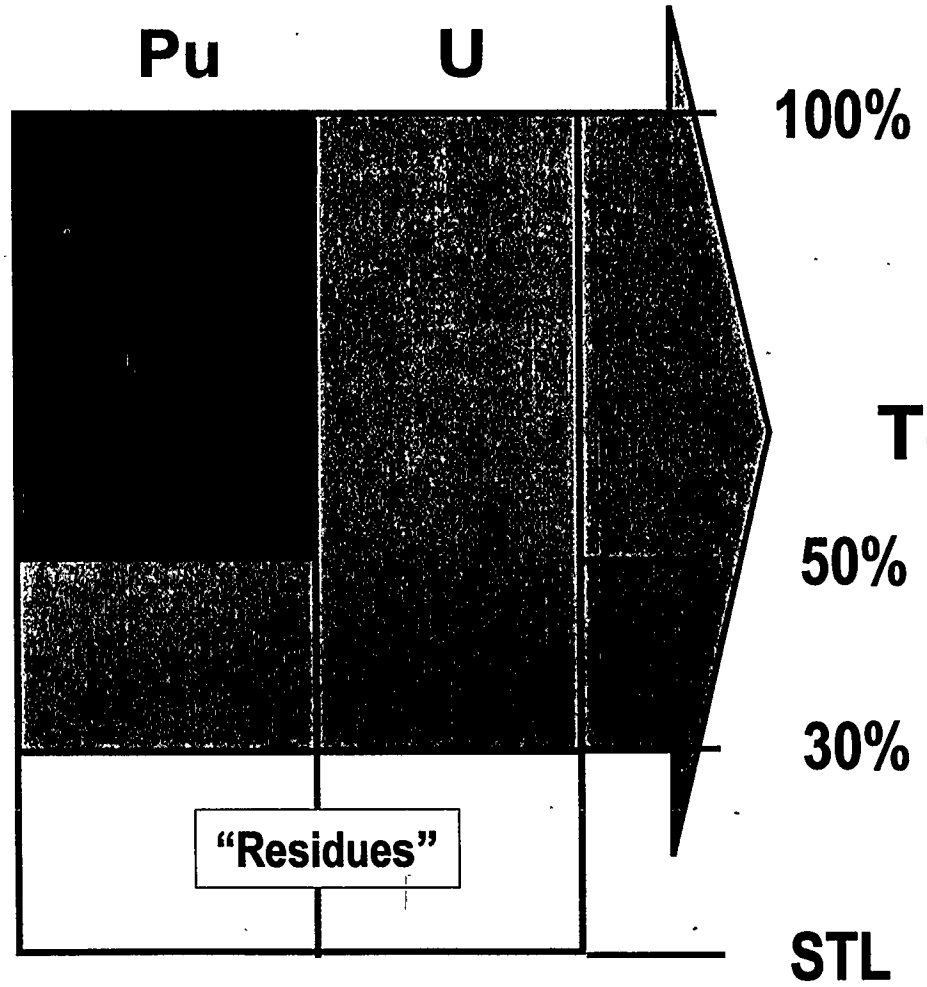
- What is Systems Engineering?
- The Process for PACK-0011
  - ✓ Problem Statement
  - ✓ Requirements Development
  - ✓ Alternatives Evaluation
  - ✓ System Design
- The Results

The System Design Process

(The Heart of Systems Engineering)



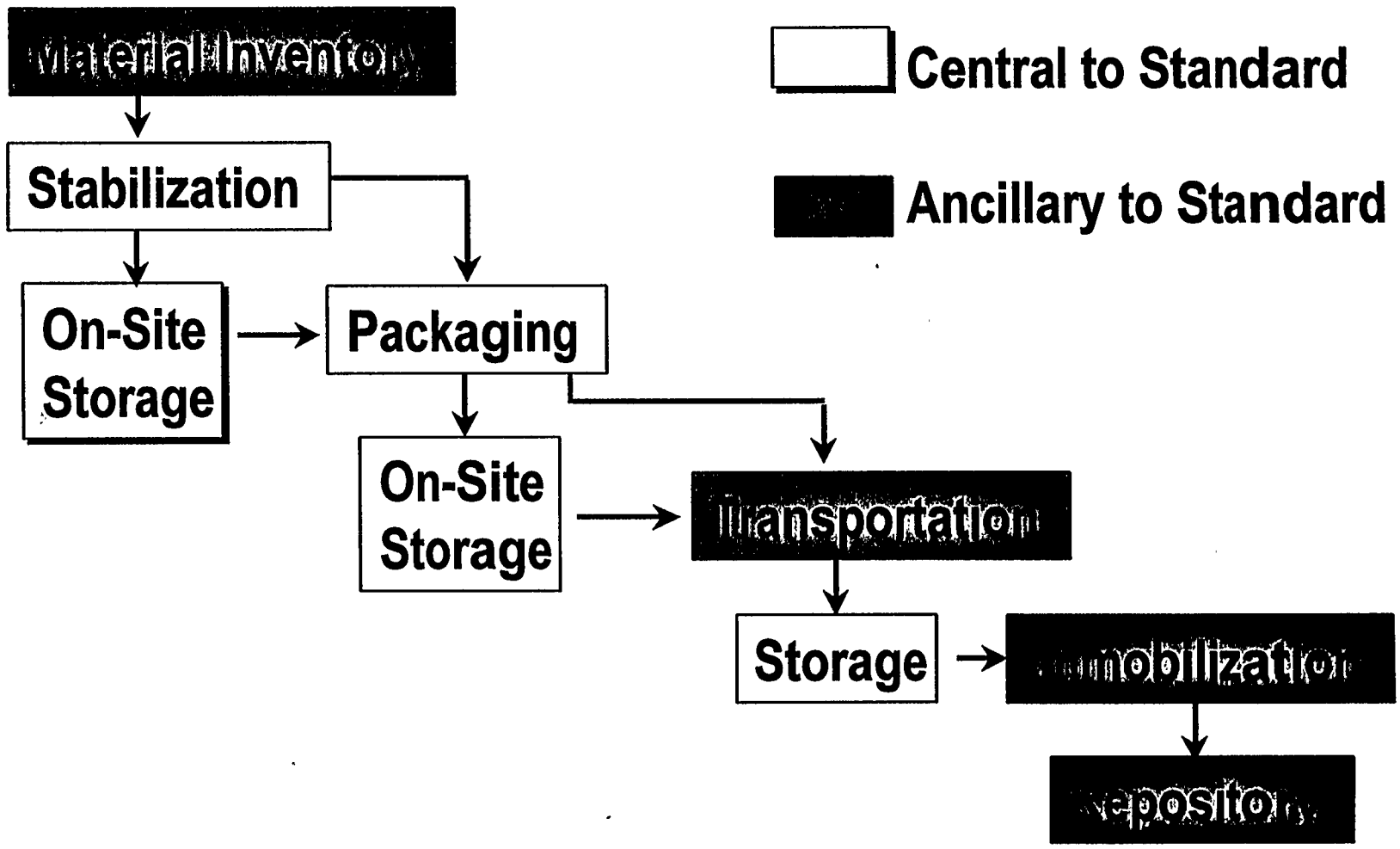
The Problem



To Immobilization

- Must Factor in:
  - ✓ Recent R & D
  - ✓ No safety reduction
  - ✓ Requirements vs. processes

Surplus Plutonium System



Requirements Development

Source Documents
- Programmatic
- Technical/ Safety

Requirements

Stakeholder Input
- Stabilizers (Sites)
- Storage (Sites)
- Programs (EM, MD, DP, NN)
- OSTP
- R&D (MIS Proj.)
- Procurement (OAK)
- Regulatory (DNFSB)

Programmatic Source Documents

- 94-1
  - ✓ DNFSB Recommendation 94-1
  - ✓ 94-1 Implementation Plan
- Strategic & Program Plans
  - ✓ DOE - 1997 Strategic Plan
  - ✓ Draft Stewardship Strategic Plan
  - ✓ Paths to Closure Plan
- MD Program Documents
  - ✓ ROD for Storage and Disposition of Weapons Useable Fissile Materials
  - ✓ Management and Disposition of Excess Weapons Plutonium (NAS)
  - ✓ Draft MD Material Acceptance Criteria Document
- PDD-13, Nonproliferation and Export Control Policy

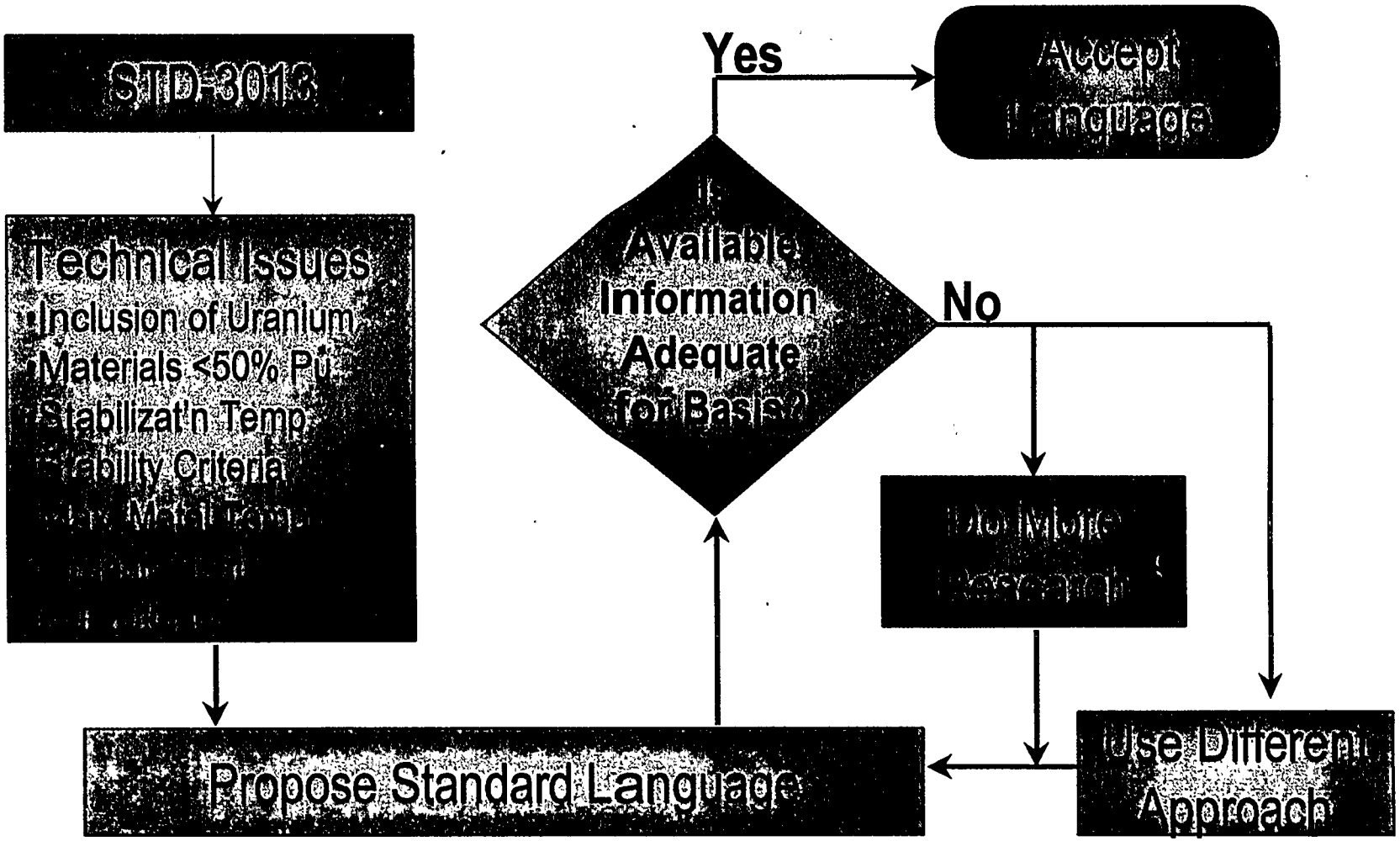
Technical Source Documents

- DNFSB Recommendation 94-1 and Implementation Plan
- Draft MD Material Acceptance Criteria Document
- DOE Orders
  - ✓ 420.1 (Facility Safety), 430.1 (Life Cycle Asset Management)
  - ✓ 440.1A (Worker Protection Management for DOE Federal and Contractor Employees)
  - ✓ 5400.1 (General Environmental Protection Program)
  - ✓ 5633.3B (Control and Accountability of Nuclear Material)
  - ✓ 6430.1A (General Design Criteria)
- CFR
  - ✓ 10CFR830.120 (Quality Assurance Requirements)
  - ✓ 10CFR835.404 (Radioactive Contamination Control and Monitoring)
- ANSI
  - ✓ ANSI ANSI/ANS-8.1-1983, R88 (Nuclear Criticality Safety in Operations with Fissionable Materials Outside Reactors)
  - ✓ N14.5 (American Nat'l Standard for Radioactive Mat'ls - Leak Tests on Packages for Shipment)

Starting Criteria ("The System")

Specifications	3013-96
Plutonium Content	>50% by weight
Uranium Content	LOI implies None
Oxide Density	Pu Crystal Density
Oxide Stabilization Temp.	950° C
Oxide Stabilization Time	2 hours
Oxide Stabilization Test	0.5% LOI
Oxide Test Methods	LOI
Metal Max. Temp. Limit	100 ° C
Liquids/organics on metal	Not Specified
Compressed Pu turnings	Not Specified
Thermal Output/Package	30 watts
Organic seal, coatings	Not Allowed
Design Standards	None
Surveillence Parameters	Not Specified
QA	List procedures

Alternatives Evaluation



Alternatives Discussion

■ November, 1997	MIS Group
■ January	"Core Group"
■ February	"Core Group"
■ March	Working Group
■ April	Working Group
■ May	Working Group

Evolved Criteria

Specification	3013-96	New Standard
Plutonium Content	>50% by weight	>30% by weight
Uranium Content	LOI implies None	>30% U+Pu
Oxide Density	Pu Crystal Density	Average Density
Oxide Stabilization Temp.	950°C	800°C (500 if pure)
Oxide Stabilization Time	2 hours	At least 1 hour
Oxide Stabilization Test	0.5% LOI	0.5% moisture
Oxide Test Methods	LOI	LOI + others
Metal Max. Temp. Limit	100°C	about 250°C
Liquids/organics on metal	Not Specified	Not Allowed
Compressed Pu turnings	Not Specified	Not Allowed
Thermal Output/Package	30 watts	19 watts
Organic seal, coatings	Not Allowed	OK in Conv. Can
Design Standards	None	DOE O 440.1
Surveillance Parameters	Not Specified	Four Listed
QA	Lists procedures	IAW site plans

System Design

Overall Strategy
- Scope
- Stabilization
- Packaging
- Storage

What Materials are Covered?
- See MD Acceptance Criteria

What is Done to Stabilize
- Metals? • Oxide? • Fuel Materials?

What are Container Specifications?
- Concept • Construction • Testing • Other

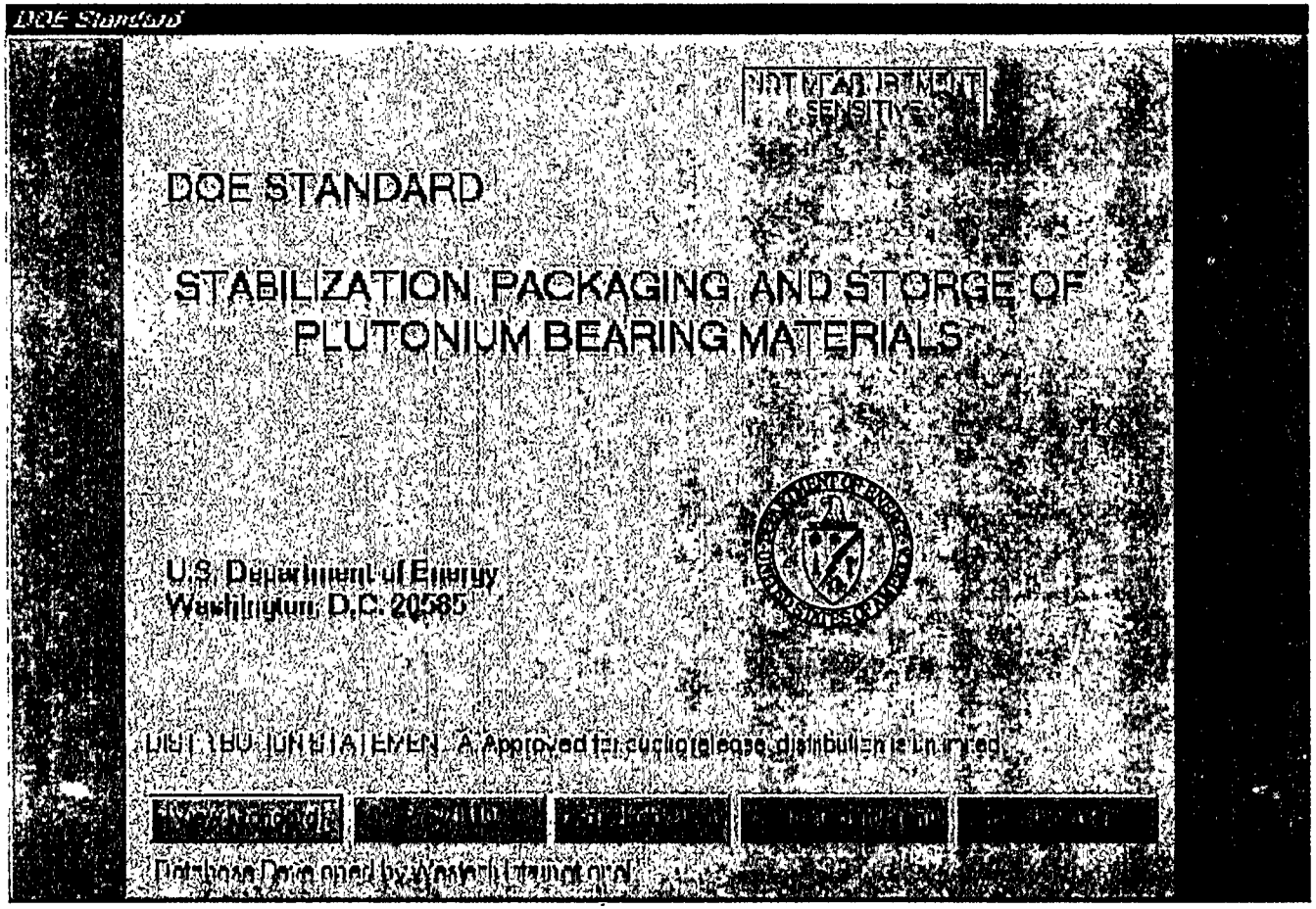
What is Placed in a Container?
- Fill Gas
- Mass Loading
- Packaging Process

What Surveillance is Required?
What Data/Records are Required?

Data Base for Standard

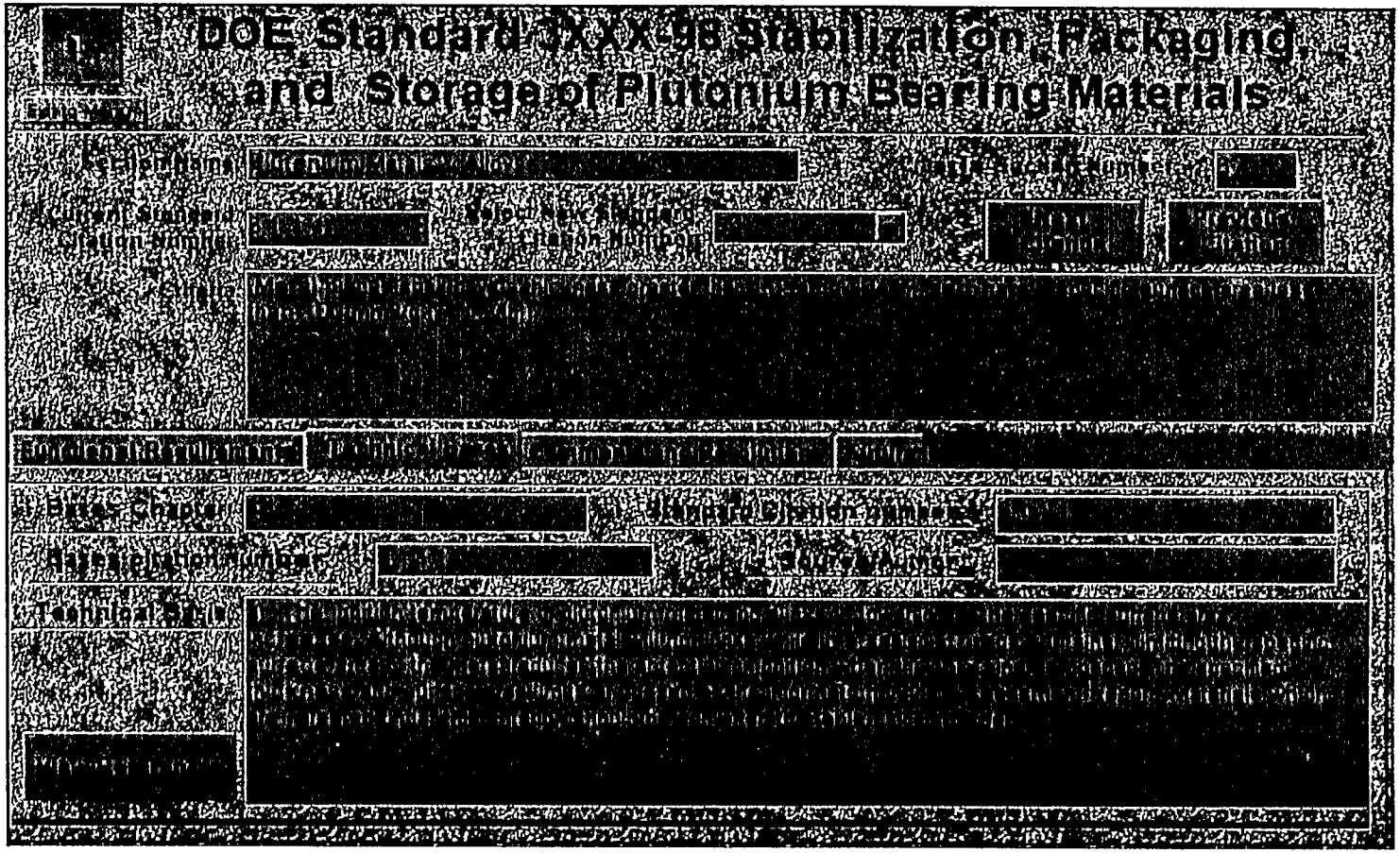
- Goal is to preserve evolution of Standard
  - ✓ Requirements
  - ✓ Criteria
  - ✓ Technical Basis
  - ✓ Comments
- User can review any criterion and access related requirements, technical basis, or comments.
- User can review any requirement and access related criteria

