

U.S. Chemical Safety and Hazard Investigation Board



CSB Public Meeting

CSB Investigation of Donaldson Enterprises, Inc. (DEI) Fireworks Disposal Explosion and Fire

Waipahu, Hawaii

January 17, 2013

U.S. Chemical Safety and Hazard Investigation Board



Donaldson Enterprises Inc. (DEI)

Speakers from Investigation Team:

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DEI Investigation Proceedings

- Introduction
- Safety Video
- Key Investigative Findings
- Board Questions
- Delivery of Proposed Recommendations

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SAFETY VIDEO







Elements of a Mass Explosion



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Investigation Findings





Key Finding 1

OSHA PSM Standard did not apply

- Manufacturing**
- Management of Change**
- Process Hazard Analysis**



Key Finding 2

Insufficient Hazard Analysis

Failure to identify and control hazards



Key Finding 3

- **Process modifications introduced hazards**
- **Lack of training and experience**



Key Finding 4

**Many possible sources of ignition
inside magazine**



Treasury Executive Office for Asset Forfeiture (TEOAF)

- **Federal Seized and Forfeited Property Program**
- **Property Management Services**
- **Contract with VSE Corporation**



Key Finding 5

No specific requirement to consider safety in contractor selection process



Key Finding 6

- **VSE review of DEI did not address safety or qualifications**
- **Experts not utilized in selection and oversight of DEI**



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INVESTIGATION REPORT

XCEL ENERGY HYDROELECTRIC PLANT

PENSTOCK FIRE

(Five Dead, Three Injured)



CABIN CREEK

GEORGETOWN,

COLORADO

OCTOBER 2, 2007

KEY ISSUES:

- SAFE LIMITS FOR WORKING IN CONFINED SPACE FLAMMABLE ATMOSPHERES
- PRE-JOB SAFETY PLANNING OF HAZARDOUS MAINTENANCE WORK
- CONTRACTOR SELECTION AND OVERSIGHT
- EMERGENCY RESPONSE AND RESCUE



Key Finding 7

Existing regulations and industry standards do not adequately address safe fireworks disposal



Key Finding 8

**Inadequate safety provisions contained
in hazardous waste permitting process**

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Questions from the Board



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Delivery of Proposed Recommendations



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Recommendation Recipient

**Federal Acquisition Regulatory
(FAR) Council**





Proposed Recommendation

2011-06-I-HI-R1

To the Federal Acquisition Regulatory Council:

Establish an additional contractor responsibility determination requirement under Subpart 9.104-1 of the Federal Acquisition Regulation (FAR) addressing contractor safety performance. The analysis under this requirement should focus on incident prevention, and environmental and system safety. At a minimum, the language should specifically require the review of a prospective contractor's:

- Environmental and safety programs;
- Safety record and incident history;
- Ability to use safe methods for any work involving hazardous materials (including explosives); and
- Suitable training and qualifications for the personnel involved in the work including prior relevant safety experience

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Recommendation Recipient

Department of the Treasury Office of
the Procurement Executive (OPE)





Proposed Recommendation

2011-06-I-HI-R2

To the Department of the Treasury Office of the Procurement Executive (OPE)

Establish formal policy requiring that:

- **Solicitations for contracts dealing with the storage, handling, and disposal of explosive hazardous materials, including fireworks, incorporate rigorous safety-related contractor selection provisions such as those provided in the DoD's Contractor's Safety Manual for Ammunition and Explosives, Section C1.5, "Pre-Award Safety Survey"; and**
- **Contracts dealing with the storage, handling, and disposal of explosive hazardous materials, including fireworks, include a provision requiring that any subcontract (regardless of tier) for the storage, handling, and disposal of explosives (including fireworks) be selected based on rigorous safety-related contractor selection provisions such as those provided in the DoD's *Contractor's Safety Manual for Ammunition and Explosives*, Section C1.5, "Pre-Award Safety Survey."**



Proposed Recommendation

2011-06-I-HI-R3

To the Department of the Treasury Office of the Procurement Executive (OPE)

Establish a formal policy requiring that contracts and subcontracts dealing with the storage, handling, and disposal of explosive hazardous materials, including fireworks, incorporate rigorous safety-related contractor oversight provisions such as those provided in the DoD's *Contractor's Safety Manual for Ammunition and Explosives*, Section C1.6, "Pre-Operational Safety Survey" and C1.7, "Post-Award Contractor Responsibilities" to provide effective oversight of subcontractors handling and disposing of explosives and hazardous materials.



