



16710  
November 20, 2012

## **CAPTAIN OF THE PORT, WESTERN ALASKA NAVIGATION ADVISORY**

Subj: **OPERATING PROCEDURES FOR ICE CONDITIONS IN COOK INLET**

### **OVERVIEW**

1. The Captain of the Port (COTP), Western Alaska, through consultation with the Southwest Alaska Pilots Association (SWAPA) and Cook Inlet maritime operators, developed these operating procedures (hereafter, *Procedures*) for vessels operating in Cook Inlet during winter ice conditions. They represent a culmination of best practices for mitigating risk to life, property, and the environment.
2. As ice analysis, forecasts, and collective risk assessments dictate, the COTP will issue Navigation Safety Advisories to activate additional measures for ice conditions in two phases: Phase I for upper Cook Inlet and Phase II for lower Cook Inlet. The two-phased approach was established to facilitate more timely and appropriate risk mitigation strategies for ice conditions observed north and south of 60° 45' N latitude (East and West Forelands). These phases will be activated and deactivated as circumstances or industry input warrant.
3. Activation of Phase I and II measures for ice conditions is based on a number of factors, to include: observed and forecast severe sub-freezing temperatures, aerial observations, information and analysis provided by NOAA, SWAPA, and Cook Inlet maritime operators.
4. If ice conditions preclude the safe operation of vessels at berths in Nikiski, Drift River, Port Mackenzie, or the Port of Anchorage, the COTP may terminate cargo operations or close the terminal or port until conditions improve (33 CFR § 160.111).
5. These *Procedures* supersede all previous Operating Procedures for Ice Conditions in Cook Inlet. We invite your feedback and proposed revisions. As best practices evolve and lessons are learned, we anticipate and welcome changes. If you have any questions concerning these *Procedures*, please contact the Sector Anchorage Waterways Management Division at (907) 271-6700, or the Marine Safety Detachment Homer Supervisor at (907) 235-3292.

## PROCEDURES FOR ALL VESSELS TRANSITING COOK INLET DURING ICE CONDITIONS

1. This section of the *Procedures* stays in effect throughout the ice season.
2. All facility operators will follow the ice operations sections of their Coast Guard approved Operations Manuals, as appropriate.
3. The master is ultimately responsible for the safe operation of their vessel at all times. Adherence to appropriate risk mitigation in accordance with these *Procedures* demonstrates forehandedness on the part of the master and is in keeping with prudent seamanship. However, it is the master's responsibility to take all necessary steps to effectively mitigate risk in all circumstances.
4. The master shall ensure proper operation of all vessel machinery and systems in ice-filled waters and ambient air temperatures to -40 degrees F. This includes but is not limited to emergency fire pumps, generators, and mooring winches.
5. The master shall maintain adequate draft to keep the vessel's sea suction and propeller well below the ice to prevent ice from sliding under the vessel. If a non-tank vessel must deviate from normal ballast procedures to meet this requirement (i.e., place water ballast in a cargo hold), the master shall obtain approval from the vessel's classification society prior to transiting Cook Inlet.
6. The master shall ensure the vessel crew is equipped with adequate personal protection suitable for cold weather during deck operations.
7. When transiting Cook Inlet, vessels must not force ice at any time. For these purposes, "forcing ice" is defined as making way through ice that is substantial enough to significantly slow the speed of the vessel, or when the vessel involuntarily slows to 50% or less of the speed being made before entering the ice. If the master, pilot, or both believe the vessel is forcing ice, the master shall abort the transit and navigate to safer waters until more favorable conditions are present (excluding Offshore Supply Vessels).
8. Self-Propelled Vessels: While these *Procedures* are in effect, all self-propelled vessels transiting Cook Inlet for the first time are subject to examination in advance of arriving at the pilot station in Kachemak Bay. Vessel operators or their agents must contact the COTP at [Sector.Anchorage@uscg.mil](mailto:Sector.Anchorage@uscg.mil) or by fax: (907) 271-6765 at least 24 hours in advance of the vessel's arrival to the pilot station to determine if they must undergo examination. The examination is in addition to other Coast Guard inspections or examinations applicable to the vessel.

9. Vessels with Internal Combustion Engines:

- a. If fitted with a heat exchanger, the raw water must be kept at a sufficient temperature to prevent the accumulation of ice or slush ice within the system. This may be achieved by delivering a heated medium to both the primary and secondary sea chests. The medium should be continuously supplied to both sea chests from the time the vessel passes Anchor Point inbound until the time the vessel passes Anchor Point outbound. Only lines or hoses designed for their intended service will be in use.
- b. Starting and control air tanks should remain peaked.
- c. All vessels propelled by gas turbines shall maintain the auxiliary gas turbine ready for immediate use and engagement in the event of main gas turbine failure.

10. Voyage Plans: All vessels arriving in Cook Inlet north of Homer, Alaska shall file a voyage plan with the COTP by email: [Sector.Anchorage@uscg.mil](mailto:Sector.Anchorage@uscg.mil) or by fax: (907) 271-6765. Voyage plans must be submitted no less than 24 hours prior to arrival at or abeam the Kachemak Bay Pilot Station. Typically, the voyage plan will include an assessment of ice conditions based on aerial observation, National Weather Service reports, and observations by maritime pilots and other operators. Voyage plans must advise the COTP of intentions to contract with a tug to lead the vessel through ice when needed. A *Cook Inlet Voyage Plan* template is available at <http://homeport.uscg.mil/anchorage>.