Opening Screen



Supporting Requirements

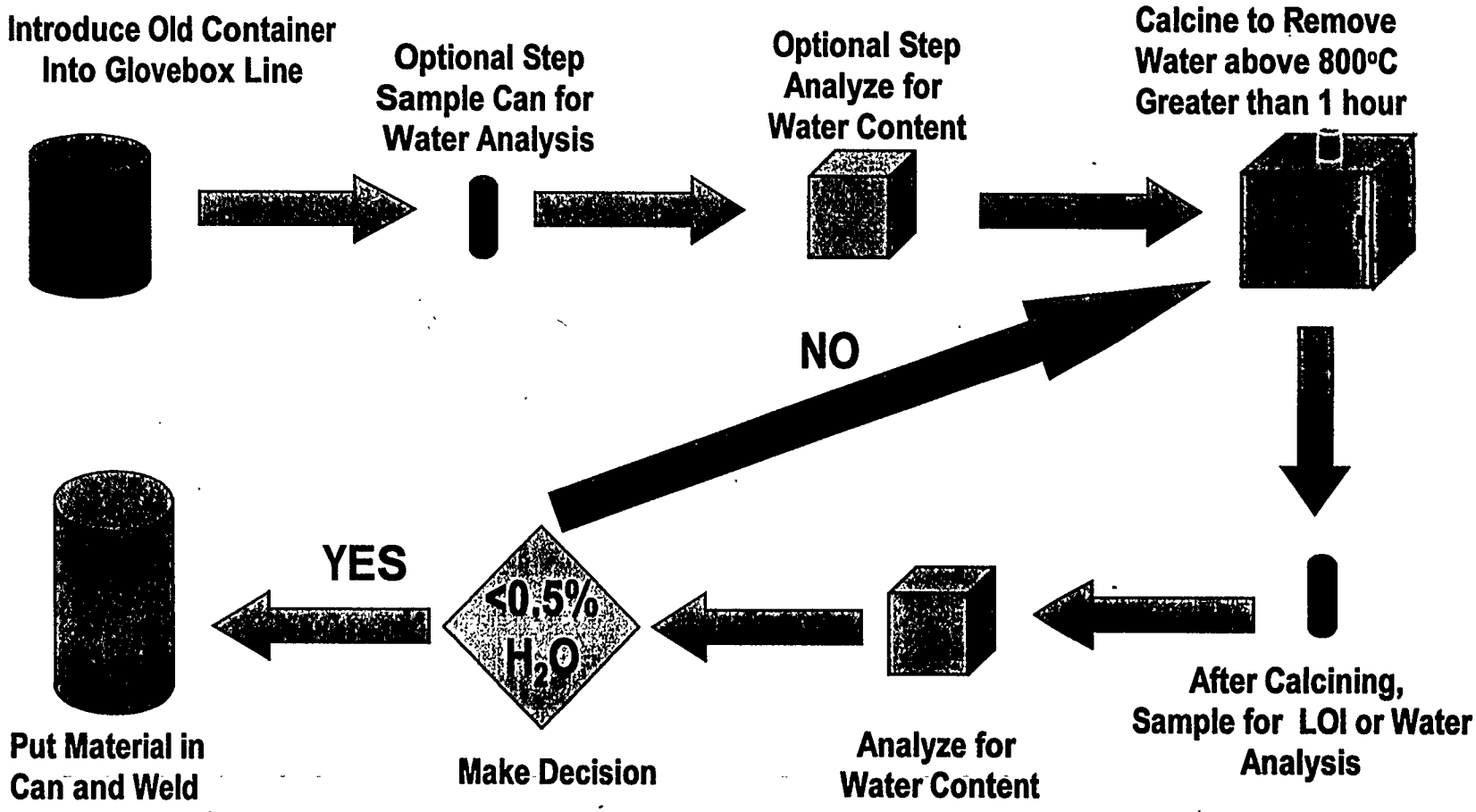
Related Technical Basis



Technical Issues Illustrated

- Oxide Stabilization Process
  - ✓ Temperature
  - ✓ Time
  - ✓ Packaging
  - ✓ Stabilization Verification
  - ✓ Stabilization Criteria
  - ✓ Consideration for Material Characteristics
- Maximum Metal Temperature

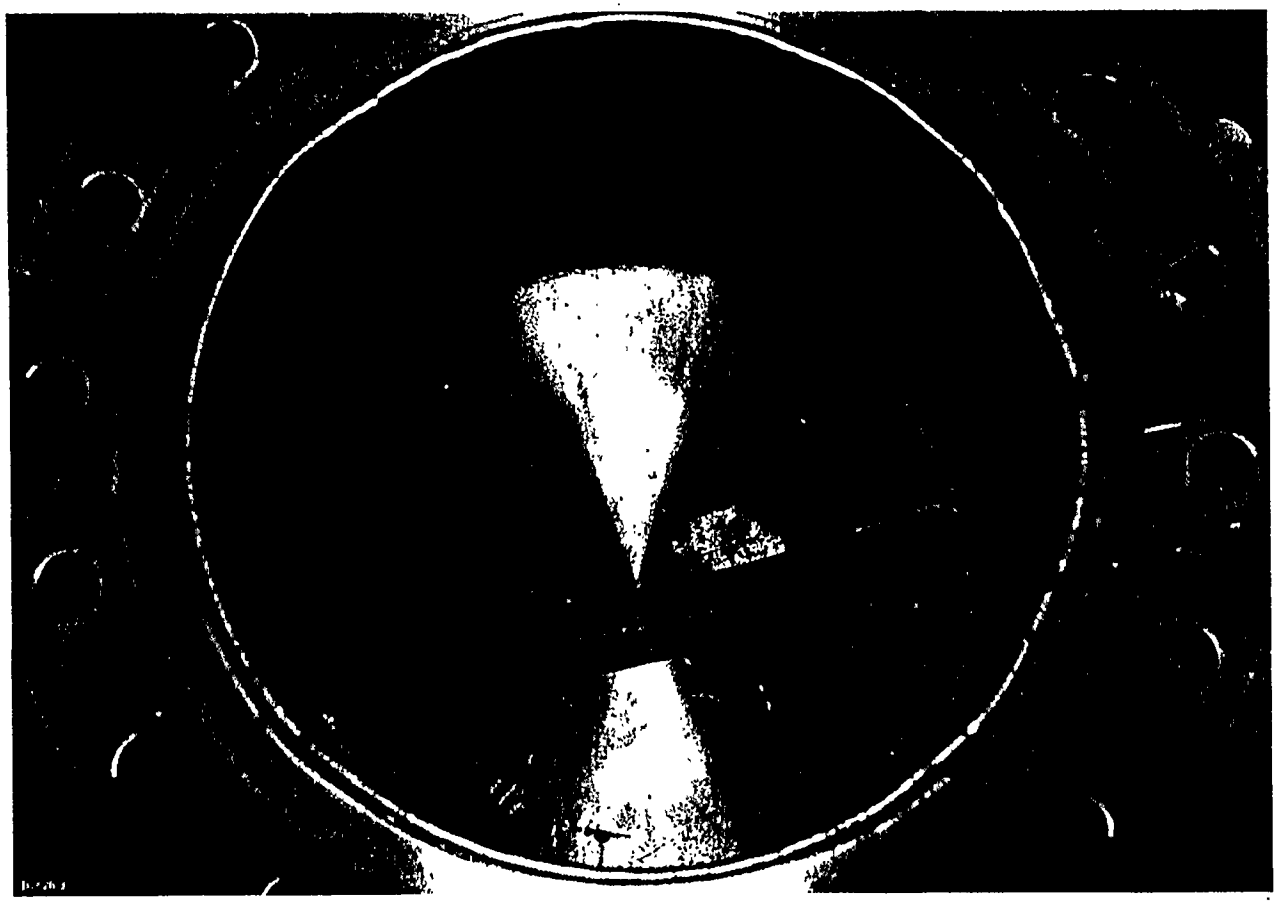
Proposed Stabilization Process



"Free-Flowing Powder!?"

Lesson: Minimize Assumptions about Material

Steel is Stronger than Plutonium



Alpha-Beta Phase Transformation is NOT a problem

Next Steps

- Complete research
- Incorporate research into technical basis (change criteria, if necessary)
- Issue new draft for Working Group review
- Incorporate Working Group comments
- Issue final draft for coordination
- Incorporate coordination comments
- Issue final Standard

DEPARTMENT OF ENERGY TOPICAL COMMITTEES UPDATE

CONSTRUCTION SAFETY
&
HOISTING and RIGGING
"TOPICAL COMMITTEES"

CHARTERS

- APRIL 1998 CHARTERS APPROVED
  - DOE CONSTRUCTION SAFETY ADVISORY COMMITTEE (CSAC)
  - DOE HOISTING AND RIGGING TECHNICAL ADVISORY COMMITTEE (HRTAC)

DOE CONSTRUCTION SAFETY "TOPICAL" COMMITTEE ACTIVITIES '97/'98

- ANSI A10 - "SAFETY REQUIREMENTS for CONSTRUCTION and DEMOLITION OPERATIONS"
  REVIEW, COMMENT, & BALLOT
  - A-10.13 "STEEL ERECTION"
  - A-10.27 "HOT MIX ASPHALT FACILITIES"

DOE CONSTRUCTION SAFETY "TOPICAL" COMMITTEE ACTIVITIES '97/'98 cont.

- ANSI A10 - "SAFETY REQUIREMENTS for CONSTRUCTION and DEMOLITION OPERATIONS"
  REVIEW, COMMENT, & BALLOT
  - A-10.20 "CERAMIC TILE, TERRAZZO, and DIMENSION STONES"
  - A-10.21 "PROPER CLEANUP and DISPOSAL of CONTAMINATED WORK CLOTHING"

DOE CONSTRUCTION SAFETY "TOPICAL" COMMITTEE ACTIVITIES '97/'98

- OSHA STANDARDS ACTIVITIES

  - COMMUNICATIONS TOWER ERECTION - TASK FORCE

    - CSAC's WESTERN AREA POWER ADMINISTRATION REPRESENTITIVE is on the TASKFORCE

DOE HOISTING & RIGGING "TOPICAL" COMMITTEE ACTIVITES '97/'98

- DOE TECHNICAL STANDARDS
  - HOISTING and RIGGING STANDARD DOE-STD-1090-98

DOE HOISTING & RIGGING "TOPICAL" COMMITTEE ACTIVITES '97/'98

- ASME STANDARDS ACTIVITIES
  (HRTAC MEMBERS ON BOTH COMMITTEES)
  - "CRANES for NUCLEAR FACILITIES"
    - "NUCLEAR UNDERHUNG and MONORAIL CRANES," (NUM)
    - "NUCLEAR OVERHEAD and GANTRY CRANES," (NOG)

DOE HOISTING & RIGGING "TOPICAL" COMMITTEE ACTIVITES '97/'98 cont.

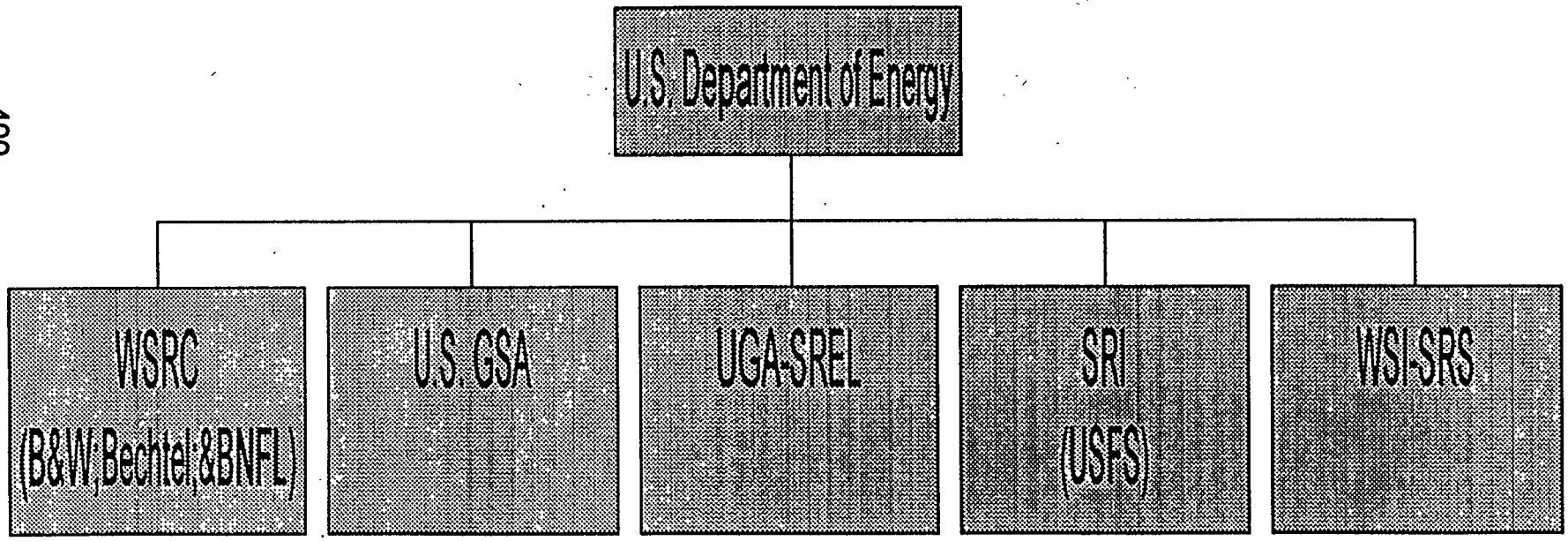
- ASME STANDARDS ACTIVITIES
  (HRTAC MEMBERS ON BOTH COMMITTEES)
  - B30.11 "MONORAILS and UNDERHUNG CRANES"
  - B30.20 "BELOW-the-HOOK LIFTING DEVICES"

ISO 14001: ACTIVITIES, BENEFITS, AND IMPLEMENTATION ISSUES AT THE SAVANNAH RIVER SITE

Authors: Ronald L. Peterson, Department of Energy,
Savannah River Operations Office

H. Steve Etheridge, Westinghouse Savannah
River Company

SAVANNAH RIVER ORGANIZATIONS



HISTORY AND BACKGROUND OF ISO AT SRS

- Built and operated from 1950 to 1989 by E. I. DuPont de Nemours & Company
- Operated from 1989 to present by Westinghouse Savannah River Company
- Size: 199,000 acres or about 310 sq. miles
- Work Force: currently about 14,500 - down from a high of over 26,000

EVOLVING SRS MISSION

- SRS focus has shifted from special nuclear materials production to environmental remediation and associated technology development.

- Technology development across a broad spectrum of engineering and scientific disciplines.

IMPLEMENTATION GOALS

- To be recognized as a leader in restoring, stabilizing, protecting and enhancing the environment

- To promote the SRS as the "Preferred Site" for future DOE missions and research opportunities

IMPLEMENTATION METHODOLOGY

- Strong culture of environmental compliance and quality assurance already in place.
- ISO 14000 Work Shop held in Augusta GA, August 1995
- Received SRS's Top Management's support
- Formed the ISO 14001Implementation Task Committee

IMPLEMENTATION METHODOLOGY (cont'd)

- Performed "top-down" gap analysis of policy, planning and program activities
- Communication and training are the keys
  - Video produced and shown
  - Training module developed and implemented
- Conversations held with Federal and state regulators and external stakeholders

CERTIFICATION OF CONFORMANCE

- SRS's top management made the decision to seek third-party certification.
- WSRC issues Request for Proposal to the five certified ISO 14001 registrars and ...selects KEMA Registered Quality Inc. (KEMA) to be SRS's registrar.
- KEMA spent almost two weeks on the SRS during the Summer of 97.
  - One "nonconformity" was found.

CERTIFICATION OF CONFORMANCE (cont'd)

- SRS resolved this "nonconformity" within thirty days and was recommended to ANSI-RAB for certification in conformance with the requirements of ISO 14001 by KEMA.

- ANSI-RAB issued SRS's Certificate of Conformance effective September 18, 1997.

- On February 5, 1998, KEMA completed its first certification maintenance evaluation. SRS passed!!

BENEFITS RECOGNIZED

- The responsibility for implementing the site-level, technical environmental assessment program was shifted to WSRC's Environmental Protection Department.(DOE-SR retains oversight responsibility.)

- Increased credibility with regulators and external stakeholders.

- State of South Carolina has allowed the SRS to take over selected drinking water permitting responsibilities.

BENEFITS ANTICIPATED

- SRS plans to participate in the U.S. EPA's Environmental Leadership Program (ELP).
- SRS will be recognized as "Best in Class" in environmental management.
- SRS will be selected as the "Preferred Site" for future DOE missions and technology development.

BENEFITS ANTICIPATED (cont'd)

- U.S. EPA will recognize ISO 14001 certification as meeting the requirements of the Code of Environmental Management Principles (CEMP).

COSTS

- Total costs obligated to date: approximately $86,000
- Major portion ($76,000) spent on contract with an accredited registrar for third-party certification
- Remainder spent on printing of policy, brochures, and other training materials.

Note: Staff salaries were not included, because they are considered part of the cost of conducting business.

BENCHMARKING/PARTNERING

- Benchmarking/partnering activities were conducted with NASA and DOE-ID/Operations.
- There are many ways for a facility to implement ISO 14001.
- There are many reasons for implementing ISO 14001.
- Some degree of regulatory relief is anticipated.
- Fewer facility evaluations conducted by external organizations have occurred.

INTEGRATED SAFETY MANAGEMENT SYSTEM (ISMS)

- Meets or exceeds the environmental requirements of DOE's ISMS.
- Can be used as a "tool" by the ISMS to meet these environmental requirements.
- SRS's EMS and ISMS have been developed using the standards/requirements identification documents (S/RIDs).

CONCLUSION

- The implementation of ISO 14001 at the SRS has resulted in real, objective-related improvements, not performance control mechanisms.

- The desired outcomes have been an environmental culture enhancement and recognition of SRS's commitment to environmental management.

ISO 14001: Activities, Benefits, and Implementation Issues at the SRS

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ISO 14001: Activities, Benefits, and Implementation Issues at the SRS

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TITLE: ISO 14001: ACTIVITIES, BENEFITS AND IMPLEMENTATION ISSUES AT THE SAVANNAH RIVER SITE

Authors: Ronald L. Peterson, Department of Energy, Savannah River Operations Office (DOE-SR)

H. Steve Etheridge, Westinghouse Savannah River Company (WSRC)

DOE's Savannah River Site (SRS) covers 310 square miles and employs approximately 14,500 people. The primary mission for the site has undergone a significant change from the production of nuclear materials for the nation's strategic weapons program to the protection and restoration of the environment at SRS. Our goals are to be recognized as a leader in restoring, stabilizing, protecting, and enhancing the environment and to promote the SRS as the "preferred site" for future DOE missions and research opportunities. To achieve these goals, SRS made the decision to implement an environmental management system that would conform to the requirements of international standard, ISO 14001. This paper will briefly describe SRS's decision to implement the environmental management system, outline the implementation methology, and discuss the benefits related to implementing ISO 14001 at a large government industrial-research facility.

Decision to Implement ISO 14001

SRS has an established culture of quality as a result of years of emphasis on quality management systems through NQA-1, DOE Order 5700.6, and ANSI/ASQC E4. Many of these systems are directly transferable to ISO 14001; for example, collection and evaluation of environmental data, record management, and corrective and preventive action systems. In early 1995, Westinghouse Savannah River Company (WSRC), the management and operating contractor for the SRS, began studying ISO 14001 and the potential benefits that implementation of the standard could provide to the environmental management of the SRS. WSRC decided that SRS could enhance its environmental management capability and performance and its credibility in the eyes of its stakeholders and regulatory authorities. Consistent with this decision, a 2-day workshop was held in August 1995 to introduce ISO 14001 to key personnel from WSRC, DOE-SR, other government agencies and subcontractors with a presence at SRS, and DOE personnel from other sites and national laboratories. At the workshop, it was concluded that many of the components, i.e., organization structure and practices and procedures, required to implement the standard were already established at the SRS. However, it was recognized that gaps existed and moderate effort would

be required to develop, implement, and document the environmental management system prescribed by ISO 14001.

Implementation of ISO 14001

Subsequent to the August 1995, ISO 14001 workshop, the Environmental Protection Department of Environmental, Safety, and Health Division, WSRC and the Environmental Quality Management Division of the Office of Environmental Quality, DOE-SR took responsibility for pursuing implementation. An ISO 14001 Implementation Task Committee was formed, made up of representatives from all of the major departments of the M&O contractor, WSRC; the other contractors and agencies that perform work on the SRS. This Task Committee met regularly, monthly at the beginning increasing to weekly as the third-party certification evaluation approached. The Task Committee divided itself into subgroups to work on the ISO 14001 elements/sub-elements, e.g., Policy, Planning, Environmental Aspects, Implementation and Operation, Facility Specific Training, Communication/Awareness, Monitoring and Measurement, and Management Review.

It is important to note that for any organization planning to implement ISO 14001, the first thing that must be done is to get top management's commitment to support such an undertaking. This is absolutely essential in the early stages of implementing ISO 14001. This was accomplished at the SRS through briefings to upper management including the corresponding legal councils of each organization involved. Status reports on the implementation were provided to upper management.

Meetings were initiated to reach all of the persons who conduct work on the SRS to brief them as to what ISO 14001 is, what is its value, and what each employee should know about ISO 14001 as it relates to their job. These meetings were followed up by local area network (LAN) messages about ISO 14001.

The subgroup of the Task Committee adopted a "top down" approach to the gap analysis. This was emphasized throughout the process. Due to the very complex nature of the site, to analyze each company and agency at all levels initially would have bogged down the process very quickly. Determining gaps at the very highest level initially is important The gap analysis was performed by matching the SRS's existing environmental policy, planning, and program activities with the requirements of ISO 14001. The gap analysis took four months to complete. The gap analysis is documented in the "ISO 14001 Environmental Management System Assessment Report and Closure Plan," issued in May 1996. This report was provided to senior management. Gap closure actions were assigned completion dates to be met by the identified responsible organizations.

By September 30, 1996 actions required for gap closure had been completed or implemented as appropriate. Obviously, the EMS is a dynamic, living process which causes ongoing activities. The cause and effect, or continuous improvement properties of the EMS can only be judged over time. The thrust of our effort now is to continue emphasis on communication and training. A plan for each of these ongoing efforts has been developed and implemented. A significant part of the communication plan is a video production describing management commitment and some basics of the EMS. Featured in the 12-minute video are Dr. Tara O'Toole (DOE), Mary McKiel (EPA), and Jim Gallagher (Westinghouse Corporate).

