

# MANDATORY STANDARDS:

C O M I N G T O A C O N S E N S U S

**SAFETY** & HEALTH  
LEARNING **ALLIANCE**



*Call 888-603-9746  
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## Event Logistics

- Facilitator introduction
  - Mike Lipka, Knowledge Management Officer  
NASA Safety Center
- To ask a question
  - Dial \*1 for the operator
  - Click the “Raise Hand” option
- The presentation will last approximately an hour and a half
- To get a closer look at the slides, select “Full Screen”
- Turn off the speakers on your computer



## Agenda

- Goals of the Safety and Health Learning Alliance
- Today's Panel Speakers
- Discussion and key points
- Wrap-up and next event

## Goals of the SHLA: the Four C's

- **COLLABORATE** Create a forum for collaboration
  - Repeatable process with trusted advisors
- **CONCENTRATE** Accelerate learning
  - “Quick hits” on timely, topical, and new approaches
- **CONTEXT** Learn from your peers—what they do and how they do it
  - Knowledge + Experience = Wisdom
- **CONNECT** Establish networking opportunities
  - Extend beyond events for personal and professional development

*Learn more at <https://nsc.nasa.gov/SHLA>*

## Today's Panel Speakers



**Mr. John Nakoski**  
Nuclear Regulatory Commission



**Mr. Adam West**  
NASA Office of the Chief  
Engineer



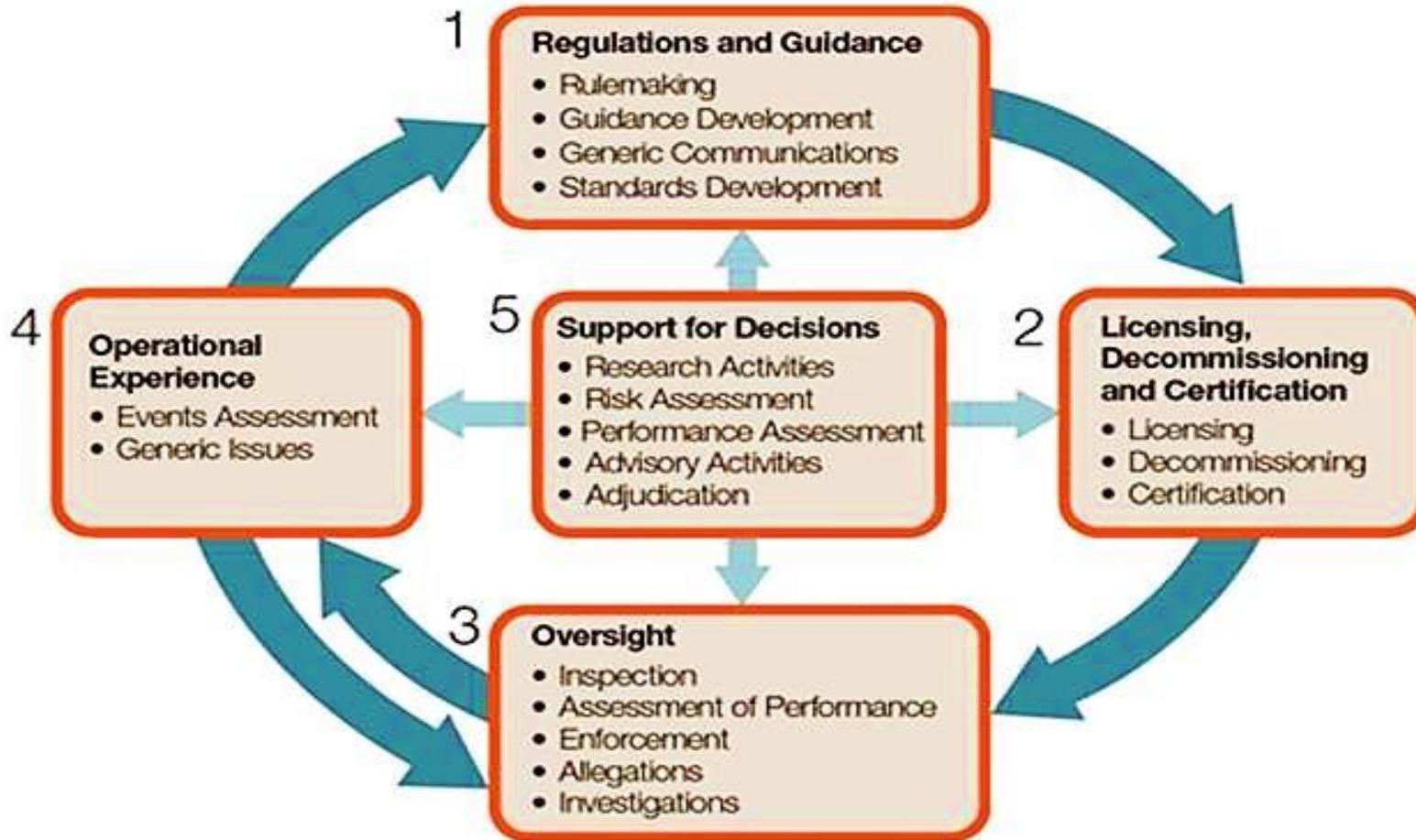
# Nuclear Regulatory Commission

## How We Regulate

June 19, 2014

John A. Nakoski  
Chief, Performance and Reliability Branch  
Division of Risk Analysis  
Office of Research, NRC