11. To obtain forecast currents corrected for Nikiski, call the SWAPA office in Homer at (907) 235-8783, or visit the NOAA website at:

2012: <http://tidesandcurrents.noaa.gov/currents12/tab2pc4.html#144>

2013: [http://tidesandcurrents.noaa.gov/tide\\_predictions.shtml?gid=276](http://tidesandcurrents.noaa.gov/tide_predictions.shtml?gid=276)

12. All vessels (including barges) should moor in such a fashion to mitigate "worst case" ice conditions expected. Typically, this is done with the bow facing the flood tide to stem the force of ice during the stronger flood tide.

13. If ice builds up between a moored vessel (including barges) and the pier and threatens the integrity of the mooring, the vessel shall be pulled away from the berth prior to max current to flush away accumulated ice.

**OFFSHORE SUPPLY VESSEL OPERATIONS**

1. Shall maintain a full 24-hour crew compliment as specified on the vessel's Certificate of Inspection regardless of voyage distance or vessel automation.
2. Vessels hull shall be of sufficient strength to force ice without impacting its seaworthiness.

## **PHASE I - UPPER COOK INLET**

**North** of 60° 45' N latitude (East and West Forelands)

### **SELF-PROPELLED VESSEL OPERATIONS**

#### **WHILE MOORED AT FACILITIES IN UPPER COOK INLET:**

1. Vessels should maintain “underway” watches in both engineering spaces and on the bridge when ice conditions threaten a vessel's mooring arrangement.
2. While these guidelines are in effect, steam (or other heated medium) should be continuously delivered to both the primary and secondary sea chests.
3. Engines and propulsion systems should be in a status to ensure the most expeditious means of mitigating ice conditions by relieving strain on mooring lines, getting the vessel underway, or both as appropriate. A sufficient number of additional mooring lines shall also be immediately available.

### **BARGE OPERATIONS**

There are no specific additional measures recommended for tug/barge operations. Mariners are to always exercise extreme caution during evolutions where ice is present.

**PHASE II - LOWER COOK INLET**  
**South** of 60° 45' N latitude (East and West Forelands)

**SELF-PROPELLED VESSEL OPERATIONS**

1. When Phase II procedures are in effect and the flood current is forecast to be **4 knots or greater** and the vessel is encountering ice conditions **alongside the KPL dock**, the following actions must be taken:
  - a. Discontinue all transfer operations.
  - b. Make transfer hoses ready for immediate disconnect.
  - c. Maintain a continuous watch (to include a pilot) to ensure the most expeditious means of mitigating ice conditions by relieving strain on mooring lines, getting the vessel underway, or both as appropriate. Place engines and propulsion systems in a status to ensure the most expeditious means of mitigating ice conditions by relieving strain on mooring lines, getting the vessel underway, or both as appropriate.
  - d. Position a designated vessel up current of the moored vessel to serve as an ice scout. The ice scout should only work under the direction of the moored vessel's navigational watch. The ice scout should be positioned to ensure observed ice conditions are relayed to the moored vessel in a timely manner for effective risk mitigation efforts.
  
2. When Phase II procedures are in effect and the flood current is forecast to be **5 knots or greater** and the vessel is encountering ice conditions while **alongside the ConocoPhillips dock**, the following actions will be taken:
  - a. Discontinue all transfer operations.
  - b. Disconnect transfer hoses.
  - c. Maintain a continuous watch (to include a pilot) to ensure the most expeditious means of mitigating ice conditions by relieving strain on mooring lines, getting the vessel underway, or both as appropriate. Place engines and propulsion systems in a status to ensure the most expeditious means of mitigating ice conditions by relieving strain on mooring lines, getting the vessel underway, or both as appropriate.
  - d. Position a designated vessel up current of the moored vessel to serve as an ice scout. The ice scout shall work only under the direction of the moored vessel's bridge watch. The ice scout should be positioned to ensure observed ice conditions are relayed to the moored vessel in a timely manner for effective risk mitigation efforts.
  
3. The master, pilot, or person in charge shall discontinue transfer operations, disconnect hoses, and get the vessel underway any time circumstances warrant.

## BARGE OPERATIONS

### **Nikiski Tug/Barge Operating Procedures:**

1. When Phase II procedures are in effect, in addition to filing a voyage plan with the COTP the following actions shall be taken:
  - a. An “assist” tug shall assist the attending tug and barge to the facility.
  - b. When there is no ice at the dock and the barge has successfully moored, the assist tug should act as an ice scout under the direction of the moored tug’s navigational watch. The ice scout should be positioned in the best location so that current ice conditions can be relayed to the attending tug in a timely manner, allowing tow response to expedite prudent risk mitigation.
  - c. When the vessel is encountering ice conditions while alongside the dock, the assist tug shall reposition alongside the moored tow in a timely manner.
  - d. When the flood current is forecast to be **2 knots or greater** and the tow is encountering ice conditions, both the attending and assist tugs shall keep main engines running and ready for immediate operation.
  - e. When the current is forecast to be **4 knots or greater** and the vessel is encountering ice conditions, all transfer operations shall be discontinued, and transfer hoses made ready for immediate disconnect.
2. The facility dock Person-in-Charge (PIC), Towing Vessel Operator, Tug Captain, or Barge Tankerman may determine it prudent to suspend transfer operations and disconnect hoses during maximum flood currents, since the ice floe is heavier on the flood tide at the Nikiski docks.

## OFFSHORE SUPPLY VESSEL OPERATIONS

1. An “underway” watch shall be maintained on the bridge when ice conditions threaten a vessel’s anchoring or mooring arrangement.

Sincerely,



PAUL MEHLER III  
Captain, U.S. Coast Guard  
Captain of the Port, Western Alaska