Proposed Recommendation

2011-06-I-HI-R4

To the Department of the Treasury Office of the Procurement Executive (OPE)

When the NFPA guidance developed by the National Fire Protection Association for the safe disposal of fireworks as recommended under recommendation 2011-06-I-HI-R7 is completed, incorporate this document by reference into the formal policies established by 2011-06-I-HI-R2 and 2011-06-I-HI-R3

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Recommendation Recipient

**Treasury Executive Office for Asset
Forfeiture (TEOAF)**





Proposed Recommendation

2011-06-I-HI-R5

To the Treasury Executive Office for Asset Forfeiture (TEOAF)

Require additional provisions within the TEOAF seized property management contract, such as a contract line item number (CLIN), that provide for the prime contractor to use expert(s) to assist the prime contractor's personnel in the selection and oversight of subcontractors who handle, store, or dispose of explosive hazardous materials, including fireworks, pursuant to the main contract

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Recommendation Recipient

VSE Corporation





Proposed Recommendation

2011-06-I-HI-R6

To the VSE Corporation

Use experts to:

- **Assist VSE procurement in selecting vendors to properly handle, store, and dispose of explosive hazardous materials, including fireworks, pursuant to prime contract requirements; and,**
- **Assist VSE personnel in overseeing the work to ensure it is being conducted safely**

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Recommendation Recipient

**National Fire Protection
Association (NFPA)**





Proposed Recommendation

2011-06-I-HI-R7

To the National Fire Protection Association (NFPA):

Develop a new standard, or incorporate within an existing standard, best practices for the safe disposal of waste fireworks that are consistent with environmental requirements. At a minimum this guidance or standard should:

- Discourage the disassembly of waste fireworks as a step in the disposal process;
- Minimize the accumulation of waste explosive materials, and encourage practices that reduce, recycle, reuse, or repurpose fireworks; and
- Incorporate input from ATF, EPA, and other agencies, experts, and available resources on fireworks disposal methodologies



Proposed Recommendation

2011-06-I-HI-R8

To the National Fire Protection Association (NFPA):

Once fireworks disposal best practices under recommendation 2011-06-I-HI-R7 is completed, develop and implement an outreach plan to promptly communicate the new NFPA practices to relevant government agencies and private entities that dispose of waste fireworks

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Recommendation Recipient

**U.S. Environmental
Protection Agency (EPA)**





Proposed Recommendation

2011-06-I-HI-R9

To the U.S. Environmental Protection Agency (EPA):

Revise the Resource Conservation and Recovery Act (RCRA) Subtitle C regulations to require a permitting process with rigorous safety reviews to replace the use of emergency permits under 40 CFR §270.61 for the disposal of explosive hazardous materials, including fireworks. At a minimum, the new process should require the use of best available technology, safe disposal methodologies, as well as safety management practices, such as those required by OSHA's Process Safety Management Standard (PSM), 29 CFR §1910.119 (e.g., hazard analysis and control, management of change)



Proposed Recommendation

2011-06-I-HI-R10

To the U.S. Environmental Protection Agency (EPA):

Until recommendation 2011-06-I-HI-R9 can be implemented, develop and issue a policy guidance document to provide a regulatory process with rigorous safety reviews to replace the use of emergency permits under 40 CFR §270.61 for the disposal of explosive hazardous materials, including fireworks. At a minimum, the new process should require the use of best available technology, safe disposal methodologies, as well as safety management practices, such as those required by OSHA's Process Safety Management Standard (PSM), 29 CFR §1910.119 (e.g., hazard analysis and control, management of change). Ensure its effective communication to all EPA regional administrators, state environmental agencies, and organizations within the fireworks industry



Proposed Recommendation

2011-06-I-HI-R11

To the U.S. Environmental Protection Agency (EPA):

Effectively participate in the National Fire Protection Association's standard development process to develop guidance on the safe and environmentally sound disposal of fireworks, as recommended under recommendation 2011-06-I-HI-R7

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Recommendation Recipient

**Bureau of Alcohol, Tobacco,
Firearms, and Explosives
(ATF)**





Proposed Recommendation

2011-06-I-HI-R12

To the Bureau of Alcohol, Tobacco, Firearms, and Explosives (ATF)

Effectively participate in the National Fire Protection Association's standard development process to develop guidance on the safe disposal of fireworks, as recommended under recommendation 2011-06-I-HI-R7

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