



## Emergency Response Exercise Evaluation

### 1.0 Exercise Evaluation Overview

The exercise evaluation responses are: *Yes*, *No*, *N/A*, *Not Observed* and *Needs Improvement*. *Yes* means that the element was observed and no non-compliances with regulatory requirements were identified. *No* means that the element did not meet regulatory requirements and is therefore a non-compliance that will require corrective action. *N/A* means the element is not applicable to the exercise and is not assessed. *Not Observed* means that staff did not observe the element, although it may have occurred. This does not mean that the element was in non-compliance. If it is not observed it cannot be assessed. *Needs Improvement* means that the element was assessed and meets requirements, however there is room for improvement. Staff may make recommendations to the company on improvements, but these are not requirements and the NEB will not follow-up on the recommendations to the company. The *Comments* section is provided in order that NEB staff can provide a narrative assessment. This section should highlight aspects of the exercise that were well executed, describe areas for improvement and should clearly describe why an element is in non-compliance.

### 2.0 EXERCISE DETAILS

|                                |  |
|--------------------------------|--|
| <b>Regulated Company</b>       | Trans Mountain Pipeline ULC  |
| <b>Operator</b>                | Kinder Morgan Canada Inc.  |
| <b>Activity Number</b>         | 1516-403   |
| <b>Condition from an Order</b> | No   |
| <b>Order Number</b>            |  |
| <b>Date of exercise</b>        | <b>29 October 2015</b>   |
| <b>Exercise Name</b>           | Westridge Marine Terminal (Westridge) Full Scale – Exercise (2015)   |
| <b>Location</b>                | Incident Command Post (ICP) - Executive Plaza Hotel; field deployment - Westridge Terminal.  |
| <b>Company Exercise Type</b>   | Full-scale   |
| <b>Company Representatives</b> | There were approximately 160 Kinder Morgan employees and contractors that participated in the Westridge exercise. As well, there were approximately 45 Western Canada Marine Response Corporation (WCMRC) employees that participated in the exercise. |
| <b>NEB Staff</b>               | Personnel from the NEB included Emergency Management Specialists, Safety Specialists, Environmental Specialists, Communication Specialists, Director of Emergency Management and Security, Vice President of Operations as well as the Chair and CEO.  |



## Other Participants

National Energy Board, Canadian Coast Guard (CCG), Transport Canada, Environment Canada, Royal Canadian Mounted Police, Department of Fisheries and Oceans, BC Ministry of Environment, Emergency Management BC, Health Emergency Management BC, Fraser Health, Vancouver Coastal Health, BC Oil and Gas Commission, Port Metro Vancouver, North Shore EMO (City of North Vancouver, District of North Vancouver and District of West Vancouver), City of Port Moody, City of Vancouver, Village of Belcarra, City of Coquitlam, Strathcona County, City of Richmond, West Vancouver Police Department, Cowichan Tribes, Musqueam First Nation, Chawathil First Nation, Kwikwetlem First Nation, Simon Fraser University, UBC Marine Mammal Research Unit, Justice Institute of BC (JIBC), Stoney Creek Environment Committee, Oiled Wildlife Society, BCSPCA, Vancouver Aquarium, Wildlife Rescue Association, Burrard Inlet Marine Enhancement Society, Pacific Wildlife Foundation, Mossom Creek Hatchery, Royal Vancouver Yacht Club, Reed Point Marine, British Columbia Association of Emergency Managers, Fire Chiefs Association of BC, Canadian Energy Pipeline Association (CEPA), Pacific Coast Terminals, Chevron, Imperial Oil, Shell, Suncor, Canexus, Western Canadian Marine Response Corporation (WCMR)

## SECTION A – EXERCISE PLANNING AND CONDUCT

### 3.0 Exercise Planning

3.1 Was the exercise participant package distributed prior to the exercise date?

Yes

Comments:

Kinder Morgan (KM) engaged potential exercise participants ahead of time, through planning meetings (16 July 2015 and 28 September 2015) and a organization chart, Environmental Unit organization chart and the Westridge Marine Terminal Field Deployment organization chart, prior to the exercise (21 October 2015).

3.2 Was the exercise scenario designed in consideration of the hazards and risks posed by the company's operations?

Yes

Comments:

The scenario was described as a release of mixed sweet crude oil (MSW) from the loading arm at the Westridge Dock, approximately 160m3 of product enters the water. The scenario exercised was realistic based on KM's Westridge operations and included activation of KM's internal response resources and contracted resources.

3.3 Was the exercise scenario appropriate to adequately test the company's ability to respond to an incident?

Yes

Comments:

This scenario provided an opportunity to staff an incident management team using a full ICS structure.

3.4 Was appropriate mitigation established for environmental and socio-economic resources potentially impacted by conducting the exercise (e.g.: approval(s) from agencies, protection of sensitive areas)?

