

REPORT ON VMT FIRE TEAM

AND

VALDEZ FIRE DEPARTMENT

OCTOBER 25, 2001

TRAINING EXERCISE

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Prepared For:

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1.0 INTRODUCTION

The close cooperation between the Valdez Marine Terminal (VMT) Fire Team and the Valdez Fire Department is a vital element in fire protection at VMT. In late 1999 the Prince William Sound Regional Citizens Advisory Council (PWSRCAC) initiated a review of fire protection systems and practices at VMT which has been documented in previous reports and presentations.

A key element of this project since initiation has been the encouragement of increased training for VFD personnel in flammable liquid fire fighting techniques. Also included in project recommendations were additional protective clothing and equipment for VMT Fire Team, increased training in fire fighting techniques, improvements in fire system maintenance and additional fire protection for East and West Metering. Most of the recommendations have been completed and the remaining items are scheduled, under consideration or addressed.

The fire fighting exercise conducted on October 25, 2001, was a result of recommendations for additional training and interaction between VMT Fire Team and the VFD. The purpose of the exercise was to provide an opportunity for the two organizations to jointly respond to, and operate as a team, in a simulated fire incident. A secondary, and encouraging, outcome of the exercise was the demonstration of two highly professional organizations and their capability to work together for protection of the terminal.

2.0 EXERCISE SCENARIO AND OBJECTIVES

On October 25, 2001, at 1 p.m. a training exercise was conducted that included members of the Valdez Marine Terminal (VMT) Fire Team and members of the Valdez Fire Department (VFD). The purpose of the exercise was to provide an opportunity for these two organizations to jointly respond to, and operate as a team, providing fire suppression activities for a simulated incident on the Valdez Marine Terminal.

The Scenario used for the exercise was a simulated incident involving a vacuum truck conducting spill cleanup of a small crude spill in the Tank 13/14-dike area. The scenario was a simulated fire resulting from the vacuum truck overheating and developing into a major vehicle fire in close proximity to process piping and valves. The resulting fire in the scenario caused ignition of the spilled product escalating the fire causing a flange or valve failure with an additional release of crude oil requiring a shift in tactics to a master stream attack.

Objectives:

The objectives of the exercise included the following:

- Safe operations
- Use of Incident Command System for fireground command and control
- An initial response using hand line attack with water followed by foam
- Command and control coordination between the Valdez Fire Department and the Valdez Marine Terminal Fire Team
- Testing communication between the two fire departments
- Implementation of master water and foam application streams from monitors on fire apparatus and trailer mounted Terminator and Skum nozzles
- VFD apparatus pumping from VMT hydrant system
- Staging of both manpower and equipment for protection of VMT and for supplemental manpower
- Testing a new personnel accountability system

Exercise Plan and Assumptions

The training exercise plan was developed by the VMT Fire Exercise Team consisting of Andrew Postishek, VMT Fire Chief; Donnie Blackburn, Valdez Fire Department Chief; Tom Kuckertz, Project Manager RCAC; Bud Slye and Tony Semenza, PWS RCAC Consultants; Dan Lawn, JPO; Dan Diehl, JPO Trans Alaska Pipeline Fire Safety Specialist; Joe Hughes, JPO; and Richard Ranger, Alyeska Pipeline Company. The plan included the following sequence of events:

- The exercise was initiated by the VMT OCC with an “ALL CALL” advising VMT Fire of a vacuum truck on fire.

- VMT Fire acknowledged call, initiated response, requested the VFD notification.
- VMT Fire en-route advised OCC that smoke was visible.
- VMT Fire arrives on location and advises that vacuum truck is partially involved in fire and they will be attacking with two 1-3/4" hand lines, established on-scene command.
- Fire spread to spilled product and quickly escalated requiring initial tactics to be revised.
- VMT Fire relocated outside of dike area, initiated master stream attack with truck monitor.
- VMT Fire provided water supply to trailer mounted Terminator nozzle.
- VFD arrived, connected to VMT hydrants system and fed master stream nozzle from Skum portable nozzle.
- VFD Fire Chief and VMT On-scene Commander worked jointly.

Assumptions used for the exercise were:

- No injuries would occur and no simulated rescue would be required.
- Operations were able to isolate leak expediently reducing spill volume after flange/valve failure.
- Simulation was representative of a fire outside of a dike area, however the dike area was being used in order to facilitate the flow of foam.
- Foam was used with each foam application lasting approximately for 30 seconds to 1 minute.

The exercise lasted approximately one hour. For the purpose of this exercise VFD was staged at the VMT fire station and was asked to respond from that location approximately 20 minutes into the exercise. **Attachment 1** contains a Chronological Listing of Events observed during the exercise.

