Department of Energy
Washington, DC 20585

July 15, 2015

JM CHRONOLOGY
JM RECEIVED 7/16/15
OUT FOR REVIEW 8/24/15
DRB DISCUSSION 9/3/15

MEMORANDUM FOR INGRID KOLB
DIRECTOR, OFFICE OF MANAGEMENT

THROUGH: for KEVIN T. HAGERTY
DIRECTOR, OFFICE OF INFORMATION RESOURCES

FROM: MATTHEW B. MOURY
ASSOCIATE UNDER SECRETARY FOR
ENVIRONMENT, HEALTH, SAFETY AND SECURITY

SUBJECT: Notice of Intent to Revise Department of Energy Order 456.1, Admin Chg 1, *The Safe Handling of Unbound Engineered Nanoparticles,* dated February 14, 2013

PURPOSE: This memorandum provides justification for the revision of Department of Energy (DOE) Order (O) 456.1, *The Safe Handling of Unbound Engineered Nanoparticles.* This directive provides the Department's expectations for establishing the requirements and responsibilities for activities involving unbound engineered nanoparticles (UNP). The directive ensures that work involving UNP occurs in a safe and secure manner that protects workers, the public, and the environment. This directive will be reviewed to include consideration for adding a requirement to manage and track inventory of nanomaterials and to correct minor administrative changes in the current directive.

JUSTIFICATION: This order is due for recertification in 2015. A request for review and comments was sent to affected DOE departmental elements. Comments were received that necessitate a review for the Department's organizations that work with nanoparticles and nanomaterials. This order will be updated by comparing it to national/international consensus standards on nanomaterial safety that have been developed and revised since this order was last reviewed. Additionally, it will be reviewed by representatives of affected DOE elements to include consideration of the recommendations from the external review completed by the DOE Office of Inspector General audit report, "Follow-up Audit of Nanoscale Material Safety at the Department's Laboratories," [Draft, April 2015].

There are no valid external, consensus, or other standards (e.g., International Organization for Standardization, Voluntary Protection Program, etc.) available that can be used in place of the new content that will be added to this directive.

IMPACT: The proposed revision to DOE O 456.1 does not duplicate existing laws, regulations, or national standards; and it does not create undue burden on the Department. It will provide further clarification and expectations for maintaining and tracking inventory of nanomaterials.

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This revision will result in enhanced safety for DOE elements that work with nanomaterials. Additional impacts of this proposed revision are provided in the completed risk analysis tool (attachment).

WRITER: Robin Pickens, (301) 903-9981, **robin.pickens@hq.doe.gov.**

OPI/OPI CONTACT: Bill McArthur, PhD, DOE Responsible Manager, Office of Worker Safety and Health Policy, EHSS, (301) 903-9674, **bill.mcarthur@hq.doe.gov.**

Ingrid Kolb, Director, Office of Management (MA-1):

Concur: _____ Nonconcur: _____ Date: 9-3-2015

Unless determined otherwise by the Directives Review Board (DRB), writers will have up to 60 days in which to develop their first draft and submit to the Office of Information Resources, MA-90.

Standard Schedule for Directives Development	Days
Draft Development	Up to 150 days
Review and Comment (RevCom)	30
Comment Resolution	30
Final Review	30
Total	240

Attachment

Risk Identification and Assessment

Revision of DOE Order 456.1, The Safe Handing of Unbound Engineered Nanoparticles

Risk	Probability	Impact	Risk Level
People			
1. Worker illness or injury	**Possible**	**Low**	**Moderate**
Mission			
1. Lost time – worker recovering at home	**Possible**	**Low**	**Moderate**
2. Lost productivity – conducting accident investigations; frequently revising procedures	**Possible**	**Low**	**Moderate**
Assets			
3. Damaged facilities or equipment.	**Possible**	**Low**	**Moderate**
Financial			
4. N/A			
Customer and Public Trust			
5. Local community resistance to missions due to fear that DOE is unable to control hazards.	**Possible**	**Low**	**Moderate**

Gap Analysis of Existing Risks and Controls

Laws	
External Regulation	
DOE Regulation	10 C.F.R. 851, Worker Safety and Health Program
DOE Orders	• DOE Order 440.1B, *Worker Protection Program for DOE (Including the National Nuclear Security Administration) Federal Employees* • DOE Order 456.1 Admin Chg 1, *The Safe Handling of Unbound Engineered Nanoparticles* • DOE Policy 456.1, *Secretarial Policy Statement on Nanoscale Safety*
Contract Controls	48 C.F.R. 970.5223-1, Integration of ESH into work planning and execution.
External Assessments	• Audit Report: *"Follow-up Audit of Nanoscale Material Safety at the Departments' Laboratories, [DRAFT], April 2015.* • Audit Report: IG-0788, ***Nanoscale Materials Safety at the Department's Laboratories,*** February 28, 2008.

Risk Mitigation Techniques

[Use the risk mitigation techniques and guidance within the attached reference to fill out the chart below. List all risks that have been identified in the gap analysis. When examining the relative cost-benefit of a proposed control be careful to notice situations where a risk-specific control may also (directly or indirectly) address a separate risk identified in the gap analysis.]

Risk Assessment for DOE Order 456.1, *The Safe Handing of Unbound Engineered Nanoparticles*					
Risk/Opportunity	**Risk Level**	**Potential Cost/Benefit**	**External Control(s)**	**Proposed Mitigation Technique**	**Internal Control (if needed)**
Worker illness or injury	Moderate	Harm to workers		Monitoring	
Lost time – worker recovering at home	Moderate	Mission inefficiencies		Monitoring	
Lost productivity – conducting incident investigations; frequently revising procedures	Moderate	Mission inefficiencies		Monitoring	
Damaged facilities or equipment	Moderate	Mission inefficiencies: replacement		Monitoring	
Local community resistance to missions due to fear that DOE is unable to control hazards.	Moderate	Could result: in political pressure to curtail missions		Monitoring	