Yes

Comments:

Concerns of surrounding municipalities and First Nations were considered when planning the exercise. For example, countermeasures were not exercised in environmentally or culturally sensitive areas on the north shore due to concerns raised by these parties. The Notice to Shipping (NOTSHIP) to advise vessels in the area of the activity was not initiated by the company. However, vessels operating in the Port directed inquiries/questions to the harbour master, who subsequently requested the NOTSHIP from CCG.

3.5 Was site security and public safety appropriately planned to enable safe conduct of the exercise?

Yes

Comments:

Security and safety planning was a priority for KM at both the ICP and the Westridge Terminal. Security staff



Comments: were present and actively monitoring participants and entrances at the ICP which was distributed on the main and second floors of the hotel. At the Westridge Terminal, security staff were present at the front gates. All gates were controlled by the safety supervisor at the Terminal.

3.6 Was the need for medical assistance considered?

Yes

Comments: A pre-exercise safety orientation was conducted at the ICP. This included how to access first aid, site emergency procedures and situations that would result in suspension of the exercise. The orientation was comprehensive and applicable to the hazards that could be encountered throughout the day. At the Westridge Terminal, responder safety was discussed and a medic as well as a Medical Treatment Vehicle was available for exercise participants.

#### 4.0 Exercise Conduct

4.1 Did the facilitator describe the exercise scenario and objectives?

Yes

Comments: The facilitator described the exercise scenario and objectives through conduct of a pre-exercise briefing. The exercise scenario and objectives were also provided prior to the exercise, in the Player's Manual.

4.2 Did the facilitator go over the rules of play (e.g., exercise duration, exercise artificialities, simulation, injects, participant roles, when to call the exercise over, how to stop the exercise in the event of a real emergency)?

Yes

Comments: The KM exercise facilitator clearly defined the real-world emergency procedures, expected time line for the exercise, the ground rules were given and during incident telephone calls, callers confirmed that the participant at the other end of the call understood that the call was a simulation. Assumptions, artificialities and out of play variables were also explained.

4.3 Did the facilitator conduct a safety briefing, including identification of the potential hazards that participants may be exposed to during the exercise, the controls to mitigate the hazards, required safety equipment and PPE (OHSR Section 19.6)?

Yes

Comments: A pre-exercise safety orientation was conducted at the ICP. This included how to access first aid, site emergency procedures and situations that would result in suspension of the exercise. The orientation was comprehensive and applicable to the hazards that could be encountered throughout the day.

4.4 At site, was a safety meeting(s) conducted as required to review site specific hazards and controls for participant safety (e.g., SWP, JSA, etc.)? (CSA Z662-11 Clause 3.1.2 (f))

Yes

Comments: A comprehensive safety meeting was conducted on the Westridge Terminal. All potential site-specific hazards were discussed with higher hazard/risk items being stressed, such as results of air monitoring, availability of Material Safety Data Sheets (MSDS) and hazards of product, muster areas, slippery areas, train traffic and security control. The on-site medic and the On-site Supervisor had a copy of the MSDS for viewing.

There were four arrivals of participants/observers, media, and two VIP tours. Media and VIP tours were staggered for arrival and departure, which maintained control and attention of the audience. Safety meetings were conducted for the participants/observers, for the media and for the VIP tours as they arrived. The on-site Supervisor was articulate during his presentation of the Field Level Hazard Assessment (FLHA) and spoke clearly and loudly. Attendance of all staff was strictly monitored. Personnel that were participants/observers



signed attendance and acknowledgement that they had received FLHA. Attendance of media and VIP participants was taken on the bus.

## SECTION B – EXERCISE IN PLAY

### 5.0 Notification and Reporting

5.1 Did the company determine the level of emergency or severity of the incident according to its EPM?

Comments: KM determined the level of emergency as a Level 3 and it was determined according to the company's Westridge Marine Terminal Emergency Response Plan (ERP).

5.2 Was the notification procedure followed according to the EPM and done in a timely manner?  
(OPR s. 32 and CSA Z662-11 Clause.10.5.2.4)

Comments: Initial response and most notification actions were simulated as part of the scenario fast forwarding. External notifications such as those typically made to the NEB and Transportation Safety Board (TSB), were not exercised as part of the scenario.

5.3 Were reporting procedures followed as per EPM and done in a timely manner?  
(OPR ss. 52(1) and CSA Z662-11 Clause 10.5.2.4)

Comments: As noted above, external reporting procedures were outside the scope of the exercise.

### 6.0 Safety

6.1 During initial response, did the company conduct a hazard analysis addressing hazard identification, personal protective equipment, control zones and a decontamination area?

