§ 38.15–20

devices, shall be installed in these spaces. Electric motors shall be seg-
regated from these spaces by a gastight bulkhead. Electric lighting of the ex-
plosion-proof type may be installed in these spaces provided all switching is
done from outside the space.
(c) All cargo tanks, piping, valves,
etc., shall be effectively grounded to
the vessel’s hull. Tanks with an insu-
lated inner shell (primary barrier)
shall have an effective grounding bond
to the outer shell (secondary barrier)
or to the vessel’s hull.
(d) Electric submerged motor cargo
pumps may be used, when in compli-
ance with the following requirements
and subject to approval by the Com-
mandant.
(1) Design details of the submerged
motor pump, with an evaluation of the
cooling efficiency of the product being
pumped, shall be submitted.
(2) Provisions shall be made to ex-
clude air from the tanks containing
cargo in either vapor or liquid phase.
The pump motor shall be deenergized
when this condition is not satisfied.
(3) A liquid level sensing device shall
automatically shut down the motor
and sound an alarm at a predetermined
low liquid level. The alarm location
may be the station from which cargo
handling is controlled or such other loca-
tion outside the cargo area as is ac-
pceptable to the Commandant.
(4) Details of the power cable, tank
penetrations and pump connections
shall be submitted.
(5) An auxiliary means of emptying
the cargo tanks shall be provided in ac-
cordance with § 38.10–10(d).
(6) Means for positively dis-
connecting the power supply between
the switchboard and the pump power
panel shall be provided, i.e., disconnect
links, lockable breakers, etc.
(7) All materials used in the fabrica-
tion of the submerged motor cargo
pumps shall be suitable for use with
the liquid cargo at the design pressures
and temperatures.

§ 38.15–20 Remote shutdowns—TB/
ALL.

(a) All machinery associated with
cargo loading, unloading, or cooling
shall be capable of being shut down
from a remote location. This location
may be the station from which the
cargo handling is controlled or such
other location outside the cargo area
as is acceptable to the Commandant.
(b) [Reserved]

Subpart 38.20—Venting and
Ventilation

§ 38.20–1 Venting—T/ALL.

(a) Each safety relief valve installed
on a cargo tank shall be connected to a
branch vent of a venting system which
shall be constructed so that the dis-
charge of gas will be directed vertically
upward to a point which shall extend
to a height above the weather deck
equal to at least one-third the beam of
the vessel and to a minimum of at least
10 feet, and shall terminate at a com-
parable distance from any other living
or working space, ventilator inlet, or
source of vapor ignition. When special
conditions will prevent the vent line
header outlets being permanently in-
stalled at a height above the deck of
one-third the beam of the vessel, then
an adjustable system shall be provided
which, when extended vertically, shall
be capable of reaching a height of one-
third the beam of the vessel.
(b) The capacity of branch vents or
vent headers shall depend upon the
number of cargo tanks connected to
such branch or header as provided for
in the table 38.20–1(b), and upon the
total safety relief valve discharge ca-
pacity.

<table>
<thead>
<tr>
<th>Number of cargo tanks</th>
<th>Percent of total valve discharge</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 or 2</td>
<td>100</td>
</tr>
<tr>
<td>3</td>
<td>90</td>
</tr>
<tr>
<td>4</td>
<td>80</td>
</tr>
<tr>
<td>5</td>
<td>70</td>
</tr>
<tr>
<td>6 or more</td>
<td>60</td>
</tr>
</tbody>
</table>

(c) In addition to the requirements
specified in paragraphs (a) and (b) of
this section, the size of the branch
vents or vent headers, shall be such
that the back pressure in the relief
valve discharge lines shall not be more
than 10 percent of the safety relief
valve setting. In nonpressure vessel
vent systems, however, where the max-
imum back pressure of 10 percent of

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