During the implementation of ISO 14001, discussions were held with the state and federal regulators and the stakeholders that have been identified through the Site's Public Involvement Program. The State of South Carolina indicated that its preference for any facility implementing ISO 14001 is to should seek third-party certification for verification of conformance with the standard.

Certification of Conformance

In July 1997, KEMA Registered Quality, Inc. (KEMA) spent approximately two (2) weeks performing a certification evaluation of the SRS. It was a very thorough review. Members of the ISO 14001 Implementation Task Team served as escorts and information resources for the KEMA review team. It was a huge, logistical challenge, but everything got scheduled and completed in a timely fashion. The key to success was planning and dry-runs prior to the KEMA review team's arrival at the site.

On September 18, 1997, the American National Standards Institute-Registrar Accreditation Board (ANSI-RAB) issued to the SRS. All of the major contractors and agencies that perform work on the site are named on this certificate.

On February 5, 1998, KEMA completed its first certification maintenance evaluation of the SRS's Environmental Management System and indicated that the SRS had satisfactorily met the requirements of ISO 14001.

Benefits Recognized

- The responsibility for implementing the site-level, technical environmental assessment program was shifted to WSRC's Environmental Protection Department. DOE-SR retains oversight responsibility.

- Increased credibility with regulators and stakeholders.

- State of South Carolina has allowed the SRS to take over selected drinking water permitting responsibilities.

- Systematic approach of the environmental management system simultaneously optimizes environmental protection activities and minimizes duplication.

- Meets or exceeds the environmental requirements of DOE's Integrated Safety Management System (ISMS).

Benefits Anticipated

- The SRS plans to participate in the U.S. EPA's Environmental Leadership Program (ELP).

- That SRS will be recognized as **"Best in Class"** in environmental management, and

- That SRS will be selected as the **"Preferred Site"** for future DOE missions and technology development

- That the U.S. EPA will recognize ISO 14001 certification as meeting the requirements of the Code of Environmental Management Principles (CEMP).

Costs

The costs of development, implementation and registration have been very reasonable and justified. The major portion of the costs was spent on the contracting of a third-party registrar to evaluate and determine whether our environmental management system was in conformance with the requirements of ISO 14001. To date, the specific costs that have been spent or obligated have been about $86,000.00 dollars. This figure does not include staff salaries that are considered part of the cost of conducting business.

Benchmarking/Partnering Activities

The SRS was contacted by the National Aeronautics and Space Administration (NASA) to participate in a "Benchmark Case Study" to discuss the resource requirements, costs, benefits, and schedule related to the development, implementation, and registration of the SRS's ISO 14001 Environmental Management System. Representatives of NASA were invited to the SRS to conduct the Benchmark Case Study on January 12 and 13, 1998. The following salient points resulted from the meetings with the representatives of NASA:

- There are many ways for a facility to implement ISO 14001

- There are many different reasons for implementing ISO 14001

- Some degree of regulatory relief is anticipated

- Fewer facility evaluations conducted by external organizations have occurred

Other DOE Field Offices such as Oak Ridge and Idaho have contacted the SRS. Partnering assistance was provided in the form of examples of the SRS EMS Policy and other documentation were provided to Oak Ridge and visits to the SRS were scheduled/planned. Representatives of the Idaho Operations Office (ID) visited the SRS on January 21 and 22, 1998. Although the ID is just getting started in the process of implementing ISO 14001, the meetings and interviews were mutually beneficial to the Idaho representatives and to the SRS.

Representatives of the Oak Ridge Operations Office have expressed an interest in visiting SRS to discuss EMS implementation, the exact dates have yet to be determined.

Integrated Safety Management System

The SRS's Environmental Management System (EMS) meets or exceeds the environmental requirements identified by the DOE's Integrated Safety Management System (ISMS). It is a "tool" that can be used by the ISMS to meet these environmental requirements. The SRS's ISMS can incorporate the Site's EMS because each system has been developed using the same standards/requirements identification documents (S/RIDs).

Conclusion

SRS management expects that its EMS will result in performance improvement as documented by the various indices measured and monitored at the site. These are real, objective-related improvements, not performance control mechanisms. The desired outcome of ISO 14001 at SRS has been an environmental culture enhancement - positive impacts on the environment through our commitment for change and continual improvement.

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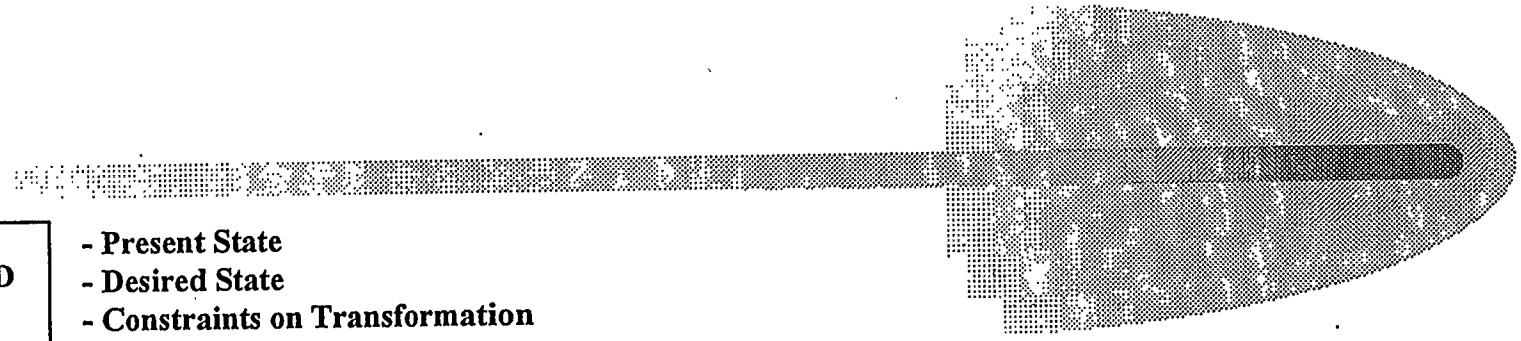
ISO 14001 AUDIT: APPLICATION OF THE SYSTEMS ENGINEERING PROCESS

VICTOR L. DORBU

BECHTEL SAVANNAH RIVER INC.

AUGUST 6, 1998

SYSTEMS ENGINEERING PROCESS



MISSION NEED ANALYSIS

- Present State
- Desired State
- Constraints on Transformation
- Goals & Objectives

REQUIREMENTS ANALYSIS

- Functions to Accomplish Mission
- High-Level Requirements

SOLUTION SYNTHESIS (Product)

- Candidate Alternative Solutions
- Evaluations of technical performance, risk, etc.
- Decision Analysis
- Preferred Solution

SOLUTION SYNTHESIS (Process)

- Candidate Alternative Solutions
- Evaluations of cost, schedule, performance, risk, etc.
- Decision Analysis
- Preferred Solution

MISSION NEED ANALYSIS

PE&CD Mission:

- **Provide leadership, integration, and execution of project management, engineering, construction, and related services to achieve and maintain ISO 14001 Certification**

MISSION NEED ANALYSIS (CONTD).

Present State:

- PE&CD Business Processes
- KASE
- Project Execution Training
- E7 Conduct of Engineering & Technical Support

MISSION NEED ANALYSIS (CONTD).

Present State (Contd).:

- E11 Conduct of Project Management and Control
- Pollution Prevention
- VPP
- Continuous Improvement

MISSION NEED ANALYSIS (CONTD.)

Constraints:

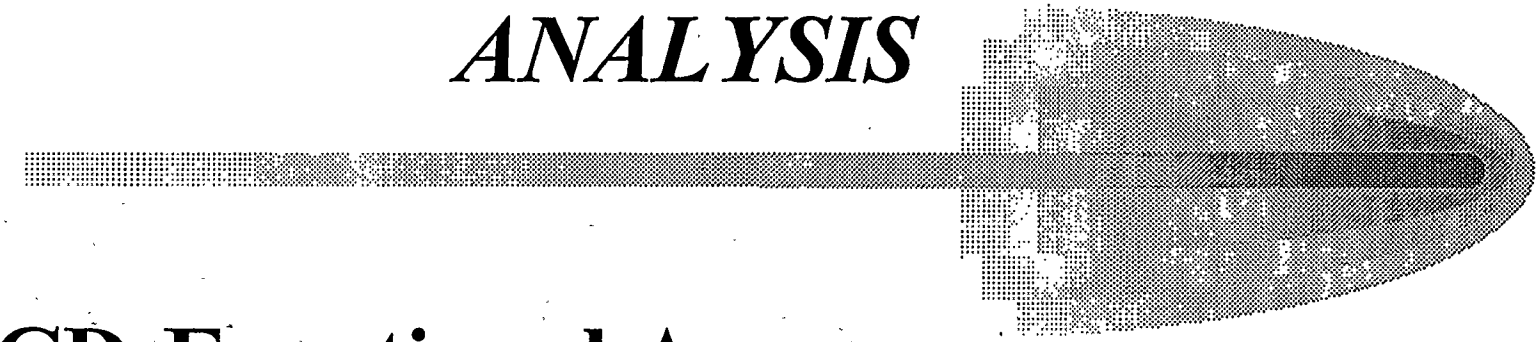
- **Federal Environmental Regulations (40 CFR)**
- **State Environmental Regulations (SC Code Title 48)**
- **Legal Agreements with Regulators**
- **DOE Orders (420.1 & 430.1)**
- **Stakeholders Agreements and Expectations**
- **Federal Facility Agreements**
- **Public Laws (42 USC, 33 USC)**

MISSION NEED ANALYSIS (CONTD).

Audit Objective:

- **The objective of the EMS audit is to assess the functionality of the environmental management systems that are in place, such as those designed to achieve regulatory compliance, and to identify and track regulatory requirements applicable to the organization, or to achieve objectives and targets.**

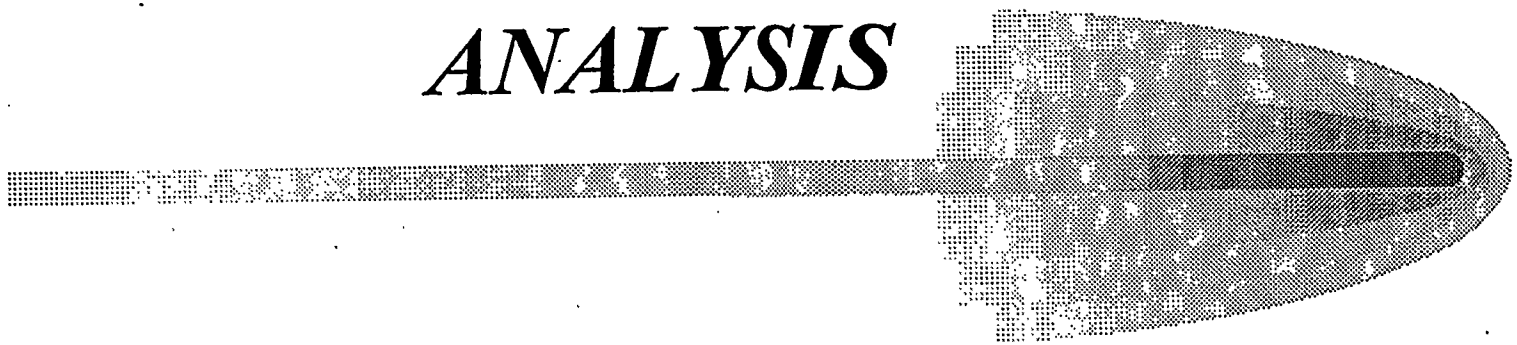
FUNCTIONS & REQUIREMENTS ANALYSIS



PE&CD Functional Areas:

- Design Engineering
- Technology Engineering
- Project Procurement
- Construction
- Construction Management

FUNCTIONS & REQUIREMENTS ANALYSIS



PE&CD Functional Areas (Contd).:

- Project Operations
- Project Controls
- Quality Control/Quality Assurance
- Operations Support

FUNCTIONS & REQUIREMENTS ANALYSIS (CONTD).

Major Environmental Responsibilities:

- Manage the SRS Asbestos Program
- Ensure environmental compliance in Site engineering and construction activities
- Provide environmental guidance for project, engineering, and construction personnel

FUNCTIONS & REQUIREMENTS ANALYSIS (CONTD).

Functions to Assure Audit Success

- **Demonstrate that ISO 14001 principles underpin PE&CD Business Processes**
- **Demonstrate that employees are committed to environmental performance goals**

FUNCTIONS & REQUIREMENTS ANALYSIS (CONTD).

Functions to Assure Audit Success (Contd).

- **Demonstrate that Conduct of Engineering & Technical Support, Conduct of Project Management and Control, and Conduct of Construction support environmental excellence, ISO 14001 Principles and Specifications**

FUNCTIONS & REQUIREMENTS ANALYSIS (CONTD).

Functions to Assure Audit Success (Contd).

- **Demonstrate Senior Management Commitment to Continuous Improvement in Environmental Performance**

- **Clearly identify and communicate PE&CD Environmental aspects to employees**

FUNCTIONS & REQUIREMENTS ANALYSIS (CONTD).

High Level Requirements:

- KEMA audit criteria
- The auditor shall not discover non-conformity
- All functional departments shall demonstrate conformance to ISO 14001 and audit criteria
- SRS's certification shall not be jeopardized by PE&CD's audit performance

SOLUTION SYNTHESIS

Alternative Courses of Action:

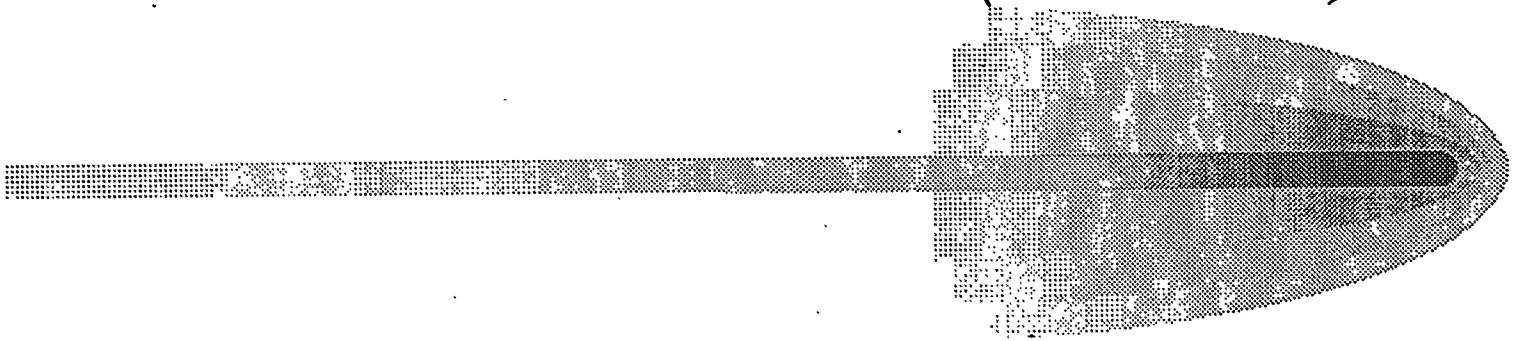
- Conduct audit on individual department basis
- Conduct audit on coordinated, centralized basis using the Systems Approach
- Conduct audit using no structured approach

SOLUTION SYNTHESIS (CONTD).

Alternative Courses of Action (Contd).:

- Conduct audit as dictated by auditing organization
- Conduct audit on functional basis

SOLUTION SYNTHESIS (CONTD).



Preferred Course of Action:

- **Conduct audit on coordinated, centralized basis using the Systems Approach**

SOLUTION SYNTHESIS (CONTD).

Result of "Preferred Course of Action"

- **No Findings**
- **ISO 14001 Certification**

ENGINEERING AND TECHNOLOGIES DEPARTMENT AND SITE CHIEF ENGINEER

Mission: To Successfully Utilize integrated Engineering Services in Executing Project and Non-Project Related Tasks

<u>Functions</u>:

- **Site authority to establish the policies, procedures, processes and systems necessary for the disciplined execution of all engineering activities**
- **Centralized service organization responsible for engineering services provided by PE&CD**
- **Assigns resources to execute and manage project and non-project related engineering activities for the Site Divisions**

PROJECT OPERATIONS DEPARTMENT

Mission: To Successfully Manage and Execute Projects

<u>Functions</u>:

- **Centralize service organization responsible for the management of project related work**
- **Site authority to establish the policies, procedures, processes and systems necessary for the disciplined management of project activities**
- **Deploy resources to the Site Divisions in a matrix fashion to manage and execute project activities**

Conduct of Project Management and Control Manual E11 Environmental Considerations

<u>Pre-conceptual Activities (Procedure 2.01 and Guide 1.1</u>

- Review existing project documentation for completeness including environmental requirements
- Prepare a Pre-conceptual Design Package which includes an early environmental evaluation, NEPA strategy, pollution prevention and waste minimization

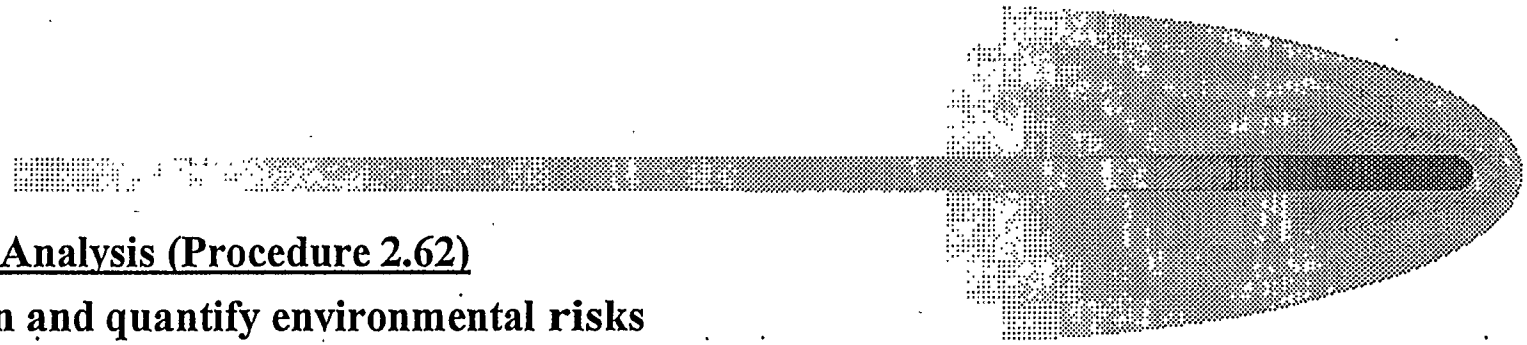
<u>Baseline Development (Procedure 2.11)</u>

- Prepare Environmental, Safety and Health Documentation
- Prepare NEPA documentation
- Include in Project Execution Plan

<u>Project Change Control (Procedure (Procedure 2.61)</u>

- Changes to scope/technical baseline must meet certain criteria including threats to health and safety and changes to achieve compliance with state and federal regulations or guidelines necessary to fulfill DOE's obligation

Environmental Considerations (Continued)



<u>Project Risk Analysis (Procedure 2.62)</u>

- **Screen and quantify environmental risks**

<u>Make or Buy (Procedure 7.2)</u>

- **Determine if the work requires immediate response to prevent negative environmental impact**

<u>Project Review Meetings (Guide 2.5)</u>

- **Provide attendees with significant information that could be used when interfacing with with regulators, etc.**

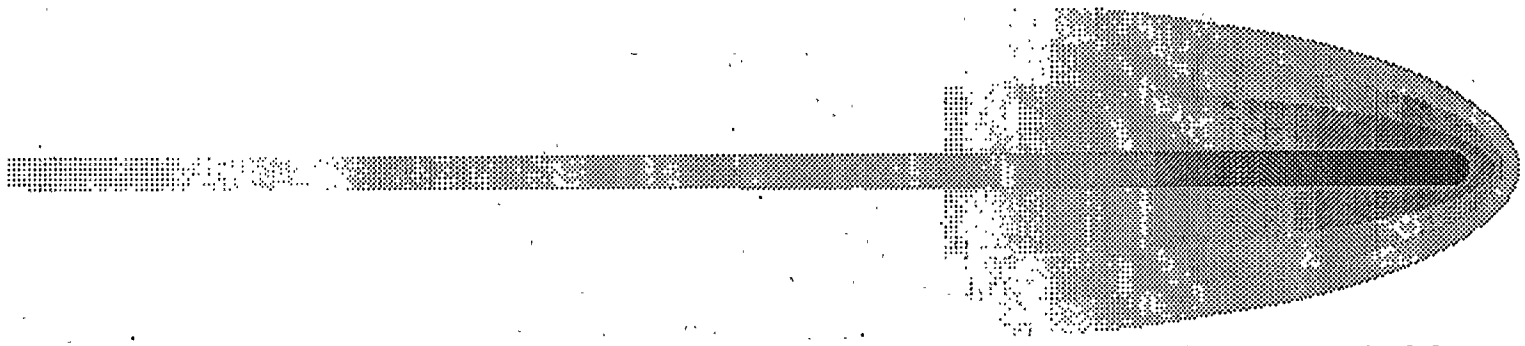
<u>Conceptual Design Report (Guide WSRC-IM-95-3)</u>

- **Address project efforts concerning compliance with NEPA**
- **Describe significant waste management options, environmental concerns, and the project's planned actions to manage these issues**
- **Clearly document permitting and and Environmental Assessment activities on the Project Schedule**

Environmental Considerations in KASE

Step #	Step Title
02A	Pre-Conceptual Risk Screening
03	Prepare Statement of Mission Need
03A	Preliminary Technical and Functional Requirements
06	Review Customer Provided Information
08	Project Expectations Meeting
10	Identify Permit Requirements
15	Project Execution Strategy
19A	Establish Statements of Work (SOW)
22	Facility Environmental Review
22B	Technical & Functional Requirements
23B	Project Risk Assessment
25A	Perform Final Design Review
25C	Issue Conceptual Design Report and Project Execution Plan
48A	Revise Preliminary hazards Analysis
49	Perform Design Process Hazards Review
56	Management Review of Safety Action Plan
72B	Complete Authorization Basis Reviews
77B	Readiness Self-Assessment (RSA)
78	Lessons Learned Review
M-8	Complete Identification of Environmental Per Requirements
M-31	Receive Construction Permits

PE&CD ISO 14001 AUDIT PLAN



• John Oakland Staff Meeting	7/21/97	1:00 p.m.
• Richard Tosetti Staff Meeting	7/22/97	7:30 a.m.
• Brief Level II Managers and their Staff	7/21-7/25*	
• Display Posters in 730-B and 730-1B Lobbies	7/21/97	
• Distribute ISO 14001 Brochures to all employees	7/23/97	
• Send Electronic mail to all PE&CD employees	7/30/97	11:00 a.m.
• Perform ISO 14001 Audit per Audit Agenda	7/30/97	11:00 a.m. - 3:00 p.m.

