

a sentence between commas reading, "as with any activity which qualifies under a nationwide permit" in § 330.11(c). That portion of the sentence confuses the intent of the paragraph and was supposed to be deleted from draft documents.

EFFECTIVE DATE: January 12, 1987.

FOR FURTHER INFORMATION CONTACT: Mr. Sam Collinson at (202) 272-1782.

SUPPLEMENTARY INFORMATION: 1.

Accordingly, the Corps of Engineers is correcting the **SUPPLEMENTARY INFORMATION** on page 41217 under the heading "**SECTION 328.3: Definitions:** By changing "40 CFR 328.3(a)(3)" to read "33 CFR 328.3(a)(3)".

2. The Corps is also correcting § 330.11(c).

§ 330.11(c) [corrected]

If the district engineer decides that an activity does comply with the terms and conditions of a nationwide permit he will so notify the general permittee. In such cases, the general permittee's right to proceed with the activities under the nationwide permit may be modified, suspended, or revoked only in accordance with the procedures of 33 CFR 325.7.

John O. Roach, II,

Army Liaison Officer with the Federal Register.

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ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 52

[A-5-FRL-3133-8]

Approval and Promulgation of Implementation Plans; Michigan

AGENCY: U.S. Environmental Protection Agency (USEPA).

ACTION: Final rulemaking.

SUMMARY: USEPA is today approving, as a revision to the Michigan State Implementation Plan (SIP), Consent Order No. 12-1984 for sulfur dioxide (SO₂) as it applies to the Consumer Power Company (CPC), J.H. Campbell plant in Ottawa County, Michigan. The plant is located in an area classified as attainment for the National Ambient Air Quality Standards (NAAQS) for SO₂.

Consent Order No. 12-1984 for the J.H. Campbell plant allows the plant's Units 1 and 2 to emit SO₂ at the following rates on a daily basis for a 3-year (1985-1987) period: 1985 (4.88 lb/MMBTU); 1986 (4.78 lb/MMBTU); and 1987 (4.68 lb/MMBTU).

The Consent Order represents a reduction from the previous (1980-1984) 6.6 lbs SO₂/MMBTU allowable emission rate but is higher than the underlying 1.66 lbs SO₂/MMBTU emission limit in the Michigan SIP. An acceptable attainment demonstration was provided which shows that the proposed limits will protect the SO₂ NAAQS and the Prevention of Significant Deterioration (PSD) increments.

EFFECTIVE DATE: This final rulemaking is effective February 11, 1987.

ADDRESSES: Copies of this revision to the Michigan SIP are available for inspection at: The Office of the Federal Register, 1100 L Street NW., Room 8301, Washington, DC.

Copies of this SIP revision and other materials relating to this rulemaking for inspection at the following addresses: (It is recommended that you telephone Ms. Toni Lesser, at (312) 886-6037, before visiting the Region V office.)

U.S. Environmental Protection Agency, Region V, Air and Radiation Branch (5AR-26), 230 South Dearborn Street, Chicago, Illinois 60604

U.S. Environmental Protection Agency, Public Information Reference Unit, 401 M Street SW., Washington, DC 20460
Michigan Department of Natural Resources, Air Quality Division, State Secondary Government Complex, General Office Building, 7150 Harris Drive, Lansing, Michigan 48821

FOR FURTHER INFORMATION CONTACT: Ms. Toni Lesser, Michigan Regulatory Specialist, (312) 886-6037.

SUPPLEMENTARY INFORMATION: On May 31, 1972 (37 FR 10842), USEPA approved Michigan's Rule 336.49, imposing statewide emission limitations for control of SO₂ emissions from power plants. On January 17, 1980, Michigan revised and recodified R336.49 as R336.1401; these revisions were not substantive. Rule 336.1401 contains emission limits and compliance dates identical to those in R336.49.

On May 6, 1980 (45 FR 29795), USEPA approved R336.1401. Rule 336.1401 contains a 1.0 percent sulfur content in fuel limitation for large coal-burning power plants, with a compliance date of July 1, 1978. Under this rule, a source could obtain an exemption from meeting the SO₂ limit up until January 1, 1980, if certain specified conditions were met. Pursuant to State regulations adopted in January 1980, a source may apply to the Michigan Air Pollution Control Commission (MAPCC) for a compliance date extension beyond January 1, 1980. Any such compliance date extensions must be incorporated into a legally enforceable State order and must be

submitted to USEPA as a revision to the federally approved SIP.

On December 24, 1980 (45 FR 85004), USEPA approved as a SIP revision Final Order No. 05-1979 for the CPC's J.H. Campbell plant, which extended the final date for achieving compliance with R336.1401 from January 1, 1980, to December 31, 1984. The J.H. Campbell plant is located in Port Sheldon Township, Ottawa County, Michigan, approximately 1 kilometer east of Lake Michigan. Ottawa County was designated as an attainment area for SO₂ on October 5, 1978 (45 FR 45993). Consent Order No. 5-1979 contained provisions that SO₂ emissions from the J.H. Campbell Plant Units 1 and 2 were not to exceed 6.6 lbs/MMBTU on a daily basis (or 3.05 percent sulfur in coal on an annual average basis) between January 1, 1980, and December 31, 1984.

On June 18, 1984, the MAPCC approved Stipulation for Entry of Consent Order and final Order No. 12-1984, which provided for an additional 3-year compliance date extension (January 1, 1985-December 31, 1987) for J.H. Campbell Units 1 and 2, and which established interim daily average SO₂ emission limitations and quarterly average limits on percent sulfur in fuel fired. On October 1, 1984, Michigan Department of Natural Resources (MDNR) submitted the Stipulation for Entry of Consent Order and Final Order, SIP No. 12-1984, between the CPC and the MAPCC as a revision to Michigan's SIP. USEPA's July 1, 1985, proposed rulemaking summarizes the provisions of Consent Order No. 12-1984 (50 FR 27030).

Public comments on USEPA's July 1, 1985, proposed action were received from the Ministry of the Environment, Province of Ontario, Canada. A summary of these comments and USEPA's responses follow:

Comment: United States and Canada signed a Memorandum of Intent in August of 1980 in which it was agreed "... to develop a bilateral agreement to combat transboundary air pollution ... [and] to make certain interim actions including the vigorous enforcement of existing laws and regulations." Ottawa asks that USEPA adhere to this agreement and, therefore, deny the compliance date extension for Consumer Power.

Response: The SO₂ SIP revision for J.H. Campbell was reviewed with respect to the requirements in the Clean Air Act. Because the interim SO₂ emission limits will protect the SO₂ NAAQS and the SIP revision satisfies the requirements of Section 110(a)(2) of the Clean Air Act, USEPA is, therefore,

required by law to approve the proposed revision.

Comment: USEPA should disapprove the proposed revision in order to be consistent with the July 26, 1985 Order by the U.S. District Court for the District of Columbia in *New York v. Thomas*, No. 84-0853. This decision dealt with a petition by several states and environmental groups and ordered USEPA to act under Section 115 of the Clean Air Act with regard to acid rain damage to Canada.

Response: On September 24, 1985, USEPA appealed this decision. On November 21, 1985, the District Court stayed its Order pending the appeal. Therefore, this Order has no immediate impact on the approvability of SIP revisions which comply with the requirements of the Clean Air Act.

Comment: SO₂ emissions from the J.H. Campbell plant contribute to the overall atmospheric loading of pollutants which are subsequently deposited on sensitive ecosystems. This long-range transport and acid deposition are the result of an aggregate of emissions on the continent, and emission sources cannot be considered in isolation. Acid deposition is currently detrimental to sensitive aquatic ecosystems in both United States and Canada.

Response: USEPA is actively researching the nature and effects of acidic deposition. In a further step in the bilateral process between the United States and Canada, special envoys were appointed to evaluate the acid deposition problem, and issued a report, including recommendations, in January 1986.

During the past several years, there have been several challenges to USEPA's approval of SO₂ SIP revisions (e.g., Commonwealth Edison, Kincaid; Tennessee Valley Authority, Kingston; Indianapolis Power & Light Company, Indiana and Michigan Electric Northern Indiana Public Service Company and Public Service Indiana plants in Indiana; and Long Island Lighting Company) based on allegations that the revisions were inconsistent with the Clean Air Act, and that they would contribute to acid deposition. These challenges were based on arguments and technical information related to acid deposition, sulfates, etc., which was similar to that submitted by Ontario in this rulemaking. In each decision in these cases, the court upheld the approval under the existing provisions of the Clean Air Act, and denied the petition (see *Connecticut v. USEPA*, 696 F.2d 147 (2d Cir. 1982); *New York v. USEPA*, 716 F.2d 440 (7th Cir. 1983); *New York v. USEPA Administrator*, 710 F.2d 1200 (6th Cir. 1983); *New York v. Gorsuch*, No. 82-1717

(7th Cir.); *New York and Connecticut v. Gorsuch*, No. 82-2059 (7th Cir.).

