

HEAVY WEATHER (WX)

SOC Quick Reference

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This standard of care has been developed jointly by Sector Puget Sound, Washington state Department of Ecology SPILLS program, and representatives of the marine industry under the umbrella of the Puget Sound Harbor Safety Committee. This Standard of Care (SOC) is not intended to replace existing company and vessel procedures, it simply institutionalizes sound marine operating practices that responsible vessel operators follow voluntarily. Other sections of the HSP



contain weather related guidance, and in particular, the Anchoring SOC is applicable. This SOC covers commercial operations; recreational boats should consult other portions of the plan for guidance. The risks discussed in this SOC have been identified as threats to the port during heavy weather. Initially, a Heavy Weather Workgroup developed standards that consolidate best practices and provide a guide to mitigate these risks. Some more recent minor modifications have been made.

A. WEATHER CONDITIONS FOR PETROLEUM TRANSFERS:

Action Items:

- Vessels- follow the Lightering Standards of Care Guidelines
- Facilities- follow heavy weather procedures in their facility operations manual.

This section principally applies to facilities and vessels transferring to or from a vessel of 250 bbls (approx. 10,500 gallons or 39,900 liters) capacity or more, i.e. the applicability in 33 Code of Federal Regulations 156. However, Washington state has oil transfer rules, i.e. 173-180 WAC and 173-184 WAC, that also address oil transfer operations involving vessels of less than 250 bbls fuel and cargo oil capacity. Companies are strongly urged to incorporate weather criteria into all their guidance on non-internal petroleum transfers, and in certain circumstances are required under state regulations to include weather criteria in making determinations for safe and effective transfer operations. Good sources of guidance include industry standards such as the American Waterways Operators (AWO) Responsible Carrier Program. Transfer operations away from the dock, whether lightering or bunkering, will be conducted under the same weather stipulations outlined in the Puget Sound Harbor Safety Committee Lightering Standards of Care, and the Anchoring Standards of Care. The wind and sea conditions criteria have been developed with industry input and are used by operating companies in the area. These standards are based on historical observations and experience in handling these vessels under prevalent conditions.

At the Dock transfers: At regulated facilities, all personnel and vessels shall follow procedures outlined in the facility operations manual. Each facility ops manual should have specific written criteria, individually tailored for local conditions, that spell out what thresholds trigger extra precautions or transfer suspension. Petroleum transfers at non-regulated facilities, including vessel to vessel transfers, should follow the weather criteria in the Lightering Standards of Care.

B. MOORING BUOYS- OPERATING POLICIES AND WEATHER CRITERIA.

Action items:

- For the West Seattle buoys, follow procedures established by BUOYS-R-US.
- Follow written heavy weather procedures established by buoy owners, including evaluation of size and characteristics of the vessel to be moored, and the forecasted weather conditions.

Barges and vessels made up to a mooring buoy can be of concern during periods of heavy weather. Barges on the West Seattle mooring buoys owned by BUOYS-R-US and managed by the Marine Exchange of Puget Sound will, as a matter of policy, be moved off the buoys and relocated to more secure moorings when impending winds are expected to reach or exceed sustained speed of 30 MPH. Companies that have or are thinking of establishing commercial mooring buoys are encouraged to follow this model. For commercially used mooring buoys, buoy owners should develop individual written guidelines that address the following:

- Location, including any specific unique characteristics users should be aware of;

- Maintenance procedures and intervals, including position checks;
- Maximum number, type and size of barges/vessels allowed on the buoy;
- Restrictions on operations;
- Plans for reducing the number of barges moored during periods of heavy weather, including specific weather criteria, and a company person responsible for monitoring the situation.

C. GENERAL MOORING POLICIES/BREAKAWAY PREVENTION

Action Items:

- Follow individual port/terminal guidelines as available.
- Individual Facilities and terminals- develop written heavy WX plan that address mooring configurations and peculiarities for the given facility.

Good mooring practices are the best preventative measure during heavy weather (HEAVY WEATHER TO BE DESCRIBED AS ANY PERIOD WHEN GALE FORCE WINDS ARE FORECASTED THAT WOULD CAUSE THE MOORING BUOYS TO BE CLOSED). The vessel master and terminal operator jointly share the responsibility to ensure prudent actions are taken. Due to the individual nature of each terminal/vessel configurations, it would be too complex to write specific guidelines into the HSP. Individual ports and SSA have guidelines that should be followed. For unmanned locations, the vessel master is responsible for securing the vessel properly, monitoring it as appropriate, and should be mindful of the issues applicable at terminals that could apply to their situation. At manned facilities, each terminal should develop a written heavy weather plan that at a minimum addresses the following:

- Mooring configurations for each anticipated vessel type
- Minimum number, size, and positioning of all lines for foreseeable weather conditions.
- Standards and responsibilities for monitoring weather and taking appropriate actions, including after hours, and reporting as appropriate to the Coast Guard.
- Standards for making rounds of the facility, and ensuring the satisfactory material condition of mooring facilities, cleats, bollards, piers, etc.
- Plans and criteria for moving vessels to alternate locations should the need arise.
- Any abnormalities particular to that terminal and pier that could affect safe mooring.
- Maximum number of barges/vessels permitted to raft together for given weather conditions.
- Standards for securing rafted vessels to each other and to the mooring or pier.