Comments: Personal protective equipment such as radios (Channel 6), gloves, fire retardant (FR) clothing, glasses, life jackets, hard hat etc. was discussed and all participants and observers were properly equipped. Control zones were identified and cold, warm and hot zones were delineated with signs and colored tape as well personnel observing participants moving through the zones and ensuring that proper simulation of decontamination was observed. Signs were identified at each stage of the decontamination area, chairs and containment pools for washing and vessels for clothing removal and containment were also set up. This was observed to be strictly enforced by KM personnel.

6.2 Was a Site Safety and Health Plan (SSHP) developed as part of the incident objectives?

Comments: The exercise in the ICP required the development of the Safety Plan that included the medical plan. The Safety Plan was developed in conjunction with the objectives and operational planning. Job Safety Analyses (JSAs) were also developed according to the tasks planned for the next operational period. At the Westridge Terminal, the Field Level Hazard Assessment included the SSHP and the JSAs and was part of the incident objectives.



6.3 Was personal protective equipment available and used properly (e.g., safety harnesses, breathing apparatus, chemical protection, personal monitors, etc)?  
(CSA Z662-11 Clause 10.2.9.2 and COH&S Regulations, Part XII, sections 12.1-12.16)

Yes

Comments:

Gas monitors were available and in use with readings being taken and documented. Safety harnesses were used for personnel ascending and descending the shore face. A tie off line was used to assist during climbing, but climbing was limited to the concept of once down, personnel were there to complete the task until relieved and there was not to be continual movement up and down therefore eliminating the risk of slips.

6.4 Was safety equipment available, and properly used? (e.g., fire extinguishers, signs, barricades, rescue, LEL meters, air monitoring, decontamination, etc.)  
(OPR paragraph 36(b) and/or 46(2)(d) and CSA Z662-11 Clause 10.5.2.4)

Yes

Comments:

An OSCAR (Oil Spill Containment and Recovery) trailer was on site and contained safety and response equipment. A medic was on site with a Medical Treatment Vehicle. An electronic gate (barrier) was permanently located at the site and was operated by personnel that were monitoring train traffic running in close proximity to the exercise site. Personnel monitoring train traffic, also controlled bus arrival and departure awareness for personnel on site. Air monitoring was accomplished by the safety personnel and being documented. Additional fire extinguishers and life jackets were on site.

## 7.0 Response Management

7.1 Did the company respond in accordance with its Emergency Procedures Manual and supporting documentation? (OPR s. 32 & CSA Z662-11 Clause 10.5.2.4)

Yes

Comments:

KM exercised a full stand-up of an ICP and included collaboration and coordination with other interested or affected parties. Deployment of response equipment and resources to operate the equipment at the Westridge Terminal, was also exercised. Basic safe on water vessel operation was also discussed and executed during exercise.

7.2 Did the company have an incident command system in place and demonstrate knowledge and training in ICS or a different/recognized incident management system?  
(OPR s. 32 and CSA Z662-11 Clause 10.5.2.4)

Yes

Comments:

The Incident Command System was fully implemented and KM demonstrated a thorough internal knowledge of ICS and also had access to on-site coaches with expertise in ICS (Witt O'Brien's Consultants). A Unified Command was established and all four Sections (Planning, Logistics, Finance/Admin and Operations) of the ICS were staffed by KM employees and other participating agencies and organizations.

7.3 Was a Command Post activated, consistent with the company response procedures?  
(OPR s. 32 & CSA Z662-11 Clause 10.5.2.4)

Yes

Comments:

A fully functional and well-resourced ICP was established at an appropriate location.

7.4 Were roles assigned consistent with the company's EPM?  
(OPR s. 32 & CSA Z662-11 Clause 10.5.2.4)

Yes

Comments:

Roles were assigned early on by the Company's IC with clear identification of priority actions for each Officer



Comments: and Chief in the Command and General Staff. Section Chiefs and other roles were also named in the ICS 207 organization chart and provided to exercise participants prior to the exercise.

7.5 Was span of control appropriate (e.g., 5-7 reports)? (CSA Z662-11 Clause 10.5.2.4)

Yes

Comments: NEB staff observations were that the span of control was appropriate and maintained.

7.6 Was the chain of command consistent with the company's response structure and was it maintained? (CSA Z662-11 Clause 10.5.2.4)

Yes

Comments: KM was clearly in Command with support from CCG, NEB, North Shore Emergency Management Office (EMO) and BCMOE. NEB staff observations were that chain of command was followed and maintained.

7.7 Were incident objectives established? Were they attainable, measurable and realistic? (CSA Z662-11 Clause 10.5.2.4)

Yes

Comments: Initial objectives were established by KM and revised by Unified Command (UC) as the exercise progressed. Incident objectives and priorities as well as critical information reporting were displayed for General Staff to see and were announced during Command and General Staff meetings. KM personnel used ICS language, forms etc. to allow its personnel to become more familiar with the system for use in real life incidents.

7.8 Were response priorities established and appropriate? (CSA Z662-11 Clause 10.5.2.4)

Yes

Comments: Initial response priorities were established by KM and revised by Unified Command as the exercise progressed.