On December 5, 1984, (49 FR 48152), USEPA made a final determination on the Section 126 petitions filed by Pennsylvania, New York and Maine. The petitions dealt with the consideration of the accumulated impacts of midwestern SO₂ emissions on the northeastern U.S. environment. USEPA concluded that no demonstration had been made that these emissions interfered with attainment or maintenance of the NAAQS or the PSD increments. The J.H. Campbell plant SO₂ SIP revision was reviewed in a manner consistent with the way in which USEPA reviewed the SIP revisions involved in the above referenced Circuit Court cases. Therefore, USEPA has satisfied its responsibilities under the Clean Air Act for the J.H. Campbell plant revision.

In summary, Consent Order No. 12-1984 reduced the allowable SO₂ emissions from the Consumer Power Company, J.H. Campbell plant in Ottawa County, Michigan, from the 6.6 lbs/MMBTU allowed in 1984 to 4.88 lbs/MMBTU in 1985, 4.78 lbs/MMBTU in 1986 and 4.68 lbs/MMBTU in 1987. USEPA's technical support documents of November 30, 1984, October 11, 1985, and June 5, 1986, provide a detailed discussion of USEPA's review of the air quality modeling analysis, PSD applicability, and response to public comments.

On July 8, 1985 (50 FR 27892), USEPA promulgated revisions to its stack height regulations, pursuant to section 123 of the Clean Air Act. The regulations do not apply to stack heights "in existence" on or before December 31, 1970. A stack is considered "in existence" if the owner or operator had, by December 31, 1970: (1) Begun a continuous program of physical on-site construction of the stack; or (2) entered into a binding agreement or contractual obligation, which could not be cancelled or modified without substantial loss, to undertake a program of construction to be completed within a reasonable time. USEPA has determined that the stack serving J.H. Campbell Units 1 and 2 was constructed before 1968 and is, therefore, not subject to USEPA's stack height regulations.

The 198 meter (m) stack serving Unit 3 was constructed in 1980 at the same time as Unit 3 was constructed, and is subject to the stack height regulations. As such, it is subject to the Good Engineering Practice formula of 40 CFR 51.1 (ii)(2)(ii). Using the J.H. Campbell building dimensions and diagrams supplied by MDNR, the stack height credit calculated using the formula is

200 m. The 198 m stack is, therefore, properly creditable under the revised regulations for the stack, and was the basis for the air quality modeling analysis submitted by the State.

Michigan's January 1986 report (submitted February 4, 1986) on its implementation of USEPA's stack height regulations provided the State's determination that the Consumers Power J.H. Campbell plant's SO₂ emission limit was not based on stack height or dispersion credit greater than allowed by the stack height regulations. Based on the foregoing, the SO₂ SIP revision for the Consumer Power J.H. Campbell plant is consistent with USEPA's revised stack height regulations.

USEPA has reviewed the State of Michigan's request for a 3-year SO₂ compliance date extension from R336.1401 for the CPC J.H. Campbell plant and finds that the analyses (1) are consistent with USEPA's modeling guidelines; and (2) indicate that the revised SO₂ emission limitations for the J.H. Campbell Plant will not cause or contribute to a violation of the SO₂ NAAQS in Michigan or any other State and will protect the PSD increments in Ottawa County. USEPA is today approving this revision to the Michigan SO₂ SIP. This revision represents a reduction from the 1980-1984, 6.6 lbs/MMBTU allowable emission rate, but is higher than the 1.66 lbs/MMBTU allowable rate in the underlying Michigan SO₂ SIP. The Consent Order between Michigan and CPC requires compliance with R336.1401 prior to January 1, 1988. An acceptable attainment demonstration was provided which shows that the proposed limits will protect the SO₂ NAAQS and PSD increments.

The Office of Management and Budget has exempted this rule from the requirements of section 3 of Executive Order 12291.

Under section 307(b)(1) of the Act, petitions for judicial review of this action must be filed in the United States Court of Appeals for the appropriate circuit by March 13, 1987. This action may not be challenged later in proceedings to enforce its requirements. (See section 307(b)(2).)

List of Subjects in 40 CFR Part 52

Air pollution control, Sulfur oxides, Intergovernmental relations, Incorporation by reference.

Note.—Incorporation by Reference of the State Implementation Plan for the State of Michigan was approved by the Director of the Federal Register on July 1, 1982.

Dated: December 5, 1986.

Lee M. Thomas,
Administrator.

Part 52 of Chapter I, Title 40 of the Code of Federal Regulations is amended as follows:

PART 52—[AMENDED]

Subpart X—Michigan

1. The authority citation for Part 52 continues to read as follows:

Authority: 42 U.S.C. 7401-7642.

2. Section 52.1170, is amended by adding paragraph (c)(81) as follows:

§ 52.1170 Identification of plan.

(c) * * *

(81) On October 1, 1984, the State of Michigan submitted the Stipulation for Entry of Consent Order and Final Order, SIP No. 12-1984, between the Consumer Power Company's J.H. Campbell and the Michigan Air Pollution Control Commission as a revision to the Michigan SO₂ SIP. Consent Order No. 12-1984 provides a 3-year compliance date extension (January 1, 1985, to December 31, 1987) for the J.H. Campbell Units 1 and 2 to emit SO₂ at an allowable rate on a daily basis of 4.88 lbs/MMBTU in 1985, 4.78 lbs/MMBTU in 1986, and 4.68 lbs/MMBTU in 1987.

(i) Incorporation by reference.

(A) October 1, 1984, Stipulation for Entry of Consent Order and Final Order, SIP No. 12-1984, establishing interim daily average SO₂ emission limitations and quarterly average limits on percent sulfur is fuel fired.

[FR Doc. 87-458 Filed 1-9-87; 8:45 am]

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DEPARTMENT OF THE INTERIOR

Bureau of Land Management

43 CFR Public Land Order 6636

[AZ-940-07-4220-11; A-12954]

Arizona; Partial Revocation of Reclamation Project Withdrawal

AGENCY: Bureau of Land Management, Interior.

ACTION: Public land order.

SUMMARY: This order partially revokes a reclamation project withdrawal affecting approximately 389.06 acres of national forest lands currently classified for exchange. After revocation of the withdrawal, the underlying lands will remain segregated from entry by a

pending Forest Service exchange application.

EFFECTIVE DATE: January 12, 1987.

FOR FURTHER INFORMATION CONTACT: John T. Mezes, BLM, Arizona State Office, P.O. Box 16563, Phoenix, Arizona 85011 (602) 241-5529.

By virtue of the authority vested in the Secretary of the Interior by section 204 of the Federal Land Policy and Management Act of 1976, 90 Stat. 2751; 43 U.S.C. 1714, and by an Act of Congress dated November 7, 1986, and a U.S. District Court order of November 25, 1986, it is ordered as follows:

1. Secretarial order of December 14, 1904, as interpreted by Order of May 19, 1964, which withdrew lands for the Horseshoe Reservoir Site, is hereby revoked insofar as it affects the following described land:

Gila and Salt River Meridian

T. 5 N., R. 7 E.,

Sec. 31, Lots 1, 2, 3, W $\frac{1}{2}$ E $\frac{1}{2}$, E $\frac{1}{2}$ NW $\frac{1}{4}$, SE $\frac{1}{4}$ SE $\frac{1}{4}$.

The area described contains 389.06 acres in Maricopa County.

2. Upon revocation of the withdrawal, the lands described above will immediately become available for a pending Forest Service exchange.

J. Steven Griles,

Assistant Secretary of the Interior.

January 5, 1987.

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BILLING CODE 4310-32-M

DEPARTMENT OF TRANSPORTATION

Coast Guard

46 CFR Part 160

[CGD 84-069a]

Lifesaving Equipment; Immersion Suits

AGENCY: Coast Guard, DOT.

ACTION: Final rule.

SUMMARY: The Coast Guard is revising the specifications for approval of exposure suits. Existing approvals for exposure suits under 46 CFR 160.071 will be terminated on the effective date of these regulations and new approvals will be issued for immersion suits under 46 CFR 160.171 after supplemental testing. Existing vessels may continue to use exposure suits approved under 46 CFR 160.071 as long as the suits remain serviceable. Ships, the construction or conversion of which started on or after July 1, 1986, will be required to have immersion suits approved under 46 CFR 160.171. The changes are needed to conform the regulations to the

International Convention for Safety of Life at Sea, 1974 (SOLAS 74), as amended.

EFFECTIVE DATE: April 13, 1987. The Director of the Office of the Federal Register has approved the material incorporated by reference as of April 13, 1987.

