§ 157.600 Purpose and applicability.

(a) The purpose of this subpart is to establish mandatory safety and operational requirements to reduce environmental damage resulting from the discharge of other non-petroleum oil.

(b) This subpart applies to each tank vessel specified in § 157.01 of this part that—

(1) Is 5,000 gross tons or more;

(2) Carries other non-petroleum oil in bulk as cargo or cargo residue; and

(3) Is not equipped with a double hull meeting § 157.10d of this part, or an equivalent to the requirements of § 157.10d, but required to be equipped with a double hull at a date set forth in 46 U.S.C. 3703a (b)(3) and (c)(3).

§ 157.610 Operational measures.

An owner or operator of a tank vessel that carries other non-petroleum oil in bulk as cargo or cargo residue shall comply with the requirements in all sections of subpart G of this part.

APPENDIX A TO PART 157—DAMAGE ASSUMPTIONS, HYPOTHETICAL OUTFLOWS, AND CARGO TANK SIZE AND ARRANGEMENTS

1. *Source.* The procedures for the damage assumption calculations contained in this Appendix conform to Regulations 24, 25, and 26 of Annex I of the International Convention for the Prevention of the Pollution from Ships, 1973, done at London, November 2, 1973.

2. *Assumptions.* For the purpose of calculating hypothetical outflow from tank vessels, three dimensions of the extent of damage of a parallelepiped on the side and bottom of the vessel are assumed.

(a) For side damage, the conditions are as follows:

Damage	Conditions
(1) Longitudinal extent l_c	$\frac{1}{3}\ L^{2/3}$ or 14.5 m, whichever is less.
(2) Transverse extent (t_c) (inboard from the vessel's side at right angles to the centerline at the level corresponding to the assigned summer freeboard).	B —or 11.5 m, whichever is 5 less.
(3) Vertical extent (v_c)	From the base line upwards without limit.

(b) For bottom damage, two conditions to be applied individually to the stated portions of the vessel, as follows:

Damage	Conditions	
	For 0.3L from the forward perpendicular of ship	Any other part of ship
(1) Longitudinal extent (l_s)	L/10	L/10 or 5 meters, whichever is less.
(2) Transverse extent (t_s)	B/6 or 10 meters, whichever is less but not less than 5 meters.	5 meters.
(3) Vertical extent from the base line (v_s).	B/15 or 6 meters, whichever is less	B/15 or 6 meters, whichever is less.

3. *Hypothetical Outflow of Oil.* (a) The hypothetical outflow of oil in the case of side damage (O_c) and bottom damage (O_s) is calculated by the following formula with respect to compartments breached by damage to all conceivable locations along the length of the vessel to the extent as defined in section 2 of this Appendix.

(1) For side damages: Formula

$$O_c = \Sigma\, W_i + \Sigma\, K_i C_i$$

(2) For bottom damage: Formula II

$$O_s = \tfrac{1}{3}(\Sigma\, Z_i W_i + \Sigma\, Z_i C_i)$$

Where:

W_i=Volume of a wing tank assumed to be breached by the damage as specified in section 2 of this Appendix; W_i for a segregated ballast tank may be taken equal to zero;

C_i=Volume of a center tank assumed to be breached by the damage as specified in section 2 of this Appendix; C_i for a segregated ballast tank may be taken equal to zero;

$$K_i = 1 - \frac{b_i}{t_c}$$

when b_i is equal to or greater than t_c, K_i is equal to zero;

$$Z_i = 1 - \frac{h_i}{v_s}$$

when h_i is equal to or greater than v_s, Z_i is equal to zero;

b_i=Minimum width of wing tank under consideration measured inboard from the vessel's side at right angles to the centerline at the level corresponding to the assigned summer freeboard; and