

## VANCOUVER FIRE DEPARTMENT, SPECIFIC COMMENTS

### Part A

#### Section 1 - Local and regional risk Analysis

Determine the fire and life safety risk and probability of error based on volume of crude oil and transport type as it will pertain to its proximity to City of Vancouver. The analysis shall include but not be limited to the risks to the following:

- a) Residential dwelling along the rail system and Columbia River.
- b) Commercial businesses along the rail system, Columbia River and downtown area.
- c) Industrial complexes adjacent to the rail lines, Columbia River and Port of Vancouver.  
(Rail lines through city/waterfront – undeveloped, high-rise buildings [planned]).

#### Section 2 - Fire Operations Gap Analysis

Determine what impacts the proposed facilities and operations will or could have on the fire department's ability to provide incident response services. Identify deficiencies and needed mitigations such as training or equipment.

- a) Assess risks associated with the proposed facilities and operations.
- b) Assess risks associated with the proposed systems for transportation and storage of flammable & combustible liquids, including:
  1. Rail transportation over local railways, loading and off-loading operations
  2. Marine transportation over local waterways, loading and off-loading operations
  3. Pipeline transportation
  4. Storage, high capacity tank storage.
- c) Evaluate the fire department's ability to provide incident response services (i.e., spill response, firefighting, confined space rescue, etc.) to the proposed facilities and related transportation systems. Evaluation to include:
  1. Pre-emergency plans
  2. Tactics and strategies
  3. Training
  4. Equipment
  5. Other resources
- d) Evaluate the proposed fire protection systems and spill protection systems for the proposed facilities.
- e) Recommend measures and estimated costs to mitigate any impacts the proposed facilities or related transportation systems may have on the fire department's ability to provide emergency services. Recommendations to include:
  1. Pre-emergency plans
  2. Tactics and strategies
  3. Training
  4. Equipment
  5. Other resources
- f) Evaluate and verify the proposed emergency vehicle access:
  1. Given the reach of Vancouver's fire water streams and the specifications of Vancouver's fire apparatus, identify specifically what is required in terms of apparatus access as it pertains to the storage tanks, the rail car facility and the dock.
    - i. Identify the best fire apparatus access design to and within the entire site.
    - ii. Provide a plan view of the site showing the acceptable access.
    - iii. Show the fire lanes and where fire lane signage is required if any.
    - iv. Identify any additional access recommendations.

- g) Evaluate and verify the fire hydrants and water supply:
  - 1. Identify the minimum fire flow required.
  - 2. Determine whether the Port of Vancouver's and/or the City of Vancouver's water supply are adequate or whether storage water, pump and standby power are required. If storage water supply is required, identify the minimum specifications.
  - 3. Provide a scale plan view document with the recommended hydrant placement.
  - 4. New water main minimum size considering any recommended fixed fire protection systems and/or fixed fire equipment such as dike mounted nozzles.
- h) Storage tanks: Provide an analysis of tank design, construction in terms of the 2012 International Fire Code and its referenced NFPA standards.
  - 1. Tank design including but not limited to foundation, supports, signage, etc.
  - 2. Ignition control issues: required classified wiring locations, protection against ignitions arising out of static, lightning, or stray currents or vapor leak migration to rail line sparks.
  - 3. Tank and pipe material compatibility with commodity stored/transported.
  - 4. Secondary containment design and material.
  - 5. Seismic, snow and wind load and flood uplift prevention issues.
  - 6. Identify minimum separation distances from adjacent structures, operations, property lines, public ways and other tanks.

What follows is a proposed scope of work for the 3rd party fire protection engineer.

**Part B**

**Section 1 - Fire Protection Engineering**

- a) Evaluate the proposed startup plans.
- b) Evaluate the proposed HMMP (Hazardous Materials Management Plan).
- c) Evaluate the HMIS (Hazardous Materials Inventory Statement) reflecting peak capacities.
- d) Evaluate the proposed accident procedures and emergency response/evacuation plans for on-site staff.
- e) Provide an analysis of the proposed emergency relief from process vessels, taking into consideration the properties of the materials used and the automatic and manual fire protection and control measures taken.
- f) Provide an analysis of applicable codes, regulations, NFPA and industry standard requirements for flammable and combustible/hazardous material liquid handling, transfer, and use.
- g) Evaluate proposed portable fire extinguishing equipment, size, type and placement.
- h) Evaluate the proposed fire protection systems and spill protection systems for the proposed facilities.
  - 1. The storage tanks
  - 2. The rail offloading facility
  - 3. The transfer piping
  - 4. The ship loading facility
- i) Verify the review drawings and comment on the proposed emergency vehicle access and identify any additional access recommendations.
- j) Verify the review drawings and comment on the proposed fire hydrants locations and adequacy of the proposed water supply.
- k) Review the proposed fixed fire protection systems.
  - 1. Provide an analysis of proposed design of fixed fire protection for each location to be installed.

2. Evaluate and comment on the proposed ongoing NFPA inspection, testing and maintenance standards for each system including tanks, liquid transfer and fixed fire protection systems.
- l) Provide plan review services by a licensed fire protection engineer for all fire protection system permits.
- m) Review and comment on the proposed inspection list and inspection plans provided by the applicant's contractor, Poole Fire Protection.
  - (1) The installation of fixed fire protection for the storage tanks.
  - (2) The fixed fire protection for the rail loading/unloading facility and equipment.
  - (3) The installation of emergency or backup power systems.
2. When requested by the fire marshal, provide qualified on-site acceptance inspections and notify the fire marshal of planned dates and times as they are scheduled so they can audit the process and progress.