7.9 Did the company expand the response structure as required to meet the requirements of the scenario (e.g., operations, planning, logistics and finance/admin or equivalent functions put in place as required) (CSA Z662-11 Clause 10.5.2.4)

Yes

Comments: This was accomplished during the change of command at the start of the exercise. The company recognized the extra requirements and was cognizant of changing conditions and expanded the organization accordingly. Once objectives were set by UC, Operations and Planning developed strategies and they were cognizant of operational constraints and adjusted accordingly.

7.10 Were communications effective and efficient? (e.g., orders, resource requests, work assignments, reporting) (CSA Z662-11 Clause 10.5.2.4)

Needs Improvement

Comments: Unified Command would have benefitted from more detailed situation reports and updates, particularly in the early hours of the incident. At the Westridge Terminal, radio communication providing updates, instruction and periodic checking in between on water, shoreline and onshore personnel was excellent.

7.11 Did communications equipment work effectively?

Yes

Comments: In the ICP, communications equipment was primarily telephone, cellular telephone and computer. NEB staff did not note any frustration among the participants of the exercise due to technical communications issues. At the Westridge Terminal, strict adherence to the buddy system was observed and all boats were in direct visual or radio contact with a onshore personnel at all times. Communication between the spill response personnel and the vessel at the simulated release site was verified through several conversations and was





witnessed on several occasions. All key response personnel were on Channel 6 and this was verified through a call down of personnel in strategic positions of responsibility.

7.12 Was the Liaison role established and did it communicate/coordinate with agencies?

Yes

Comments:

Numerous external agencies and organizations were involved in the exercise. Interaction and discussion among the agencies and organization was excellent and collaborative. NEB staff note that the City of Burnaby was invited by KM to participate in the exercise but chose not to participate and hence was not represented.

7.13 Did the company demonstrate the ability to mobilize the required personnel and equipment in a timely fashion? (i.e., "get big" quick?) (CSA Z662-11 Clause 10.5.2.4)

Yes

Comments:

In the ICP, the company escalated their response quickly and each Section staffed up accordingly. At the Westridge Terminal, the company efficiently mobilized the appropriate resources for oil containment and concentration, deflection, recovery and protection. This promotes a quicker and easier clean up of spilled oil. NEB staff note that although the escalation of the personnel in the ICP for this exercise was simulated and is not reflective of an actual response escalation, it shows that the company has considered that it would require significant support.

7.14 Was an Operational Period established (this may not apply to a short term event such as a gas release) (CSA Z662-11 Clause 10.5.2.4)

Yes

Comments:

A 24 hour operational period was established by Unified Command.

7.15 Was an Incident Briefing held? (CSA Z662-11 Clause 10.5.2.4)

Yes

Comments:

Following the Incident Briefing by KM's initial on-scene commander, command was transferred to KM's incoming Incident Command in the ICP. The incident briefing provided an overview of what happened as well as what activities had been undertaken overnight, by the company.

7.16 Were the tactics and planning (or equivalent) meetings conducted and effective?

Yes

Comments:

As a member of Unified Command, NEB was satisfied with conduct of these meetings. There was linkage between the intended work for the following day and the objectives established by UC. Meetings had written agendas, roll call was taken, meeting rules were communicated and a scribe was available for all meetings. NEB staff noted that the flow of the exercise, particularly at larger meetings, did follow the appropriate steps of the Planning "P" and execution of implementing the ICS.

7.17 Were there visible role ID (i.e., vests or labels) for the critical roles? (CSA Z662-11 Clause 10.5.2.4)

Yes

Comments:

Vests and ID badges were worn by all participants in ICP. All players were provided with vests (Green for UC, red for Command Staff, Orange for Operations, Blue for Planning, Yellow for Logistics and Grey for Finance). In addition, Controllers wore black vests and members of the truth room donned beige vests.

7.18 Was an external communication strategy formulated? (e.g. preparation of messaging for the media, authorizations for release of information to the media and interactions with the media) (OPR s. 32 & CSA Z662-11 Clause 10.5.2.4)

Yes



Comments: KM's external communications strategy was approved by Unified Command. The communications table was well staffed with certain staff dedicated to handle media inquiries, and other staff focused on developing products and messages. The knowledge gatherers and Public Information Officer (PIO) frequently shared information and updates to help inform message development and media responses.

7.19 Were appropriate maps used and up-to-date (e.g., environmental, residents, cables, pipelines, powerlines, electric, water, sewer) (CSA Z662-11 Clause 10.5.1.1(b) and 10.5.2.4)

Yes

Comments: Hard copy and digital mapping systems were used and available to exercise participants. NEB staff noted some of the following maps: a map highlighting Geographic Response Strategies, incident location and staging areas; overflight maps; trajectory model maps; a map of Burrard Inlet; a Situation Map of the Westridge Marine Terminal with Divisions and Zones highlighted.