**D. DERELICT AND DILAPIDATED UNATTENDED VESSELS
(ABANDONED BUT NOT YET DERELICT), AND OTHER HAZARDS
TO NAVIGATION**

Action Items:

- Report sightings to the Captain of the Port, particularly if any may threaten safe navigation or public health and safety to the environment.

If these types of vessels are observed while mariners are going about their business in the port, they should be reported to the Captain of the Port as soon as possible. This applies especially to vessels that are moored or anchored precariously and threaten to become hazards to navigation, as well as objects that are actively creating a hazard to navigation.

Although the vessel owner retains responsibility to remove a derelict vessel, the Washington Department of Natural Resources (DNR) has the authority to take temporary possession of vessels posing an imminent threat to public health and safety to the environment in order to safeguard same and, subject to due process and funding availability, may permanently remove and dispose of the derelict or abandoned vessel.

**E. DEEP-DRAFT VESSELS UNDERWAY, HIGH RISK LOCATIONS,
AND VESSELS WITH PROBLEM HISTORIES**

Action Items:

- Call for additional tugs or take other action early, before dangerous situations develop.
- Consult Puget Sound Pilots and the U.S. Coast Pilot to identify high risk areas.

In all cases, the vessel master and pilot should make a proactive evaluation of the current and forecasted weather, and if necessary delay movement, call for additional tugs, or take other appropriate measures. Vessels which have particular attributes that introduce additional risk should be especially sensitive to environmental conditions that take advantage of the vessel's weaknesses. High risk areas in the Puget Sound region include:

- North and Sound bound transits of the eastern Strait of Juan de Fuca via Haro or Rosario Straits
- Admiralty Inlet (in vicinity of Partridge Point)
- Southern end of the Straits of Georgia.

Masters and Pilots should consult the Coast Pilot and other sources of local knowledge when transiting these areas, and be pre-pared for strong tides, currents, and weather conditions.

Vessels with problem histories are those that the COTP has noted as:

- Having experienced previous propulsion control or steering problems
- Having lost anchors or damaged anchors
- Having poor or negligent operating histories.

F. TUGS WITH TOW UNDERWAY, HIGH RISK LOCATIONS, TOW CONFIGURATION /CARGO DEPENDENT

Action Items:

- Close all watertight openings on the tug and tow
- Reduce speed when necessary, post extra lookouts to monitor the tow
- Inspect terminal gear, including bridle, pendant, chafe gear, drum and brake; ensure compliance with 33 CFR 164.74.

Tug masters must be especially cognizant of the high risk areas as out-lined in the above paragraph. The areas to be transited and forecasted weather and tidal/current conditions should be considered when deciding tow configurations, cargo, and size and type of barges to be used. During periods of heavy weather, tug masters should take the actions covered in the “Action items” portion of this SOC.

G. LOG TOWS AND STORAGE

Action Items:

- Check the condition of the log rafts before towing.
- Consider raft size, tug capability, and expected weather and current conditions.
- Assign personnel to check condition of logs in storage, including end chains, buoys, etc.
- Take prompt action in the event of loose or damaged bundles; recover loose logs.

Because of the lack of maneuverability and dangers associated with log tows breaking up, companies engaged in log storage or towing should have written guidance for their masters and other operational personnel. For tows, masters should make positive evaluations prior to getting underway to check the current and forecasted weather, applicable tides and currents, suitability of the tug for the tow size, and any other factors.

For logs in storage, personnel should be assigned to check all storm booms (end chains and floatation), buoys (strain) and standing booms (end chains and floatation), for damage, loose bundles or spillage of logs. Depending on wind direction and number of bundles in the boom, action may be required to tighten or loosen tie lines to relived strain. If damage is observed, the deck officer on watch shall notify dispatch immediately and take appropriate action to recover or affect necessary repairs.

H. RECREATIONAL VESSELS

Action Items:

- Ensure that all prudent actions have been taken to minimize water entry into the vessel.
- Check the condition of anchor and mooring lines, pendants, chafe gear.
- Move vessels to safe areas or remove from water before severe weather.

I. FERRIES (WASHINGTON STATE FERRIES (WSF), COUNTY AND PRIVATE.)

Action Items:

- Masters must adhere to written policies concerning heavy weather procedures.

WSF has its own internal practices that address the risks on each particular run. However, county and private ferries do not necessarily have their own written policies. Each company should have written guidance directing vessel masters to take weather conditions into account during operations. Particular attention should be paid to the prevailing and forecasted weather conditions at all docks to be visited, as well as on the planned route, and other alternative possibilities should conditions become too severe.

