



## **Prince William Sound Regional Citizens' Advisory Council's Position on Safe Crude Oil Tanker and Escort Vessel Operation in Prince William Sound**

### **I. Introduction:**

The Prince William Sound Regional Citizens' Advisory Council (PWSRCAC) was formed after the 1989 Exxon Valdez oil spill to provide a voice for citizens affected by decisions related to the Alyeska Pipeline Service Company (APSC) terminal in Valdez and the oil tankers transiting through Prince William Sound (PWS). PWSRCAC is an independent non-profit corporation guided by its mission: citizens promoting environmentally safe operation of the Alyeska terminal and associated tankers. The existence of a citizens advisory council for PWS is mandated by the federal Oil Pollution Act of 1990 and PWSRCAC's funding and independence from industry are guaranteed in the contract between PWSRCAC and APSC.

APSC's Ship Escort/Response Vessel System (SERVS) is changing their marine services contract that includes crude oil tanker escort vessel services from Crowley Maritime Corporation (Crowley) to Edison Chouest Offshore (ECO), effective July 1, 2018. This change requires federal and state approval before it occurs.

PWSRCAC is committed to working with APSC and regulators to ensure that the level of prevention and response services are not weakened as a result of this transition. We all want the same thing - to prevent oil spills, and have the best response system possible should prevention measures fail.

### **II. Position Overview:**

Laden oil tankers and escort vessels should not be permitted to transit through PWS and into the Gulf of Alaska in weather conditions which APSC/SERVS and the PWS Tanker Owners/Operators (PWS Shippers) have determined to be unsafe. If it is unsafe to train personnel in these conditions, it is unsafe to transport oil. Thorough evaluation of the new system should be done and approved by all participants before it is used as an escort for any actual oil shipments.

### **III. Background:**

After the 1989 Exxon Valdez oil spill, PWS Shippers were required to meet new state and federal regulations for escort and emergency towing services. Hinchinbrook Entrance Closure Conditions (Closure Conditions) were reduced to 45 knots or 15-foot seas as an oil spill prevention measure.<sup>1</sup> In 1998, ADEC required additional modeling, as well as escort and disabled tanker towing exercises to improve their Hinchinbrook Entrance Best Available Technology (BAT) Assessment, verifying Crowley's ability to

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<sup>1</sup> 1992-1996, the PWS Disabled Tanker Towing Study and Prince William Sound Risk Assessment.

adequately control, make up to, and tow a disabled tanker up to Closure Conditions and to ensure safe travel through the Valdez Narrows.<sup>2</sup>

Crowley's fleet was improved to include new Enhanced Tractor Tugs (ETTs) and Prevention and Response Tugs (PRTs) in 1999-2000, and exercises were completed with these tugs in sea states up to 15-16 feet and 40 mph (35 knot) winds. ADEC and USCG permit the PWS Shippers to transit through Hinchinbrook Entrance and into the Gulf of Alaska with laden tankers in weather conditions up to 45-knot winds or 15-foot seas<sup>3</sup> based on modeling and escort/emergency towing exercises completed by Crowley's escort vessels and crew.

Crowley has provided marine services under contract to APSC/SERVS for years, and Crowley's escort vessels, equipment, and crew performance have been evaluated by computer simulation modeling analyses, sea trials, and escort and towing demonstration exercises, including demonstrating the capability to tow a disabled tanker through Hinchinbrook Entrance in near closure conditions.