## How We Regulate



# Regulation and Guidance

- **Rulemaking**
  - ✓ Establish requirements for safe use of nuclear material or operation of nuclear power plants
- **Guidance Development**
  - ✓ Information to aid licensees to meet safety requirements
- **Generic Communications**
  - ✓ Sharing information about events or requesting information about regulatory requirements
- **Standard Development**
  - ✓ Participation in standards setting organizations to develop consensus standards

# Licensing, Decommissioning and Certification

- **Licensing**
  - ✓ Authorization to use or transport nuclear material or operate a nuclear facility
- **Decommissioning**
  - ✓ Safely removing a nuclear facility from service and reducing radioactivity to a level for license termination
- **Certification**
  - ✓ Authorization to manufacture spent fuel casks, transportation packages, sealed sources and devices, and authorizing operation of a gaseous diffusion plant

# Oversight

- **Inspection**
  - ✓ Verifying licensee activities are conducted to ensure safe operation consistent with NRC requirements
- **Assessment of Performance**
  - ✓ Review inspection findings and objective performance indicators to assess licensee performance and determine appropriate NRC action
- **Enforcement**
  - ✓ Sanctions against licensees that violate NRC regulations
- **Allegations**
  - ✓ Respond to reports of wrongdoing by licensees, applicants, or licensee contractors or vendors
- **Investigations**
  - ✓ Investigating wrongdoing by licensees

# Operational Experience

- **Events Assessment**

- ✓ Daily review and long term trending of events and other reported incidents to determine appropriate regulatory response

- **Generic Issues**

- ✓ Identifying and resolving safety issues that affect more than one licensed facility

# Support for Decisions

- **Research Activities**
  - ✓ Experiments, technical studies and analyses that help make realistic decisions, assess safety significance of issues, and prepare the agency for the future
- **Risk Assessment**
  - ✓ Using risk analysis methodologies and performance insights to support regulatory decision-making
- **Performance Assessment**
  - ✓ Evaluation of potential releases of radioactivity to assess resultant doses to determine whether the facility has met performance objectives
- **Advisory Activities**
  - ✓ Independent advisory body review and assessment of regulatory proposals
- **Adjudication**
  - ✓ Listening to concerns of affected parties in a legal setting

The NRC also strives to improve its processes in these five areas through risk-informed and performance-based regulation

# Questions ?

**John A. Nakoski**

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*Office of the Chief Engineer*

# **NASA Technical Standards Program**

## **OCE Endorsed Standards**

### **Safety and Health Learning Alliance**

Adam West  
June 19, 2014

# Endorsed Standards

## Why have them



- To help narrow the field of potential technical standards that will help **drive commonality** and use through-out NASA's engineering community
- To serve as a "pick list" based on experience to ensure that proven technical standards have not been overlooked by programs & projects in the selection of requirements for design, development, and operations.
- To help call attention to non-Government technical standards used by NASA, to support Public Law (OMB A119) to make maximum use of Non-Government standards in preference to Government developed standards.



# Endorsed Standards

What are they



- Standards that are endorsed by the NASA Chief Engineer for use by current and future Agency programs and projects.
- A list of proven technical standards that have been identified and recommended by NASA Tech Fellow's Technical Discipline Teams for particular types of applications for commonality across the Agency, but are not of a criticality that they be mandated by NASA policy.
- A list including approved NASA Technical Standards developed under the sponsorship of the OCE plus those technical standards developed and approved by other government and non-government standards developing organizations.



