EMERGENCY RESPONSE PLAN
Emergency Management Program

• We have a robust Emergency Management Program in place today, which is required by the National Energy Board and complies with the regulations set out by the regulator
• It is part of KMC’s Integrated Safety and Loss Management System (ISLMS)
• The most important aspect of preparedness is to prevent an emergency from occurring at all
Emergency Response Plans

Integrated Safety and Loss Management System

Public Awareness Program

Emergency Management Program

Goals Objectives and Targets

Hazard Assessment

Planning Standard

Response Resources

Document Control and Update Practices

Oscar Maintenance Manual

Liaison Practices

EM Exercise and Training Standard

Exercise Planning Process

Post incident/exercise process

Field Guide manuals

ERP's / Fire Plans

Control Points Manual

ICS Guide
Planning Standard

• It is a standard by which response planning can occur

• Fundamental document:
  – Defines terminology for use in the management system documentation
  – Uses hazard assessment processes already in place
  – Is based on credible worst-case scenario calculations
  – Determines the type, extent and location of response equipment and personnel based on response time
Emergency Response Plans

• KMC has a number of documents to help with the management of an incident including:
  – Emergency Response Plans
  – Fire Plans
  – Fire Pre-Plans
  – Incident Command System Guide
  – Numerous Job Aids
    • Crisis Communication Plan
    • Convergent Volunteer Plan
    • Air Monitoring Plan
    • Environmental Management Plans
    • WCMRC Geographical Response Strategies and Response Procedures
Westridge Marine Terminal: Regulation

- **National Energy Board (NEB) Act**
  - National Energy Board-regulated facility
    - *Onshore Pipeline Regulations*
    - Federal Incident Commander – NEB
- **Canada Shipping Act**
  - Transport Canada-regulated facility
    - Westridge Marine Terminal is classified as an Oil Handling Facility
    - Federal Incident Commander – Canadian Coast Guard
# Regulatory Jurisdiction

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<th>Terminal (land based)</th>
<th>Dock (into water)</th>
<th>Ship within Boom</th>
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<td>Regulator Unified Command*</td>
<td>Notified</td>
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<td>Transport Canada</td>
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*NEB represents the Federal Family in Unified Command*
Westridge Emergency Response Plan

Emergency Actions
1. Responder Health & Safety
2. Notifications
3. Spill and Site Assessment
4. Spill Containment & Recovery
5. Protection of Sensitive Areas
6. Multiple Hazards

Support Information
7. Site Information
8. Incident Management
9. Operations
10. Planning
11. Logistics
12. Finance/Administration
13. Wildlife Care
14. MSDS

Regulatory Information
15. Environmental Policy
16. Regulatory Background
17. Training and Exercises
Break Out Session #1

Three Breakout Groups
Time allocated: 30 minutes

Topic: EM Plan and Potential Integration

Questions for each group:
1. What information is in your ERP relating specifically to a Westridge Terminal incident?
2. What are the public safety and/or environmental protection measures in your plan that can be applied to a terminal incident? (eg. All-Hazards, HAZMATt)?
3. What can KMC provide (information/materials) that would help support/strengthen your plans?
FIRE PLANNING
Facilities Design Safety Considerations

- Facilities designed and operated to prevent fires, however, should they occur, early detection systems are in place.

- Industry Best Practices
  - Engineer controls
  - Operational procedures
  - Maintenance practices

- Relevant Codes
  - API Standards
  - NFPA Standards
Fire Safety Plans

- Fire safety plans and evacuation plans are compliant with provincial and national fire codes

- Plans include site and building drawings with:
  - Evacuation routes
  - Muster points
  - Response and safety equipment (e.g., fire extinguishers)

- Plans designate response positions and duties
Fire Pre-Planning

• Site-specific plans for facilities that have active liquid hydrocarbon storage tanks or loading and unloading facility
• Pre-plans include:
  – Notification procedures
  – Equipment
  – Site drawings and photos
  – Tank-specific data
  – Spill response data
    • Size
    • Fire suppression requirements
    • Exposures
    • Drainage
  – Tactical response guidelines and procedures
  – Potential hazards associated with fire incidents
Incident Prevention

Permits/Plans

- Safety standards manual
- Safe work permit
- Hot work permit
- Confined space permit
- Job Hazard Assessment (JHA)
- Tailgate meeting
- Confined space rescue plan
- Fire safety plan
Response Capability

- Site staffed 24/7 during ship-loading operations
- CCTV cameras along dock
- Fixed gas detection in high hazard areas
- Fixed remote control foam turrets at each dock designed for a minimum of 30 minutes foam suppression for containment area
- Unlimited water supply for firewater pumps
- Large volume foam concentrate on-site as well as backup at Burnaby Terminal
- Backup portable foam bladder trailer
Fire Equipment Enhancements