7.20 Were dedicated Field Observers used? (CSA Z662-11 Clause 10.5.2.4)

Yes

Comments: Dedicated field observers communicated back to the ICP.

7.21 Was the incident status displayed and maintained? (CSA Z662-11 Clause 10.5.2.4)

Yes

Comments: The Incident Status Board was at the front of the room and was updated consistently throughout the exercise. Ongoing status updates were also verbally communicated to exercise participants in ICP. Both hard copy and digital formats were used.

7.22 Were the roles and responsibilities of the company versus emergency services personnel understood and was there communication and coordination between these parties? (OPR s. 32 & CSA Z662-11 Clause 10.5.2.4)

Yes

Comments: At the Westridge Terminal, a medic, responders, security services and police were on site and there was communication and coordination between these parties. The Burnaby Fire Department was not on site, although were invited and chose not to attend.

7.23 Was there effective record keeping throughout the exercise such as a list of participants and observers, forms, event logs and participant feedback? (CSA Z662-11 Clause 10.4.3.2 and 10.5.2.4)

Yes

Comments: Record keeping responsibilities was led by the Documentation Unit Leader. All participants used ICS forms. Participants, Observers and media were all required to sign in to the exercise. ICS 214 forms (Activity Logs) were available for use. Participant feedback was solicited by the company through an online survey on 10 November 2015. All injects were recorded in the truth room. Additionally, there was one list on the wall and another on a document created by a contractor. Also, as the injects (and responses) were provided, the contractor was entering them into a spreadsheet on a computer. At the Westridge Terminal, exercise participant attendance was taken with names and contact information at sign in and a signature at sign out.

## 8.0 Tactical Response

8.1 Did the company implement an appropriate tactical response according to its Emergency Procedures Manual and supporting documents?

Yes

Comments: Tactics were developed by the Planning and Operations Sections and approved by Unified Command. KM was





Comments: able to deploy equipment in the OSCAR trailer for shoreline containment and staging areas as well as equipment from the WCMRC inventory including: primary boom deployment around a 4000 ton capacity tank barge (acting as the vessel being loaded via the loading arm) at the loading arm, secondary and tertiary boom for containment as well as boom deployment on shoreline for shoreline protection. KM was also able to mobilize 30 and 40 ton (skimming capacity) skimming vessels with fins and internal pumps as well as inflatable boom deployed in a U configuration between two skimming vessels to contain a heavy crude oil.

8.2 Were alternate strategies and tactics considered? (CSA Z662-11 Clause 10.5.2.4)

Yes

Comments: Alternate strategies and tactics in the event of changing conditions or alternate conditions were discussed at the ICP.

8.3 Was the nearest populated centre and its distance from the emergency site determined? (CSA Z662-11 Clause 10.5.2.4)

Yes

Comments: As the Westridge Terminal is located in a major urban area, consideration of impacts on the surrounding communities was a priority. Representatives of these populated centres were invited to participate in the incident command structure (primarily in Liaison or UC).

8.4 Was there a discussion on how landowners and potentially affected persons would be notified? (CSA Z662-11 Clause 10.5.2.4)

Yes

Comments: Preparation of an evacuation plan was exercised and media and social media alerts and news releases were prepared. NEB staff observed a Liaison meeting where the participants discussed the possibility of evacuation and how the evacuation notices would go out [i.e. municipalities discussed their existing Standard Operating Procedures (SOPs) and previous experiences]. Staff also noted that KM had a display stand with a tablet displaying a Twitter Feed on activities related to the incident. This was periodically updated throughout the day.

8.5 Was an effective emergency site layout established and identified? (hot/cold zones, flagging, barricades, signs, etc.) (CSA Z662-11 Clause 10.5.2.4, Cl. 10.5.2.1(b) and OPR s. 47)

Yes

Comments: Control zones were identified as cold, warm and hot zones. Zones were delineated with signs and colored tape as well personnel observing participants moving through the zones and ensuring that proper simulation of decontamination was observed.

8.6 Was there a check-in procedure established at each site/division? (OPR s. 47, CSA Z662-11 Clause 3.1.2(f), 10.5.2.1(b) and/or 10.5.2.4)

Yes

Comments: There was a check in procedure at the ICP along with identification badges for each participant. At the Westridge Marine Terminal, attendance of all staff was strictly monitored.

8.7 Was site security maintained? (CSA Z662-11 Clause 3.1.2 (f) or if it is related to people, Clause 10.5.2.4 and/or OPR s. 47)

Yes

Comments: Security was on site at the ICP. The deployment of security reflected what would be normal for a real incident. At the Westridge Marine Terminal, police and a security company were in place.