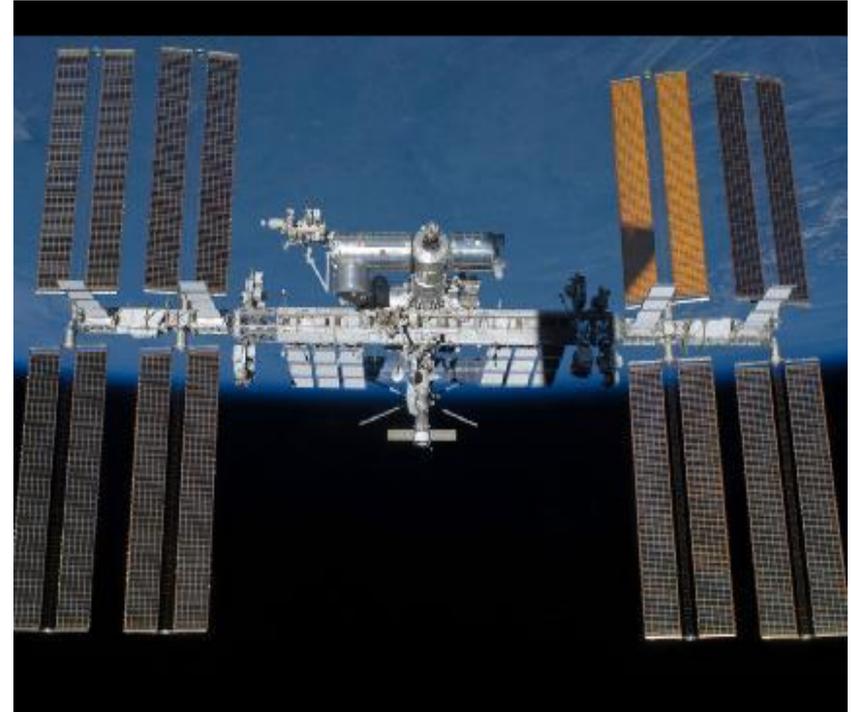
Note: All regulatory and public law requirements are endorsed by NASA

# Endorsed Standards

## Selection Criteria

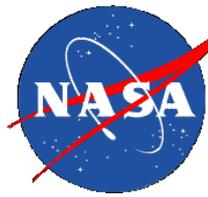


- Maintained document that is reviewed and updated on a periodic basis
- Leverages best engineering practices representing the most current proven technology/knowledge
- Widely accepted by engineering discipline experts (internal/external)
- Address common, high-level functions that should be addressed by all program/projects



# Endorsed Standards

## Selection process



- To help kick start the effort - started with over 600 possible documents
  - NESC list, SMC list, previous efforts, top 200 downloads from the Standards Program web-site
  - Excluded program/project documents, Center documents, laboratory procedures/process, regulatory/ public law, procurement specs, handbooks
- Approximately 100 documents passed through initial filter
- Each standard was associated with a technical discipline
- Tech Fellows asked to:
  - Review for accuracy
  - Suggest deletions and additions
- 50 standards made final cut
- List will be supplemented when appropriate





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## NASA TECHNICAL STANDARDS

[NTSP](#)[ENDORSED STANDARDS](#)[OTHER RELATED STANDARDS](#)

The [NASA Technical Standards Program \(NTSP\)](#) is sponsored by the NASA Chief Engineer. The Program's primary mission is to enhance the Agency's engineering capabilities and promote mission success by supporting NASA participation in the development of voluntary consensus standards and other Government agency standards to meet NASA's needs and developing NASA technical standards when existing technical standards do not meet or cannot be adapted to meet NASA's needs (refer to [NPR 7120.10, Technical Standards for NASA Programs and Projects](#)). The value of provided technical standards is enhanced by integrating lessons learned, application notes, and the Standards Update Notification System.



The [NASA Standards and Technical Assistance Resource Tool \(START\)](#) provides access to standards from over 100 standards-developing organizations, including DoD and NASA. Communicating and sharing past scientific and technical experiences are crucial to the Agency's continued success; specific experiences relative to technical standards are documented as lessons learned and application notes in START. Because changes to technical standards can have major impacts on the safety, performance, reliability, and cost of NASA's programs and projects, the Standards Update Notification System notifies specific users when registered technical standards change.

**Contacts:** [Tim Crumbley](#) NASA Technical Standards Program Manager and Responsible Official  
[Adam West](#) NASA Standards Executive

## RECENTLY PUBLISHED NASA ENGINEERING STANDARDS

The following standards have recently been approved by the NASA Chief Engineer and are accessible via the NASA Standards and Technical Assistance Resource Tool (START) at <https://standards.nasa.gov>.



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Fabrication Alliance

Flight Sciences

Structures, Loads and Mechanical Systems (SLaMS)

System Engineering & Integration (SE&I)

Thermal & Environmental Control and Life Support

### WORKING GROUPS

Annual Engineering Leadership Workshop

## NASA TECHNICAL STANDARDS

NTSP

**ENDORSED STANDARDS**

OTHER RELATED STANDARDS

In an effort to provide greater flexibility and the promotion of commonality of technical standard usage throughout NASA's engineering community, "OCE Mandatory Engineering Standards" have been transitioned to a list of "OCE Endorsed Engineering Standards." As such, the September 6, 2007 letter defining OCE mandatory standards application is cancelled.