• Two large volume firewater pumps installed along shoreline (supplied by inlet)
• Two large volume foam concentrate pumps including large concentrate storage tank
• Numerous hi-volume manifolds installed along shoreline
• Remote controlled fixed foam turrets at each dock (minimum two per dock)
• Cooling lines along dock
• Numerous 300-lb dry chemical wheeled extinguishers for three-dimensional fires
Fire Response & Protection Equipment

- Fixed foam discharge
- Remote operation
  - Vapour suppression
  - Fire suppression
Fire Response & Protection Equipment

Foam Bladder Trailer

Foam Cannon Turret
Fire Response & Protection Equipment

Foam Cannon

Hose Trailer
Westridge Dock System (Proposed)
Vessel Fires

- Regulations require all vessels to be designed, constructed, equipped and operated safely
- Staff onboard are trained to handle emergencies, including shipboard fire
- Conventions, Codes and Standards:
  - International Convention for the Safety of Life at Sea (SOLAS)
  - International Code for Fire Safety Systems (FSS)
  - International Code for Application of Fire Test Procedures (FTP)
  - International Safety Management Code (ISM)
  - International Convention on Standards for Training, Certification and Watchkeeping for Seafarers (STCW)
Tanker Fires

• All vessels utilize:
  – Structural fire protection
  – Fire alarm and detection
  – Fixed and portable fire suppression systems

• On tankers:
  – Cargo tanks are kept inerted, i.e., reduced oxygen content in tanks
  – Ignition sources are removed
  – 24/7 gas detection, fire/smoke alarms
  – Water and foam system
  – Fixed firefighting system, e.g., CO₂, HE foam

• Best Practice:
  – OCIMF Recommendations
  – KMC Tanker Acceptance Standard (Westriddle)
  – Vapour collection during loading (Westriddle)
Fire on Vessel at Westridge

• Should a fire occur on a vessel at Westridge:
  – Vessel crew will act according to the vessel’s emergency plan and apply appropriate firefighting equipment/methods
  – Westridge emergency plan will be activated:
    • Notifications will be made
    • Product transfer will cease
    • Loading Master will co-ordinate between vessel and terminal
  – Dock fire suppression system is designed to protect the facility and support the vessel with water and foam monitors
  – Tugs with high capacity firefighting equipment are available
  – Vancouver Fraser Port Authority Fire Response has access to VFD fire-boats and firefighters trained to fight shipboard fires
First Responder Training
Mutual Aid

• KMC resources available for mutual aid
  – Industrial incident response
  – Fire response
  – Environmental response – land or water
  – Decontamination

• Burrard Industrial Mutual Aid Agreement
  – Reciprocal emergency response agreement between Shell, Imperial Suncor and KMC
  – Identified resources and response capacity to support one another in an incident

• Other Mutual Aid Agreements
  – City of Kamloops
  – Canadian Energy Pipeline Association (CEPA) Mutual Emergency Assistance Agreement
Air Quality Monitoring Plan
Emergency Air Monitoring Plan

• Objectives of plan
  – Anticipate and identify Potential Chemicals of Concern (PCOC) hazards from unplanned releases and fires
  – Evaluate public health exposures
  – Protect public through specific air monitoring and response protocols
Emergency Air Monitoring Plan

- Roles and Responsibilities
- Potential Chemicals of Concern (PCOC)
  - Applicable criteria and response
- Sample strategy
  - Pre-planning
  - Sampling strategy
  - Monitoring equipment
  - Field data
Emergency Air Monitoring Plan

Incident Response – Air Monitoring

• Action Level
  – Pre-identified criteria levels
  – Pre-identified sensitive receptors (vulnerable populations)

• Notify Unified Command & Liaison
  – Data shared and provide technical advice to local authorities
  – Authority determines appropriate public safety actions
Emergency Air Monitoring Plan

Response Actions

- Real-time monitoring of immediate public safety hazards to provide data for assessment and action

1. Notified of incident
2. Reading from equipment on-site
3. Mobilize supplemental resources – regional mobile units
4. Request advanced and long-term monitoring supplemental resources
5. Populate Environmental Unit in Planning Section of ICP
6. Generate sampling strategy for air quality monitoring
7. Consult with regulatory agencies and authorities on public safety measures

Note - activities are taking place simultaneously
Automated Monitoring Station (SAM)
Air Quality Station: Real Time Data
Air Quality Station
Air Quality Station: Real-Time Data
Wildlife Management Plan
Wildlife Management Plan