ADDRESS: The comments, final evaluation, and materials referenced in this notice will be available for examination and copying between 7:30 a.m. and 4 p.m., Monday through Friday, except holidays, at the Marine Safety Council (G-CMC/21), Room 2110, U.S. Coast Guard Headquarters, 2100 Second Street SW., Washington, DC 20593.

FOR FURTHER INFORMATION CONTACT: LCDR William M. Riley (202) 267-1444.

Drafting Information: The principal author of this final rule is LCDR William M. Riley, Office of Marine Safety, Security, and Environmental Protection, assisted by the Office of the Chief Counsel.

SUPPLEMENTARY INFORMATION: On June 17, 1983, the International Maritime Organization (IMO) adopted the Second Set of Amendments to SOLAS 74. These amendments, which enter into force on July 1, 1986, will require "immersion suits" to be carried on board certain vessels on an international voyage. Exposure suits approved under 46 CFR 160.071 are already required to be carried on U.S. vessels, and substantially meet the requirements for immersion suits. However, the specification for immersion suits contained in Regulation 33 of Chapter III of SOLAS 74 includes a number of requirements which differ from those contained in § 160.071. This final rule will bring the U.S. regulations into line with the treaty with respect to nomenclature, test subjects, donning over clothing, donning at low temperature, storage temperature, flame and oil exposure, impact resistance, water ingress, hand dexterity after immersion in cold water, freeboard, and righting.

Existing U.S. standards, which exceed the SOLAS 74 requirements, will be retained. In particular, the United States will continue to refuse approval of uninsulated and non-buoyant immersion suits, which are permitted by SOLAS 74. Uninsulated and non-buoyant suits do not provide an acceptable level of protection because they require layers of woolen clothing to be worn under the suit for warmth and a life preserver to be worn over the suit to provide flotation. The extra time required to don the clothing and life preserver may result in a loss of life.

In order to distinguish between approved suits which meet SOLAS 74 requirements and those which do not, the Coast Guard will change the nomenclature of the suits from "exposure suit" to "immersion suit" and also use the approval number markings on the suits to make the distinction. Current approvals for exposure suits under subpart 160.071 will be terminated on the effective date of these rules. New approvals for immersion suits will be issued when supplemental testing has been performed. New ships subject to SOLAS 74 will be required to have immersion suits meeting the requirements of SOLAS 74. Existing ships and those not subject to the SOLAS 74 requirements may retain previously approved exposure suits as long as they are serviceable. The results will be an orderly phase-out of the currently-approved suits with a minimum of hardship to vessel operators and manufacturers.

Requirements for certain vessels to carry immersion suits will be addressed in a separate rulemaking. Advance notice of that rulemaking project was published in the *Federal Register* of December 31, 1984 (49 FR 50745). The requirements for approval of immersion suits need to be treated separately so that manufacturers can develop products to comply with the specification by the time the shipowners begin placing orders for them.

A Notice of Proposed Rulemaking was published on February 4, 1986 (51 FR 4401), and invited comments for 90 days ending May 5, 1986. Comments were received from eleven sources including five current manufacturers of exposure suits, one independent laboratory, two associations of shipowners, and three individuals. The following summarizes the comments, suggestions, and actions taken.

Foot Valves

Four comments appealed to the Coast Guard to eliminate the "requirement" for foot valves to expel air from the legs of the suit during a head-first dive into the water. The comments stated that the valves leak, that air in the legs does not prevent a wearer from attaining an upright position, and that any air in the suit provides added buoyancy and insulation. The existing regulations for exposure suits do not require foot valves. Nothing in the proposed rule for immersion suits would have required foot valves. The language of the proposed rule, unchanged from the existing rule, required "a means to prevent air from accumulating in the legs during a head first jump." Foot valves are only one method of

addressing this requirement. There are exposure suits currently approved which incorporate other means. We believe that the more stringent leak tests mandated by SOLAS 74/83 will effectively eliminate features of suits which increase leakage, including any poor designs of foot valves. Air trapped in the suit is not to be relied on to provide any part of the required buoyancy or insulation. SOLAS 74/83, Chapter III, Reg. 33, section 1.1.4 requires that an immersion suit be "proved with arrangements to minimize or reduce free air in the legs of the suit." This more flexible wording has been incorporated in the final rule.

Leak Tests

One current manufacturer objected to the proposed leak/water ingress tests as unreasonably stringent. This comment advanced the theory that the small amount of leakage allowed by SOLAS 74/83 was prompted by the fact that water entering an uninsulated immersion suit will lessen the insulating value of the clothing worn underneath. The comment therefore proposed that the leakage rate not apply to insulated suits to the type approved in the U.S. This rulemaking is not the proper forum to renegotiate the IMO standards. Furthermore, the comments received concerning foot valves indicate that users of the suits are not satisfied with leakage rates in some currently approved exposure suits. Therefore the proposed leak test is retained in the Final Rule.

Oil Exposure Test

Three comments addressed the oil exposure test. Two current manufacturers objected to the test as too stringent because it involves immersing the suit completely in diesel oil for 24 hours. This oil exposure test is required by SOLAS 74/83, Chapter III, Reg. 30, section 2.4. Therefore this comment is rejected. Two existing exposure suits are known to have passed this test.

The independent laboratory suggested that a specific grade of oil be used for the test. The suggestion that a specific grade of oil be used has merit and has been adopted.

Cost

Two current manufacturers and the independent laboratory provided useful information concerning the cost of testing for approval, which has been used in the preparation of the Final Evaluation.

Freeboard

One manufacturer objected to the application of the SOLAS 74/83

lifejacket freeboard requirement to immersion suits. It is true that regulation 33 of Chapter III, which covers immersion suits, does not contain a freeboard requirement. However, that regulation also does not discuss buoyant immersion suits, except in the context of an immersion suit complying with regulation 32 of SOLAS 74/83 Chapter III for lifejackets. The only other option discussed is an immersion suit worn in conjunction with a lifejacket. Therefore we feel that any buoyant immersion suit is intended to perform in a manner equivalent to a lifejacket to the extent possible. The added buoyancy to increase freeboard by only 1/4 inch is considered feasible.

Righting

Two comments addressed the issue of making the suits self-righting. An existing manufacturer of exposure suits expressed the opinion that self-righting is not practical. The independent laboratory pointed out that automatic inflation mechanisms currently available, which might be used in a self righting design, may not function properly in cold water. Nothing in the proposed rule would have required immersion suits to be self-righting. The opportunity has been provided, however, for creative use of automatically inflated auxiliary buoyancy units to lift or turn the unconscious wearer to a position where breathing is not impeded. The minimum standard remains that a conscious wearer must be able to turn to a face up position, and that any auxiliary buoyancy unit, whether inflated or not, must not interfere with this ability. The language describing the righting test has been revised to increase clarity without altering the requirements of the proposed rule. The discovery that some automatic inflation mechanisms may not function properly in cold water is an important consideration. A reference to the commercial hybrid PFD specification has been added to ensure the evaluation of the cold-water performance of such mechanisms, if they are used.

Nomenclature

One individual objected to the change of name of the "survival suit" to immersion suit. The comment stated that the term immersion suit has less impact and does not convey the importance of the item. However, the term "survival suit" is not used in the current regulations and the Coast Guard discourages its use because it has no specific legal definition. Since the term "immersion suit" is the one used in international requirements for the suits,

this nomenclature is expected to be the most readily understood by shipboard personnel, shipping companies, manufacturers, and law enforcement personnel worldwide.

Need for New Specification

One association of shipowners objected to any change in the specifications to comply with SOLAS 74/83, citing the preamble to previous rulemaking document which stated that current designs of exposure suits substantially comply with the treaty. We still believe that basic designs of existing exposure suits will comply with little or no modification. However, we would be remiss if we failed to incorporate the essential elements of the SOLAS 74/83 requirements in our domestic regulations. Advance testing by some manufacturers has already revealed that minor modifications in design and construction techniques will be needed on some suits.

Uninsulated and Non-buoyant Suits

The same comment also called for the Coast Guard to approve uninsulated and non-buoyant suits. To do so would be to take a giant step backwards in marine safety. The extra time required to don layers of heavy clothing under an immersion suit and/or a lifejacket over the suit might result in a loss of life. We cannot assume that all hands will already be up and about and dressed for cold weather when the signal to abandon ship is sounded. Indeed, the weather can be deceptively warm while the water temperature is cold enough to bring on death by hypothermia quickly. The approval of uninsulated and/or non-buoyant immersion suits was one of the alternatives considered in the Draft Evaluation, and was also discussed in the Preamble to the Proposed Rule. Numerous cases could be envisioned where uninsulated or nonbuoyant suits would decrease the chances of survival. Therefore this comment is rejected.

