FLOODING OF ENGINE ROOM

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	ACTION TO BE TAKEN (NOT NECESSARILY IN ORDER)
	Immediate Action
☐	Sound the general alarm and order all E/R staff to standby the engine room.
☐	Commence pumping bilges with bilge pump; activate emergency bilge suction and any other pump that may be linked to the bilge system e.g. general service pump.
☐	At sea alter ships course away from danger and to ease the motion of the ship. If safe emergency anchorage available, anchor the vessel A.S.A.P.
☐	If ship is in imminent danger of sinking due to loss of buoyancy, consider beaching the vessel.
☐	Consult current voyage damage stability for flooding of the E/R.
☐	If ship is in port call for shore assistance; salvage pumps, divers etc.
	Communication
☐	Call for assistance if vessel in grave or imminent danger; inform Port Control / VTIS if applicable.
☐	Notify Company of the vessel location; extent of flooding; damage; action taken; assistance requested; and authorities advised. THE INFORMATION MUST BE PRECISE to enable the Company to fully assess the situation. **SEE OVERLEAF**
☐	Establish regular communication schedule with Company and provide situation report. Have pipeline schematic and ER arrangement plans to hand and use them to reference valves etc.
☐	Check and close all non-essential seawater intake and overboard valves. Check and close all ballast and freshwater tank valves.
☐	Check seawater intakes by changing over from low to high intakes and isolating each one individually.
☐	To prevent damage, shut down and isolate plant as and when necessary, prior to it becoming flooded.
☐	Move portable equipment and spares that are likely to be damaged by the water higher up or out of the E/R to protect it.
☐	Check emergency generator ready for starting.
☐	Every effort must be made to **MINIMISE POLLUTION**. Pump contaminated water to slop tanks. Consideration should also be given to pumping to cargo tanks in consultation with Unicorn. Keep the local authorities advised of the situation and prevent measures taken.
☐	Systematically check for the source of the leak. • **NEVER ASSUME** that valves are closed - check and recheck. • Marine growth can obstruct the ships side valves and prevent the seats from seating properly. Opening and closing the valves a number of times may dislodge the growth. • Refer to the schematic drawing and ensure every possible source of the leak has been checked. • Keep the Company fully advised on what has been done and ensure that all parties are referring to the same drawing.
☐	Establish source of leak and take appropriate action in consultation with the Company.
☐	Save VDR data, following the instructions posted.

	CONTINGENCY PLAN FOR FLOODING OF ENGINE ROOM
1.	Flooding of the engine room can result in a major loss of buoyancy and total loss of propulsion and electrical power. It can occur as follows -: • Damage to hull plating due to impact e.g. from grounding. • Fractured ships side valve. • Leaking pipeline pressurised by a pump; an open or passing ships side intake valve or overboard valve; a head of water from sea or a ballast or freshwater tank. • Fractured tank bulkhead e.g. afterpeak or sloptank; • Human error e.g. opening a sea strainer or stripping a valve while it is under pressure.
2.	**React quickly** - Try to establish the source of the leak as soon as possible and shut it off.
3.	If this is not possible, try to **contain the situation** by • Pumping bilges using as many pumps and the biggest pumps as possible; activate the emergency bilge suction. • Eliminating sources of flooding by closing all non-essential ships side valves and tank valves. Checking cooling water intakes by switching over the seawater intakes. NOTE: If the vessel is underway the main engine should be kept running until the vessel is well clear of any danger. • Commencing a controlled shut down of plant and equipment prior to it becoming damaged by water. Engines or electric motors that have been stopped prior to being flooded are relatively easily cleaned and recommissioned. • Using the cooling water pumping system to pump out the bilge by carefully opening the cover of the seawater strainer ensuring that the line is not pressurised and allowing the bilge water to cascade into the strainer and be pumped overboard with the cooling water circulating pump.
4.	If underway the vessel should be steered away from any danger or anchored in a safe anchorage as quickly as possible. If safe to do so, alter course to ease the motion the vessel. Heavy rolling will cause heavy surging (waves) of water in the bilges that will damage pipework and fittings and will extend the height of water damage to the plant.
5.	Establish contact with the Company and provide detailed information on the location, extent of flooding and damage, and what has been done to stop and contain it (reference should be made to pipeline drawings etc). The Company being in a less stressful environment should be able to accurately assess the situation and provide advice to the Master and CEO.
6.	Every effort must be made to **minimise pollution**. Keep a log of all events, communications, precautions taken to prevent pollution and any decisions that may have an adverse effect on pollution prevention.
7.	If the bilges were reasonably clean at the time of flooding the oil residues will float to the top of the water and there should be little or no pollution when pumping. When the level of the contaminated water is reached it should be pumped via the oily water separator or to the slop tank(s). Limit the volume of clean water to the slop tank to retain sufficient space for the contaminated water. If there is insufficient slop tank space consideration should be given to pumping slops to empty or partially full cargo tanks, however this should be done in close liaison with the Company. Keep a lookout for pollution and keep the local authorities advised of the situation.
8.	**Systematically and thoroughly check for the source of the leak. NEVER ASSUME** that valves are closed, **check each and every one** and mark them off against the schematic pipeline

	drawing. Ships side valves can become clogged with marine growth and should be opened and closed a number of times to clear it. This should be routinely done in service to prevent build up of marine growth. To isolate all possible sources of flooding excluding hull damage, it may be necessary to shut down the entire plant except for the emergency generator. This will determine if the side valves are tight. If the water still continues to rise recheck each valve. If the flooding has stopped open valves one at a time while monitoring the water level. Once it starts to rise the last valve that was opened is the likely source of flooding and this should be checked.
9.	Calls to the vessel's mobile and satellite telephones during the emergency may provide a major distraction to the Master, and consideration should be given to posting a dedicated officer on the bridge to handle and filter all communications.
10.	Guidance is provided by the following publication. • **PERIL AT SEA AND SALVAGE** ○ Chapter 1 Assistance, including salvage assistance. ○ Chapter 2 Communications ○ Chapter 3 Casualty reports ○ Chapter 4 Evaluation of situation ○ Chapter 5 Action when ship is disabled but not aground. ○ Accidental flooding.