The list of "OCE Endorsed Engineering Standards" is authorized by the Office of the NASA Chief Engineer based on recommendations from engineering discipline subject matter experts from across the NASA technical community. It includes approved NASA Engineering Standards developed under sponsorship of OCE, plus those engineering standards developed by voluntary consensus standards (non-government) bodies and other Government agency standards-developing organizations. The list is expected to be revised whenever appropriate.

The "OCE Endorsed Engineering Standards" list should be used as a "pick list" to help ensure that proven engineering practices have not been overlooked by programs and projects in the selection of requirements for design, development, and operations.

To be considered for inclusion, each standard must meet the following criteria:

1. Be approved, reviewed, and updated on a periodic basis; and
2. Address common, high-level functions that need to be addressed by projects across or within a given program or elements across or within a given project; and
3. Leverage best engineering practices representative of the most current proven technology; and
4. Be widely accepted by engineering discipline experts from industry, military, academia, and NASA to ensure proven, consistent, common practices in the engineering discipline area are applied; and
5. The list does not include program- or project-specific or Center documents, laboratory procedures or processes, or procurement specifications. Please note that all regulatory and public law requirements are endorsed by NASA.

Your support is critical to a successful implementation. Please direct suggested revisions to this list to [Adam West](#).

Click the above button to access "OCE Endorsed Engineering Standards" and "Safety and Mission Assurance (S&MA) Endorsed Standards".

OCE Endorsed Engineering Standards

S&MA Endorsed Standards

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## OCE ENDORSED ENGINEERING STANDARDS

[← Back to NASA Technical Standards](#)

NOTE: The standards listed below are available to qualified NASA and Contractor personnel free of charge by registering and logging into the [NASA Standards and Technical Assistance Resource Tool \(START\)](#). By default, the list is sorted ascending by Document Number. Click any column heading to toggle the sort.

Document Number	Document Title	Comments
AFSPCMAN 91-710-V1-7	Range Safety User Requirements Manuals, Vol 1-7 - Air Force Space Command Range Safety <a href="#">Volume 1</a> <a href="#">Volume 2</a> <a href="#">Volume 3</a> <a href="#">Volume 4</a> <a href="#">Volume 5</a> <a href="#">Volume 6</a> <a href="#">Volume 7</a>	
AIAA G-077-1998	<a href="#">Guide for the Verification and Validation of Computational Fluid Dynamics Simulations</a>	
AIAA S-080	<a href="#">Space Systems - Metallic Pressure Vessels, Pressurized Structures, and Pressure Components</a>	
AIAA S-081	<a href="#">Space Systems - Composite Overwrapped Pressure Vessels (COPVs)</a>	
AIAA S-110	<a href="#">Space Systems - Structures, Structural Components, and Structural Assemblies</a>	Document is for space systems that are rated for human occupancy; unknown if any NASA non-human-rated space projects are using it.
AIAA S-111	<a href="#">Qualification and Quality Requirements for Space Solar Cells</a>	
AIAA S-112	<a href="#">Qualification and Quality Requirements for Space Solar Panels</a>	
AIAA S-113	<a href="#">Criteria for Explosive Systems and Devices Used on Space and Launch Vehicles</a>	
AIAA S-114	<a href="#">Moving Mechanical Assemblies for Space and Launch Vehicles</a>	
AIAA S-119	<a href="#">Flight Dynamics Model Exchange Standard</a>	
AIAA S-120	<a href="#">Mass Properties Control for Space Systems</a>	
AIAA S-122	<a href="#">Electrical Power Systems for Unmanned Spacecraft</a>	
FAA HF-STD-001	<a href="#">Human Factors Design Standard</a>	(HFDS) for Acquisition of Commercial Off-the-Shelf (COTS) Subsystems, Non-developmental Items (NDI), and Developmental Systems
IEEE 24765	<a href="#">Systems and Software Engineering - Vocabulary</a>	
MIL-STD-1472	<a href="#">DoD Design Criteria Standard - Human Engineering</a>	MIL-STD-1472 is not sufficient by itself. Only when combined with Chapters 3 & 4 only of the FAA HF-STD-001 is it endorsed for other than Human Space

# Questions?



## Wrap Up and Next Event

- Visit the SHLA Web site at [nsc.nasa.gov/SHLA](http://nsc.nasa.gov/SHLA)
  - Video of this presentation, slides, event summary
- Click here → [SHLA Event Survey](#) We'd like to hear your feedback
- Our next event
  - Safety and Health Learning Alliance Program Review
  - September, 2014 at 1 p.m. EDT
  - Join the panel by contacting Mike Lipka at [Michael.J.Lipka@nasa.gov](mailto:Michael.J.Lipka@nasa.gov) or 440.962.3172