



DOE'S NANOSCALE MATERIALS HEALTH and SAFETY POLICY

*DOE and DOE Contractors Industrial Hygiene Meeting
in Conjunction with the
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Exposition*

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Why DOE Needs Nanotech Policy

- DOE has critical interests in this area, and a major role in the federal research and development initiative
 - FY 2007: \$258M at DOE (nearly \$100M in construction and operation of scientific user facilities, and over \$150M in basic research)



Why DOE Needs Nanotech Policy



Why DOE Needs Nanotech Policy

- ‘Nanotechnology White Paper’
 - Review of Potential Public and Health, Safety, and Environmental Concerns



Development of Nanotech Policy

- **Raise Management's Level of Awareness**
 - 'Ensuring the Safety and Viability of Nanotechnology'
 - Analogies of Other Technology i.e., Nuclear Power and Biotechnology



DOE Nanotech “policy”

- **Safety and Health Bulletin “Good Practices for Handling Nanomaterials” (5/05)**
- **DOE P 456.1 “Secretarial Policy Statement On Nanoscale Safety” (9/05)**



DOE Nanotech “policy”

- **10 CFR 851 Appendix A 11**
“Nanotechnology Safety – *Reserved*
(2/06)
- **DOE N 456.1 “The Safe Handling of**
Unbound Engineered Nanoparticles”
(1/09)



Developing “policy”

- **Work with Stakeholders in Working Group**
 - Office of Health, Safety and Security
 - Under Secretary for Science
 - National Nuclear Safety Administration
 - Under Secretary
 - National Laboratory Directors Council



Developing “policy”

- **Leverage existing stake holders knowledge**
- **Leverage Existing Standards and Drafts**
 - Nanoscale Science Research Centers - Approaches Document
 - ASTM – Terminology for Nanotechnology



Developing “policy”

- ASTM – Guide for Handling Unbound Engineered Nanoparticles in Occupational Settings
- NIOSH – Approaches to Safety Nanotechnology
- **Use existing knowledge of highly hazardous operations**



DOE N 456.1

- **Requirements for Federal Facilities**
- **Contractor Requirements Document (CRD)**
 - Must be added to Contracts



DOE N 456.1

- **Review References to identify applicable approaches to working with UNP**
- **Maintain registries**



DOE N 456.1

- **Establish S&H policies and procedures including:**
 - site safeguards and security plans, facility security plans, and emergency management programs



DOE N 456.1

- **TRAINING:** at the time of initial assignment and refresher
- **EXPOSURE ASSESSMENT**
 - Use best available hazard information
 - Assess the need for use of HEPA
 - Establish an air monitoring program



DOE N 456.1

- **MEDICAL SURVEILLANCE**

- A general physical exam
- Pulmonary function test
- General blood work
- Other tests or exams as determined by the occupational medical provider



DOE N 456.1

- **CONTROLS**
- **POSTING AND LABELING**
- **TRANSPORTATION**
- **WASTE MANAGEMENT**



References

- **HS Supports the ORAU TRADE IH/OS SIG**
- **http://orise.orau.gov/ihos/Nanotechnology/nanotech_home.html**