8.8 Were road block locations simulated or established?

(CSA Z662-11 Clause 3.1.2 (f) or if it is related to people, Clause 10.5.2.4 and/or OPR s. 47)

Yes

Comments:

The incident site was not on a road way, however, access was controlled and security was on the road entering Terminal area; train traffic was also monitored. In the event of a real incident, train traffic may be compromised and may need to be blocked but at the site location this was not mentioned and for the exercise, it was not required as the exercise scenario did not involve a spill on the train tracks. Train traffic did not present a problem and trains signaled as they passing through.

8.9 Were control points pre-identified as part of the company's response planning and were they established in a timely and effective manner? (OPR s. 32, s. 48 & CSA Z662-11 Clause 10.5.2.4)

Yes

Comments:

Control points were established by the Planning and Operations Sections and approved by Unified Command.

8.10 Was decontamination considered or in place during the exercise?

(OPR s. 47, CSA Z662-11 Clause 10.5.2.1(b) and/or 10.5.2.4)

Yes

Comments:

Decontamination was considered and in place at the Westridge Terminal. Materials, equipment, specialized personnel in adequate quantities and at a suitable location was establish at the site in acceptable time lines. Signs identified each stage of the decontamination area. Chairs and containment pools for washing, and, vessels for clothing removal and containment, were available for responders. NEB staff noted that this was strictly enforced.

8.11 Did the company effectively consider waste management?

(OPR s. 32, s. 48 & CSA Z662-11 Clause 10.5.2.4)

Yes

Comments:

Development of a waste management plan was exercised.

## 9.0 Environment

9.1 Did the company organize environmental stakeholders appropriately?

Yes

Comments:

From the standpoint of the Science Table, participating environmental stakeholders were able to participate in the review and prioritization of identified environmental sensitivities and priorities. NEB staff was included in the Deployment Orientations Chart with KM's environmental monitor.

9.2 Did the company identify environmentally sensitive areas for protection?

Yes

Comments:

Environmentally sensitive areas in Burrard Inlet were identified and prioritized by the company early in the exercise.

9.3 Was the identification of sensitive areas used to determine the location of control points?

Yes

Comments:

Environmental sensitivities identified, along with trajectory modelling, was used to determine control point locations.



9.4 Did the company identify key human health receptors (e.g., water intakes/wells) for protection?

Yes

Comments:

Human health receptors, including water intakes, were considered during the identification of environmental sensitivities.

9.5 Was hazard monitoring considered or conducted (e.g. vapour monitoring)? (OPR s. 47)

Needs Improvement

Comments:

Air monitoring data was considered during the exercise. The Science Table noted that the air modelling data was able to predict areas potentially impacted by Volatile Organic Compounds (VOCs). NEB staff noted that field personnel and personnel in the ICP had different assumptions as to the potential for the spilled crude to contain H<sub>2</sub>S. To resolve this, H<sub>2</sub>S modelling was discussed in the Science Table and eventually conducted as part of the hazard assessment for the exercise. At the Westridge Terminal, key responders used four head vapor monitoring equipment.

9.6 Did the company successfully deploy containment equipment?

Yes

Comments:

At the Westridge Terminal, the placement of primary, secondary and tertiary boom occurred approximately within an hour of the simulated release start. Protection boom strategies were successfully exercised and consistent with developed geographic response plans. Hot, warm, and cold zones were also identified.

9.7 Did the company have pre-determined mitigation measures and resources to manage wildlife?

Yes

Comments:

Wildlife consultants were retained to manage impacted wildlife. The management of wildlife was not exercised at the Westridge Terminal. UC determined an additional objective of "Recover and treat affected wildlife" early in the exercise.

## 10.0 Security Threat

10.1 Did the company follow their process for responding to security threats/incidents?  
(CSA Z246.1 Clause 10.2)

N/A

Comments:

Security threats and incidents did form part of the exercise scenario in the ICP and at the Westridge Marine Terminal. Security information and contingency planning information was consistently provided to NEB staff prior to and the day of the exercise.

10.2 Did the company consider changing the internal threat level? (CSA Z246.1 Clause 5.6.2 + 10.2(g))

N/A

Comments:

Please refer to comments provided in 10.1.

10.3 Did the change in threat level trigger the implementation of additional security countermeasures  
(At the incident site? At other company sites)? (CSA Z246.1 Clauses 5.6.2 + 10.2(e))

N/A

Comments:

Please refer to comments provided in 10.1.



10.4 Did the company communicate a security threat advisory (internal - other staff/locations)?  
(CSA Z246.1 Clause 10.2)

N/A

Comments: Please refer to comments provided in 10.1.

10.5 Did the company communicate with appropriate law enforcement and other agencies?  
(CSA Z246.1 Clause 10.2)

N/A

Comments: Please refer to comments provided in 10.1.