* (to be scheduled)

LESSONS LEARNED

- **Visible Senior management commitment to process is crucial**
- **The opening meeting set the tone and greatly influenced the outcome of the audit**
- **The pre-audit meetings with audit team made the planning and execution better**

LESSONS LEARNED (Contd).

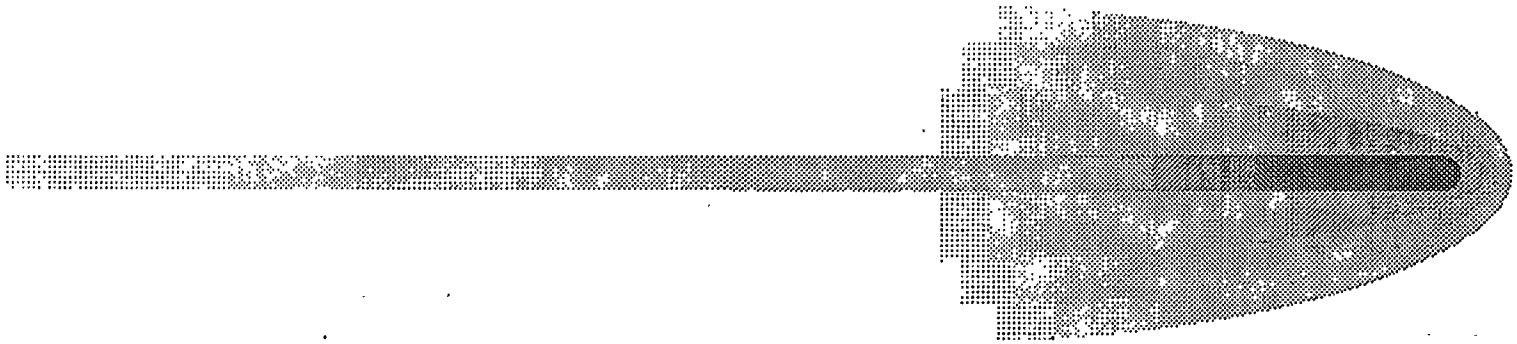
- **Audit protocol and checklists very helpful**
- **Communicate! Communicate! Communicate!**
- **Dedicated resources on day of audit very essential**
- **On-line information management system saved a lot of time and made the auditor's task easier**

LESSONS LEARNED (CONTD).

- **Subject-Matter Experts (SME) should be on hand to promptly address technical issues**

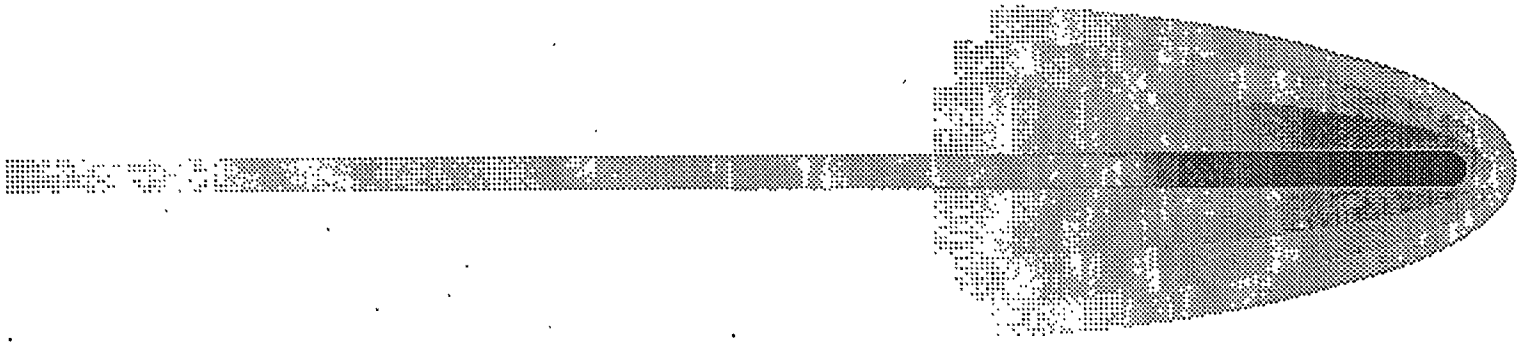
- **Pre-audit selection of projects and engineering tasks that demonstrate PE&CD's environmental performance as a normal way of doing business reinforced the auditor's confidence in the Division's Environmental Management System (EMS)**

LESSONS LEARNED (CONTD).



- **<u>Leverage</u>**
  - **management belief**
  - **regulator interest**
  - **existing system (e.g., Conduct of Operations)**
  - **corporate/site culture (e.g., workplace safety)**

LESSONS LEARNED (CONTD).



- **Avoid another program of the month syndrome**
- **Develop a plan of action and "stick to it"**

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Thursday, August 6, 1998

DOE Track

Session B: *Crosscutting DOE Initiatives Related to the Identification and Use of Technical Standards*

Speakers: John Austin
Richard Pettit
Clark Gibbs

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STATUS OF EXTERNAL REGULATION

OF THE

U.S. DEPARTMENT OF ENERGY

John H. Austin, Deputy Chairman

NRC TASK FORCE

August 6, 1998

OUTLINE

- Background
- Memorandum of Understanding
- Status of FY 1998 Pilot Projects
- FY 1999 Pilot Projects
- Need for Standards

BACKGROUND

- 1994 - legislation proposed on external regulation
- 1995 - DOE Advisory Committee on External Regulation of DOE Nuclear Safety Report
- 1996 - DOE Working Group on External Regulation
- 1996 - Secretary of Energy O'Leary announces intent to seek legislation
- 1997 - NRC endorses proposal and forms Task Force
- June 1997 - Secretary of Energy Peña and Chairman Jackson refocus effort on pilot program
- November 1997 - DOE/NRC Memorandum of Understanding

MEMORANDUM OF UNDERSTANDING

- Signed November 21, 1997
- Two year pilot program involving 6 to 10 facilities, followed by proposed legislation
- In transmittal letter, Commission proposed to seek legislation after each pilot project
- Objectives of pilot program

STATUS OF FY 1998 PILOT PROJECTS

- Lawrence Berkeley National Laboratory (California)
  - Performs research in energy sciences, general science, and biosciences
  - Completed field work in January 1998
  - Identify issues, options, and make recommendations
  - Complete report by October 1, 1998

STATUS OF FY 1998 PILOT PROJECTS (continued)

- Radiochemical Engineering Development Center (Tennessee)
  - Production, storage, and distribution center for DOE heavy element research center
  - Completed field work, including horizontal slice across Oak Ridge National Laboratory in June 1998
  - Complete report in late 1998

STATUS OF FY 1998 PILOT PROJECTS (continued)

- Receiving Basin for Offsite Fuels (South Carolina)
  - Receipt, transfer and interim storage of irradiated fuel elements from Savannah River Site reactors, and domestic and foreign research reactors
  - Conducting field work
  - Complete report in late 1998

FY 1999 PILOT PROJECTS

- Pacific Northwest National Laboratory
  - Entire site
  - Developing work plan
- Nonpower reactor?
- Environmental Management Facility?

NEED FOR STANDARDS

- Radiation safety standards for accelerators
  - Mixed radiation fields
  - Safety of accelerators
- How to perform integrated safety assessments of old operating facilities
  - Design basis
  - Graded approach
  - Bounding approach

NEED FOR STANDARDS (continued)

- Decommissioning standards
  - Best available technology
  - SAFSTOR?
- Fissile byproduct materials
  - Criticality
  - Material control and accounting
- Part 20 standards for NARM
- Standards for unit operations and environmental transport
  - How to avoid educating NRC multiple times?

Laboratory Accreditation

Richard B. Pettit
Primary Standards Laboratory
Sandia National Laboratories
Albuquerque, NM 87185

ABSTRACT

Accreditation can offer many benefits to a testing or calibration laboratory, including increased marketability of services, reduced number of outside assessments, and improved quality of services. Compared to ISO 9000 registration, the accreditation process includes a review of the entire quality system, but in addition a review of testing or calibration procedures by a technical expert and participation in proficiency testing in the areas of accreditation. Within the DOE, several facilities have recently become accredited in the area of calibration, including Sandia National Laboratories, Oak Ridge, AlliedSignal FM&T; Lockheed Martin Idaho Tech. Co., and Pacific Northwest National Lab. Recently, representatives from these and other DOE facilities throughout the U.S. formed a DOE Accreditation Committee under the sponsorship of the DOE Technical Standards Program. This committee will hold its first open meeting on September 23-24, 1998 at the National Institute of Standards and Technology in Gaithersburg, MD. with the goal of developing procedures for sharing and coordinating information within DOE on accreditation issues.

At the national level, a new non-profit organization was recently formed called the National Cooperation for Laboratory Accreditation (NACLA). The goal of NACLA is to develop procedures, following national and international requirements, for the recognition of competent accreditation bodies in the U.S. NACLA is a voluntary partnership between the public and private sectors with the goal of "a test or calibration performed once and accepted world wide." The NACLA accreditation body recognition process is based on the requirements of ISO Guide 25 and Guide 58. A membership drive will begin some time this fall to solicit organizational members and an election of a permanent NACLA Board of Directors will follow later this year or early 1999.

Laboratory Accreditation

Introduction

The need for laboratory accreditation of testing and calibration laboratories is becoming increasingly important and is being driven by both regulatory requirements and national and international requirements in the marketplace. In the future, laboratory accreditation may become a requirement for corporate survival. Accreditation is defined as "a procedure by which an authoritative body or person is competent to carry out specific tasks. [1] Compared to ISO-9000 registration, accreditation includes a review of the entire quality system supporting the laboratory, but it also includes two very important and distinguishing additional requirements: First, it includes a the review of the testing or calibration laboratory's procedures by a technical expert to ensure that the process, equipment, environment, uncertainties, etc. are correct for the results claimed. Secondly, the testing or calibration laboratory must participate in proficiency testing in the areas where it is seeking accreditation. In many cases, the proficiency testing is coordinated by the accreditation body that is performing the accreditation, but it may also be a joint effort that is coordinated by a series of laboratories that have been, or are, seeking accreditation. These additional requirements ensure that the laboratory is performing its job correctly and that its results are compatible with other laboratories.

The purpose of this paper is to discuss accreditation activities within the Department of Energy (DOE), especially the formation of a DOE Accreditation Committee under the Technical Standards Program and the recommendation that all DOE calibration and testing laboratories adopt the international ISO Guide 25 "General Report for the Completeness of Testing and Calibration Laboratories." In addition, the activities of a new organization, called the National Cooperation for Laboratory Accreditation (NACLA), are discussed which has the goal of recognizing competent accreditation bodies in the US and developing international recognition of the US accreditation program.

DOE Accreditation Activities

Within the DOE, several facilities have recently become accredited in the area of calibration, including:

- Sandia National Laboratories' Primary Standards Laboratory;
- Oak Ridge National Laboratories Metrology Center;
- AlliedSignal Federal Manufacturing & Technology Metrology Lab. in Kansas City, MO;

- Idaho National Engineering and Environmental Laboratory Standards and Calibration Laboratory in Idaho Falls, ID;
- Pacific Northwest National Laboratory in Richland, Washington.

Additional information of the scope of accreditation for these laboratories can be obtained from the National Institute of Standards and Technology (NIST) National Voluntary Laboratory Accreditation (NVLAP) home page at *http://ts.nist.gov/ts/htdocs/210/214/214.html*. Recently, representatives from these and other DOE facilities throughout the U.S. formed a DOE Metrology Committee under the sponsorship of the DOE Technical Standards Program. The objectives of the DOE Metrology Committee are to promote a coordinated metrology program for DOE, provide a network for sharing information and resources, and encourage high-quality, cost-effective metrology services for DOE Programs. The committee meets once a year and at the current time has three working groups in the areas of Communication, Uniformity, and Resources.

The Uniformity Working Group has recommended that DOE adhere to the requirements of ISO Guide 25 for all calibration and testing laboratories within DOE. This will provide uniformity within DOE and bring DOE into alignment with national and international standards. Before reaching this recommendation, the Working Group surveyed 30 DOE metrology laboratories concerning their current requirements. Most laboratories currently comply with ANSI/NCSL Z540-1-1994 "Calibration Laboratories and Measuring and Test Equipment – General Requirements" or ISO Guide 25. Note that ISO Guide 25 is currently under revision as DIS 17025, which will become an ISO Standard and that ANSI/NCSL Z540-1-1994 is based primarily on ISO Guide 25.

A second Working Group is focusing on Resource issues. The group has developed a web site for the committee at *http://www.doe.gov/metrology/ mchome.html*. The site includes information on committee members, a point of contact at each DOE laboratory, and position papers. In the near future, a metrology capabilities database for all DOE laboratories will be added. The Communication Working Group is focusing on establishing a program to educate DOE customers and sponsors on the importance and need for metrology capabilities within DOE on a broad front. The group is establishing a process to develop and approve Position Papers from the Metrology Committee. Additional information on the activities of this group can be obtained from the web site or by contacting J. R. Wayland (505) 845-9771 *jrwayla@sandia.gov*.

An additional DOE-wide committee addressing accreditation issues has recently been formed. The group will hold its first open meeting September 23-24, 1998 at NIST, Gaithersburg, MD. Called the DOE Accreditation Committee, it is also sponsored by the DOE Technical Standard Program and has as its goal coordinating and relaying information within DOE on accreditation issues. Contact Dr. Sal Scarpitta, Brookhaven National Laboratories (516) 344-9771 for further information on the September workshop. The workshop will develop a DOE Accreditation Committee Charter and Bylaws and form Working Groups in three areas, including Communications; Accreditation Related Activities within DOE; and Interfacing with External Accreditation Activities.

NACLA

Currently, there are over 150 accreditation bodies in the United States, representing agencies from the private sector, federal governments, state governments, and local programs. [2,3] These programs are not coordinated since they were developed to address specific needs in specific areas. The programs differ in administration, scope of the standards, approval process, etc. A more coordinated approach to the US situation is needed because there is no recognized national system for accredited laboratories; thus many laboratories must undergo multiple accreditations. [4] In addition, only a few accreditation bodies are recognized internationally, so that the tests or calibrations from accredited laboratories are not accepted in foreign countries. [5]

The issues at the national level were addressed in an Open Workshop held at the National Institute of Standards and Technology (NIST) on January 7, 1997. [6] After the Workshop, the National Cooperation for Laboratory Accreditation (NACLA) was established in order to address those issues. NACLA is a voluntary partnership between interested public and private sectors with the goal of coordinating the accreditation of laboratories in the U.S. The goal of NACLA is "a test performed once and accepted world wide." An interim board of directors was formed in April 1997; after one year of operation, the interim board developed a processes for the recognition of accreditation bodies. At the present time, I am a member of the interim board representing the DOE through the sponsorship of the DOE Technical Standards Program Office.

The NACLA recognition process is based on international guidelines, specifically ISO Guide 25, "General Requirements for the Competence of Calibration or Testing Laboratories" and ISO Guide 58, "Calibration and Testing Laboratory Accreditation Systems – General Requirements for Operation and Recognition." In addition, accredited laboratories must follow all elements of other required standards and relevant regulatory requirements that are needed to obtain accredited status. The recognition system proposed by NACLA provides an assessment of accreditation bodies by "teams" with representation from accreditors, as well as from other interested parties – such as government agencies, testing and calibration laboratories, and industry. The approval process also involves a Recognition Committee that also has representation from all parties. This type of "team" oversight process provides the necessary confidence building opportunities through active participation by regulatory agencies, industry and others that have a need to have confidence in the NACLA recognized accreditation bodies. In addition to the recognition process, the NACLA interim board has developed an organizational structure, operating committees, and operational procedures, including by-laws, administrative guidelines, and a quality manual. While many of these documents are still under development, many can be obtained from the NACLA web sight listed below.

An Open Forum was held at NIST on April 16, 1998 to present the current status of NACLA and discuss the proposed recognition process. The Open Forum was attended by 125 representative from accreditation bodies, federal and state agencies, industry, testing/calibration laboratories, and other interested parties. Following a discussion of the

NACLA process for the recognition of accreditation bodies, the by-laws, and the quality manual, the general consensus expressed by attendees was to proceed with the incorporation of NACLA. President Fred Grunder, representing American Industrial Hygiene Association (AIHA), proceeded with the incorporation using a law firm in Washington, D.C. Almost all of the members of the interim board have agreed to transfer to board members of the new organization. Federal agencies will participate on the new Board of Directors as liaison members. In addition federal employees will serve on all NACLA committees along with other NACLA members.

A membership drive will began sometime this fall to solicit organizational members. Soon there after, a nominating committee will develop a slate of candidates for election to a permanent NACLA Board of Directors by the fall of 1998. A full NACLA membership meeting will be held later this year or in early 1999. The slate of candidates will represent all stakeholders (government, accreditors, laboratories, industry, and other interested parties) in the NACLA process.

Additional information can be obtained from NIST/NACLA home page at *http://ts.nist.gov/ts/htdocs/210/nacla/index.htm* or by contacting Richard B. Pettit, (Sandia) at (505) 844-6242, Fred Grunder (AIHA) at (703) 849-8888 or Cathleen Trail (NIST) at (301) 975-4462.

Summary

Laboratory accreditation has become a very important issue at the national level and is being driven by international/national standards and requirements, and the marketplace. At the present time, the United States has very diverse accreditation programs that are represented by over 150 accreditation bodies. A new organization, called NACLA, has been formed in order to provide for the recognition of competent accreditation bodies through a voluntary partnership of private and public sectors. NACLA will provide a focus and coordination of laboratory accreditation programs in the US (and eventually North America), in order to serve national needs in accreditation. The DOE Technical Standards Program has recently formed two committees, the DOE Metrology Committee and the DOE Accreditation Committee, in order to interface with these national activities and to provide a focal point within DOE for metrology and accreditation information and issues.

References

1. ISO/IEC Guide 2 "General Terms and Their Definitions Concerning Standardization and Related Activities," International Organization for Standardization, Geneva, Switzerland.

2. Janice S. Jablonski, "Examination of Laboratory Accreditation Programs in the United States and the Potential Role for a National Laboratory Accreditation System," NIST GCR 97-714, March 1997.

3. Helen Gillespie, "Lab Accreditation is All Over the Map," Today's Chemist at Work, pp. 48-54, March, 1998.
4. Belinda L. Collins, "Laboratory Accreditation: The Need for a National Infrastructure," Calibration Laboratory, pp. 18-22, November/December, 1996.

5. Klaus Brinkmann, "How to achieve World-Wide Mutual recognition of Calibration and Test Results – or: Who Accredits the Accreditor?," Accred. Quality Assurance, Vol. 2, No. 5, pp. 224-233, July 1997.

6. Janice S. Jablonski and Walter G. Light, "Report on the Open Forum on Establishment of the National Council for Laboratory Accreditation (NACLA) at the National Institute of Standards and Technology January 7, 1997," NISTIR-6008, March, 1997.