Sizes

The same comment questioned the value of oversize adult suits, since the person who needs such a suit may be at a work station, where only adult universal size suits are stowed, in an emergency. One manufacturer, meanwhile, suggested that a "small adult" size suit be approved, to provide a better fit on persons near the boundary between adult and child sizes. These two comments illustrate the dilemma faced in balancing conflicting desires of various interest groups. Shipowners cannot predict the mixture of sizes needed to provide a custom fit for all the crewmembers on a

commercial vessel. Aboard vessels required to carry the suits, a minimum number of sizes to cover the population is desired. Each crewmember must, however, be provided with a suit that fits well enough to save one's life. The same applies to a small adult who needs a child size suit. It is the Coast Guard's belief that all such persons will fit into one of the currently specified sizes. The selection of test subjects in these rules ensure that the fit of the suits is evaluated at the extremes of the size range.

Removable Gloves

One comment suggested that removable gloves be prohibited, on the grounds that the gloves could be cut off and discarded to make the suit more convenient to wear for everyday work. This argument is not convincing. There is no reason to cut the tether and discard a glove that is already removable. It is more likely that an integral glove would be cut off. Any such modification of the suit would invalidate its approval. There is no requirement that any manufacturer offer a suit with removable gloves. The option is desirable to some purchasers, however, and we see no reason to prohibit it.

Storage

The same comment objected to any proposal to change the required method of storage of the suit. This comment has no merit. Nothing in the existing rules specifies how the suit is to be rolled or folded in its storage case, and nothing in the proposed rules would have imposed or changed such a requirement.

Instructions

The same comment submitted a proposed illustration of the correct method of donning for use in their instructions. Incorporating this illustration into the manufacturer's instructions is a part of the approval process and not of this rulemaking.

Another current manufacturer proposed that a committee of manufacturers be chartered by the Coast Guard to develop a standard instruction booklet and oversee its printing, apportioning the cost among all manufacturers. This comment also made a proposal to appoint a chairman of the committee. The Coast Guard is not in a position to mandate participation in such a project, particularly the cost-sharing aspect of the printing. We certainly would not presume to appoint one manufacturer to a position of authority over others. However, we will consider incorporating any industry

standard which the manufacturers develop voluntarily.

Supplementary Testing

The independent laboratory submitted various suggestions concerning which tests need to be conducted on existing suits. This is an administrative matter to be determined by a thorough review of each manufacturer's file after the final rule is published.

Face Coverage

The independent laboratory requested clarification concerning whether the regulation prohibits the face from being covered. Neither the existing regulation nor the revised regulation would prohibit the face from being covered provided visibility is not impaired.

Hand Dexterity Test

The independent laboratory recommended that a physician be present during the hand dexterity test, and that the option remain to conduct it after the thermal protection test. It is anticipated that all hand dexterity tests will be conducted in conjunction with the thermal protection test, for reasons of economy. We believe it is clear from the language of the proposed rule that the hand dexterity test may be conducted after the thermal protection test. We have added language cautioning that a physician must be present during the hand dexterity test, and clarifying that the test subjects in the thermal protection test may be used for the hand dexterity test.

Retroreflective Material

The independent laboratory recommended that the words "directly in front of the wearer" be deleted from the retroreflective material requirement. This point is well taken. The required retroreflective material should be distributed so that some of it is visible from any angle of view. The language of the final rule has been changed to require that the necessary amount of retroreflective material simply be visible above the water.

Temperature Cycling Test

The independent laboratory also commented that one sample should be sufficient for the temperature cycling test. The requirement for two samples is taken from IMO Resolution A-521. The cost of testing two samples versus one sample is considered reasonable and is retained.

Woolen Clothing

The independent laboratory objected to the requirement for certain articles of

woolen clothing to be worn by the test subjects in circumstances where that clothing might be damaged by water. The woolen clothing is specified in IMO Resolution A-521. We have added language in the final rule to authorize the use of synthetic materials which provide equivalent insulation.

Substitute Test Subjects

The independent laboratory requested that provision be made in the regulations for timid test subjects to be replaced by other subjects of the same anthropomorphic type, without regard to sex, when necessary for certain evolutions such as the jump test. Substitution of test subjects for a particular test, or the use of additional subjects for retest, are already allowed on a case-by-case basis. We are reluctant to grant blanket permission for substitution in the regulations since the fact that a test subject is not confident enough in the device to even attempt the test is itself valuable feedback. By retaining the option to evaluate such cases individually, the Coast Guard will maintain better control over the approval process. This request is therefore denied.

Annual servicing

One manufacturer proposed a requirement for annual servicing of suits. Suits required to be carried on inspected vessels are inspected annually by a Coast Guard officer. We see no need to mandate annual service by a manufacturer's representative or contractor.

Economic Analysis and Certification:

This final rule is considered to be non-major under Executive Order 12291 and non-significant under DOT regulatory policies and procedures (44 FR 11034; February 26, 1979). A final evaluation has been prepared and placed in the rule making docket. It may be inspected or copied at the address listed above under ADDRESSES. Copies may also be obtained by contacting the person listed under FOR FURTHER INFORMATION CONTACT.

The expected benefit of this rule will be compliance of U.S. Coast Guard approved immersion suits with the requirements of the International Convention for Safety of Life at Sea, 1974, as amended. The cost of this final rule to the public will be the cost of supplemental testing of existing designs of suits to meet the new requirements, which has been estimated at \$2,490 per adult size and \$245 per child size design. There are 21 adult and 3 child size suits approved, each of which would have to be retested. The total cost to the

manufacturers is therefore \$53,025. The cost to the government will be the cost of a government engineer to review the independent laboratory report of the supplemental testing, and the clerical cost to re-issue a certificate of approval for each suit design. This cost is estimated at \$150 per approval for a total of \$3,600, which would add between 3% and 6% to the cost of each suit sold over the next 5-10 years. This analysis assumes that current designs of suits will pass the supplemental testing. If any designs fail the tests, those manufacturers may incur additional costs to redesign their products, or may be forced out of the market. Based upon the estimated cost involved, the Coast Guard certifies that this final rule would not have a significant economic impact on a substantial number of small entities.

Paperwork Reduction Act

This rule making contains information collection requirements. These requirements have been previously submitted to the Office of Management and Budget for review under the Paperwork Reduction Act (44 U.S.C. 3501 *et seq.*) and have been approved by OMB under control number 2115-0141.

List of Subjects in 46 CFR Part 160

Marine safety, Incorporation by reference.

In consideration of the foregoing, 46 CFR Part 160 is amended as follows:

PART 160—LIFESAVING EQUIPMENT

Subpart 160.171—[Removed]

1. Subpart 160.071 is removed.
2. Subpart 160.171 is added to read as follows:

Subpart 160.171—Immersion Suits

Sec.	Scope.
160.171-1	Scope.
160.171-3	Incorporations by reference.
160.171-5	Independent laboratory.
160.171-7	Approval procedures.
160.171-9	Construction.
160.171-11	Performance.
160.171-13	Storage case.
160.171-15	Instructions.
160.171-17	Approval testing for adult size immersion suit.
160.171-19	Approval testing for child size immersion suit.
160.171-23	Marking.
160.171-25	Production testing.

Authority: 46 USC 3306; 49 CFR 1.46.

§ 160.171-1 Scope.

This subpart contains construction and performance requirements, and approval tests for adult and child insulated, buoyant immersion suits that

are designed to prevent shock upon entering cold water and lessen the effect of hypothermia (extreme body heat loss due to immersion in cold water). Immersion suits approved under this subpart will meet the requirements of Regulation 33 of Chapter III of the International Convention for Safety of Life at Sea (SOLAS), 1974, under the Second Set of Amendments adopted 17 June 1983.

§ 160.171-3 Incorporations by reference.

(a) Certain materials are incorporated by reference into this subchapter with the approval of the Director of the Federal Register in accordance with 5 USC 552(a) and 1 CFR Part 51. The Office of the Federal Register publishes a table, "Material Approved for Incorporation by Reference," which appears in the Finding Aids section of this volume. In that table is found citations to the particular sections of this part where the material is incorporated. To enforce any edition other than the one listed in paragraph (b) of this section, notice of change must be published in the Federal Register and the material made available. All approved material is on file at the Office of the Federal Register, Washington, DC 20408, and at the U.S. Coast Guard, Survival Systems Branch (G-MVI-3), Washington, DC 20593.

(b) The materials approved for incorporation by reference in this subpart are:

American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.

ASTM B 117-73 (Reapproved 1979), Standard Method of Salt Spray (Fog) Testing.

ASTM C 177-76, Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Guarded Hot Plate.

ASTM C 518-76, Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter.

ASTM D 975-81, Standard Specification for Diesel Fuel Oils.

ASTM D 1004-66 (Reapproved 1976), Tear Resistance of Plastic Film and Sheeting.

Federal Standards Specification Unit (WFSIA), Regional Office Building, Room 6039, 7th and D Streets SW, Washington, DC 20407.

National Bureau of Standards Special Publication 440—Color, Universal Language and Dictionary of Names; December 1976.