OBSERVATIONS

VMT Fire arrived within six minutes with the on scene Fire Captain giving a size-up to the VMT Assistant Chief who was establishing command. The VMT Assistant Chief appointed an Accountability Officer and then directed Engine 3 and its crew to respond into the dike area to handle the simulated fire using pre-connected hand lines off the engine. Engine 3 laid a five-inch supply line from a hydrant outside of the dike area to the point of attack.

At approximately nine minutes into the operation the fire attack began using pre-connected fire hose. The exercise called for this operation to last for about ten minutes and for Engine 3 to start with a water attack and then go to foam before being told to shut down and leave the area so that the exercise could continue using large volume water / foam nozzles.

VMT Fire positioned Engine 6 to flow its 2000gpm deck gun and to also put into operation a 3000 gpm portable foam nozzle (National Foam Terminator/Gladiator foam nozzle). At approximately 1:25 p.m. VFD was called to the scene with their Engine 14. Once at the scene they were asked to put into operation a 2000 gpm Skum portable nozzle.

During this entire exercise Controllers Bud Slye and Tony Semenza were monitoring the teamwork, coordination and communications that were taking place. After the objectives were met the exercise was terminated and Officers as well as observers conducted a critique at the VMT Emergency Operations Center. During this critique the Controllers used an evaluation form that was provided for the exercise as a tool to get input from both participants and observers.

CRITIQUE AND SUMMARY

The general consensus of both participants and observers was that the exercise met all of the objectives set out by the VMT Fire Exercise Team. Both VMT management and the Valdez Fire Department committed to doing more of these types of exercises in the future using both organizations to continue to improve coordinated response capabilities.

During the exercise, notes were tabulated on the performance of the two fire departments using key criteria in the exercise objectives. These are contained in **Attachment 2**. **Attachment 3** contains photographs of the drill illustrating conditions and actions during the drill.

Observations made by Controllers:

- This simulated fire ground exercise was an excellent first step in utilizing the capabilities and resources of both organizations.
- The ICS was utilized on the fireground and both organizations worked well together using this system.
- An accountability process was utilized.
- Communications were clear and concise.
- A Safety Officer was utilized.
- The appropriate personal protective equipment was used.
- Everyone was focused on doing the job safely and efficiently.
- Both departments demonstrated their ability to effectively put large volume foam and water monitor nozzles in operation quickly and safely.

Overall, the Controllers were impressed with the effectiveness of both organizations and recommend that these type exercises take place at least on an annual basis.

ATTACHMENT 1

CHRONOLOGICAL LISTING OF EVENTS

**CHRONOLOGICAL LISTING OF EVENTS
VMT FIRE TEAM/VALDEZ FIRE DEPARTMENT
TRAINING EXERCISE
OCTOBER 25, 2001**

1:00	Started Exercise
1:00:30	Valdez Fire Department (VFD) Alerted
1:06	Fire Captain Gave Size-up
1:07	“Code Red Call” – Command Established on Scene Accountability Officer Established Manpower Reserve Established and Briefed
1:07	Terminal Coverage Established at E. Pump House
1:08	Hose Lay and Connector to Fire Hydrant
1:10	Accountability Established on Fire Scene
1:12	Hose Lay into Diked Area Started
1:16	Water to Engine 3 (E3)
1:18	Water Flow to 1 ½ Inch Hand Lines Established
1:19	Both Lines Flowing Water
1:20	Foam from Both Hose Lines
1:22	Foam Stopped
1:23	Back Out Initiated
1:24	Valdez Fire Department Called to Scene
1:25	E3 Clear of Diked Area
1:26	E6 Starting Deck Gun from Vehicle

1:28	Two Minute Warning of VFD Before Arrived at Scene VFD E14 In Route E6 Charges to Foam Discharge
1:30	E6 Back to Water Discharge
1:31	VFD E14 Arrives at Scene
1:32	Hose Lay E14 to Hydrant by Hand Started Discharge Pressure on E6 = 190 PSI
1:35	Terminator/Gladiator Trailer Arrives on Scene
1:36	Line Charged to VFD E14
1:38	Accountability Check Confirmed
1:39	Terminator Discharging Water
1:40	Skum Nozzle Trailer Arrives on Site E6 Intake 50 PSI E14 80 PSI Outlet
1:42	Foam Discharges from Terminator
1:44	Foam Discharges from Skum Nozzle from VFD E14
1:48	E6 Terminator Shutdown
1:55	Exercise Closed Down

ATTACHMENT 2

VMT EVALUATION FORMS

VMT DRILL EVALUATION FORM

Incident Command:

General Criteria		Yes	No	N/A	Comments
1.	Was command formally established over the radio?	X			IC established command immediately on arrival
2.	Was command location identified over the radio?	X			The location chosen provided an overview of the incident site
3.	Did Incident Commander (I/C) give an initial assessment of incident over the radio?	X			The IC gave an initial assessment and provided first incoming engine with hydrant location
4.	Did I/C establish a "HOT" zone and communicate this over the radio?	X			IC gave assessment and advised first-in units to don appropriate PPE
5.	Did I/C appoint a Safety Officer?	X			IC appointed Safety Officer as soon as personnel were on scene
6.	Did the I/C appoint a Staging Officer and designate a location for staging?	X			IC appointed a Staging Officer as personnel became available and provided information on staging location
7.	Did I/C appoint an Operations Officer?		X		IC assumed this responsibility
8.	Did I/C ensure that a primary accounting for all non-ERT personnel was conducted?	X			IC appointed an Accountability Officer who provided feedback to the IC throughout the incident
9.	Did I/C ensure all emergency responders were accounted for at all times?	X			See previous comment
10.	Did I/C maintain a manageable span of control?	X			The IC never had more than 4 Officers communicating with him during the incident
11.	Was mutual aid called?	X			For the sake of this drill Valdez Municipal Fire Dept. was utilized

Safety Officer:

General Criteria		Yes	No	N/A	Comments
1.	Was Safety Officer appointed by I/C?	X			Safety Officer did a good job in advising the IC and other Officers on all safety issues
2.	Did the Safety Officer write a Site Safety Plan?		X		This incident did not require a site safety plan
3.	Did the Safety Officer make an assessment of hazardous and unsafe conditions?	X			Safety Officer made assessment and provided his findings to all Officers and the IC

4.	Based on the above assessment, were measures taken to ensure Personnel safety?	X			Appropriate PPE was worn by all emergency responders
5.	Did the Safety Officer ensure the I/C was supplied with and communicated hazard information to affected personnel?	X			See comments above
6.	Did the Safety Officer ensure that the proper zones (hot, warm and cold) were identified and access adhered to?	X			This was communicated via radio to all fire ground Officers as well as IC
7.	Did the Safety Officer ensure that proper PPE was used for a specific zone?	X			See comments above
8	Did Safety Officer report concerns, if any to IC?	X			Safety Officers reported concerns via radio as well as face to face

Operations Officer:

General Criteria					
		Yes	No	N/A	Comments
1.	Was Operations Officer appointed by I/C?		X		Because of the scope of the incident the IC assumed this role
2.	Did Operations ensure that a primary search was completed and all personnel accounted for?		X		
3.	Did Operations have direct management of all tactical activities involved with the incident?		X		
4.	Did Operations request and approve all resources committed to the control of the incident?		X		
5.	Did Operations routinely update command on the status of the tactical activities of the incident?		X		
6.	Did Operations make and expedite changes to the action plan as necessary and report same to the I/C?		X		
7.	Did Operations appoint Division Officer?		X		

Master Stream Operation:

General Criteria					Comments
		Yes	No	N/A	
1.	Were master streams positioned effectively?	X			Master streams from both the Terminal Fire Dept. as well as the Valdez Fire Dept. were positioned appropriately during this exercise

2.	Were master streams put into operation without any problems?		X		Some minor problems came up requiring repositioning of equipment as well as compensating for high hydrant pressures
3.	Were Valdez Fire Department members utilized for master stream operations?	X			See comments above
4.	Did master streams reach their objective?	X			All master streams effectively reached their target

Communications:

General Criteria		Yes	No	N/A	Comments
1.	Did VMT provide radios to VFD?	X			Officers from the VFD were given terminal radios and were able to effectively communicate with the IC
2.	Were communications clear between the two fire departments throughout the incident?	X			Excellent job by the IC as well as all the Officers in providing information and feedback to each other
3.	How was the coordination between VMT FD and VFD?	X			Excellent teamwork and coordination

Motorized Equipment Operations:

General Criteria		Yes	No	N/A	Comments
1.	Were there problems using VMT in-plant hydrant system?	X			Minor problems
2.	Were there any fire water pressure issues?	X			Engine companies using in-plant hydrants experienced high hydrant pressures which they were able to compensate for to complete exercise
3.	Were the motor pump operators able to make foam?	X			This exercise provided an opportunity to train backup pump operators on foam making
4.	Were there any problems providing the correct pressure to master stream devices?		X		Operation went smoothly
5.	Was the motorized apparatus correctly spotted at hydrants?	X			Minor problem with one engine that required a re-spotting
6.	Did the motor pump operator provide the correct pressure during hand line operations?	X			Excellent job by motor pump operator

ATTACHMENT 3
PHOTOGRAPHS



VFD PERSONNEL SET UP SKUM MONITOR



INITIAL ATTACK ON VACUUM TRUCK PROP



VMT FIRE TEAM TERMINATOR FOAM NOZZLE DISCHARGE



FOAM NOZZLE ON VMT ENGINE IN OPERATION



COMBINED OPERATION – VMT & VFD ALL MONITORS



VMT MONITOR ON ENGINE IN OPERATION