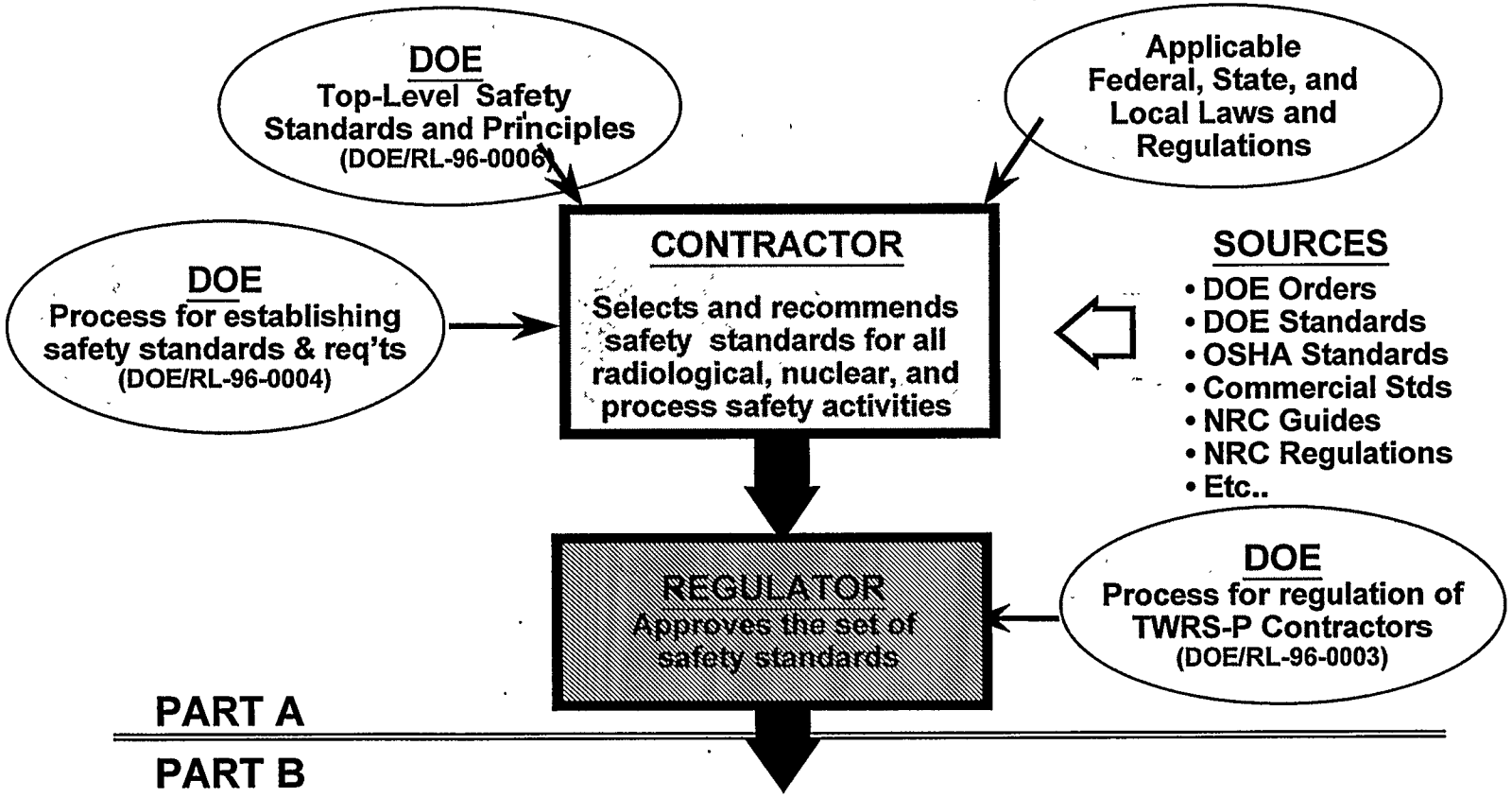
ISM & Worksmart Standards

Application to Safety Regulation

TWRS Privatization Initiative

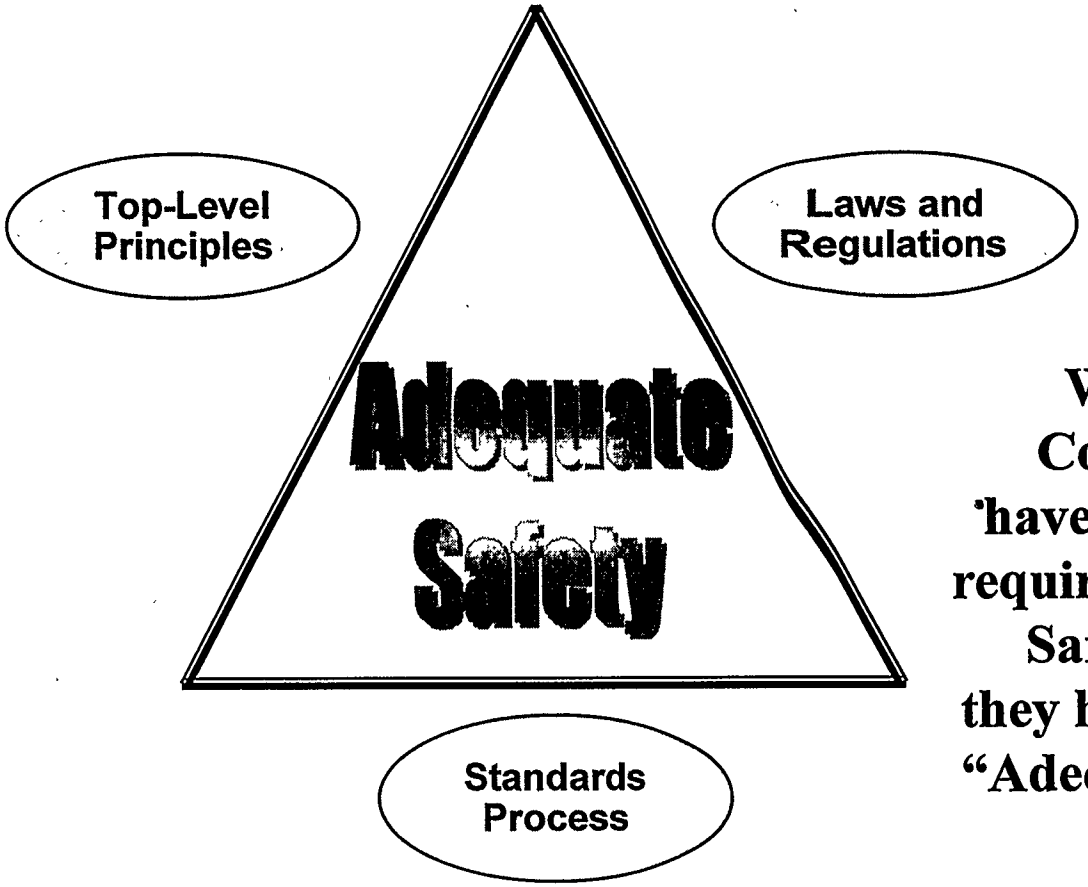
D.C. Gibbs DOE-RL

Standards Selection Process



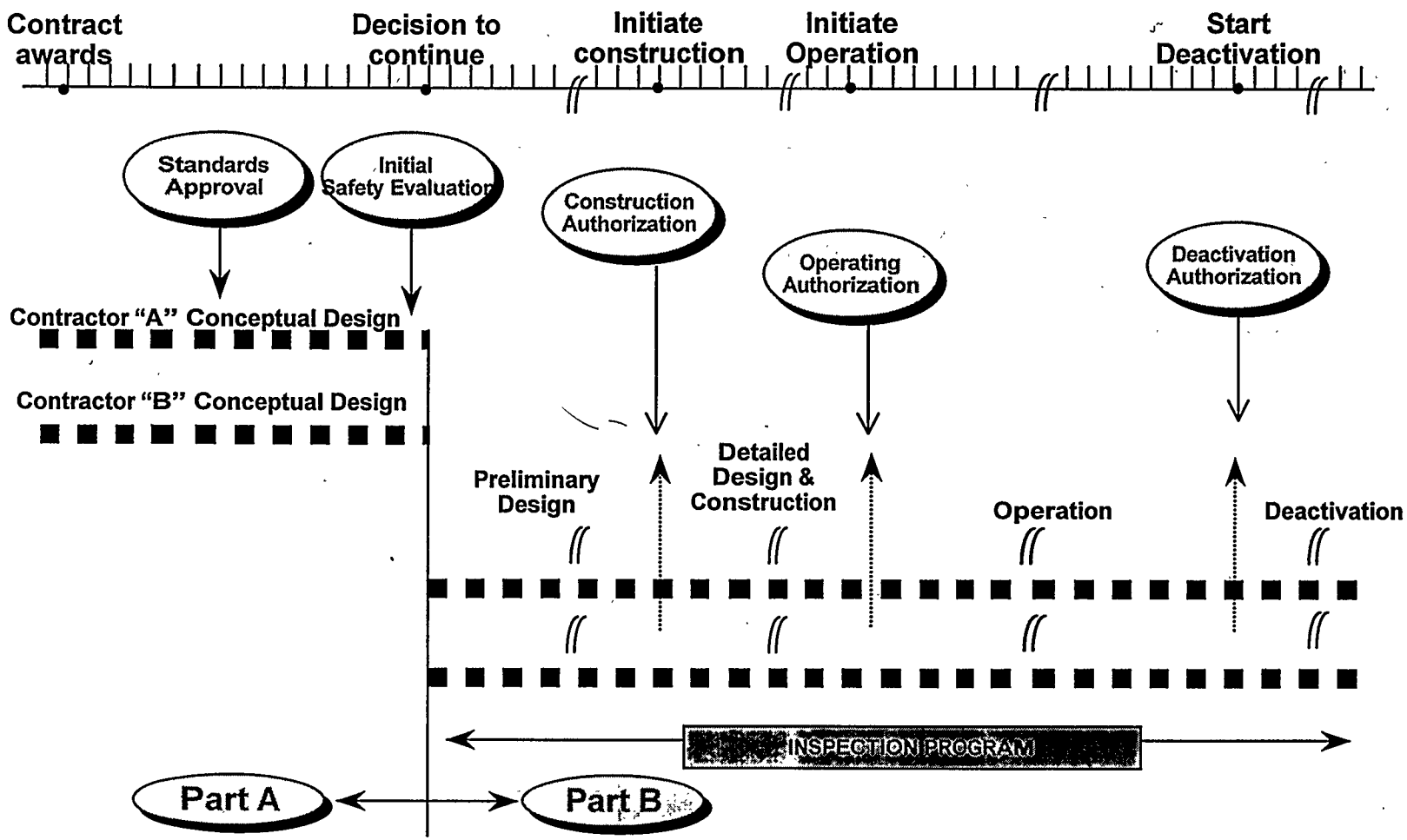
- Implemented by the contractor in its activities as requirements of contract
- Used by the regulator in evaluating safety implementation and safety adequacy

Concept of the Safety Triad

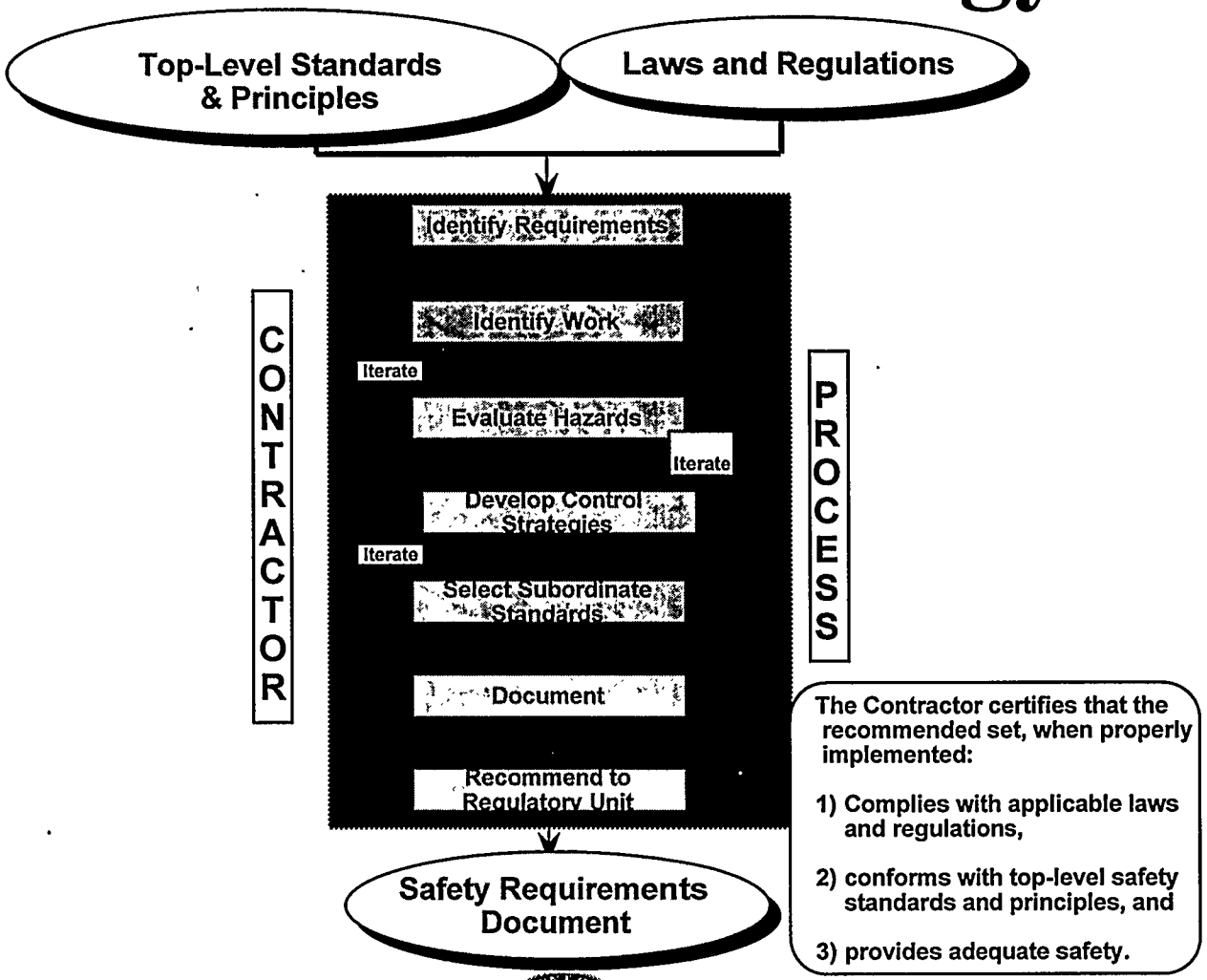


When the Contractors have fulfilled the requirements of the Safety Triad, they have achieved "Adequate Safety"

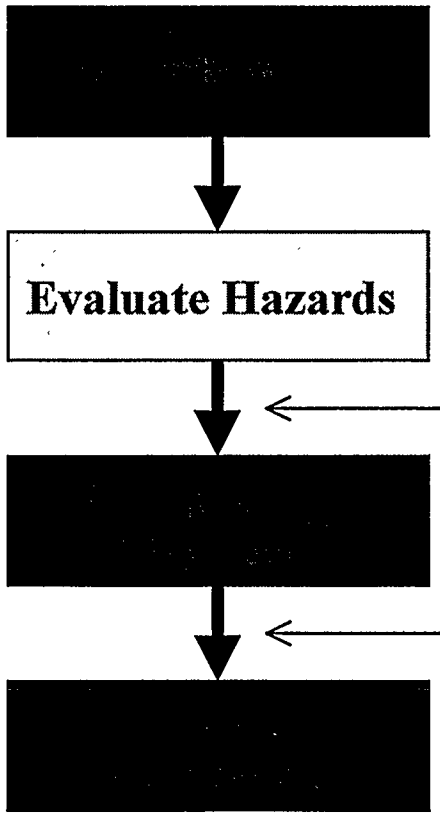
Regulatory Schedule



Process Methodology



Problems with Contractors' Submittals



Highly conceptual, ill-defined design
Little systems engineering content

Logic absent

Control strategies mostly missing

Logic absent

Chosen standards mostly pre-selected

Tailoring of Safety Features

CONTRACT & REGULATIONS

POTENTIAL UNTAILORED SAFETY FEATURES

Likely to be "traditional"
Likely to be excessively conservative

CONTROL STRATEGIES

HAZARDS DEFINITION

Why the Problem

Competition

Financing

Assumptions

?

Existing

Standards

Emphasis

Opportunities for Improvement

- Control Strategy Emphasis
- Logic of the Process
- Primer on Tailoring

Opportunities for Improvement

Control Strategy Emphasis

Logic of the Process

Primer on Tailoring

Application of Integrated Safety Management and the Work Smart standard processes for safety regulation of the Richland Tank Waste Remediation System Privatization (TWRS-P) initiative.

The initial regulatory framework for TWRS-P was devised in response to: 1) the need to establish a system that would be suitable for regulation of a privatized contractor operating in a fixed price environment, 2) the relative absence of experience in the design and construction of the specific facility contemplated, 3) the desire not to invoke DOE Orders, and 4) the need to achieve an adequate measure of safety. These objectives led to the decision to use a contract based regulatory system that included a set of top level standards and principles, a formula process for generating subordinate standards, and a description of how the regulatory process would work. The Contractors would be obliged to, a) comply with the DOE rules, b) conform to the top level standards and principles, and c) follow the process for establishing standards. When the Contractors met all three requirements, they would achieve "adequate safety", a concept well imbedded in the contract. Their success at doing so would be measured by a DOE Regulatory Unit operating in the fashion described by the regulatory process document that was patterned after and was consistent with the NRC Principles of Good Regulation.

The demonstration phase of TWRS-P was to be divided into two parts. In Part A, the Contractors would complete a conceptual design, and make two regulatory submittals, a Standards Approval Package and an Initial Safety Assessment. Part B would cover the balance of the project, and would include the Construction Approval Request, and the Operating Approval Request. The Standards Approval Package was to contain a Safety Requirements Document, which disclosed the Contractors' selected subordinate standards set, as required by the contract. The process document for identifying subordinate standards was drawn from Work Smart Standard 450.3-1 and Integrated Safety Management techniques available at the time. Since Part A has now been completed, the Regulatory Unit has accumulated some experience with the use of these techniques.

The fact that neither Contractor followed the process to the expectations of DOE is strongly suggestive of defects in the description of the process as well as a reluctance to depart from the old familiar way of doing business -- prescriptive, top-down standards selection. The integrated safety management process of the contract required that control strategies be identified that would control hazards described in a Hazards Analysis Report. The control strategies were then to be implemented through the selection of subordinate standards ("subordinate" in the sense that they would be subordinate to the contract-defined top level standards) which could be chosen from any extant standard or could be ad hoc, tailored to the specific situation. Instead, both Contractors failed to articulate their control strategies, and generally wound up with a set of pre-selected standards, only tenuously linked to the work and the hazards associated with that work.

The Regulatory Unit has concluded that, among other things, there was insufficient emphasis on control strategy selection and that the process be logical, and has modified its contractual language accordingly. The inadequacies in the contractual language are partly traceable to the standard, which would benefit from the TWRS-P experience.

Application of Integrated Safety Management and the Work Smart standard processes for safety regulation of the Hanford Tank Waste Remediation System Privatization (TWRS-P) initiative.

TITLE SLIDE

When the construction of the plant that would vitrify the Hanford tank wastes was being planned in 1995, it was decided that better reliability and economy could be achieved by undertaking the project as a private venture as an alternative to including it within the scope of the Hanford site operating contractor. At that time, the prospect of NRC regulation was explored. Representatives from the NRC indicated that they would not be in a position to provide regulation within the timeframes dictated by the consent agreement between the State of Washington, the EPA and the DOE. Moreover, it was believed that then current statutes might preclude them from doing so. It was decided therefore that DOE would regulate the project.

The initial regulatory framework for TWRS-P was devised in response to: 1) the need to establish a system that would be suitable for regulation of a privatized contractor operating in a fixed price environment, 2) the relative absence of experience in the design and construction of the specific facility contemplated, 3) the desire not to invoke DOE Orders, and 4) the need to achieve an adequate measure of safety. These objectives led to the decision to use a contract based regulatory system

SLIDE ON CONTRACTUAL SETUP

that included a set of top level standards and principles, a formula process for generating subordinate standards, and a description of how the regulatory process would work. The Contractors would be obliged to, a) comply with the DOE rules, b) conform to the top level standards and principles, and c) follow the process for establishing standards. When the Contractors met all three requirements,

SLIDE ON ADEQUATE SAFETY

they would be said to have achieved "adequate safety", a concept well imbedded in the contract. Their success at doing so would be measured by a DOE Regulatory Unit operating in the fashion described by the regulatory process document that was patterned after and was consistent with the NRC Principles of Good Regulation.

The demonstration phase of TWRS-P was to be divided into two parts. In

SLIDE ON SCHEDULE

Part A, the Contractors would complete a conceptual design, and make two regulatory submittals, a Standards Approval Package and an Initial Safety Assessment. Part B would cover the balance of the project, and would include the Construction Approval Request, and the Operating Approval Request. The Standards Approval Package was to contain a Safety Requirements Document, which disclosed the Contractors' selected subordinate standards set, as required by the contract. The process document for identifying subordinate standards was drawn from Work Smart Standard 450.3-1 and Integrated Safety Management techniques available at the time.

SLIDE ON PROCESS

Since Part A has now been completed, the Regulatory Unit has accumulated some experience with the use of these techniques.

It turned out that neither Contractor followed the process to the expectations of DOE. Numerous problems were encountered. First, neither contractor adequately defined the work required. There was little evidence that conventional systems engineering had been performed and incorporated into the work definition to provide confidence that the functional requirements definition had a sound basis in mission analysis, parametric analysis, system function studies, alternatives development, or interface control. The level of detail in the design was so ethereal as to

raise questions whether the subsequent hazards analysis would reach an adequate level of completeness.

Second, control strategies that deal with the identified hazards were

SLIDE ON RESULTS

generally missing. The integrated safety management process described in the contract required that control strategies be identified that would control hazards described in a Hazards Analysis Report. The DOE Regulatory Unit's expectation was that the Contractors would develop control strategies through a logical process, then select standards that were subordinate to the top level standards and principles that would implement the control strategies. The control strategies were to be implemented through the selection of subordinate standards ("subordinate" in the sense that they would be subordinate to the contract-defined top level standards) which could be chosen from any extant standard or could be ad hoc, tailored to the specific situation. Instead, both Contractors failed to articulate their control strategies, and generally wound up with a set of pre-selected standards, only tenuously linked to the work and the hazards associated with that work. In general, both Contractors chose pre-selected standards, as they have always done, that were by and large consistent with the identified hazards. Unfortunately, there appeared to be little recognition for the need to articulate a control strategy.

As a consequence of poor work definition, missing control strategies, and the absence of a logical process, evidence of tailoring was essentially

SLIDE ON TAILORING

absent from the regulatory submittals received by the Regulatory Unit. Tailoring is heavily dependent on iteration among the individual steps in the integrated safety management process. One evaluates his hazard and decides whether he should modify his design (the work) so as to reduce the severity of the hazard. If a realistic control strategy cannot be identified, the hazard may need re-evaluation. If the implementing

subordinate standard turns out to be excessively expensive or otherwise unrealistic, another approach to control strategy selection may be indicated. Most importantly, if one starts with the premise that he is going to use pre-selected standards, there will be no opportunity to tailor. If the process is not followed, tailoring cannot occur.

One reason for these difficulties can probably be attributed to the design of the contract. Since competition between two potential suppliers was

SLIDE ON WHY THE PROBLEM

being promoted, the contract may have been interpreted to discourage close interaction between the DOE Regulatory Unit and either of the Contractors. During Part A, the Contractors were left essentially to their own devices without much regular guidance from the customer. The DOE regulatory Unit itself was slow coming up to strength, a problem that should be avoided in any future applications. This situation was further exacerbated by the inexperience of both contractors in the use of standards-base integrated safety management techniques.

Second, the architects of the contract may have assumed, because of the competitive nature of the procurement, that the Contractors would supplement the DOE fixed funding. They would be motivated to do so to obtain an advantage over their competitor, and thereby advance the design state to an extent greater than would be the case using the DOE supplied funding alone. Furthermore, it was also expected that each contractor would draw to a great extent from existing designs. Both of these assumptions probably turned out to be wishful thinking.

Third, it is possible that there was not sufficient emphasis, at the time of placement of the contract, that standards based integrated safety management truly is different from the old way of doing things -- prescriptive, top-down requirements definition integrated with pre-selected standards. The contract was probably interpreted, correctly, as

providing much greater opportunity for the Contractors to deploy their creative skills without the requisite recognition that greater autonomy and authority usually conveys greater responsibility.

Despite these three qualifications, the fact both Contractors were so far off the mark is strongly suggestive of defects in the process described by the standard. We have concluded that, among other things, there was insufficient emphasis on control strategy selection, tailoring, and that the

OPPORTUNITIES SLIDE

process be logical. The standard goes into considerable length on how various teams are to be constituted and assembled, and how stakeholder involvement is to be secured while being almost silent on the need that the individual steps in the process must be defended. The concept of Integrated Safety Management is an innovation in the design of new facilities. Its successful use could have positive implications on future plant designs, costs, and delivered safety performance. It is reasonable to give such a tool every opportunity to succeed, including having standards that are sufficiently descriptive that they communicate the process adequately.

Drawing from this experience, the Regulatory Unit has modified its contractual language and has produced two position papers intended to provide further illumination on control strategy selection and tailoring. Nonetheless, there remain significant opportunities for improvement. The subject of control strategy selection is in need of further definition, and more thought could be given to the broader subject of how Integrated Safety Management approaches relate to conventional engineering design. A tendency remains for reviewers to accept a Contractor's approach which may be defective vis a vis ISM but consistent with "the way engineering is done". The relationship between the two could be explored and defied. We have accumulated enough experience with the use of this technique to recognize its potential. Unfortunately, that potential has yet to be fully realized.