Federal Test Method Standard No. 191a dated July 20, 1978, Method 5304.1, Abrasion Resistance of Cloth, Oscillatory Cylinder (Wyzenbeek) Method, dated July 9, 1971.

Federal Standard No. 751a, Stitches, Seams, and Stitchings, dated January 25, 1965.

Underwriters Laboratories, Inc., 333 Pfingston Rd. Northbrook, IL 60062.

UL 1191, First Edition (Standard for Components for Personal Flotation Devices), as revised March 29, 1977.

§ 160.171-5 Independent laboratory.

The approval and production tests in this subpart must be conducted by an independent laboratory accepted by the Coast Guard under Subpart 159.010 of this chapter.

§ 160.171-7 Approval procedures.

(a) *General.* An immersion suit is approved by the Coast Guard under the procedures in Subpart 159.005 of this chapter.

(b) *Approval testing.* Each approval test must be conducted in accordance with § 160.171-17 or § 160.171-19.

(c) *Approval of child size and oversize adult suits.* No child size or oversize adult sized suit will be approved unless the adult size of the suit has been approved.

§ 160.171-9 Construction.

(a) *General.* Each immersion suit must be constructed primarily of a closed-cell flexible foam that meets the buoyancy and thermal insulation requirements in § 160.171-11 (a) and (c). Each suit must be designed to cover the wearer's entire body, except for the area of the nose and eyes. It must be capable of being worn inside-out or be clearly capable of being worn in only one way and, as far as possible, incapable of being donned incorrectly.

(b) *Impact resistance and body strength.* The body of each suit must be designed to allow the wearer to jump from a height of at least 4.5 m into the water without injury and without dislodging or damaging the suit.

(c) *Seams.* Stitching in each sewn structural seam of an immersion suit must be lock type stitching that meets the requirements in Federal Standard No. 751 for one of the following:

- (1) Class 300 Lockstitch.
- (2) Class 700 Single Thread Lockstitch.

Other stitches which are not true lock stitches may be used to reinforce a glued seam provided the adhesive alone has the required seam strength after the non-standard stitch has been removed.

(d) *Seam strength.* Each seam must have a strength of at least 225 Newtons (50 lb.).

(e) *Closures and seals.* Each closure and seal must be designed so that, following a jump from a height of not less than 4.5 m into the water, there is no undue ingress of water into the suit.

(f) *Hardware.* All hardware of an immersion suit must be of a size and design that allows ease of operation by the wearer. The hardware must be attached to the suit in a manner that

allows the wearer to operate it easily and that prevents it from attaining a position in which it can be operated improperly.

(g) *Metal parts.* Each metal part of an immersion suit must be—

(1) 410 stainless steel or have salt water and salt air corrosion characteristics equal or superior to 410 stainless steel; and

(2) Galvanically compatible with each other metal part in contact with it.

(h) *Suit exterior.* The primary color of the exterior of each suit must be vivid reddish orange (color number 34 of National Bureau of Standards Publication 440). The exterior surface of the suit must resist tearing and abrasion when tested as prescribed in § 160.171-17(n) and (o).

(i) *Buoyant materials and compartments.* Buoyant materials used in a suit must not be loose or granular. The suit must not have an inflated or inflatable chamber, except as prescribed in § 160.171-11(a)(2).

(j) *Hand and arm construction.* The hand of each suit must be a glove that allows sufficient dexterity for the wearer to pick up a 9.5 mm (3/8 in.) diameter wooden pencil from a table and write with it, after being immersed in water at 5° C for a period of one hour. The glove may not be removable unless it is attached to the arm and unless it can be secured to the arm or stowed in a pocket on the arm when not in use. A removable glove must be designed so that there is no undue ingress of water into the glove during use. Each arm with a removable glove must have a wristlet seal that meets paragraph (e) of this section.

(k) *Leg construction.* Each suit must be designed to minimize or reduce free air in its legs when the wearer enters the water headfirst.

(l) *Foot construction.* Each leg of a suit must have a foot that has a hard sole or enough room for a work shoe to be worn inside. The sole of each foot must be—

- (1) Natural or synthetic rubber that is ribbed or bossed for skid resistance; and
- (2) Designed to prevent the wearer from slipping when the suit is tested as prescribed in § 160.171-17(c)(5).

(m) *Size.* Each adult suit must fit persons ranging in weight from 50 kg (110 lb.) to 150 kg (330 lb.) and in height from 1.5 m (59 in.) to 1.9 m (75 in.). Each child size suit must fit children or small adults ranging in weight from 20 kg (44 lb.) to 50 kg (110 lb.) and in height from 1.0 m (39 in.) to 1.5 m (59 in.). An oversize adult suit is intended for persons too large for the standard adult suit. Each suit must be capable of being worn comfortably over clothing and must not restrict the wearer's motion.

The suit size and design must allow successful completion of the mobility tests prescribed in § 160.171-17(c)(2) through (7).

(n) *Retroreflective material.* Each immersion suit must be fitted with Type I retroreflective material that meets Subpart 164.018 of this chapter. When the wearer of an immersion suit is in any stable floating position, at least 200 cm² (31 sq. in.) of the material must be visible above water.

(o) *PFD Light.* Each immersion suit must be designed so that a light meeting the requirements of Subpart 161.012 of this chapter can be attached to its front shoulder area and so that the light when attached does not damage the suit and cannot adversely affect its performance. If the manufacturer of the suit designates a specific location for the light, or designates a specific model light, this information must be clearly printed on the suit or in the instructions prescribed by § 160.171-15(c).

(p) *Inflation tube.* If the suit has an inflatable auxiliary means of buoyancy, each joint in the oral inflation tube must be joined with a clamping device. A flange connection between the tube and the inflatable chamber must be reinforced so that the flange on the inflation tube is secured between the material of the inflatable section and the reinforcement.

§ 160.171-11 Performance.

(a) *Buoyancy.* Each suit must meet the following buoyancy requirements as measured in the test conducted under § 160.171-17(h):

(1) The adjusted buoyancy of each adult and each oversize adult size suit must be at least 100 N (22 lb.). The adjusted buoyancy of each child size suit must be at least 50 N (11 lb.). The measured buoyancy must not be reduced by more than 5% after 24 hours submersion in fresh water.

(2) Each suit must have a stable floating position in which the wearer's head must be tilted to a position between 30° and 80° above the horizontal, with the mouth and nose at least 120 mm (4 3/4 in.) above the surface of the water. If necessary, this position may be obtained through the use of an auxiliary means of buoyancy such as an inflatable bladder behind the wearer's head.

(3) If an auxiliary means of buoyancy is necessary to meet paragraph (a)(2) of this section, the suit must have a stable floating position without the auxiliary means of buoyancy in which the mouth and nose of the wearer are at least 50 mm (2 in.) above the surface of the water.

(4) The buoyancy of any auxiliary means of buoyancy must not be counted when determining the buoyancy of the suit.

(b) *Righting.* The suit must be designed to turn the body of an unconscious person in the water from any position to one where the mouth is clear of the water in not more than five seconds, without assistance or the use of any means of auxiliary buoyancy which must be inflated by the wearer; or to allow the wearer to turn from a face down to a face up position in not more than 5 seconds, without assistance or the use of any means of auxiliary buoyancy. If an automatically inflated means of auxiliary buoyancy is used to meet this paragraph, the inflation mechanism must meet the requirements for commercial hybrid PFDs in § 160.077-15(c) of this chapter, and the tests required under § 160.077-21(c)(3) of this chapter. Auxiliary buoyancy, if fitted and/or inflated, must not interfere with righting.

(c) *Thermal protection.* The suit must be designed to protect against loss of body heat as follows:

(1) The thermal conductivity of the suit material when submerged 1 m (39 in.) in water must be less than or equal to that of a control sample of 4.75 mm ($\frac{3}{16}$ in.) thick, closed-cell neoprene foam. The control sample of foam must have a thermal conductivity of not more than 0.055 watt/meter-°K (0.38 Btu-in./hr.-sq.ft.-°F).

(2) The suit must provide the wearer with sufficient thermal insulation, following one jump into the water from a height of 4.5 m, to ensure that the wearer's body core temperature does not fall more than 2° C (3.6° F) after a period of 6 hours immersion in calm circulating water at a temperature of between 0° C (32° F) and 2° C (35.6° F).

(d) *Donning time.* Each suit must be designed so that a person can don the suit correctly within two minutes after reading the donning and use instructions described in § 160.171-15(a).

(e) *Vision.* Each suit must be designed to allow unrestricted vision throughout an arc of 60° to either side of the wearer's straight-ahead line of sight when the wearer's head is turned to any angle between 30° to the right and 30° to the left. Each suit must be designed to allow a standing wearer to move head and eyes up and down far enough to see both feet and a spot directly overhead.