## SECTION C – POST EXERCISE

### 11.0 Post Exercise

11.1a Was a debrief meeting conducted that received input from all participants?  
(CSA Z662-11 Clause 3.1.2(h) or 10.5.2.4)

Needs Improvement

Comments: Exercise length and scenario timing did not allow for an effective hotwash and debrief. Positives and areas for improvement were quickly discussed amongst smaller groups but no plenary discussion or debrief occurred. This would have contributed to sharing learnings amongst all participants and observers.

11.1b If a debrief meeting was conducted, did the company mention how they would address participant feedback and lessons learned?

Needs Improvement

Comments: How feedback and lessons learned would be addressed was only mentioned in a cursory manner.

11.2 Were all documents collected after the exercise? (CSA Z662-11 Clause 10.4.3.2 and 10.5.2.4)

Yes

Comments: Exercise participants used ICS forms and were requested to leave all documents in the ICP for collection by KM.

11.3 Were the exercise objectives met?

Needs Improvement

Comments: Overall, the exercise was successful in achieving the exercise objectives with the exception of presentation of an Incident Action Plan (IAP). Exercise timing and scenario timing did not allow for production and presentation of detailed plans to the Unified Command in a sufficiently completed state such that the Unified Command could fully understand the status of the plans and what was being requested in terms of supporting the Incident Action Plan. This includes the Incident Action Plan and supporting plans such as the waste management plan, the evacuation plan, the volunteer management plan and ICS products such as the ICS 232 Resources at Risk Summary. It was also not clear how the work conducted by the Science Table and the Environmental Unit informed the IAP.



## SECTION D – NEB OVERALL OBSERVATIONS

High-level observations of the exercise and whether or not the objectives of the exercise were met.

The KM Westridge Terminal full-scale was a full-day table top and deployment event held on 29 October 2015 – the incident site was at the Westridge Marine Terminal and the Incident Command Post was set up at the Executive Plaza Hotel, in Coquitlam. The NEB evaluated this exercise through the company's use of its emergency procedures manual (Westridge Marine Terminal Emergency Response Plan), as required by the NEB under the National Energy Board Act.

The KM Westridge Terminal full-scale exercise commenced at 8:00am on 29 October 2015 and concluded at 4:30pm, the same day. The exercise focused on the response capabilities of the Incident Management Team, specifically operational response management, public affairs, and command and control. The incident was managed by a Unified Command structure (KM Incident Commander, CCG, NEB, BCMOE and the NSEM) and an integrated Incident Management Team (IMT) with personnel from Kinder Morgan Canada, Witt O'Briens, and numerous contractors and federal, provincial, and municipal agencies. Observers were free to monitor activities undertaken by any of the groups but could not participate in any of the activities. The exercise was followed by a "lessons learned" session where groups developed their top 3 of what went well and what needs improvement but did not discuss as noted in 11.1a. KM said it would prepare a report and share exercise findings with participants, early in 2016.

The exercise purpose was to provide an opportunity for response personnel to demonstrate and practice the implementation of the Westridge Terminal ERP. The exercise objectives were:

### Overall Exercise Objectives:

- Demonstrate Kinder Morgan's response capabilities, and interact with the participating invited guests.
- Post Exercise report complete with corrective action plan by December 29, 2015.
- KM to conduct a VIP program to show the workings of an ICP, and on water response to an incident originating at the Westridge Marine Terminal.

### Command Post Objectives:

- Establish a functioning Incident Command Post with full Incident Command System staffed for incident size and exercise scale to facilitate a learning environment.
- Establish Unified Command with participating agencies.
- Establish Science Table for the incident.
- Implement ICS Planning Cycle through the successful completion of a Planning Meeting including presentation of an Incident Action Plan.
- Develop a plan for convergent volunteers.
- Conduct a simulated press briefing with all members of Unified Command.
- Complete objectives as assigned by Unified Command.
- React to and complete tasks that are injected by the truth room.

### Equipment Deployment Objectives:

- Placement of secondary boom within 1 hour of the simulated release start time.
- Effective on-water communication with participating agencies and contractors including on-water to shoreline communication.
- Identify hot, warm and cold zones.
- WMCRC to implement protection boom strategies consistent with developed geographic response plans.

NEB general observations were that participants at the exercise understood their roles and were familiar with the various regulatory agencies that were participating. Liaising and cooperation between sections was satisfactory and the overall flow of the exercise improved significantly as the exercise progressed. The incident management team addressed the exercise inputs efficiently through open dialogue at meetings and by the responsive development of new plans as required. These inputs were also discussed during media briefings and the information provided to the public and to response personnel got clearer and more coherent as the day progressed. NEB staff noted that KM response personnel became more familiar and comfortable with their various roles in the ICS structure as the day went on - this improves KM's response readiness.