United States Coast Guard (USCG) regulations<sup>4</sup> require a tanker master to operate a crude oil tanker within the performance capabilities of its escort vessels, taking into account sea and weather conditions. Additionally, the Alaska Department of Environmental Conservation (ADEC) regulations require escort vessels to meet BAT requirements for the operation of a tank vessel under escort and to meet escort vessel performance and training standards.<sup>5</sup>

New escort vessels (to replace Crowley vessels) are being built in 2017 and 2018. Sea trials, witnessed by USCG and the American Bureau of Shipping (ABS), will be completed in the Gulf of Mexico before the equipment travels to Alaska in early 2018. The new vessels and personnel will arrive in PWS for training and transition between February and July 2018. Computational Fluid Dynamic (CFD) computer modeling, as well as escort and disabled tanker towing exercises will need to be completed over a range of weather conditions before the new vessels and crew can provide the public with confidence in the new contractor's equipment, training, and knowledge of PWS weather, prevalent sea state conditions, and location of land and submerged reefs and how to properly deal with each.

Properly conducted computer simulation modeling<sup>6</sup> provides mathematical and theoretical predictions of an escort vessel's ability to escort or control a disabled laden tanker; however, it does not adequately verify a human's ability to maximize equipment performance or incorporate human error or limitations known to be significant factors in adverse weather and emergency situations. Escort and emergency towing exercises are needed to verify human performance. No tests have been completed yet because the tugs are not in Alaska at this time.

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<sup>2</sup> PWS Tanker Oil Spill Discharge Prevention and Contingency Plan (Tanker C-Plan) decision, and Settlement Agreement between ADEC, Cordova District Fisherman United, and United Fisherman of Alaska; and Alaska Department of Environmental Conservation, 1998 PWS Tanker Oil Spill Prevention and Contingency Plan decision and Best Technology Decision by the Deciding Officer for Condition 2a, April 28, 1998.

<sup>3</sup> This limit is documented in the PWS Tanker C-Plan and PWS Vessel Escort Response Plan as an oil spill prevention measure.

<sup>4</sup> 33 CFR § 168.10(b)

<sup>5</sup> 18 AAC § 75.425(e)(4)(A)(iii), 18 AAC § 75.020 and 18 AAC § 75.027.

<sup>6</sup> Model predictive confidence increases if coupled with actual sea trial and towing exercise performance data to verify equipment performance and to examine human performance in actual operating conditions.

As of January 18, 2018, PWSRCAC has requested from APSC and ADEC, but not yet received, a full set of computer simulation modeling studies to support the new contractor's claimed ability to provide tanker escort and towing service through PWS over the range of weather conditions in which oil will be shipped. Furthermore, ADEC and USCG have not yet verified the contractor's new escort vessel equipment or crew's ability to escort a tanker or make a disabled laden tanker safe in PWS.

APSC/SERVS has committed to training new crews to "demonstrate tanker escorts in a variety of weather and sea conditions" in PWS before July 1, 2018, although APSC/SERVS Marine Service Transition Fact Sheet announced escort vessel towing exercises in adverse weather conditions pose "unacceptable risk to the people who work on TAPS," and that "we will not conduct testing in near closure conditions."<sup>7</sup>

PWSRCAC submitted comments to ADEC on September 18, 2017, stating "PWSRCAC's position is that it is environmentally unsafe to move oil in conditions in which it is unsafe for SERVS to exercise a tanker save". PWSRCAC submitted recommendations to ADEC and USCG on September 18, 2017, for work that should be completed before the new vessels are approved for use.

The National Weather Service announces "Gale Warnings" at weather conditions equating to the currently approved Closure Conditions (measured at the Seal Rocks Buoy located in a protected area), at the same time actual conditions in the adjacent Hinchinbrook Entrance and Gulf of Alaska have been documented at 57 knots or 20-foot seas.<sup>8</sup> If historical weather data provided in the PWS Tanker C-Plan is examined, it shows Closure Conditions could be reduced, with a very slight impact (a few percent per year) to the actual operating window for laden tankers.

