

to the cargo manifold, as is practicable.

(a) Reducers, adapters, bolts, washers, nuts, and gaskets to allow at least two simultaneous transfer connections to be made from the vessel's cargo manifold to 15-centimeter (6-inch), 20-centimeter (8-inch), and 25-centimeter (10-inch) cargo hoses. All reducers must be permanently marked with sizes.

(b) One extra set of adapters, bolts, washers, nuts, and gaskets per reducer set must be carried as spares.

(c) Reducers, bolts, and gaskets must meet the requirements of 46 CFR 56.25. Cast iron and malleable iron must not be used.

[CGD 91-045, 59 FR 40188, Aug. 5, 1994, as amended by CGD 91-045, 61 FR 39789, July 30, 1996; USCG-1998-3799, 63 FR 35531, June 30, 1998]

**§ 157.415 Bridge resource management policy and procedures.**

(a) Not later than February 1, 1997, a tankship owner or operator shall provide written policy and procedures to masters and officers in charge of the navigational watch concerning the need for continuously reassessing how bridge-watch resources are being allocated and used, based on bridge resource management principles. This written policy and procedures must include vessel and crew specific examples that address the following:

(1) The number of qualified individuals that should be on watch to ensure that all duties can be performed effectively.

(2) The appropriate qualifications of all members of the navigational watch, the importance of confirming that all members of the watch are fit for duty, and the need to ensure that all members of the navigational watch are not impaired by fatigue.

(3) The need to take into account any known limitation in qualifications or fitness of individuals when making navigational and operational decisions.

(4) The need to be clear and unambiguous in assigning duties and the need to establish that the individual understands his or her responsibilities.

(5) The need to perform tasks in a clear order of priority and to adjust the priority of tasks as circumstances may require.

(6) The importance of assigning and reassigning members of the watch to locations where they can perform their duties most effectively.

(7) Conditions that warrant task reassignment among members of the watch.

(8) The instruments and equipment necessary for the effective performance of each task and appropriate actions if the instruments and equipment are not available or not functioning properly.

(9) The need for, and examples of, clear, immediate, reliable, and relevant communication among members of the navigational watch.

(10) The action to be taken to suppress, remove, and avoid nonessential activity and distractions on the bridge.

(11) The importance of collecting, processing, and interpreting all essential information and making it conveniently available to other members of the navigational watch and the pilot, as necessary to perform their duties.

(12) The need to ensure that non-essential materials are not placed on the bridge.

(13) The need to ensure that members of the navigational watch are prepared to respond at all times efficiently and effectively to changes in circumstances.

(b) Beginning not later than February 1, 1997, a tank barge owner or operator shall not permit the barge to be towed unless those individuals assigned to duties that are similar to the duties of the officer in charge of a navigational watch on the primary towing vessel have been provided written bridge resource management policy and procedures as specified in paragraph (a) of this section.

[CGD 91-045, 61 FR 39789, July 30, 1996]

**§ 157.420 Vessel specific watch policy and procedures.**

(a) Not later than February 1, 1997, the owner or operator of a tankship shall provide written policy and procedures to masters concerning the need for each individual who is newly employed on board the vessel to have a reasonable opportunity to become familiar with the shipboard equipment, operating procedures, and other arrangements needed for the proper performance of their duties, before being