- Wildlife management strategies vary greatly from incident to incident
  - Marine or freshwater
  - Season – breeding, migration
  - Type of terrain
  - Type of vegetation

- Incident-specific action plans will be developed for each of the three components of the Wildlife Management Plan
Wildlife Management Plan

• Comprised of three components
  – Wildlife Monitoring
  – Wildlife Recovery and Rehabilitation
  – Wildlife Deterrents
Wildlife Management Plan

Wildlife Monitoring

- Purpose:
  - To identify ongoing and potential impacts to wildlife and identify appropriate mitigations
  - Identifies potential species and species at risk within the impacted area
  - Outlines monitoring/surveillance strategies for the impacted area and any other potentially affected areas
Wildlife Monitoring

- Describes potential mitigation measures for identified risks to wildlife
  - Wildlife sweeps ahead of response activities
  - Amphibian salvage for populations at risk of oiling
  - Setback buffers around birds nests that are in use
Wildlife Management Plan

Wildlife Monitoring

- Data collected from the monitoring activities is used to develop appropriate Wildlife Recovery and Rehabilitation & Wildlife Deterrents Plans
Wildlife Management Plan

Wildlife Recovery and Rehabilitation

- Purpose:
  - To determine and implement the appropriate actions regarding the active handling of impacted wildlife
  - Identifies regulatory requirements and permits required for wildlife capture and handling
Wildlife Management Plan

- Wildlife Recovery and Rehabilitation
  - Outlines the wildlife capture, transport, rehabilitation and release processes
  - Addresses requirements for wildlife care centres
Wildlife Management Plan

Wildlife Deterrents

- Purpose:
  - To determine and implement the appropriate deterrent technologies and techniques
  - Identifies regulatory requirements required for wildlife deterrence activities
  - Provides guidance on deterrence considerations to ensure effective implementation of mitigation strategies
  - Identifies deterrence methods and strategies specific to the site and species
Wildlife Management Plan

Wildlife Deterrents
Wildlife Management Plan

Wildlife Management Team

– Kinder Morgan Canada
  • Overall responsibility for wildlife management in an emergency
  • Fills ICS role of Environmental Unit Lead

– Golder Associates
  • Responsible for wildlife monitoring and mitigation during response activities

– Focus Wildlife
  • Responsible for wildlife capture, care, deterrence and rehabilitation
Convergent Volunteer Management Plan
Convergent Volunteer Management

- What are “Convergent Volunteers?”
- Why do we need a plan to manage Convergent Volunteers?
Convergent Volunteer Management

- KMC Convergent Volunteer Management Plan
  - Establishes procedures to allow for well-organized, coordinated, and safe use of volunteers
  - Provides for the direction of volunteers
  - Identifies specific areas in which volunteers can safely be used

- Plan tested during 2015 Westridge Exercise and 2016 Kamloops Exercise
Convergent Volunteer Management

• Plan enhancements underway
  – Research and consultation
  – Fortify strategies to manage convergent volunteers
    • Volunteer Operations Centre (VOC)
    • Volunteer Resources
    • Communication
    • Orientation and Training
Break Out Session #2

Four Breakout Groups

Topic: Supplemental Plans

• Will rotate through the four stations to discuss:
  1. Fire Pre-Plans and Fire Response Plans
  2. Air Quality Monitoring Plan
  3. Wildlife Management Plan
  4. Convergent Volunteer Management Plan

Time allocated: 40 minutes
Containment Booms

• At Westridge, KMC uses two types of oil spill containment booms

• Primary Boom
  – Non-regulatory KMC standard operations procedure as a preventive and mitigation practice
  – Considered best practice
  – Deployed for every vessel during the entire product transfer period
  – Will contain oil in the unlikely event of a spill and help to protect the environment

• Emergency Response Boom
  – Regulatory requirement of Canada Shipping Act
  – Required to deploy boom within one hour of a release
Primary Boom Deployment

*Proposed
Primary Boom Deployment

*Proposed
Emergency Response Deployment

*Proposed
Emergency Response Deployment

*Proposed
Emergency Response Deployment

*Proposed*
PREPAREDNESS AND PLANNING:
WCMRC
Spill Response – Regime

Canada Shipping Act – primary legislation
- Establishes marine spill Response Organizations (RO)
- Requires all ships (including tankers) and Oil Handling Facilities to have a membership with an RO
- Approval of RO fees

WCMRC is the RO for the west coast
- 200 mile limit, south of 60, inland BC waters
- Response equipment and personnel to meet responsible party’s needs
- Transport Canada – responsible for administration of the act
- Canadian Coast Guard (DFO) – federal monitoring agency
- Environment Canada – federal environmental monitor
- BC MOE – responsible for shorelines