J. BRIDGE POLICY

Action Items:

- Use the U.S. Coast Pilot and Notice to Mariners to determine if bridge issues may impact a voyage.

There are several bridges over major waterways in the Puget Sound Region, and their operations could be curtailed due to heavy weather or other problems. General policies are outlined in the Coast Pilot, and emergent issues will be addressed either through the Local Notice To Mariners, or Broadcast Notice to Mariners. Mariners should use these resources to determine in advance if their planned voyage will be impacted.

K. FISH FARMS

Action Items:

- Develop and maintain company policy to address heavy weather concerns.
- Ensure fish pens are secured and monitored as per company policy as available.

L. CARGO HANDLING, CRANE OPERATIONS, CARGO SECURING

Action Items: Individual Facilities should develop written heavy WX plan that address:

- Designation of a person to monitor weather, and assess need for additional security.
- Moor IAW the mooring section of this SOC.
- Shore crane securing and tiedown requirements (per manufacturer's instructions).
- Container/cargo height reductions and location away from the water or other hazardous areas.
- General operating equipment securing.
- Applicable federal, state, local, as well as contractual labor safety regulation compliance.

Each individual cargo handling operation has its own unique operating concerns requiring more or less procedural oversight, depending on the complexity of the operation and its exposure to the weather elements. In any case, heavy weather procedures are a critical centerpiece of a company's emergency response plan, regardless of location in Puget Sound. Port, pier, terminal and dock authorities, operators and/or owners are encouraged to conduct annual reviews of internal heavy weather procedures specific to vessel/dock operations at their facilities. Procedures should be updated and distributed to key personnel to ensure the safety of employees, cargo, equipment, the public and the environment during periods of heavy weather. Procedures should cover all the items in the "Action items" portion of this SOC.

M. FLOATING PLANT, DREDGING, PORT OPERATIONS

Action Items:

- Adhere to written policy for modifying/securing operations under certain WX conditions.
- Identify a safe anchorage/moorage for each job.
- Proactively consider the activity's impact on safe navigation in all WX conditions.

Companies that conduct these types of relatively fixed operations should also be cognizant of the impact of heavy weather. Companies should develop written guidance to operations supervisors to take into account current and forecasted weather, and have specific plans for ceasing operations and moving to a safe anchorage or mooring at a specific weather threshold. Operations supervisors should be especially cognizant of how their operations impact navigable waterways. For further guidance, see the HSP Anchoring Standards of Care.

N. POTENTIAL VESSEL TRAFFIC SERVICE ACTIONS

VTS Actions: VTS Puget Sound will monitor vessels underway and at anchor, and the general port areas as much as is practicable. VTS will provide weather warnings as outlined in the PSVTS Users Manual: <http://www.uscg.mil/d13/psvts/>. If Coast Guard intervention in a situation is absolutely necessary to ensure safety, VTS actions may include directing vessels to anchor or raise anchor, seek sheltered areas, increase position reporting requirements, require stand-by tugs, and / or control vessel movements to mitigate the threats posed by heavy weather.

O. POTENTIAL CAPTAIN OF THE PORT (COTP) ACTIONS

Action Items:

- Direct bunkering and lightering operations to cease.
- Direct hazardous materials and explosives loading to cease.
- Direct changes in mooring configuration or location for vessels at terminals.
- Direct vessel movement including course/speed.
- Direct vessels to seek shelter and hold position.
- Require stand-by tugs or tugs in attendance.

If individuals or vessels are not taking actions to mitigate the risks posed by heavy weather, the COTP is authorized under various Federal laws to take or direct certain actions, including but not limited to those described in the “Action items” section of this SOC.

P. REPORTING PROCESS TO THE COAST GUARD

Everyone can take ownership in making the waterways safe during heavy weather, just as anyone located on the water can be affected by weather induced problems. Mariners going about their business in the port should report any actual or potential problems on or near the water to the Captain of the Port at 206-217-6001, or via VTS for VTS participants. If anything appears out of place, or if any vessels, boats or barges in the port are tied up in a less than safe or prudent manner, a timely report to the Coast Guard can prevent such events. If the Coast Guard identifies unsafe situations, they will, if time permits, bring the situation to the attention of the party responsible for it. If the responsible party is not taking timely action, then the CG will assist them in doing so, by helping to identify and organize other resources. If the responsible party is not taking action, and does not look capable or willing to do so, then the COTP may issue directions to compel action, or take independent actions to mitigate unsafe situations for which the responsible party may be liable for.

Q. WEATHER RESOURCES

For real-time weather information in the Puget Sound region, go to <http://www.wrh.noaa.gov/sew/>. Here you will find information on latest weather conditions, forecasted weather, watches and warnings, and much more.