(f) *Water penetration.* An immersion suit must be designed to prevent undue ingress of water into the suit following a period of flotation in calm water of one hour.

(g) *Splash protection.* Each suit must have a means to prevent water spray

from directly entering the wearer's mouth.

(h) *Storage temperature.* Each suit must be designed so that it will not be damaged by storage in its storage case at any temperature between -30° C (-22° F) and +65° C (149° F).

(i) *Flame exposure.* Each suit must be designed to prevent sustained burning or continued melting after it is totally enveloped in a fire for a period of 2 seconds.

(j) *Oil resistance.* Each immersion suit must be designed to be useable after a 24 hour exposure to diesel oil.

§ 160.171-13 Storage case.

(a) Each suit must have a storage case made of vinyl coated cloth or material that provides an equivalent measure of protection to the suit.

(b) Each storage case must be designed so that it is still useable after two seconds contact with a gasoline fire.

§ 160.171-15 Instructions.

(a) Each suit must have instructions for its donning and use in an emergency. The instructions must be in English and must not exceed 50 words. Illustrations must be used in addition to the words. These instructions must be on the exterior of the storage case or printed on a waterproof card attached to the storage case or to the suit.

(b) If the suit has an inflatable auxiliary means of buoyancy, separate instructions covering the use of the inflation valve must be provided on the suit near the valve or on a waterproof card attached near the valve.

(c) Instructions for donning and use of the suit in an emergency must also be available in a format suitable for mounting on a bulkhead of a vessel. This placard must be in English, must include illustrations, and must include a warning as to the risk of entrapment in a submerged compartment due to the buoyancy of the suit.

(d) Instructions for donning and use of the suit in an emergency, instructions for care and repair of the suit, and any additional necessary information concerning stowage and use of the suit on a vessel must be available in 8½ x 11 loose-leaf format suitable for inclusion in the vessel's training manual.

§ 160.171-17 Approval testing for adult size immersion suit.

Caution: During each of the in-water tests prescribed in this section, a person ready to render assistance when needed should be near each subject in the water.

(a) *General.* An adult size immersion suit must be tested as prescribed in this section. If the suit is also made in a child

size, a child size suit must be tested as prescribed in § 160.171-19. If the suit is also made in an oversize adult size, an oversize adult suit must be tested as prescribed in § 160.171-17(g) to determine the measured buoyancy for the suit. No additional testing will be required if the oversize adult suit is of the same design as the adult suit except for extra material to provide for larger persons.

(b) *Test samples.* Each test prescribed in this section may be performed by using as many immersion suits as needed to make efficient use of the test subjects and test equipment, except that each subject in the impact test described in § 160.171-17(c)(11) must not use more than one suit during the test, and the suits used in the impact test must also be used in the thermal protection test described in § 160.171-17(d).

(c) *Mobility and flotation tests.* The mobility and flotation capabilities of each immersion suit must be tested under the following conditions and procedures:

(1) *Test subjects.* Seven males and three females must be used in the tests described in this paragraph. The subjects must represent each of the three physical types (ectomorphic, endomorphic, and mesomorphic). Each subject must be in good health. The heaviest subject, of either sex, must weigh at least 135 kg (298 lb.). The heaviest male subject must weigh at least 115 kg (254 lb.) and the lightest male subject must weigh not more than 55 kg (121 lb.). The heaviest female subject must weigh at least 115 kg (254 lb.) and the lightest female subject must weigh not more than 55 kg (121 lb.). Each subject must be unfamiliar with the specific suit under test. Each subject must wear a standard range of clothing consisting of:

- (i) Underwear (short sleeved, short legged);
- (ii) Shirt (long sleeved);
- (iii) Trousers (not woolen);
- (iv) Woolen or equivalent synthetic socks;
- (v) Rubber soled work shoes.

(2) *Donning time.* Each subject is removed from the view of the other subjects and allowed one minute to examine a suit and the manufacturer's instructions for donning and use of the suit in an emergency. At the end of this period, the subject attempts to don the suit as rapidly as possible without the aid of a chair or any support to lean on. If the subject does not don the suit completely, including gloves and any other accessories, within two minutes, the subject removes the suit and is given

a demonstration of correct donning, and again attempts to don the suit. At least nine of the ten subjects must be able to don the suit completely, including time to remove shoes if necessary, in two minutes in at least one of the two attempts.

(3) *Field of vision.* The immersion suit's field of vision must be tested as follows:

(i) While wearing a suit, each subject sits upright and faces straight ahead. An observer is positioned to one side of the subject at an angle of 60° away from the subject's straight-ahead line of sight. The observer must be able to see the subject's closest eye at this position. The observer then walks past the front of the subject to a position on the subject's other side that is at an angle of 60° away from the subject's straight-ahead line of sight. The suit must not obstruct the observer's view of the subject's eyes at any point between the two positions.

(ii) While wearing the suit, each subject stands upright and faces straight ahead. An observer is positioned to one side of the subject at an angle of 90° away from the subject's straight-ahead line of sight. The subject then turns his or her head through an arc of 30° toward the position of the observer. This procedure is repeated with the observer positioned on the other side of the subject at an angle of 90° away from the subject's straight ahead line of sight. The suit must not obstruct the observer's view of the subject's eyes when the subject's head is turned 30° toward the observer.

(iii) While wearing the suit, each subject stands upright and faces straight ahead. Through a combination of head and eye movement, the subject looks first at a spot directly overhead, then looks at a spot on or between the feet. An observer must verify that the subject can make the necessary head and eye movements while wearing the suit.

(4) *Hand dexterity.* A physician must always be present during this test. While wearing a suit, including a removable glove if any, and after being immersed in water at 5° C (41° F) for a period of one hour, each subject must be able to pick up a 9.5 mm (3/8 in.) diameter wooden pencil from a flat hard surfaced table using only one hand. Still using only one hand, the subject must be able to position the pencil and write with it. At least eight of the ten test subjects must be able to complete this test. This test may be performed in conjunction with the thermal protection test described in § 160.171-17(d), in which case five of the six test subjects specified in 160.171-17(d)(1) must be able to complete the test.

(5) *Walking.* A 30 m (100 ft.) long walking course must be laid out on a smooth linoleum floor. The finish on the floor must allow water to lie on it in a sheet rather than in beads. The course may have gradual turns, but must not have any abrupt change in direction. Each subject is timed walking the course two times at a normal pace with the floor dry. Each subject then dons a suit and is timed again walking the course two times with the floor wet. The subject is given adequate rest between trials to avoid fatigue. The subject must not slip on the wet floor when wearing the suit. The average time for each subject to walk the course while wearing the suit must be not more than 1.25 times the subject's average time to walk the course without the suit.

(6) *Climbing.* A vertical ladder extending at least 5 meters (17 feet) above a level floor must be used for this test. Each subject is timed climbing the ladder twice to a rung at least 3 meters (10 feet) above the floor. The subject then dons a suit and is again timed climbing to the same rung twice. The subject is given adequate rest between trials to avoid fatigue. The average time for each subject to climb the ladder while wearing the suit must be not more than 1.25 times the subject's average time to climb the ladder without the suit.

(7) *Swimming and water emergence test.* A pool with an inflatable liferaft at one side must be used for this test. The liferaft must be of a type approved under Subpart 160.051 of this Chapter and must not have a boarding ramp. Each subject, wearing a life preserver but not the immersion suit, enters the water and swims 25 m. The subject must then be able to emerge from the pool onto the liferaft using only the hands placed on top of the liferaft as an aid and without pushing off of the bottom of the pool. Any subject unable to emerge onto the liferaft within 30 seconds is disqualified for this test. At least five subjects must qualify and be used for this test. If less than five subjects of the original ten qualify, substitute subjects must be used. Each qualified subject, after sufficient rest to avoid fatigue, repeats this test wearing an immersion suit instead of the life preserver. At least two-thirds of the qualified subjects must be able to swim this distance, and emerge onto the liferaft within 30 seconds, wearing the immersion suit.

(8) *Stability and retroreflective material.* While wearing the suit in water without any auxiliary means of buoyancy, each subject assumes a face-up position and then allows his or her body to become limp. The distance from the water surface to the lowest part of the subject's mouth or nose is measured.

This procedure is repeated using the auxiliary means of buoyancy, if one is provided. For each test subject, the stable position and the distance of the mouth and nose above the water must be prescribed in § 160.171-11(a)(2) and § 160.171-11(a)(3). During this test, each subject must be viewed by observers to determine whether the retroreflective material of the suit meets § 160.171-9(n).

