

**PWS RCAC
FIRE PROTECTION REVIEW
October 9, 2000**

The following presentation to the PWS RCAC Board of Directors summarizes the fire protection survey at Alyeska Valdez Marine Terminal, Valdez, AK (VMT) conducted by Orville M. "Bud" Slye, Jr., PE of Loss Control Associates, Inc. (LCAI) and Fire Protection Consultant Tony Semenza. The survey was conducted September 25, 2000 through September 28, 2000 with a verbal report to the Board of Directors on September 28, 2000.

The survey covered five key areas:

- **Storage Tank Fire System Adequacy**

On a previous visit to VMT in June, 2000 we had made a recommendations that VMT develop a process to insure that sub-surface foam piping was being flushed with crude to assure it was free of sediment build up. VMT has developed a process which documents that this is done on an annual basis for a minimum of two hours per tank. VMT is also moving forward to complete installation of jump-over from the crude suction line to the foam inlet piping. This project should be complete by the middle of December, 2000 and we have been assured by VMT management that this project will be completed on schedule.

VMT is planning to periodically flush foam piping to assure the foam system is not plugged. Flushing will be documented and reported to the Alaska State Fire Marshal. VMT is currently developing a procedure for flushing which will be submitted to the State Fire Marshal for approval before implementation.

- **Fire System Management Program**

The fire system management program is being coordinated by Fire Chief Andy Postishek. The fire team that Andy has assembled continued to identify the top five critical issues in the fire system's performance, operating conditions and maintenance, and worked to correct these issues. Once an issue has been corrected, another item is elevated off a list of outstanding jobs and put in the top five category. The Fire Chief now has a fire systems specialist to provide support in tracking (through the terminal's passport maintenance system) the maintenance work orders as they relate to fire protection issues so that these work orders will get the proper attention. The specialist is also available to provide the Fire Chief with input on other fire protection issues.

- **Fire Training/Fire Equipment Issues**

Off-site fire training has been scheduled for both Alyeska and the City of Valdez fire fighters this year. In addition, we provided the Fire Chief with dates in both February and April of 2001 for a fire school that is available for his personnel as well as Valdez municipal fire fighters to attend. Much progress has been made in providing new turnout gear for the VMT emergency responders. To date 80% of the gear is in and issued and the remaining 20% has been ordered and should be received prior to year end. This protective clothing provides the VMT emergency responders with the best turnout gear available. VMT management has also committed to purchasing two additional fire engines, each having a fire pump capacity of 3500 gallons per minute at draft. The new engines should be available within the next 6-9 months. They will replace two of the older fire engines currently in use and increase the current pumping capacity of the fire engine fleet from a little over 8000 gallons per minute to well over 13,000 gallons per minute.

- **Water Based Fire System**

Significant progress has been made in this area. A number of new hydrants have been installed throughout the terminal and progress continues to be made on relining the epoxy portion of the fire water system which is to be completed by the end of 2002. A new check valve has been installed in the west tank farm portion of the facility on a 16 inch line. This should eliminate continuing to have to operate a jockey pump to maintain pressure in the system.

- **East and West Metering Buildings - Fire Protection System**

Ongoing discussion with the VMT fire team and management continued on the subject of insuring that the current fire protection system is adequate for these buildings. As a result of our last audit and much research the fire team contracted with Integrated Protection Services from Carlsbad, CA to evaluate the current system. We support the approach to go from an in-line proportioning system to an in-line balanced proportioning (ILBP) system to insure proper foam density and application rates. We also support a full fire flow test using mobile apparatus with balanced pressure proportioning capabilities to insure that the configuration of the current nozzles inside the buildings can adequately provide the coverage necessary to suppress any spill fire which might occur in these buildings. If any additional modifications are necessary they should be done at the time of installing the skid mounted in-line balanced proportioning system. RCAC Consultants should be present when the full application test of the system is conducted.

- **2001 RCAC Fire Protection and Safety Review**

Suggest the following objectives and schedule for the June 2001 PWS RCAC Fire Protection and Safety review:

- 1) Review progress on recommendations for fire system and fire fighting issues including:
 - Fire System Maintenance
 - E and W Metering Building fire protection system upgrades
 - Evaluation of fire water system corrosion control, hydrant repairs, hydraulic model
 - Progress in testing and flushing sub-surface foam systems
 - Training of Valdez and Alyeska Fire Departments
 - Review of progress on purchase of new fire trucks and fire fighters protective equipment
- 2) Review of fire protection systems and equipment on the Berths

It is anticipated that the review will require three days at VMT and 1 to 2 days with RCAC Valdez staff. A briefing report will be provided to RCAC personnel and a written report prepared providing a summary of findings and recommendations.

99-059/PWS RCACRev10/09/00
OMSlye – LCAI
Tony Semenza