Automating OB/OD Permit Applications

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EPA OB/OD RCRA Permit
Assessment & Objectives
(DUGM Presentation 10/17/06)

• 49  OB/OD  Treatment, Storage & Disposal (TSD) Units in U.S. Under Interim Status Operating Permits (ISOP) Not Approved Controls

• 11  OB/OD  TSD Units On Track for Closure

• 38  OB/OD  TSD Units Continuing With ISOPs

• Facilities Provided Data in FY06 EPA Survey

• By FY08 Achieve 95% EPA Approved Controls

• By FY11 Achieve 98% EPA Approved Controls
JMC OB/OD RCRA Permit Assessment & Analysis

• JMC Facility Permits Cover OB/OD/IN/Plasma Arc—As Applicable

• Demil Permit Costs: $1-3M/Site, Initial Application

• Permitting Expenditures Every 3-5 Years

• Potential JMC Expenditure $10-30M Every 3-5 Years

• Need to Decrease Permitting Time and $$ Costs
Human Health Risk Assessment

- Planning, Scoping & Problem Definition
- Toxicity & Exposure Analyses
- Risk Characterization
HRA Automation—MACS Existing Resources

- Analytical Software Algorithms
- Munition Characterization MIDAS
- Historic OB/OD Data
- Concern Criteria
- OB/OD Emissions Data
- Regulatory Lists

Automated HRA
HRA Component Automation

- Planning, Scoping & Problem Definition
  - Daily/Annual OB & OD Emissions
  - Enhanced Emissions Database—SMEs
  - Emission Levels of Concern
  - Emission HAPs & PBTs
HRA Component Automation

- **Toxicity & Exposure Analyses**
  - Cancer: IURs, Oral CSFs
  - Noncancer: RfCs, RfD
  - Acute: 12 Lists
  - Annual Releases
  - Exposure Time
  - Tiers I, II & III

MACS Health Risk Assessment (MACS-HRA)
HRA Component Automation

- **Risk Characterization**
  - **Cancer**
    \[ \text{Risk} = \text{EC}_L \odot \text{IUR} \]
    
    \( \text{EC}_L \) = lifetime of *continuous* inhalation exposure to individual HAPs
    
    Total Cancer Risk = Risk_1 + Risk_2 + Risk_3 + ...  
  
  - **Noncancer**
    \[ \text{Hazard Quotient (HQ)} = \text{EC}_C \odot \text{RfC} \]
    
    \( \text{EC}_C \) = lifetime of *continuous* inhalation exposure
    
    Hazard Index (HI) = HQ_1 + HQ_2 + HQ_3 + ...  
  
  - **Acute**
    \[ \text{HQ}_A = \text{EC}_{ST} \odot \text{AV} \]
    
    \( \text{HQ}_A \) = acute hazard quotient for an individual HAP
    \( \text{EC}_{ST} \) = estimate of short-term inhalation exposure to that HAP
    \( \text{AV} \) = the corresponding acute dose-response value for that HAP
    
    HI_A = HQ_{A1} + HQ_{A2} + HQ_{A3} + ...  

MACS Health Risk Assessment (MACS-HRA)
MACS-ERA & MACS HRA Development Process

- Enhanced OB & OD Constituent Emissions Database — EFFs & SME
- Rank Emission Product Concern Levels
- MACS-ERA Software Development
- Add 5 LOL Databases → 18 Total
- Existing OB/OD Application Reviews + CHPPM, EPA
- MACS-HRA Software Development
- Supplemental Permit Information Identification
MACS Integration Value Added (“Free”) Capabilities

MACS Centralized Databases
- Munitions Characterization – MIDAS
- Demil Processes
- Constituent Chemicals
- Chemicals Released
- Concern Criteria
- Green Criteria
-Insensitive Criteria
-Corrosive Criteria
-Packaging Criteria
-Transportation/Storage Factors
-Reliability Factors
-Hazardous Waste Forms
-Regulations

MACS–1 Demil (Web)
- UXO Remediation (Concept)
- Munition Life Cycle (MLCMT)
- ARAS Ammo Reliability (Proposal)

MACS–2 Ranges (Web)
- TRACS Hazardous Waste (Web)

MACS–3 Theoretical Compliance Analyses (Web)
- MACS–ERA Emission Risk (Web)

MACS–4 Sources & Shortages (Proposal)
- MACS–HRA Health Risk (Web)

MACS–5 Manufacturing (Proposal)
- MACS–6 Storage & Packaging (Concept)

MACS–6 Corrosives (Proposal)
- Green Energetics (Proposal)

MACS–COC Chemicals of Concern (Web)
- Plasma Arc (Client–Server)

MACS–2 Ranges (Web)
- Dispersion Risk (Web)

MACS–3 Theoretical Compliance Analyses (Web)
- MACS–ERA Emission Risk (Web)

MACS–4 Sources & Shortages (Proposal)
- MACS–HRA Health Risk (Web)

MACS–5 Manufacturing (Proposal)
- MACS–6 Storage & Packaging (Concept)

MACS–6 Corrosives (Proposal)
- Green Energetics (Proposal)
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For more information on MACS-ERA or MACS-HRA, or a remote demonstration of other MACS modules, please contact:

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