(9) *Righting.* Each subject while wearing a suit in water, without the use of any auxiliary means of buoyancy, takes a deep breath, assumes a face-down position, allows his or her body to become limp, and slowly expels air. The suit must cause the subject to turn to a position where the face is clear of the water within 5 seconds; or if the suit does not turn the subject within 5 seconds, the subject must be able to turn face up under his or her own power within 5 seconds. If the suit is provided with any means of auxiliary buoyancy, the procedure is repeated under each of the following applicable conditions:

(i) With any means of auxiliary buoyancy attached but not inflated;

(ii) With any means of auxiliary buoyancy which must be inflated by the wearer inflated according to the instructions; or

(iii) With any means of auxiliary buoyancy which inflates automatically inflated by its automatic mechanism.

(10) *Water and air penetration.* Each subject is weighed while wearing a pre-wetted suit without any auxiliary means of buoyancy. The subject jumps into water from a height that will cause the subject to be completely immersed. The subject swims or treads water for approximately one minute, emerges from the water, and is weighed within 10 seconds after emerging. The procedure is repeated with the subject entering the water headfirst. If air accumulates in the legs as the subject enters the water head-first, it must be expelled automatically. At the end of this test, the weight of the subject in the suit must not exceed the weight of the subject in the suit at the beginning of the test by more than 500 grams. Each test subject then re-enters the water and floats for a period of one hour. The subject then emerges from the water and is weighed within 10 seconds. The weight of the subject in the suit at the end of this test must not exceed the weight of the subject in the suit at the beginning of the period of flotation by more than 200 grams.

(11) *Impact.* While wearing a suit without any auxiliary means of buoyancy, each subject jumps into water feet first six times from a height of 4.5 m (15 ft.) above the water surface.

Each subject must be able to assume a face up stable position without assistance after each jump. The suit must not tear, separate at any seam, or exhibit any characteristic that could render it unsafe or unsuitable for use in water.

(d) *Thermal protection.* The thermal protection capability of a suit must be tested under the following conditions and procedures:

(1) *Test subjects.* Male subjects must be used for this test. Each subject must be familiarized with the test procedure before starting the test. Each subject must have somatotype parameters within the following ranges according to the Heath-Carter anthropometric method: endomorphy 3.5 ± 1.0 ; mesomorphy 4.0 ± 1.5 ; ectomorphy 3.5 ± 1.0 .

Note: The following publication, among others, contains guidance for use of the Heath-Carter anthropometric method: "Body Type and Performance," Hebbelinck and Ross; FITNESS, HEALTH AND WORK CAPACITY, INTERNATIONAL STANDARDS FOR ASSESSMENT; Larson, L. A. (Ed.); International Committee for the Standardization of Physical Fitness Tests; Macmillan: New York, 1974 (pp. 266-283).

Each subject must have had a normal night's sleep before the test, a well-balanced meal 1 to 5 hours before the test, and no alcoholic beverages for 24 hours before the test. In addition to the suit, each subject must wear:

- (i) Underwear (short sleeved, short legged);
- (ii) Shirt (long sleeved);
- (iii) Trousers (not woolen);
- (iv) Woolen or equivalent synthetic socks;
- (v) Work shoes, if the suit is designed for shoes to be worn inside.

(2) *Test equipment.* The test must be conducted in calm water with a temperature between 0°C (32°F) and 2°C (35.6°F). The air temperature 300 mm (1 ft.) above the water surface must be between minus 10°C (14°F) and 20°C (68°F). Each subject must be instrumented with an electrocardiograph, a thermistor or thermocouple in the rectum placed 150 mm (6 in) beyond the anus, thermistor or thermocouple in the lumbar region, a thermistor or thermocouple on the tip of the index finger, and a thermistor or thermocouple on the tip of the great toe. Each thermistor or thermocouple must have an accuracy of 0.1°C (0.18°F). The suits used in this test must be the same ones previously subjected to the impact test described in § 160.171-17(c)(11).

(3) *Test procedure.* A physician must always be present during this test. Before donning the suit, each subject rests quietly in a room with a

temperature between 10°C (50°F) and 25°C (77°F) for 15 minutes. The rectal temperature is then recorded as the initial rectal temperature. The subject dons a suit as rapidly as possible without damaging the instrumentation and immediately enters the water. The subject assumes a face-up, stable floating position. No auxiliary means of buoyancy may be used during this test. The subject remains in the water engaging in activity that maintains the heart rate between 50 and 140 per minute for the first hour, and between 50 and 120 per minute during the remainder of the test, except that no attempt is made to control heart rate if the subject is shivering. Each thermistor or thermocouple reading is recorded at least every 10 minutes.

(4) *Completion of testing.* Testing of a subject ends six hours after he first enters the water, unless terminated sooner.

(5) *Termination of test.* Testing of a subject must be terminated before completion if any of the following occurs:

- (i) The physician determines that the subject should not continue.
- (ii) The subject requests termination due to discomfort or illness.
- (iii) The subject's rectal temperature drops more than 2°C (3.6°F) below the initial rectal temperature, unless the physician determines that the subject may continue.
- (iv) The subject's lumbar, finger, or toe temperature drops below 10°C (50°F), unless the physician determines that the subject may continue.

(6) *Test results.* The test results must be prepared as follows:

(i) The total rectal temperature drop during the test period and the average lumbar, finger and toe temperature at the end of the test must be determined for each subject in the test, except subjects who did not complete testing for a reason stated in paragraph (d)(5)(i) or (d)(5)(ii) of this section. These temperatures and temperature drops must then be averaged. The average drop in rectal temperature must not be more than 2°C (3.6°F), and the average lumbar, toe and finger temperature must not be less than 5°C (41°F). Data from at least four subjects must be used in making these temperature calculations.

(ii) Rates of toe, finger, lumbar, and rectal temperature drop for each subject who did not complete testing for a reason stated in paragraph (d)(5)(iii) or (d)(5)(iv) of this section must be determined using the highest temperature measured and the temperature measured immediately before testing was terminated. These rates must be used to extrapolate to 6

hours the estimated rectal, finger, lumbar, and toe temperature at the end of that time. These estimated temperatures must be the temperatures used in computing the average temperatures described in paragraph (d)(6)(i) of this section.

(e) *Insulation.* Suit material must be tested under the following conditions and procedures, except that if the suit material meets the requirements for the control sample in paragraph (e)(1)(iii) of this section, the test procedure in paragraph (e)(2) of this section is not required.

(1) *Test equipment.* The following equipment is required for this test:

(i) A sealed copper or aluminum can that has at least two parallel flat surfaces and that contains at least two liters (two quarts) or water and no air. One possible configuration of the can shown in figure 160.171-17(e)(1)(i).

(ii) A thermistor or thermocouple that has an accuracy of $\pm 0.1^{\circ}\text{C}$ ($\pm 0.18^{\circ}\text{F}$) and that is arranged to measure the temperature of the water in the can.

(iii) A control sample of two flat pieces of 4.75 mm (3/16 in.) thick, closed cell neoprene foam of sufficient size to enclose the can between them. The control sample must have a thermal conductivity of not more than 0.055 watt/meter- $^{\circ}\text{K}$ (0.38 Btu-in./hr.-sq.ft.- $^{\circ}\text{F}$). The thermal conductivity of the control sample must be determined in accordance with the procedures in ASTM C 177 or ASTM C 518.

(iv) Two flat pieces of suit material of sufficient size to enclose the can between them. The surface covering, surface treatment, and number of layers of the material tested must be the same as those of material used in the suit. If the material used in the suit varies in thickness or number of layers, the material tested must be representative of the portion of the suit having the least thickness or number of layers.

(v) A clamping arrangement to form a watertight seal around the edges of the material when the can is enclosed inside. A sealing compound may be used. Figure 160.171-17(e)(1)(v) shows one possible arrangement of the clamping arrangement.

(vi) A container of water deep enough to hold the entire assembly of the can, material, and clamp at least 1 meter (39 in.) below the surface of the water.

(vii) A means to control the temperature of the water in the container between 0°C (32°F) and 1°C (33.8°F).

(viii) A thermistor or thermocouple that has an accuracy of $\pm 0.1^{\circ}\text{C}$ (0.18°F) and that is arranged to measure the

temperature of the water in the container at the depth at which the can, material, and clamp are held.

(2) *Test procedure.* The can is held under water (which can be at room temperature) and clamped between the two pieces of the neoprene control sample so that the assembly formed conforms as closely as possible to the shape of the can, and so that water fills all void spaces between the can and the sample. When the water temperature in the can is at or above 45° C (113° F), the assembly is then placed in the container and submerged to a depth of 1 m (39 in.) at the highest point of the assembly. The water temperature in the container must be between 0° C (32° F) and 1° C (33.8° F) and must be maintained within this range for the remainder of the test. No part of the assembly may touch the bottom or sides of the container. Every two minutes the assembly is shaken and then inverted from its previous position. The time for the water inside the can to drop from 45° C (113° F) to 33° C (91° F) is recorded. This procedure is performed three times using the control sample and then repeated three times using the suit material instead of the control sample. The shortest time for the drop in water temperature when the suit material is used must be greater than or equal to the shortest time when the neoprene control sample is used.