The public is averse to any risk of another crude oil tanker spill in PWS because of the well-documented impacts of the Exxon Valdez oil spill, and because the public bears all the adverse consequences of increased risk taking. Oil spilled in adverse weather cannot be cleaned up with current oil spill response technology.<sup>9</sup>

**Accordingly, the PWSRCAC has adopted the following position regarding safe tanker operations in PWS, with special emphasis on the oil tanker escort vessel system.**

#### **IV. Position:**

1. Oil tankers and escort vessels should not be permitted to transit through PWS and into the Gulf of Alaska in weather conditions which APSC/SERVS and the PWS Shippers have determined to be unsafe for training. Limits of safe operation for vessels and crews should be delineated. Transit in conditions exceeding those

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<sup>7</sup> APSC/SERVS Marine Services Transition, Frequently Asked Questions, 2017, [http://www.alyeska-pipe.com/assets/uploads/pagestructure/TAPS\\_SERVS\\_Overview/editor\\_uploads/Training%20FAQ.pdf](http://www.alyeska-pipe.com/assets/uploads/pagestructure/TAPS_SERVS_Overview/editor_uploads/Training%20FAQ.pdf).

<sup>8</sup> Robert Allan Ltd, 2016, Naval Architect and Marine Engineer.

<sup>9</sup> The PWS Shipper's oil spill plan concludes mechanical response is limited by winds that exceed 30 knots, and sea more than 10 foot seas; dispersant application is limited by winds of more than 27 knots, and in situ burning is limited by winds more than 20 knots. PWSRCAC's oil spill response gap studies conclude response is substantially impaired at even lower wind and wave height threshold (above 20 knots or 3 foot seas).

limits should not be allowed. If it is unsafe to train personnel, it is unsafe to transport oil.

2. Crew Safety is paramount. Escort vessel crews deserve and must receive training and experience escorting tankers and practicing disabled tanker towing exercises throughout PWS over the full range of operating conditions in which they will be expected to perform escort and disabled tanker towing services. Controlled training opportunities, including in adverse weather, can be stopped at any time that the risk to crews and/or vessels becomes unacceptably high.<sup>10</sup>
3. Closure Conditions throughout PWS should be set to:
  - a. Increase crew safety;
  - b. Reduce the risk of accident and/or oil spill;
  - c. Match industry's training limits;
  - d. Meet state and federal regulation as required by 33 CFR 168;
  - e. Improve escort vessel save capability; and
  - f. Provide escort vessel operators time to train crews and obtain experience operating in PWS, through Hinchinbrook Entrance, and into the Gulf of Alaska over a narrow range of less adverse weather conditions.
4. In order to fulfil the duty of the public trust, Federal and state approval of PWS escort vessel operations should be very thorough and comprehensive to verify whether the new vessels meet state and federal laws and regulations, including the state's BAT requirements and the federal escort vessel requirements of 33 CFR 168 and be effective in protecting people and the environment. Approval should include and not be limited to a detailed verification of the escort vessel operator's capability to escort laden tankers and tow disabled tankers in the full range of weather conditions in which PWS Shippers plan to operate, and assure full compliance with all applicable laws and regulations. Federal and state review and approval should ensure there is no gap in the PWS tanker escort vessel system (a critical oil spill prevention measure to reduce the risk of another catastrophic oil spill) during the PWS escort vessel operator transition.
  - a. PWSRCAC seeks, and should have the opportunity in carrying out its advisory role, to fully participate in the federal and state review and approval process, including but not limited to having: access to computer simulation modeling; the ability to witness sea trials (in the Gulf of Mexico where the vessels are built); the ability to witness escort and disabled tanker towing exercises in PWS; and to participate in the BAT review.

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<sup>10</sup>The PWSRCAC Board of Directors passed a resolution including position statements 1. and 2. on January 18, 2018.