Thursday, August 6, 1998

DOE Track

Session C: *Other DOE "Technical Standards" of Interest*

Speakers: Carol Blackston
Stephen Warren
Andrew Szilagyi
Dorsey Edwards

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U.S. DEPARTMENT OF ENERGY

INFORMATION TECHNOLOGY STANDARDS PROGRAM

Information Technology (IT) Standards and the DOE Information Architecture

Carol Blackston

carol.blackston@hq.doe.gov

DOE IT Standards Program Manager

1998 Federal Technical Standards Workshop

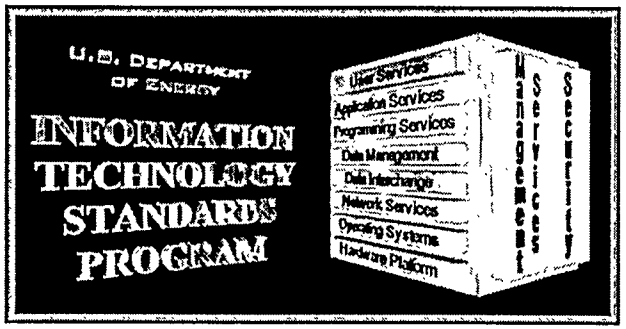
Program Goals

- Promote adoption, development, specification, application, and retirement of IT standards
- Ensure Departmentwide coordination of draft IT standards and proposed DOE Information Architecture standards
- Provide access to IT standards and foster DOE participation in voluntary IT standards activities
- Support information systems interoperability through IT standards

U.S. DEPARTMENT OF ENERGY
INFORMATION TECHNOLOGY STANDARDS PROGRAM

Management Philosophy

"Just as IT standards are voluntary at the international level, adherence to the DOE Profile of Adopted Standards is voluntary for DOE elements, both Federal and contractor. However, it is in everyone's best interest to cooperate. The DOE IT standards profile is developed through consensus, with all DOE elements having a voice in the process. The goal of the IT Standards Program is to be flexible, forward-thinking, and in line with technology direction."



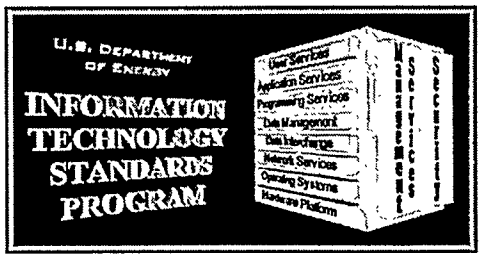
Legislative Drivers

- The Clinger-Cohen Act of 1996 (Public Law 104-106), which requires Agencies to establish an IT architecture

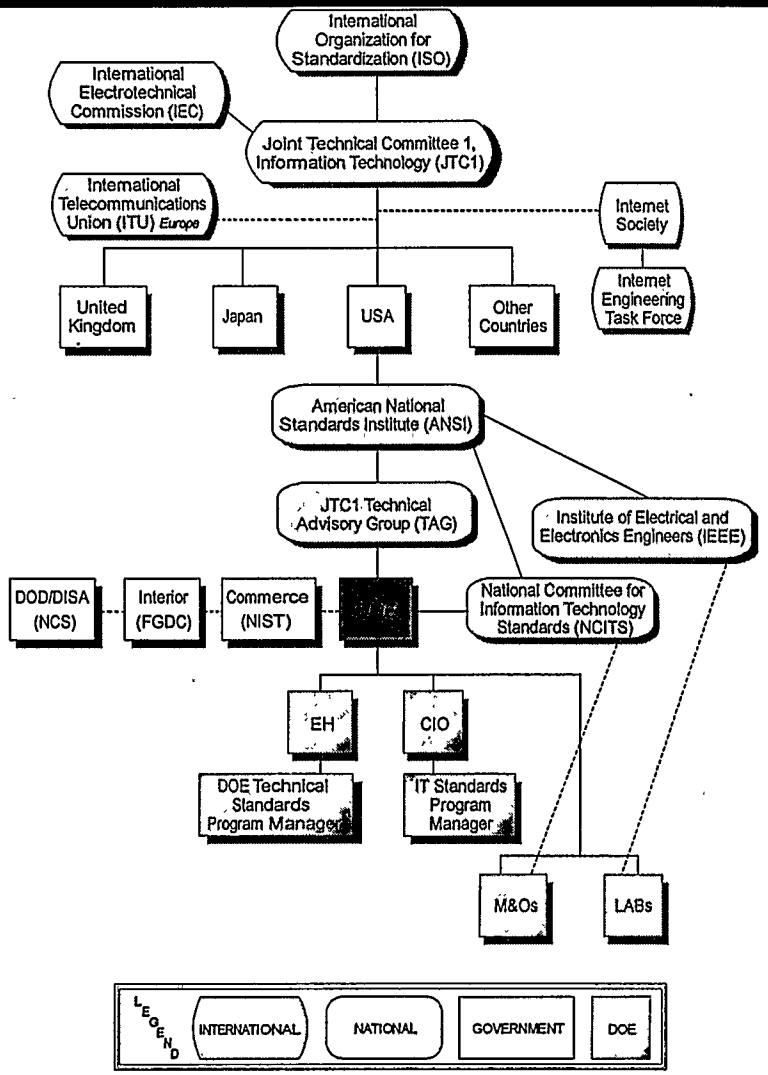
- National Technology Transfer and Advancement Act of 1995 (Public Law 104-113), which supports Federal involvement in voluntary standards bodies

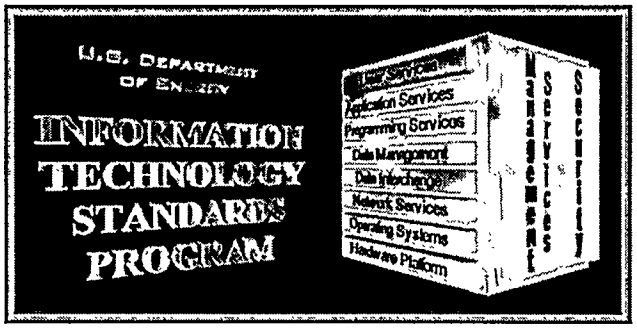
- Office of Management and Budget (OMB) Memorandum, June 18, 1997, concerning IT Architectures, which calls for a technical reference model and standards profiles

- OMB Circular A-119, "Federal Participation in the Development and Use of Voluntary Standards"



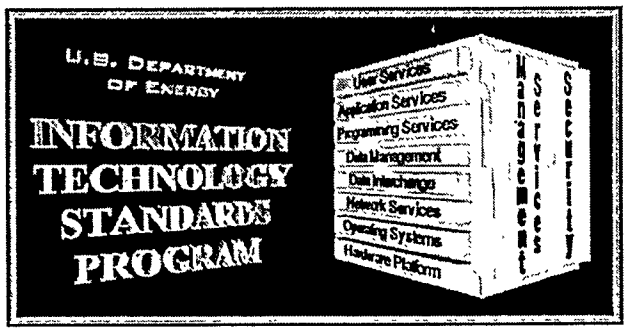
Relationship to Standards Bodies



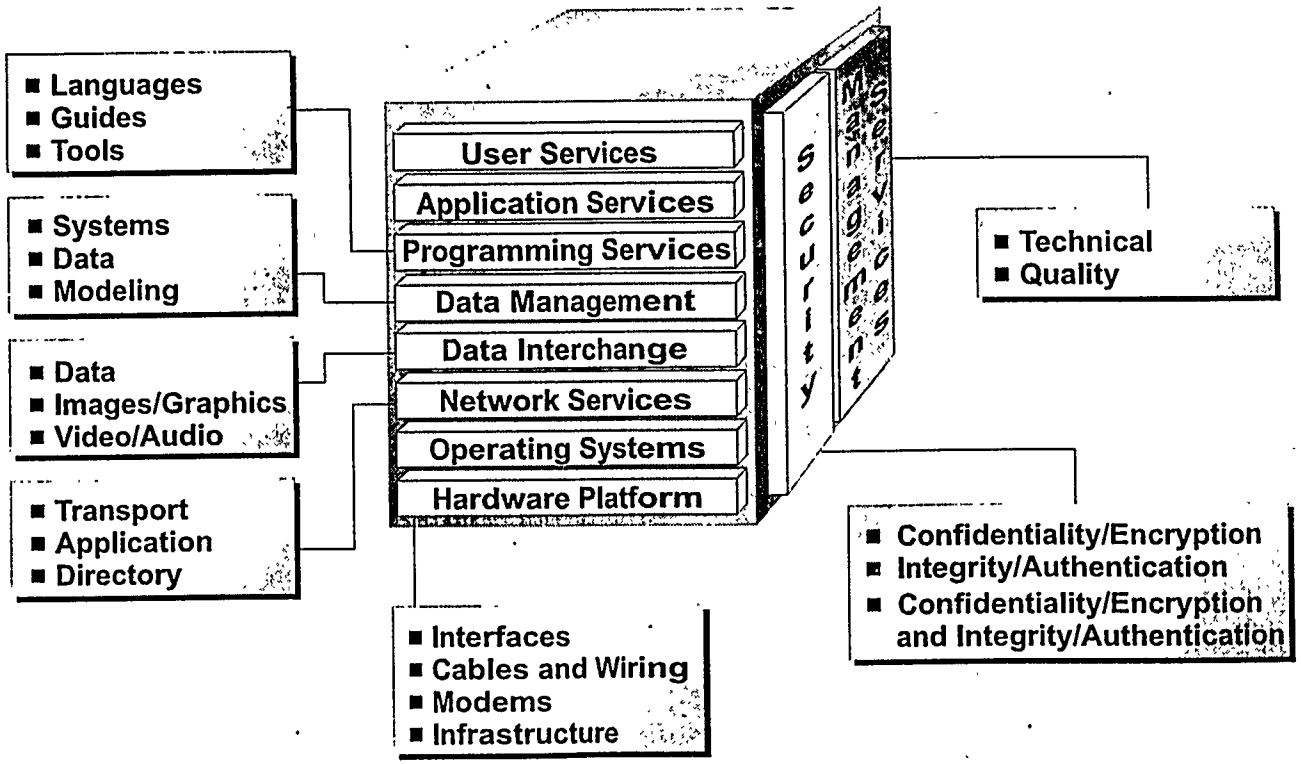


IT Standards Program Components

- DOE Technical Reference Model
- Profile of adopted IT standards
- IT standards adoption and retirement process
- Site and program POCs
- IT subject matter experts
- Project templates
- Special interest groups
- Web site
- Publications



Technical Reference Model



Data Management

Systems

FIPS 127-2 (SQL)
FIPS 193 (SQL Envt)
ISO 10027:1990 (IRDS)
Object Mgmt. Arch. & Object Request Broker
Object Mgmt. Grp. (OMG) Models
ISO/IEC 9579-1:1993

Data

ISO/IEC 11179:1994
Data Stds. & Guidelines Reps & Codes (FIPS, ANSI, ISO)

Modeling

FIPS 183 (IDEFO)
FIPS 184 (IDEFIX)
NIAM
ISO/JTCI/SC21

Programming Services

Languages

FIPS 21-4 (COBOL)
FIPS 69-1 (FORTRAN)
FIPS 160 (C)
C++

Guides

DOE Soft Engineer Meth (SEM)
ANSI/IEEE 828-1990
ANSI/IEEE 1042-1987

Tools

ISO/IEC 13719-1 (PCTE)
IEEE 771-1989 (PILOT)

User/Application Services

X Window System
IEEE 1295-1993 (MTE)

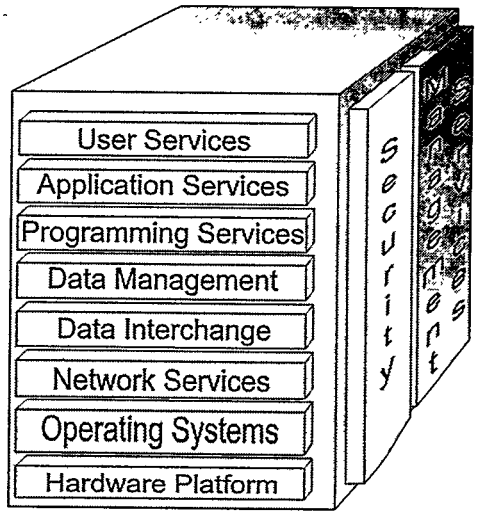
Management Services

Technical

FIPS 179-1 (GNMP)
OMNIPoint
SNMP
IEEE 1387

Quality

ISO 9000



Data Interchange

Data

EIA/CDIF PN-30 (CDIF)
ANSI/ISO 8211-1985 (DDF)
ISO 8879:1986 (SGML)
HTML
FIPS 161-2 (EDI)
FIPS 192 (GILS)
ANSI Z39.2-1985-MARC
ANSI Z39.59-1988 (EMPM)
HDF - Defacto
NETCDF - Defacto
PDF - Defacto
Postscript - Defacto
RTF - Defacto
ISO/IEC DIS 10180 (SPDL)
ISO/IEC 10036:1993

Images/Graphics

FIPS 120-1 (GKS)
FIPS 128-2 (CGM)
FIPS 153-1 (PHIGS)
FIPS 173 (SDTS)
FIPS 177-1 (IGES)
FIPS 194 (ODA)
GIF/LZW - Defacto
IS10918:1992 (JPEG)
ISO 10303 (STEP)
ISO 10303:1994 (PDES)
TIFF - Defacto

Video/Audio

FIPS 178 (H.320)
ANSI/ISO IS11172:1992 (MPEG)

Security

Confidentiality/Encryption

FIPS 46-2 (DES)
FIPS 74
FIPS 140-1
FIPS 141
FIPS 171
FIPS 185 (EES)
FIPS 196
IEEE 1003.1e
IEEE 1003.2c
IDEA

Integrity/Authentication

FIPS 113
FIPS 180-1 (SHS)
FIPS 186 (DSS)
FIPS 190
IEEE 1003.22

Confidentiality/Encryption and Integrity/Authentication

RSA Public Key Cryptography
Kerberos, DCE-SS 1.1 (GSSAPI)
Privacy Enhanced Mail
Pretty Good Privacy
MIME Object Security Services
S-HTTP
Secure Sockets Layer
IEEE 1003.6

Operating Systems

POSIX

Network Services

Transport

FIPS 146-2 (POSIT)
FIPS 182 (ISDN)
TCP/IP

Application

HTTP
SMTP
MIME
X.400
IEEE 1224.1-1993 API
ANSI/NISO Z39.50

Directory

DNS
X.500
LDAP
IEEE 1224.2-1993 API
XFN

Hardware Platform

Interfaces

FIPS 154
ANSI/X3.131-1990

Cables and Wiring

FIPS 159
FIPS 175
FIPS 176

Modems

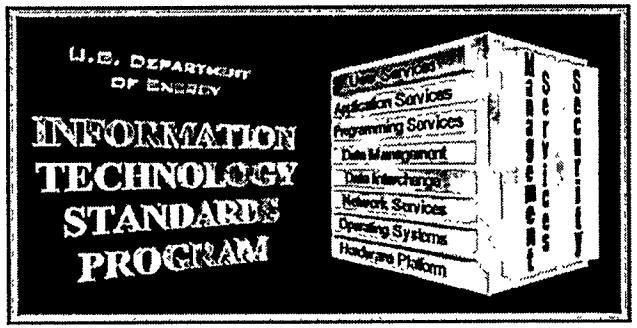
FIPS 168
FIPS 169
FIPS 170

Infrastructure

FIPS 187
FIPS 195

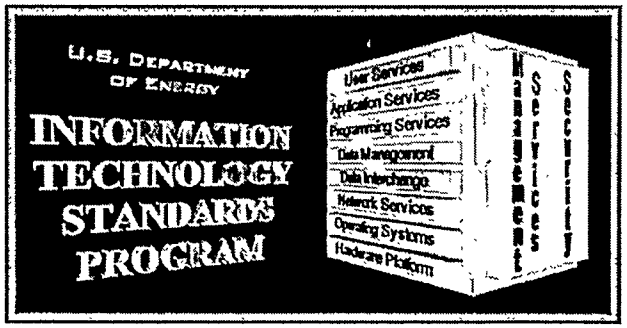
Profile of IT Standards

- Over 140 standards approved
- 51 Federal standards
- 26 ISO standards
- 31 ANSI standards
- 34 Defacto, emerging standards



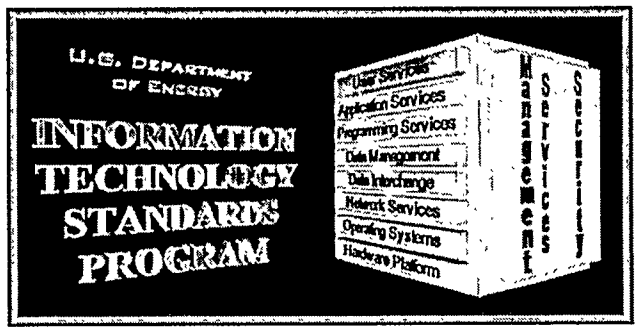
IT Standards Adoption Retirement Process

- Proposed standard - proposed by any POC or special interest group
- Interim standard - Consensus of all DOE sites and programs
- Adopted standard - Approved by Corporate Guidance Group



Program and Site POCs

- Over 70 from 54 programs and sites
- Promote program and site level profiles
- Coordinate comments on proposed standards



Subject Matter Experts

- At least 40 serve on voluntary standards bodies
- DOE is a voting member of ISO/IEC JTC1 TAG
- PNNL is the Secretariat for ISO/IEC JTC1 SC 32 Data Management and Interchange
- ORNL staff member chairs the SGML working group of ISO/IEC JTC1

Project Templates

- New task shows IT standards used by DOE
- Depicts which standards are used for IT projects
- Have templates for e-mail and digital signature
- Goal is to create templates for corporate, HQ, and program/site projects

E-mail Template

Project Name: Departmentwide Electronic Mail

Project Description:

The Department's E-mail provides a standardized capability to effectively and efficiently carry typical business documents to all DOE sites. Business quality E-mail, sufficient to conduct the regulatory and financial operations of DOE, requires an infrastructure that supports the following capabilities: connectivity/interoperability, guaranteed delivery/accountability, timely delivery, confidentiality/security, sender authentication, integrity, survivablility, availability/reliability, ease-of-use, identification of receipts, message preparation, storage, and retrieval.

Technical Reference Model Service Area: Network Services

Subservice Area: Application

Simple Mail Transfer Protocol SMTP)
Multipurpose Internet Mail Extensions (MIME)
X.400 Message Handling Services
IEEE 1224.1-1993 X.400 Based Electronic Messaging Application Program Interface (API) (Language Independent)

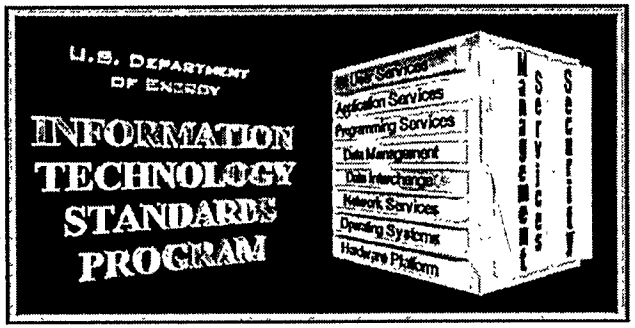
Subservice Area: Directory

Internet Domain Name System (DNS)
X.500 - Information Technology-Open Systems Interconnection - The Directory : Overview of Concepts, Models, and Services
Lightweight Directory Access Protocol (LDAP)
IEEE 1224.2-1993 Directory Services - Applications Program Interface (API) (Language Independent)

Departmental Point of Contact: Tal Corbet, HR-43, (301) 903-4628, talmadge.corbett@hq.doe.gov

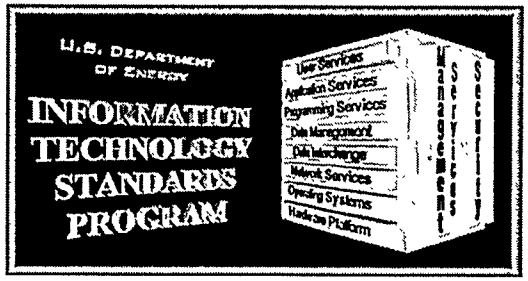
Special Interest Groups

- Digital Signature Working Group
- IT Standards Program Manager serves as member
- Envision groups formed to introduce new technology in a collaborative manner



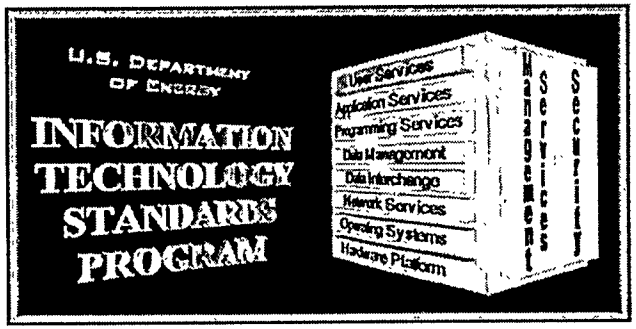
Web Site

- Accessible through *http://cio.doe.gov* and click on "*Standards*"
- Program information distribution and dissemination center
- Features databases of standards, POCs, subject matter experts
- Hotlinks to emerging standards sites



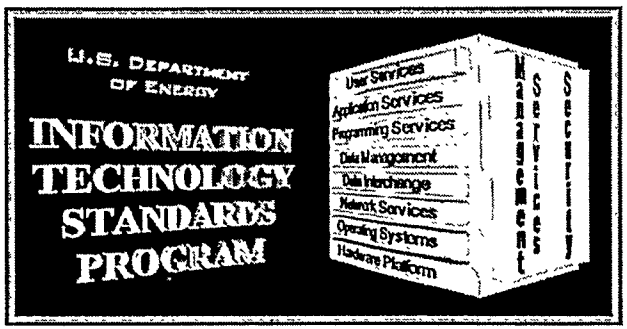
Publications

- *DOE IT Standards Program Management Plan* - June 1998
- *Information Architecture Profile of Adopted Standards* - September 1997
- *Information Architecture Standards Adoption and Retirement Process Service Action Plan* - March 1997



Next Steps

- Project templates
- Database of IT subject matter experts
- Program success measurement surveys
- Ongoing adoption and retirement of standards
- Enhancement of DOE IT standards home page
- Sunset review of all adopted standards in 1999



Decommissioning Handbook and Implementation Guide

1998 Federal Technical Standards Workshop
August 6, 1998

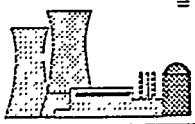
Stephen Warren
U.S. Department of Energy
Office of Environmental Restoration