Additional NEB general observations were that the relationships built amongst responding parties and agencies and those potentially affected by an incident or those with expertise to inform the response were extremely beneficial. NEB staff note that the City of Burnaby were invited to participate in the exercise but chose not to. NEB staff were satisfied that KM demonstrated that the company can respond appropriately and communicate with the public and other potentially affected parties for the scenario tested. NEB staff also noted a sense of accomplishment by participants and a feeling that they were better prepared to participate in an actual response if required.

#### Safety:

The NEB Safety Specialist in the ICP was satisfied Safety Officer functions were well staffed and well coordinated. A Deputy Safety Officer as well as safety professionals were available to help with the response. Two individuals from WCMRC (Western Canada Marine Response Corporation) provided specific area knowledge and a Industrial Hygienist provided information regarding the impacts of various hazardous substances.

The NEB Safety Specialist at the Westridge Terminal was satisfied that the company was well prepared, both with equipment, personnel and security. KM and WCMRC responders were knowledgeable, span of control was well established and observers and tour personnel were efficiently controlled and informed of hazards. There was no confusion and everyone worked together ensuring that the hazards had been addressed before getting entrenched in the exercise. The morale was very positive and added greatly to a successful exercise.

#### Environment:

The NEB Environmental Specialist was satisfied with the initiation of the Science Table and how it was able to provide consolidated scientific advice regarding environmental sensitivities and priorities during the incident. Documents reviewed included a Shoreline Cleanup and Assessment Technique (SCAT) Plan, SCAT Endpoints and General Operations Treatment Recommendations (Pre-SCAT).

For the field deployment, in play environmental protection measures implemented were appropriate. Decontamination measures were put into place and necessary equipment and personnel were available to conduct decontaminations protocols. Hot, warm, and cold zones from shoreline access were also established and controlled. No environmental protection concerns were identified during the field deployment activities.

#### Communications:

The NEB Communications Specialist was satisfied that the Public Information and Liaison functions were well staffed and well coordinated. Meetings and information sharing was frequent, all participants understood their respective roles and how to action requests. The group made good use of the knowledge of stakeholders and residents in the area to inform their approach. The group was quick to address the public's need for information through the establishment of a public information line and by setting up a web page. The group also made good use of social media to provide timely information to the public in advance of a press briefing and an official statement from the company.

KM's Incident Commander is commended for his effective leadership in UC. Similarly, the NEB notes that all members of the UC, Canadian Coast Guard, BC Ministry of Environment, and North Shore Emergency Management should be commended for the professionalism, expertise, and collaboration that they brought to the Unified Command.

Please refer to Section E, below, for NEB recommendations and comments on areas for improvements.

## SECTION E – NEB RECOMMENDATIONS

List the items that need improvement. Recommendations under this section do not require follow-up with the company.

As noted in 11.1a and 11.1b, NEB staff observed that the exercise length and scenario timing did not allow for an effective hotwash and debrief. Positives and areas for improvement were quickly discussed amongst smaller groups but no plenary discussion or debrief occurred. This would have contributed to sharing learnings amongst all participants and observers. KM said it would prepare a report and share exercise findings with participants early in 2016.

As noted in 11.3, NEB staff are of the view that there was not sufficient information regarding the format and preparation timing of an





Incident Action Plan and supporting plans provided to the Unified Command. For future exercises, NEB recommends that a more complete outline of what will be in the Incident Action Plan and supporting plans (e.g. volunteer management plan) is presented along with a detailed time line for completion. This would allow Unified Command to make a more informed decision as to whether to support the Incident Action Plan.

As noted in 7.10, NEB staff are of the view that additional and more detailed situation reports and updates to the Unified Command would have assisted it in understanding the current status of the situation, particularly in the early hours of the incident. NEB staff also recommend that a Master Sequence of Events List is prepared, for future exercises. This will aid in focusing the work of the incident management team.

**Safety:**

At the Westridge Terminal, NEB staff recommend that positioning of railings be established as part of the trailer set-up process.

**Environment:**

As noted in 9.5, NEB staff recommend a more formalized approach to determining H2S content within the hazard assessment.

NEB staff observed that the Science Table was effective in fulfilling its role . Staff note that there is a need for additional discussion between Kinder Morgan, Canadian Coast Guard, National Energy Board and Environment Canada to better understand how to optimize output from the Science Table to the Environmental Unit to help inform Unified Command.

**SECTION F – NON-COMPLIANCE** List the questions that have resulted in non-compliances. Refer to the Notice of Non-Compliance Form

**Non-compliances?**

|    |
|----|
| No |
|----|

**SECTION G – NEB SIGN OFF**



NEB Staff: \_\_\_\_\_

Date: \_\_\_\_\_

NEB Staff: \_\_\_\_\_

Date: \_\_\_\_\_

Reviewed by NEB Senior Staff:

\_\_\_\_\_

Date: \_\_\_\_\_

**SECTION H – COMPANY SIGN OFF**

Company Representative

\_\_\_\_\_

Date: \_\_\_\_\_