

US EPA ARCHIVE DOCUMENT

Synfuel

A Western Rivers Marine Transportation Risk Assessment

Origins of Synfuel

- 1980 - Crude Oil Windfall Profit Tax Act, Section 29 offers a tax credit for producing fuel from non-conventional sources.
 - Initially, coal fines from waste piles were recovered, treated with a chemical binder and “pelletized” for marketing.
 - Today, coal is sprayed with a variety of products (oil, pitch, latex, asphalt, etc).

Synfuel Pragmatism

- Coal-oil synfuels create a sheen; Coast Guard responds.
- Interventions needed to prevent sheens.
- MTR interventions for coal-oil synfuels could be the genesis for regulations for all synfuels determined to be hazardous.
- Conduct a Risk Assessment to determine appropriate interventions.

Synfuel Risk Assessment

- A Risk Assessment would:
 - include experts and stakeholders.
 - follow a systematic, proven process.
 - evaluate risk...based on expert opinion.
 - get industry input “up front.”
 - provide needed interventions.
 - seek a balance between the extremes of the risk and regulation spectrums.

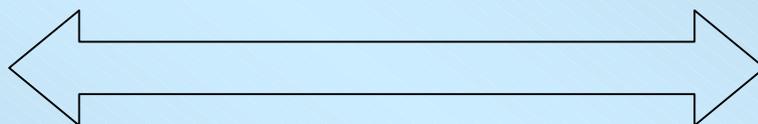
Spectrum of Risk and Regs

Low Risk, No Regs

High Risk, Many Regs



Coal



Oil

Spectrum of Risk and Regulation

Risk Assessment Process

- Identify Experts and Stakeholders
- Identify the Hazard
- Define the Key MTR Processes
- Identify Dominant Incidents
- Identify High Risk Incidents
- Identify Interventions
- Evaluate their Effectiveness and Cost

Synfuel Experts & Stakeholders

- Producers
- Transporters
- Consumers
- Regulators

Synfuel Hazard

- The Risk Assessment focused on the coal-oil synfuels that sheen.
- Determination of “hazardous” for other synfuel binders was beyond scope of this Risk Assessment.
- The interventions from the assessment could be applied to all synfuels that were determined “hazardous.”

Key MTR Processes

- Loading
- Fleeting
- Transporting
- Unloading

Dominant Incidents

- During Loading and Unloading
 - break away
 - fire
 - spillage
 - wind spillage
 - allision

Dominant Incidents (continued)

- During Transport and Fleeting
 - collision/allision
 - sinking
 - grounding
 - fire
 - breakaway
 - rain/incidental water
 - spillage of loose cargo

Evaluating Risk

- The risk of each incident was evaluated.
- Risk was evaluated by frequency of occurrence and impact.
- Frequency and impact scales were determined by workgroup experts.

Highest Risk Incidents

- During Loading and Unloading
 - spillage
- During Transport and Fleeting
 - breakaway
 - collision/allision
 - grounding
 - incidental water

Determining Interventions

- Interventions (which break the causal chains of high risk incidents) were brainstormed for each incident.
- Interventions were then evaluated based on effectiveness and cost.

Interventions

- During Loading and Unloading:
 - Operating Procedures
 - Mooring Procedures
 - Use of Deflectors
 - Breasting Barges
 - Tending Barges
 - Reduction of end loads
 - Regulate last pass loading speed

Interventions (continued)

- During Fleeting
 - Operations Manual
- During Transporting
 - Draft management
 - Protective positioning
 - Double hull vessels
 - Response manual
 - Incidental water disposed at reception facilities

Standards of Care

- Synfuel presents a low risk.
- Interventions are quite robust given the low risk.
- Interventions were recommended as “Standards of Care” vice regulations.
 - Industry self-impose.
 - COTPs consider if spill occurs.

PTP in Action

- Prevention Through People Principles
 - Take a Quality Approach
 - Honor the Mariner
 - Seek Non-Regulatory Solutions
 - Share Commitment
 - Manage Risk

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Questions?