Four Elements of Nuclear Weapons Complex Environmental Legacy

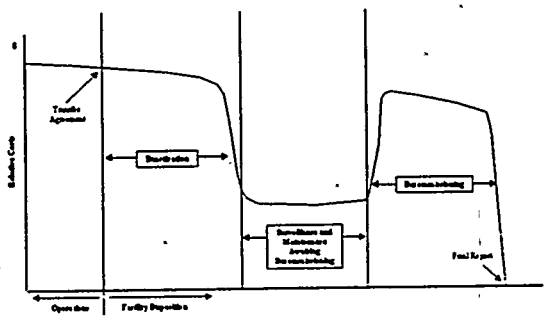
- Waste
  - high-level, transuranic, low-level, hazardous, byproduct material
- Contaminated environmental media
  - soils, ground water, surface water, sediments, debris
- Materials in inventory
  - materials not used and not expected to be used
- Surplus facilities
  - nuclear weapons production facilities no longer needed

Impact of Changing DOE Mission

1950 - 1989	≅ 20,000 Operating Facilities Negligible Number of Surplus Facilities
1990	≅ 14,000 Operating Facilities ≅ 6,000 Surplus Facilities
1998	≅ 10,000 Operating Facilities ≅ 10,000 Surplus Facilities



Typical Facility Disposition Phases



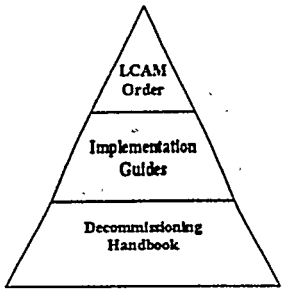
Evolution of Decommissioning Requirements and Guidance (1 of 2)

DOE Order 5820.2a, Rad Waste Mgmt. Chapter V, Decommissioning	Order issued (9/88)	DNFSB Recommendation 94-2 (9/94)		
Policy on Decommissioning		EM Program established for site restoration and decommissioning (10/89)	DOE/EPA policy on decommissioning (5/95)	Decommissioning Resource Manual, DOE/EM-346 (8/95)
DOE Order 430.1, LCAM				LCAM issued (8/95)
Decommissioning Handbook	Decommissioning Handbook, DOE/EV/10128-1 (11/80)	Decommissioning Handbook, DOE/EM-0142P (5/94)		

Evolution of Decommissioning Requirements and Guidance (2 of 2)

DOE Order 5820.2a, Rad Waste Mgmt. Chapter V, Decommissioning	Chapter V			
Policy on Decommissioning	DOE/EPA Policy			
DOE Order 430.1, LCAM	Proposed changes to LCAM (10/96)	Commitment to incorporate disposition requirements and guidance in new directives system (12/96)	Disposition Working Group formed to resolve issues (6/97)	Revised LCAM sections and guides issued for review (10/97)
Decommissioning Handbook				Handbook revision initiated (10/97)

Present Structure of Decommissioning Requirements and Guidance



LCAM Order

- Integrated/seamless process for the management of physical assets from acquisition through operations and disposition
- Value-added, quality driven, graded approach to life-cycle asset management
- Performance measures based upon best industry practices and ensuring formal, comprehensive, integrated, document planning, and control methods

http://www.explorer.doe.gov:1776/htmls/directives.html
(within DOE Draft Directives)

LCAM - Decommissioning Requirements

- Collection, maintenance, and update of baseline data to support physical, chemical, and radiological characterization
- Surveillance and maintenance (S&M) activities that correspond with facility conditions
- Method for identifying, assessing, and evaluating alternatives and documenting a preferred alternative
- Process that identifies specific facility end-points and activities to achieve those end-points

LCAM - Decommissioning Requirements (cont.)

- Method for detailed engineering planning and plan documentation
- Use of Non-Time-Critical Removal Action as the framework for decommissioning
- Development of a final report or equivalent document

Decommissioning Implementation Guide

- Represents acceptable methods for implementing LCAM
- Natural outgrowth from the *Decommissioning Resource Manual* (DOE/EM-0246, August 1995)
- With Transition, Deactivation and S&M Guides, provides a comprehensive approach to fulfilling the disposition phase of the facility life-cycle

http://www.explorer.doe.gov:1776/htmls/directives.html
(within DOE Draft Directives)

Decommissioning Handbook

- Provides non-mandatory guidance consistent with existing DOE policies
- Does not impose any additional requirements
- Provides examples and lessons learned for each step in the *Decommissioning Implementation Guide*

http://www.em.doe.gov/dd/
(available in September)

Status of LCAM, Guides, and Handbook

- LCAM Order is expected to be completed within the next few months
- Deactivation, Decommissioning, and S&M Guides have been reviewed through the directives system process; final guides will be issued in October 1998
- Decommissioning Handbook is scheduled for completion in August 1998

Lessons Learned

- Start with a plan, but be flexible
- Consensus may not be possible; be prepared to negotiate compromises
- Engage the target audience early to get their input and to build awareness and receptivity

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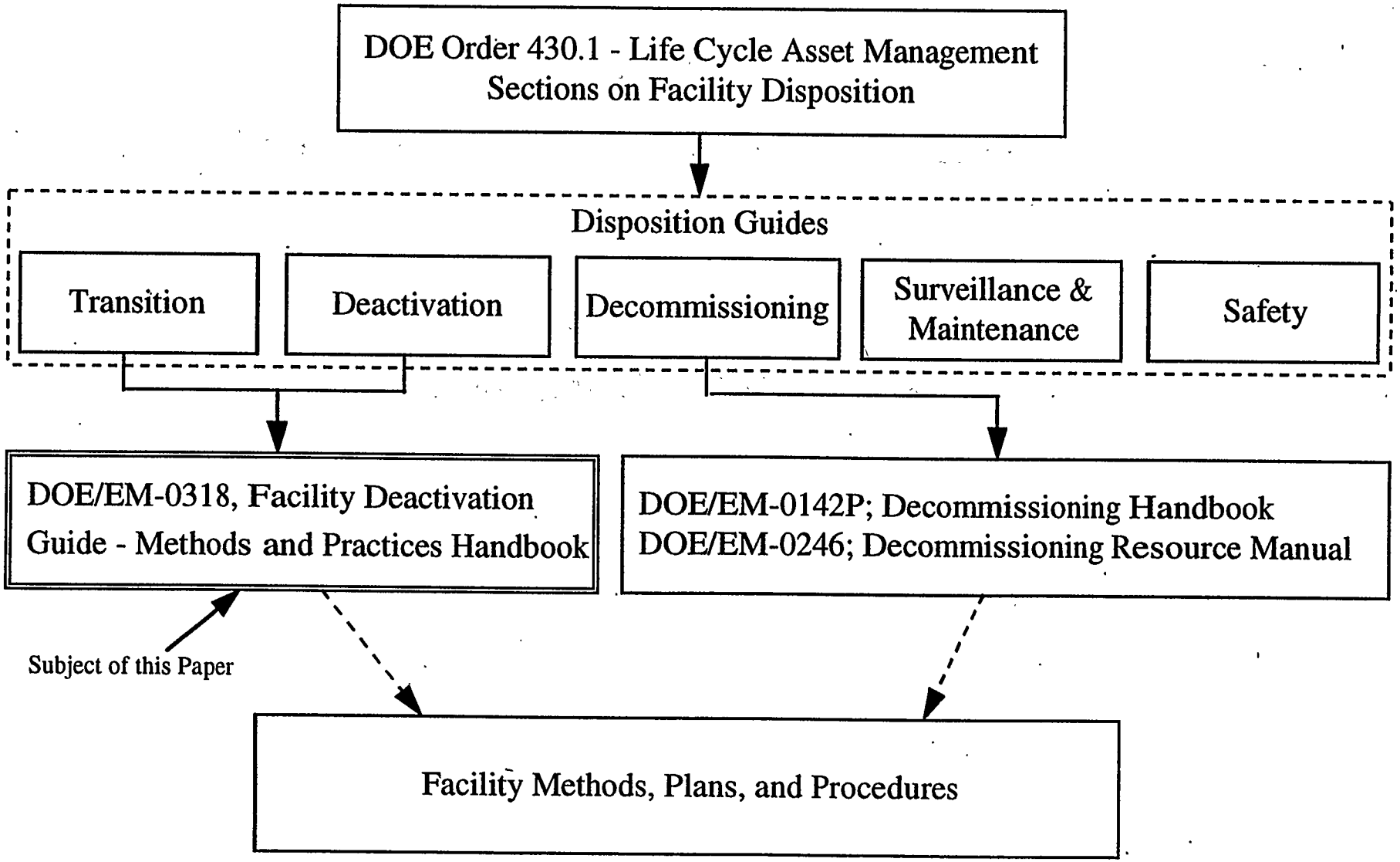
Facility Deactivation Guide

Andy Szilagyi, DOE EM-62

1998 Federal Technical Standards Workshop

August 6, 1998

Hierarchy of Requirements & Guidance



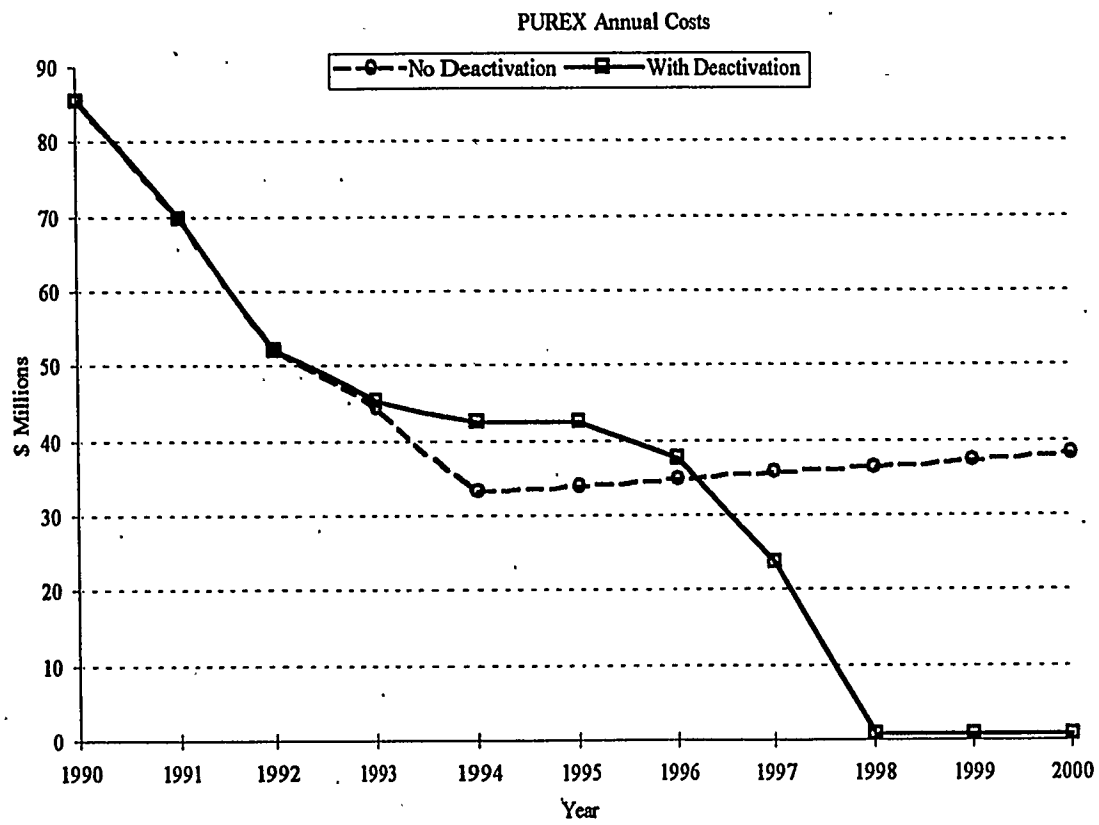
Need for LCAM/Disposition Guidance

- It is not obvious to managers of facilities that have been in production how to get started with disposition.
- To the extent possible, must use available budget for a surplus facility to reduce hazards and risk -- (to reduce costs, and thereby make budget available for other facilities deactivation & decommissioning).

Deactivation

- Reducing the cost associated with surplus facilities, i.e., "Mortgage Reduction"
- Transition to:
  - Long-term S&M (e.g., PUREX at RL)
  - or
  - Decommissioning (e.g., Bldg. 771/774 at RFETS)

"Mortgage Reduction"



Deactivation Experience Transfer

- Considerable experience has been gained:
  - Project Management and Organization
  - End Point Specifications
  - Task Planning
  - Facility Turnover
- Meshes directly with LCAM requirements.
- Experience must be made available to others.

Facility Deactivation Guide, Methods and Practices Handbook, DOE/EM-0318

- Purpose
  - Transfer experience - an important tool for management and work planning.
  - Guidance, not requirements.
- Focus
  - Deactivation Project Management.
  - End points specification and implementation.
- Based on Field Experience!
  - Solid engineering/management methods that are systematic and work at the facility level.
  - Detailed examples that can be emulated.

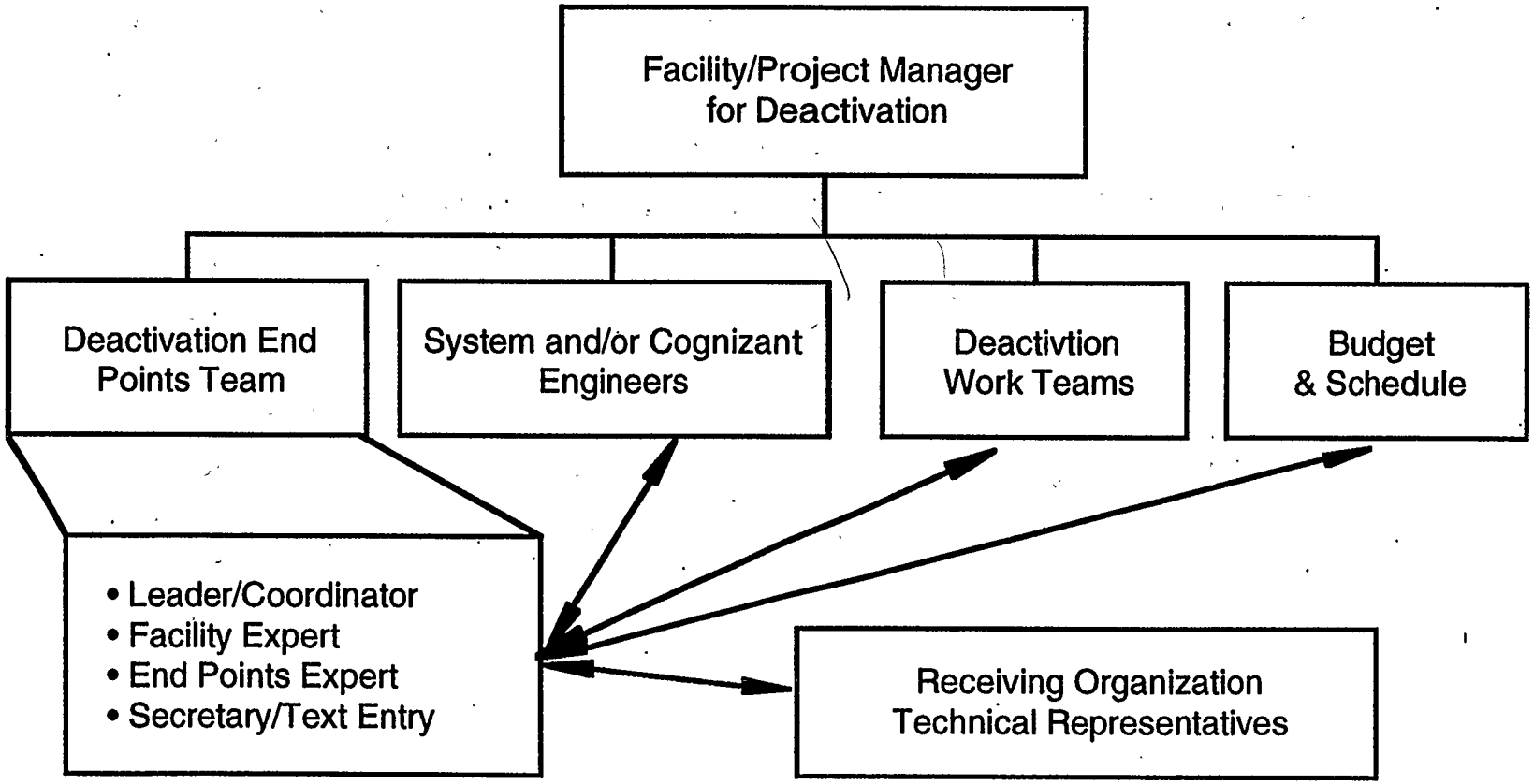
Handbook Addresses Project Phases

1. **Project Initiation** - Setting up the sequence of major hazard reduction activities, followed by more routine work. Organizational responsibilities and interaction with the downstream "customer" for the facility are addressed.
2. **End Points Planning** - Systematic methods are described and detailed templates are provided to specify the conditions to be achieved for project completion.
3. **Deactivation Work** - Relationship of the end points specifications ("what") to the conduct the work ("how").
4. **Project Closeout** - Techniques to demonstrate and record that the specified end points have been achieved.

Chapters 1- 4
Deactivation "Flow"

1. **Introduction** - Purpose, background, and rationale for end points methods as an integral part of deactivation project management.
2. **Deactivation Management** - Priority of early deactivation decision making and activities; and specifying end points.
3. **End Points Management** - Project organization functions and responsibilities for managing the end points specification and implementation.
4. **End Points Completion and Turnover** - Completing the deactivation project and turning the facility over to the follow-on custodian.

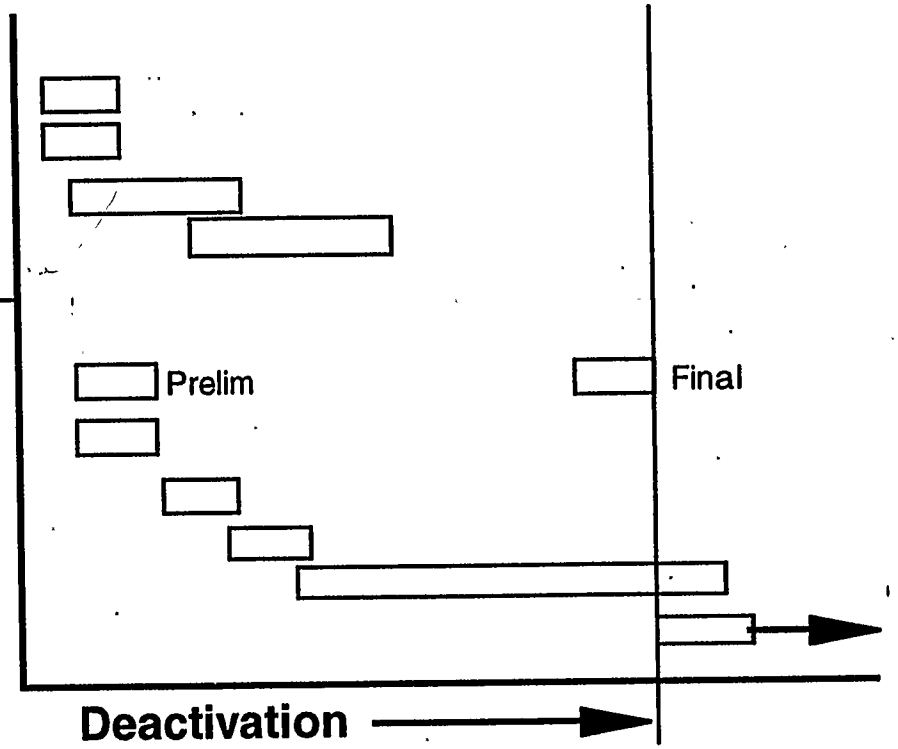
Example - Project Organization Functions



Example, Project Planning Overview

Early Decisions*
- Establish overall end point
- Facility specific commitments
- Early deactivation tasks
- Hazard reduction

Detailed End Points
- Post deactivation S&M plan
- Set up method & criteria
- Specify end points
- Deactivation work plans
- Establish end point conditions
- Continuing S&M

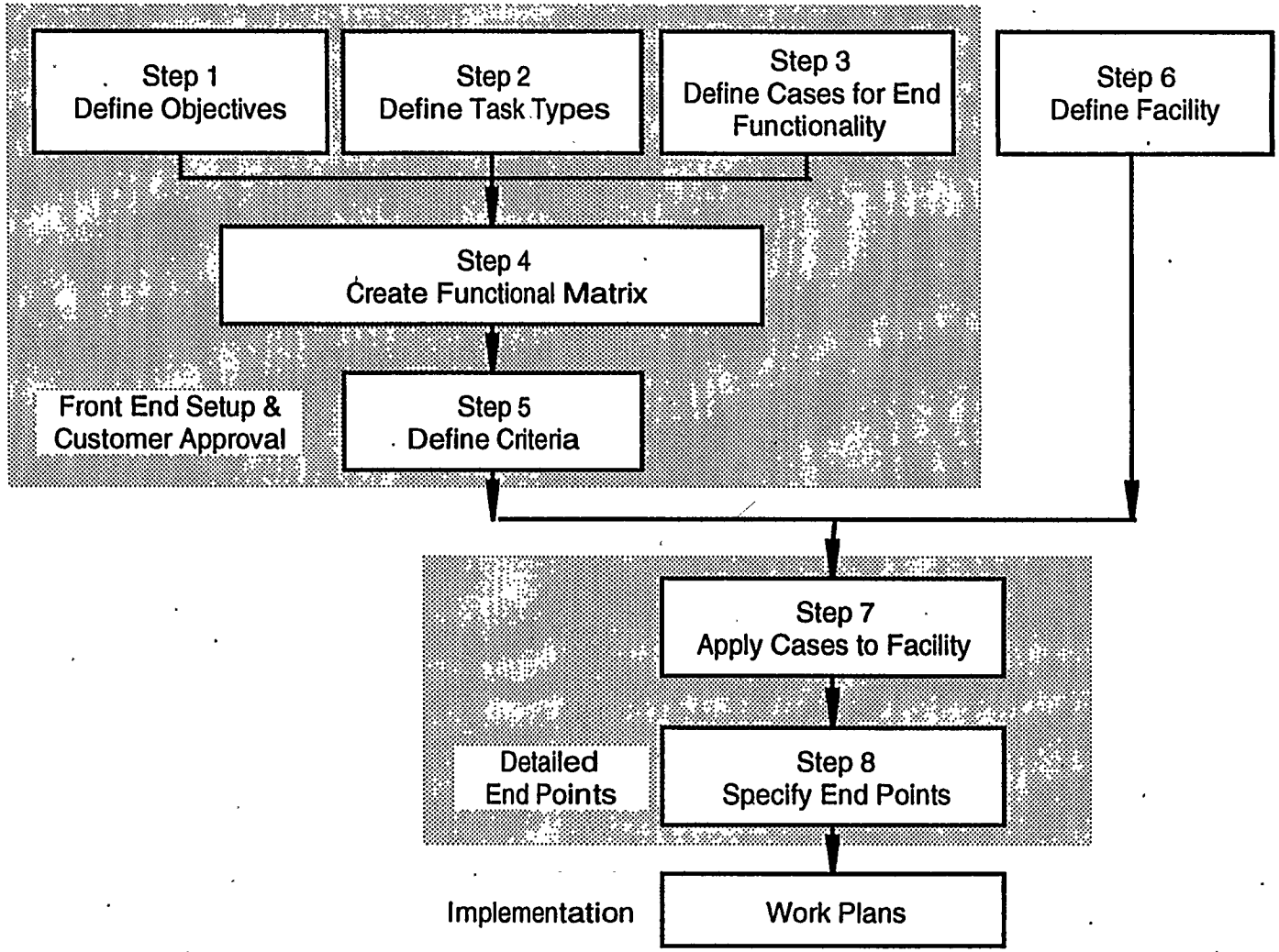


* Especially for Transition prior to transfer to EM

Chapters 5 & 6
End Point Specification Methods

5. **Hierarchical End Points Method** - This method is appropriate to the type of project involving a complex facility that contains process systems and a variety of contaminated areas or other hazards.
6. **Checklist End Points Method** - This method is appropriate for facilities which require less detailed planning, such as for industrial type buildings which are relatively uncontaminated, with only a few or no process systems, and with minimal or no chemical hazards.

