

Louie Flora

From: Rep. Paul Seaton
Subject: FW: LNG Comparison
Attachments: LNG Comparison.pdf

From: Jenni Zielinski [<mailto:swpilots@ak.net>]
Sent: Tuesday, February 14, 2012 1:27 PM
To: Rep. Paul Seaton
Cc: Rep. Eric Feige
Subject: LNG Comparison

Dear Representative Seaton and Representative Feige,

Please find a copy of a letter attached dated June 2, 2011 sent to the current administration regarding the Navigational Comparison between Valdez and Cook Inlet for large LNG export facility. Please do not hesitate to contact me with any questions.

Best regards,

JENNI ZIELINSKI
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June 2, 2011

**Lt. Governor Mead Treadwell
Alaska State Capitol Building
Third Floor
Juneau, AK 99801**

Via email: meadwell@alaska.net

Dear Sir;

RE: Navigational Comparison between Valdez and Cook Inlet for large LNG export facility.

Southwest Alaska Pilots Association is the State recognized marine pilot association providing pilotage service for region two - South Central Alaska. The Association has been providing this service in Cook Inlet since the founding of the organization and has been servicing the Valdez TAPS trade since its inception. LNG export tankers from Nikiski (Cook Inlet) are serviced by our organization. We also provide pilotage for the shuttle tankers operating in Cook Inlet which move oil from Valdez to Nikiski, providing the facility that refines aviation fuel and gasoline for the Alaska market. This experience provides our Association with the ability to compare the feasibility of operating a large LNG tanker facility in either Valdez or Cook Inlet.

Cook Inlet tides and currents are known to be extreme, with the average flood and ebb current at Nikiski being 3.9 knot flood and 2.3 knot ebb (2011 NOAA, *Tesoro Pier Nikiski Pier*). The location of the Nikiski docks provides a lee from the full extreme of the ebb current. These strong currents require deep draft vessels to stem the current when docking and undocking typically port side alongside, thereby creating specific windows of time when vessels may be docked and undocked. Predictably, half the tidal cycle forms the window for these maneuvers, with a typical cycle being every six hours. This requirement does create timing restrictions that may cause delays for vessel maneuvering. Current velocity requires vigilance when maneuvering and would be a limitation to the size of vessel that may be operated safely at Nikiski.

East Forelands provides a lee from the ebb current and the ice coming down from upper Cook Inlet. Typically these piers are exposed to ice approximately three months per year. The ice in Cook Inlet does affect navigation of vessels when operating in that area. The size of vessels is a consideration that needs to be utilized when considering year round operations for Cook Inlet shipping. Typically the vessels that frequent Nikiski are considered shuttle tankers - 50,000 to 110,000 DWT. The LNG tankers that were calling upon Nikiski had a carrying capacity of 90,000 MT utilizing a deep draft of 12 meters. Larger LNG tankers may be utilized; however the size of ship would still need to be limited and would need to be

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considered a shuttle tank vessel by industry standards. Tidal range and depth of water available will also be a restricting factor for the size of vessel operating at Nikiski. Present depth alongside the facilities at Nikiski and the shoal depth for approaches to Nikiski could limit the depth of the vessels to approximately 15 meters.

Nikiski mooring requirements would need to be analyzed closely relating to the size of the vessel. Nikiski does experience fetch from ocean swell because it is exposed to the south. This exposure can create a situation where vessels may not be capable of mooring alongside during certain situations such as when a tug assisting will be unable to remain alongside the vessel due to swell. The vessel may cause damage whilst moored when extreme conditions exist, causing a surge of the vessel alongside the pier. These limitations for Nikiski are minimized by utilizing the smaller shuttle tanker size vessels.

Wind is a critical factor when operating large high profile ships such as LNG tankers. LNG tankers typically will have little draft fluctuations between a loaded state and empty status as compared to oil tankers. This is due to the weight of the oil as compared to the limited weight of the gas. Valdez typically has higher winds and longer sustained winds than Nikiski. Both ports experience summer sea breeze winds with the port of Valdez having west winds and Nikiski experiencing south winds. Winter winds are typically stronger for both ports and both experience the same direction north to north east winds. Nikiski winds typically will be shorter in duration with less velocity than Valdez. Valdez winds can be significant and may cause delays in mooring and transiting the Valdez narrows. Nikiski winds typically do not cause delays because they are not as strong and are shorter in duration.

Dock alignment will be critical in Valdez to permit the vessels to work up into the wind to facilitate a safe mooring operation. Nikiski dock alignment will be necessitated by the direction of the current requiring vessels to be parallel to the predominate direction of the current.

Valdez has no constraints with consideration for the size of vessel that can operate safely. Oil tank vessels that used to frequent Valdez TAPS terminal were considered VLCC (Very Large Crude Carrier). These vessels were 300,000 DWT tankers and had no restrictions with fully loaded drafts of 24 meters. LNG carriers of any size would be able to operate in the port of Valdez with no draft limitations, including the approaches to Valdez which are all deep water. Valdez narrows is not a limiting factor for vessel movements as the narrowest point, being abeam Middle Rock, is in excess of half a mile.

Valdez current predictions are weak and variable per NOAA, however this does not account for the fresh water mixture occurring in summer months causing unpredictable layered currents that affect deep draft vessels. This current affects docking and undocking maneuvers dependent on the draft and amount of fresh water mixing at any time. This current does not cause delays and is compensated for by utilizing the tug assistance that is available.

The Port of Valdez is an ice free port and is protected from sea swell and fetch from outside swell conditions. This permits the large vessels to safely moor without surge occurring whilst operating at the facilities. Mooring requirements would be similar to any other port that doesn't experience fetch.

Security for tank vessels operating in the port of Valdez is well established and monitored by USCG. TAPS terminal has an established security zone designated by visible buoys. This area is advertised in the Valdez small boat harbor as restricted entrance for all vessels. The zone is also monitored by USCG

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radar and USCG vessels. Compliance with the restricted area is mandatory and is enforced by USCG. Coast Guard vessels will frequently escort, or shadow, tank vessels operating in the busy summer season enforcing the moving security zone surrounding the tankers. Nikiski does not have similar security for the tank vessels operating in Cook Inlet. USCG radar and vessels are not available in the Nikiski area and Cook Inlet is not monitored by the USCG as with Valdez and Prince William Sound.

Valdez SERVS provides the escort system for tank vessels that are escorted by two tugs within the port and whilst transiting Prince William Sound. This escort system is not available in Cook Inlet; however Tesoro has positioned a tug boat at the Nikiski docks.

In conclusion Valdez is capable of providing a year round viable shipping facility for LNG export. This statement is verified by the present TAPS export facility operating from the port. Nikiski would not be a viable operation for year round, large LNG ship operations but shuttle ships can operate year round as has been proven by the history of this port. Shuttle ships have been moving crude oil from Valdez to the refinery at Nikiski and Nikiski has proven the location is a viable facility for exporting LNG to Japan for many years. However these ships were specially built for this run, with size being one of the determining factors for success. SWAPA's recommendation is that an LNG export facility should be built in Valdez with a shuttle LNG tanker utilized to transfer the gas from Valdez to Nikiski thereby providing the necessary gas for Alaskans. This same process has been occurring for years, utilizing oil instead of gas.

I hope this information is helpful and if you have any questions, please do not hesitate to contact us.

Sincerely,

Capt Jeff Pierce

Capt. Jeff Pierce by JLZ
President
SWAPA