- b. Peer-reviewed technical and scientific computer simulation modeling studies should be completed to verify the mathematical and theoretical possibility that each class of the operator's new escort and towing vessels are capable of providing their intended service through PWS, Hinchinbrook, and into the Gulf of Alaska over the full range of laden tanker sizes and weather conditions approved for transit.
- c. Actual escort and disabled tanker towing validation in PWS should be completed by the new escort vessel operator's crew, using its new escort vessels, witnessed by ADEC, USCG, and PWSRCAC personnel. The operator must, at a minimum, demonstrate that **each** escort or towing service vessel is tested in PWS to verify it is capable of providing escort and emergency towing for the full range of laden tanker sizes and over the full range of weather conditions approved for tanker transit.
- d. Agreement should be reached by ADEC and USCG, with input from industry, PWSRCAC, the public, and other experts on: the number and type of escort and disabled tanker towing exercises needed, and the procedures, data collection, and data measurement requirements to be used in such exercises. Agreement should be reached before the exercises begin, and effectively communicated to the public.
- e. All exercises are to be conducted with prudent consideration of safety factors and with concurrence by both ship and tug masters:
  - i. Include normal making-up procedures using the standard 30 I 30 second recognition/response delay.
  - ii. Hard right rudder at 10 knots with rescue performed by an ASD 4517 tug.
  - iii. Rudder locked at 15 degrees right with rescue performed by an ASD 4517 tug.
  - iv. Rudder locked at 15 degrees left with rescue performed by an ASD 4517 tug. This approximates the turn now made inside Hinchinbrook Entrance.
  - v. Stopping the ship from 10 knots. To be performed by each type of tug with rudder angles of hard over, 15 degrees and amidships.
  - vi. Tow from the stern with rudder hard over right and left.
  - vii. Tow from the stern with rudder at 15 degrees right and left.
  - viii. Attach to a tanker's bow and tow on a designated course with each type of tug, towing with various rudder angles on the tanker.
- f. Best practices should be implemented in ensure crew safety.

- g. If equipment is delayed arriving in PWS, or if APSC/SERVS's and the contractor's plans to conduct exercises do not include the full range of weather currently approved for tanker transit, state and federal approval should limit PWS laden tanker transit to only the tanker sizes and weather conditions tested. Subsequent plan amendments could be submitted to expand the weather window when field demonstrations and towing exercises have been completed.
  - h. State and federal approval should specify routine (monthly, quarterly, or annual) escort and disabled tanker exercises needed and required to continuously improve and verify vessel and crew capabilities.
5. Any requirements placed on state approval of the marine service transition (e.g., Conditions of Approval) should avoid unlawful phasing.<sup>11</sup> CFD computer simulation modeling, sea trial work in the Gulf of Mexico, and field demonstrations and towing exercises on all escort vessels are "reasonably obtainable information" and should be completed before state approval. Conditions of Approval may be required for agencies to specify routine (monthly, quarterly, or annual) escort or disabled tanker towing exercises required thereafter.

## **V. Conclusion:**

Much has been learned over the past 28 years by the escort towing company and its crews, tanker owners and crews, government regulators, industry, and members of this citizens' advisory council about how to keep people and the marine and terrestrial environments safe from the devastation of another major oil spill in PWS. It has taken thoughtful and vigorous commitment to the prevention of oil spills to keep Alaska safe since the Exxon Valdez oil spill.

The weather in PWS is frequently challenging. Technology is not infallible. Human beings responsible for decisions about piloting tankers and escort vessels and other key aspects of transporting oil through PWS are capable of making errors and lapses in judgment. Complacency must be overcome constantly. It is with acknowledgment of these realities that the PWSRCAC sets forth the guidance and recommendations in this paper in a good-faith effort to help ensure the Alaska public, waters, and environment are protected from any further major oil pollution incidents.

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<sup>11</sup> See Decision of Deciding Officer Johnson in the Adjudication of Prince William Sound Oil Tanker Contingency Plans Approved October 2, 1995 and Consolidated Matters. In 1998, Johnson decided Conditions of Approval must be limited to only situations where it is impractical or impossible for ADEC to obtain information prior to its approval, and that Conditions of Approval may not serve as a substitute for initial pre-approval analysis that should be conducted with reasonably obtainable information.