Example - Hierarchical Method



Chapters 7- 10 Implementation

7. **Deactivation Work Plans** - typical example.
8. **Post-Deactivation Surveillance and Maintenance Planning** - an essential input to developing end point specifications and for preparation of the facility for long-term monitoring prior to final decommissioning.
9. **Deactivation Practices** - examples of deactivation practices; a range of experience in carrying out deactivation work with focus on placing a facility in long-term S&M.
10. **Some Project Management Lessons Learned** - abstracted from the PUREX deactivation history.

Availability & Status

- The Deactivation Guide may be accessed via the WEB in two formats:
  - Acrobat Reader (can cut and paste from)
  - Microsoft Word (version 6.0)
- Internet address:

  http://www.em.doe.gov/facdeact/
- Published in 1996 - Intend to update in 1999.

Summary

- Deactivation is an essential element of mortgage reduction*.
- LCAM sets requirements for facility disposition.
- Experience must be made available throughout DOE.
- The Guide/Handbook is an important tool for deactivation projects' implementation of LCAM.

* The criteria and methods gained through experience to date can also be used prior to transfer to EM.

Multi-Agency Radiation Survey and Site Investigation Manual

National Environmental Training Office (NETO)

A Department of Energy

"Center of Excellence"

NETO's Mission

- Standardize environmental training
  - Eliminate duplication of effort
  - Enhance consistency of application
- Identify & provide best-in-class environmental courses
- Address the latest environmental requirements
- Include all parties to enhance communication

MARSSIM Is...

- A consensus document between DOD, DOE, EPA and NRC on technical methodologies for radiological survey
- An approach to planning, conducting, and assessing radiological surveys to demonstrate compliance with dose-based cleanup criteria

Background

- Thousands of Sites with known or potential contamination that owners want to remediate and release
- DOE, EPA, and NRC are developing dose-based regulations for site release
- Different agencies need a consistent approach to demonstrate compliance

Present Methodology

What is familiar today:

- Decommissioning and Decontamination
- CERCLA or RCRA Cleanup
- FUSRAP
- BRAC
- Additional Requirements (State by State)

History of MARSSIM

- Concept: *Fall 1993*
- First Meeting: *January 1994*
- Internal Interagency Review: *June 1996*
- Public Review: *December 1996*
- EPA Science Advisory Board (SAB) Peer Review: *December 1996*
- Finalized: *December 1997*

MARSSIM Users Include:

- NRC Licensees
- DOE Contractors
- EPA & NRC Regulators
- States
- Members of the Public
- Anyone involved with the release of radioactively-contaminated sites

MARSSIM Scope

- Applies to Lands (soil) and Structures (buildings) --- not material, small items, or consumer products
- Focus is on the Final Status Survey (FSS)

Outside MARSSIM Scope

- Subsurface and Groundwater Contamination
- Surface Water Contamination
- Analytical Laboratory Measurements and Methods
- Chemical Hazards and Cleanup

MARSSIM Guidance

Data Life Cycle

- Planning
- Implementing
- Assessing
- Deciding

MARSSIM Guidance

- Planning
- Implementing
- Assessing
- Deciding

MARSSIM Strengths

- Nationally consistent
- Scientifically defensible
- Flexible approach
- Reduces time, cost, and measurements

Implementation Support

- Agencies Points-of-Contact
- EPA Web-site
- Training
- Handouts
  - Frequently Asked Questions
  - POC Listing

Federal Technical Standards Workshop
MARSSIM Presentation
Answers to Frequently Asked Questions

Am I required to implement/use MARSSIM?

No, MARSSIM is guidance, not a requirement.

Do I have to follow the process outlined in MARSSIM? Are any deviations allowed?

The DQO process allows the flexibility for deviations. A discussion of this process is provided in chapter 2 of the Manual.

Are there any alternatives to the MARSSIM process?

Yes, many alternatives are mentioned in MARSSIM. The Data Quality Objective (DQO) process is utilized to determine the appropriate method(s). The process may indicate MARSSIM, or some alternate method, as the best choice.

Who are the MARSSIM users?

NRC, State, DOD, DOE, site owners, contractors, regulators, public, etc.

How do the costs associated with the MARSSIM compare with other currently available alternatives?

Under most circumstances, following the MARSSIM process will require fewer numbers of samples, thereby saving time and money. Other methods may either overestimate or underestimate the number of samples needed to demonstrate compliance or may not take decision errors into account.

What are the benefits to using MARSSIM over currently available methods? What is the value of the MARSSIM in comparison with other currently available alternatives?

MARSSIM provides a technically defensible process over a broad range of situations. Results to date indicate that the MARSSIM process requires fewer measurements in comparison to other methods for demonstrating compliance for radiological sites. The MARSSIM also provides a performance-based approach and has a strong focus on planning. The MARSSIM generally involves more planning and less re-work than other currently available methods.

Is the MARSSIM technically accurate?

Yes, the MARSSIM underwent extensive scientific and peer reviews prior to finalization. The methods are technically accurate and applicable over a large range of situations.

Does the MARSSIM provide a practical and implementable approach to performing radiation surveys and site investigations?

The MARSSIM has been shown to be practical and implementable in field application. The MARSSIM provides technically defensible and efficient methods to demonstrate compliance with radiological criteria.

Is there an overall plan or timetable for implementation of MARSSIM?

Each agency has committed to timely implementation. The NRC has identified a date (after 8/20/98, all new D&D plans must be compliant with the dose-based rule).

How does MARSSIM relate to existing guidance on scoping, characterization, or remedial action surveys?

MARSSIM does not provide extensive guidance on scoping, characterization, or remedial action surveys, but it does document approaches to these surveys as they relate to the Final Status Survey (FSS). The guidance presented in MARSSIM on these pre-release surveys is primarily focused on providing input to planning the FSS.

How is MARSSIM related to:
- CERCLA or RCRA cleanup.
- FUSRAP
- BRAC
- State requirements

MARSSIM is a decision framework to release sites under any of these programs. The MARSSIM survey process could be used for obtaining data in any of these programs. Appendix C and F of MARSSIM discuss how MARSSIM fits in with regulatory and other programs.

What is the relationship between RESRAD or RESRAD-BUILD and MARSSIM?

These software tools are used to obtain site-specific release criteria (e.g., Derived Concentration Guideline Levels). Their purpose is to translate between a dose or risk to an activity per unit concentration or activity per unit. Identifying the DCGL is outside the scope of MARSSIM.

What are the specific methods for demonstrating compliance?

The user compares the DCGLs to survey data (pass/fail). Specific details on the MARSSIM methodology are outlined in the Manual (either by discussing them or referencing them.)

What statistical tests are utilized for demonstrating compliance?

Many tests can be used and are discussed. For example, MARSSIM presents non-parametric tests (e.g., WRS, Sign) for skewed distributions and parametric tests for normal distributions.

What guidance is provided by MARSSIM on:

- Conducting Historical Site Assessments
  How to obtain site information & prior survey data (i.e., operations records) for input to the FSS
- DQO
  DQO process (7 steps) on how to plan and make decisions
- Field Survey Methods and Instruments
  Instrument list; guidance on sampling, direct measurements, and scanning
- Survey Planning & Design
  Identify items needed to plan. Chapter 5 of the Manual covers in depth.
- Interpreting Survey Results
  Data Quality Assessments, data interpretation, and tests. Chapter 8 of the Manual covers this topic.
- QA/QC
  QAPP (QA/QC) process and requirements.

What do I do about conflicts between MARSSIM and existing guidance documents?

The MARSSIM is guidance. In some cases, MARSSIM would supercede existing guidance. Talk to your program office.

Who were the Federal Agency participants involved in the development of MARSSIM?

The participants (Work Group) are identified in the front of the Manual.

How can I determine if anyone from my site was involved in the development and/or peer review of MARSSIM?

Representative agency participants were involved in the development effort. Contact your agency representaive for specific information.

Who is the MARSSIM point-of-contact for each of the four agencies?

The agencies points-of-contact are identified in the front of the Manual.

How do I get a copy of MARSSIM?

The Government Printing Office (GPO) for copies or the EPA WEB site [www.epa.gov/radiation/marssim] for download.

Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM)

FOR FURTHER INFORMATION CONTACT: Any of the following points of contact for each agency:

DOE: Kenneth Duvall, Phone: (202) 586-0242, U.S. Department of Energy (EH-412), 1000 Independence Avenue, SW, Washington, DC 20585
e-mail: kenneth.duvall@hq.doe.gov

EPA: Mark Doehnert; Phone: (202) 564-9386, U.S. Environmental Protection Agency, Mail Stop 6602J, 401 M. Street, SW, Washington DC 20460
e-mail: doehnert.mark@epamail.epa.gov

NRC: Robert A. Meck, Phone: (301) 415-6205, U.S. Nuclear Regulatory Commission, MS T-9C24, Washington DC 20555, e-mail: ram2@nrc.gov

DOD: David Alberth, Phone: (410) 436-3548, Army-Aberdeen, MD.

Questions concerning the multi-agency document development project should be addressed to:

CDR Colleen Petullo
U.S. Environmental Protection Agency, R&IE
PO Box 98517
Las Vegas, NV 89193-8517
(702) 798-2476
e-mail: petullo.colleen@epamail.epa.gov

Copies of the MARSSIM may be purchased by requests in writing to: The Superintendent of Documents, U.S. Government Printing Office, P.O. Box 37082, Washington, DC 20402-9328. The NRC document number is NUREG-1575, and the EPA document number is EPA 402-R-97-016. The manual is also available through the Internet at: http://www.epa.gov/radiation/marssim

The author agencies solicit comments arising from review and use of the MARSSIM. Comments will be reviewed periodically by the author agencies, resolved as appropriate, and incorporated into revisions of the MARSSIM. Submit written comments to EITHER the U.S. Environmental Protection Agency, ATTN: Air and Radiation Docket, Mail Stop 6102, Air Docket No. A-96-44, Room M1500, First Floor Waterside Mall, 401 M Street, S.W., Washington D.C. 20460 or the Chief, Rules and Directives Branch, Division of Administrative Services, U.S. Nuclear Regulatory Commission, Washington DC 20555-0001. Copies of all comments received by one agency will be periodically copied and sent to the others. Revised pages resulting from the resolution of comments will be available on the Internet at the world wide web site:
http://www.epa.gov/radiation/marssim

Thursday, August 6, 1998

DOE Track

Session D: *Continuous Improvement in the Implementation of the Technical Standards Program*

Speakers: Madelyn Wilson
Don Williams
Richard Serbu

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STATUS REVIEW OF THE DOE TECHNICAL STANDARDS HOME PAGE

Madelyn Marie Wilson
Office of Scientific & Technical Information
August 6, 1998

00-81-59-07-98

Program Overview & Guidance

- OMB Circular A-119
- Technical Standards Program Tutorial
- Topical Committees
- DOE Technical Standards Program Procedures & Style Guide

00-31-60-07-98

DOE Technical Standards

- Project Registration Number Assignments

News/Contacts

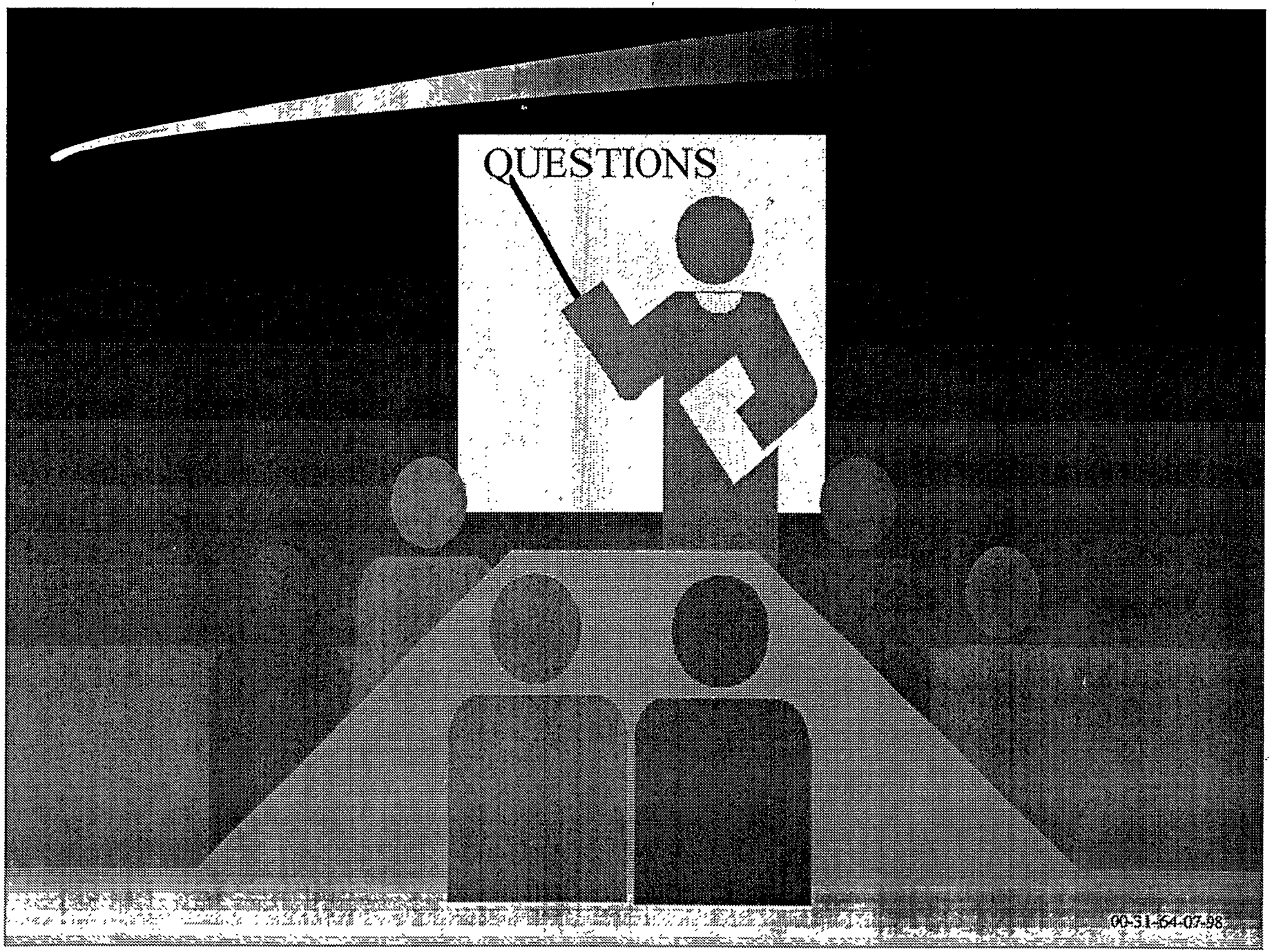
- Technical Standards Managers List
- Form 1300.2—Record of Non-Government Standards Activity
- Form 1300.3—Document Improvement Proposal
- Form 1300.5—Project Registration & Approval Request

00-31-62-07-98

Enhancements

- Add interactive form capabilities
- Upgrade search engine software
- Standardize Drafts for Review into a table format
- Develop Hot Topics & Frequently Asked Questions
- Develop site map

00-331-63-07-98


QUESTIONS
00-31-64-07-98

1998 GENERAL REVISION TO THE TECHNICAL STANDARDS PROGRAM PROCEDURES

Presented at the 1998
Federal Technical Standards Workshop

Don Williams, Oak Ridge National Laboratory
August 6, 1998

Current Technical Standard Program Procedures (TSPPs)

- *Program Overview*
- *TSPP-1, TSP Responsibilities*
- *TSPP-2, Establishing the Need for a Technical Standard*
- *TSPP-3, Non-Government Standards (NGSs) Use/Participation*
- *TSPP-4, Registering a Technical Standards Project*
- *TSPP-5, Development of a New DOE Technical Standard*
- *TSPP-6, Coordination of DOE Technical Standards*
- *TSPP-7, Technical Standards Comment Resolution*
- *TSPP-8, Approving/Issuing DOE Technical Standards*
- *TSPP-9, Maintenance of DOE Technical Standards*
- *TSPP-10, Conversion of DOE Technical Standards to NGSs*
- *TSPP-11, Technical Standards Program Topical Committees*

TSPP Changes (June 1998)

- TSP Overview
  - Page iii, third paragraph - revised the definition of "technical standard" (wording consistent with new OMB A-119). Page v - added footnote on Directives Management Board function.
- TSPP-1: Updated selected responsibilities of the Technical Standards Program Manager (sections 2.5.3, 2.5.13, and 2.5.20).
- TSPP-2: Section 2.1.1 - added a new paragraph on DOE preference for selection of performance standards vs. prescriptive standards (wording from new OMB A-119).

TSPP Changes (June 1998)

- TSPP-3:
  - Section 2.3 - expanded list of sources for adopted voluntary standards.
  - Section 3.3 - expanded part c. based on new OMB A-119.
  - Section 3.5 - added new bullet on DOE/contractor participation in voluntary standards activities as example of DOE support of these bodies (consistent with new OMB A-119).
  - Section 3.6 - added new section on consultation with ethics personnel regarding voluntary standards participations (per new OMB A-119).

TSPP Changes (June 1998)

- TSPP-4:
  - Deleted attachment with new functional areas list (listing now in DOE-TSL-2).
  - Section 2.2 - revised/added notes on coordination of technical standards with DOE/GC and DOE/S-3.1.
- *TSPP*-6:
  - Section 2.1.1 - revised reference to processing minor changes to TSP documents.
  - Section 2.1.1 - revised/added notes on coordination of technical standards with DOE/GC and DOE/S-3.1.
  - Section 2.1.4 - added note on consulting with TSP Manager on use of reduced coordination period for new/revised DOE technical standards.

TSPP Changes (June 1998)

- TSPP-8:
  - Added new Attachment A - listing of TSP document identification numbers and responsible organization.
  - Added section 2.1.3(d) on distribution of TSP documents to DOE/GC for possible Congressional notification.
- TSPP-9:
  - Section 2.4 - clarified requirements for 5-year update review.
  - Section 3. - clarified part b. to better correlate action steps with procedure flow chart.
  - Section 4.2.1(b) - clarified handling of Change Notices vs. revisions.
  - Section 4.2.2 - added note under TSPO responsibilities on identification of reaffirmation status for TSP documents.

New TSPP Changes Being Proposed For Consideration

- *TSPP-6/7: Delete emphasis on comments in form of word-for-word replacements*
- *TSPP-9: Further clarification on Change Notices vs. Revisions*
  - *Technical changes - handle as revision.*
  - *Changes in documents referenced in standards:*
    - *A change in a revision level of a reference is generally NOT a technical change (responsibility of the Preparing Activity to confirm this).*
    - *Adding new references or deleting existing references IS a technical change, and the updated draft technical standard should be processed as a revision.*

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Technical Standards Program
Functions and Process Improvement

Federal Technical Standards Workshop
August 6, 1998

The Technical Standards Program (TSP) is a service program! It functions to:

o Identify suitable voluntary consensus standards for consideration for use

o Provide contacts and links with Standards Development Organizations to identify, develop or revise Voluntary Consensus Standards (VCSs) and other non-government standards

o Provide processes and procedures to develop new DOE Technical Standards (TSs) as they are needed

o Maintain ownership and currency of DOE TSs

o Provide Information Management - TSs and draft TSs are posted on the TSP Home Page

o Issue the Standards Forum and Standards Actions to provide information on standards and issues

o Charter DOE Topical Committees

o Provide data bases of participants in various standards organizations on behalf of DOE

Promoting the Use of Voluntary Consensus Standards includes:

o Locating and listing VCSs of interest to users

o Publicizing How VCSs can be obtained

o Providing subscription services to commercial standards services

o Linking with DOE infrastructure, such as Directives, Work Smart and Lessons Learned

Most of the TSP requirements are in Public Law 104-113 and OMB A-119 (not in DOE Order 252.1)!

o Federal Agencies must use VCSs (with exceptions)

o Federal Agencies should work with SDOs to develop needed standards

o Report participation with SDOs

o The TSP does not handle Conformity Assessment issues in the Law and Policy

DOE Order 1300.2A is the current Order, but is being replaced by DOE O & G 252.1

o The new Order requires DOE Feds to use the TSP.

o EH is tasked to manage the TSP

o DOE organizations involved in TS activities need to appoint a Technical Standards Manager

o All DOE organizations affected by DOE TSs have an opportunity to participate in the TSP

o The Guide (DOE G 252.1-1) is really a program description guide and steers you to the TSP Procedures that the TSPO and TSMC uses to conduct their activities.

Maintain quality nuclear TSs per DNFSB commitment

o Structure and formal procedures

o DOE-wide comment and review

o Under Technical Standards Manager oversight

o Eliminate "rogue" standards

o Provide a technical and procedural pedigree for DOE TSs

Provide a path for technology transfer

o New R&D technology

o CRADAs

o D&D experience and technology

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