



DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
1322 PATTERSON AVENUE, SE SUITE 1000 (757) 322-4203
WASHINGTON NAVY YARD DC 20374-5065

9000
Ser CIENG/167

FEB 01 2007

From: Commander, Naval Facilities Engineering Command

Subj: INTERIM TECHNICAL GUIDANCE (ITG) FY07-01, SHORE TO SHIP POWER

Ref: (a) OPNAVINST 11310.3B Operation and Maintenance Policy for
Shore to Ship Power
(b) CNO WASHINGTON DC R 221910Z FEB 06
(c) NAVSEA WASHINGTON DC R 300510Z JAN 07
(d) UFC 4-150-02, "Dockside Utilities for Ship Service" available at
http://www.wbdg.org/ccb/DOD/UFC/ufc_4_150_02.pdf

Encl: (1) Revised Attachment 2-1.3 to enclosure (1) of OPNAVINST 11310.3B

1. Purpose. The purpose of this guidance is to provide revised basic criteria concerning the design and operation of shore to ship power service.

2. Discussion. Recent failures of shore power critical components resulted in publication of reference (a). Reference (b) directed shore activities and regions to adjust the long-time pickup settings of the 450 Volt shore to ship power service circuit breakers for submarines so that they match the nominal ratings of equipment on the submarine and shore power cables and connectors. Reference (c) provides technical concurrence to increase the shore power service circuit breaker long time over current trip settings. Additionally, a clarification of cable requirements in enclosure (1), attachment 2-1.3 of reference (a) has been identified.

3. Action.

a. Design & Operation. For both new and existing installations, the following criteria is established:

1) At the time reference (a) was written the second sentence in paragraph 6.a of enclosure (1) provided nominal ratings and settings as follows:

“(Currently, the nominal ratings for joy plug connectors and External Hull Fittings (EHFs) are 400 amperes. If the 400 Ampere setting is not a standard setting on the existing equipment then the next higher setting is acceptable.)”

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Based on the technical concurrence of reference (c), this sentence should now state:

“(Currently, the limiting rating for equipment on the submarine is 435 amperes. If the 435 ampere setting is not a standard setting on the existing equipment then the next higher setting is acceptable.)”

2) Reference (a), enclosure (1), attachment 2-1.3 is revised and provided as enclosure (1) to this document.

b. Criteria: Reference (d) will be revised to incorporate all applicable changes.

4. Point of Contact. For clarification or additional information related to this subject, please contact Mr. John Peltz, P.E, DSN 262-4208, commercial (757) 322-4208, email john.peltz@navy.mil.


F. B. COLE, Jr.
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SUPERSEDED

CONDUCTOR – CLASS I, UNIDIRECTIONAL LAY-UP, MAXIMUM RESISTANCE: 0.0238 OHMS/1000FT AT 25°C.

CONDUCTOR INSULATION – EPR PER ICEA S-75-381.

ABRASION RESISTANCE TEST IN ACCORDANCE WITH ISO 4649 – INDEX OF 50 MINIMUM.

PHYSICAL AND AGING TESTS IN ACCORDANCE WITH ICEA S-75-381.

TEAR RESISTANCE, MINIMUM, 20LB/IN.

UN-AGED VALUES.

TENSILE STRENGTH, MINIMUM – 1200 PSI.

ELONGATION AT RUPTURE, MINIMUM % – 150.

AFTER AGING IN AIR 168 HOURS AT $121 \pm 1^\circ\text{C}$.

TENSILE STRENGTH, MINIMUM % OF UN-AGED VALUE – 75.

ELONGATION AT RUPTURE, MINIMUM % OF UN-AGED VALUE – 75.

LONG TERM INSULATION RESISTANCE IN 75°C WATER SHALL BE IN ACCORDANCE WITH UL 44.

CONDUCTOR JACKET (ENHANCED PLUS ONLY) – CPE OR HYPALON – COMPOSITE, TYPE RHH/RHW-2.

ABRASION RESISTANCE IN ACCORDANCE WITH ISO 4649 – INDEX OF 50 MINIMUM.

PHYSICAL AND AGING TESTS IN ACCORDANCE WITH ICEA S-75-381.

TEAR RESISTANCE, MINIMUM, 30 LB/IN.

UN-AGED VALUES.

TENSILE STRENGTH, MINIMUM – 2000 PSI.

ELONGATION AT RUPTURE, MINIMUM % – 400.

OVERALL JACKET – MOLD CURED, TWO LAYER REINFORCED JACKET FILLING THE CABLE INTERSTICES.

INNER WALL – HEAVY DUTY CPE.

PHYSICAL AND AGING TESTS IN ACCORDANCE WITH ICEA S-75-381.

UN-AGED VALUES.

TENSILE STRENGTH, MINIMUM – 1800 PSI.

ELONGATION AT RUPTURE, MINIMUM % – 300.

AFTER AGING IN AIR 168 HOURS AT $100 \pm 1^\circ\text{C}$.

TENSILE STRENGTH, MINIMUM % OF UN-AGED VALUE – 85.

ELONGATION AT RUPTURE, MINIMUM % OF UN-AGED VALUE – 55.

OUTER WALL – EXTRA HEAVY DUTY CPE.

ABRASION RESISTANCE IN ACCORDANCE WITH ISO 4649 – INDEX OF 75 MINIMUM.

PHYSICAL AND AGING TESTS IN ACCORDANCE WITH ICEA S-75-381.

TEAR RESISTANCE, MINIMUM, 50 LB/IN.

UN-AGED VALUES.

TENSILE STRENGTH, MINIMUM – 2400 PSI.

ELONGATION AT RUPTURE, MINIMUM % – 300.

AFTER AGING IN AIR 168 HOURS AT $100 \pm 1^\circ\text{C}$.

TENSILE STRENGTH, MINIMUM % OF UN-AGED VALUE – 70.

ELONGATION AT RUPTURE, MINIMUM % OF UN-AGED VALUE – 55.

ENHANCED & ENHANCED PLUS THOF SPECIFICATION

REVISED: CIEE

JANUARY 31, 2007

ATTACHMENT 2-1.3