(f) *Storage temperature.* Two samples of the immersion suits, in their storage cases, must be alternately subjected to surrounding temperatures of -30° C to +65° C. These alternating cycles need not follow immediately after each other and the following procedure, repeated for a total of ten cycles, is acceptable:

(1) 8 hours conditioning at 65° C to be completed in one day;

(2) The specimens removed from the warm chamber that same day and left exposed under ordinary room conditions until the next day;

(3) 8 hours conditioning at -30° C to be completed the next day; and

(4) The specimens removed from the cold chamber that same day and left exposed under ordinary room conditions until the next day. At the conclusion of the final cycle of cold storage, two test subjects who successfully completed the donning test in paragraph (c)(2) of this section enter the cold chamber, unpack and don the immersion suits.

Alternatively, the suits may be unpacked in the chamber, then removed and immediately donned. Neither of the suits must show damage such as shrinking, cracking, swelling, dissolution or change of mechanical qualities.

(g) *Measured buoyancy.* The buoyancy of a suit must be measured

under the following conditions and procedures:

(1) *Test equipment.* The following equipment is required for this test:

(i) A mesh basket that is large enough to hold a folded suit, and that is weighted sufficiently to overcome the buoyancy of the suit when placed in the basket.

(ii) A tank of water that is large enough to contain the basket submerged with its top edge 50 mm (2 in.) below the surface of the water.

(iii) A scale or load cell that has an accuracy of 0.15 Newtons (1/2 oz.) and that is arranged to support and weigh the basket in the tank.

(2) *Test procedure.* The basket is submerged so that its top edge is 50 mm (2 in.) below the surface of the water. The basket is then weighed. Thereafter, a suit is submerged in water and then filled with water, folded, and placed in the submerged basket. The basket is tilted 45° from the vertical for five minutes in each of four different directions to allow all entrapped air to escape. The basket is then suspended with its top edge 50 mm (2 in.) below the surface of the water for 24 hours. At the beginning and end of this period, the basket and suit are weighed underwater. The measured buoyancy of the suit is the difference between this weight and the weight of the basket as determined at the beginning of the test. The measured buoyancy after 24 hours must not be more than 5% lower than the initial measured buoyancy. The measured buoyancy after 24 hours is used to determine adjusted buoyancy as described in paragraph (h) of this section.

(h) *Adjusted buoyancy.* The adjusted buoyancy of a suit is its measured buoyancy reduced by the percentage buoyancy loss factor of the buoyant suit material. The percentage buoyancy loss factor is part of the buoyancy rating code determined in accordance with UL 1191, except that the minimum number of samples required to determine each property is 10 instead of 75.

(i) *Suit flame exposure.* The suit's resistance to flame must be tested under the following conditions and procedures:

(1) *Test equipment.* The following equipment is required for this test:

(i) A metal pan that is at least 300 mm (12 in.) wide, 450 mm (18 in.) long, and 60 mm (2 1/2 in.) deep. The pan must have at least 12 mm (1/2 in.) of water on the bottom with approximately 40 mm (1 1/2 in.) of gasoline floating on top of the water.

(ii) An arrangement to hold the suit over the gasoline.

(2) *Test procedure.* A suit is held from its top by the holding arrangement. The

gasoline is ignited and allowed to burn for approximately 30 seconds in a draft-free location. The suit is then held with the lowest part of each foot 240 mm (9.5 in.) above the surface of the burning gasoline. After two seconds, measured from the moment the flame first contacts the suit, the suit is removed from the fire. The suit must not sustain burning or continue melting after removal from the flames. If the suit sustains any visible damage other than scorching, it must then be subjected to the stability test described in paragraph (c)(8) of this section, except that only one subject need be used; the impact test described in paragraph (c)(11) of this section, except that only one subject need be used; the thermal protection test described in paragraph (d) of this section, except that only one subject need be used; and the buoyancy test described in paragraph (g) of this section, except that the buoyancy test need be conducted for only 2 hours.

(j) *Storage case flame exposure.* The storage case must be tested using the same equipment required for the suit flame exposure test. The immersion suit must be inside the storage case for this test. The storage case is held from its top by the holding arrangement. The gasoline is ignited and allowed to burn for approximately 30 seconds in a draft-free location. The storage case is then held with its lowest part 240 mm (9.5 in.) above the surface of the burning gasoline. After two seconds, measured from the moment the flames first contact the case, the case is removed from the fire. If the case is burning, it is allowed to continue to burn for six seconds before the flames are extinguished. The storage case material must not burn through at any point in this test and the immersion suit must not sustain any visible damage.

(k) *Corrosion resistance.* Each metal part of a suit that is not 410 stainless steel, or for which published evidence of salt-spray corrosion resistance equal to or greater than 410 stainless steel is not available, must be tested as described in ASTM B 117. A sample of each metal under test and a sample of 410 stainless steel must be tested for 720 hours. At the conclusion of the test, each sample of test metal must show corrosion resistance equal to or better than the sample of 410 stainless steel.

(l) *Body strength.* The body strength of a suit must be tested under the following conditions and procedures:

(1) *Test equipment.* The test apparatus shown in figure 160.171-17(1)(1) must be used for this test. This apparatus consists of—

(i) Two rigid cylinders each 125 mm (5 in.) in diameter, with an eye or ring at each end;

(ii) A weight of 135 kg (300 lb.); and
(iii) Ropes or cables of sufficient length to allow the suit to be suspended as shown in Figure 160.171-17(1)(1).

(2) *Test procedure.* The suit is cut at the waist and wrists, or holes are cut into it as necessary to accommodate the test apparatus. The suit is immersed in water for at least two minutes. The suit is then removed from the water and immediately arranged on the test apparatus, using each closure as it would be used by a person wearing the suit. The 135 kg (300 lb.) load is applied for 5 minutes. No part of the suit may tear or break during this test. The suit must not be damaged in any way that would allow water to enter or that would affect the performance of the suit.

(m) *Seam strength.* The strength of each different type of seam used in a suit must be tested under the following conditions and procedures:

(1) *Test equipment.* The following equipment must be used for this test.

(i) A chamber in which air temperature can be kept at 23°C (73.4°F) $\pm 2^{\circ}\text{C}$ (1.8°F) and in which relative humidity can be kept at $50\% \pm 5\%$.

(ii) A device to apply tension to the seam by the means of a pair of top jaws and a pair of bottom jaws. Each set of jaws must grip the material on both sides so that it does not slip when the load is applied.

(2) *Test samples.* Each test sample must consist of two pieces of suit material, each of which is a 100 mm (4 in.) square. The two pieces are joined by a seam as shown in figure 150.171-17(m)(3). For each type of seam, 5 samples are required. Each sample may be cut from the suit or may be prepared specifically for this test. One type of seam is distinguished from another by the type and size of stitch or other joining method used and by the type and thickness of the materials joined at the seam.

(3) *Test procedure.* Each sample is conditioned for at least 40 hours at 23°C (73.4°F) $\pm 2^{\circ}\text{C}$ (1.8°F) and $50\% \pm 5\%$ relative humidity. Immediately after conditioning, each sample is mounted individually in the tension device as shown in figure 160.171-17(m)(3). The jaws are separated at a rate of 5 mm/second (12 in./minute). The force at rupture is recorded. The average force at rupture must be at least 225 Newtons (50 lb.).

(n) *Tear resistance.* The tear resistance of suit material must be determined by the method described in ASTM D 1004. If more than one material is used, each material must be tested. If varying thickness of a material are used in the suit, samples representing the

thinnest portion of the material must be tested. If multiple layers of a material are used in the suit, samples representing the layer on the exterior of the suit must be tested. Any material which is a composite formed of two or more materials bonded together is considered to be a single material. The average tearing strength of each material must be at least 45 Newtons (10 lb.).

(o) *Abrasion resistance.* The abrasion resistance of each type of suit material on the exterior of the suit must be determined by the method described in Federal Test Method Standard 191, Method 5304.1. If varying thicknesses of exterior suit material are used, samples representing the thinnest portion of the material must be tested. If exterior material has multiple layers, samples of the layer on the outside surface of the suit must be tested. Any exterior material which is a composite formed of two or more layers bonded together is considered to be a single material and the abradant must be applied to the surface that is on the exterior of the suit. The residual breaking strength of each material must be at least 225 Newtons (50 lb.).

(p) *Test for oil resistance.* After all its apertures have been sealed, an immersion suit is immersed under a 100 mm head of diesel oil, grade No. 2-D as defined in ASTM D-975, for 24 hours. The surface oil is then wiped off and the immersion suit subjected to the leak test prescribed in § 160.171-17(c)(10). The ingress of water must not be greater than 200 grams.

§ 160.171-19 Approval testing for child size immersion suit.

A child size suit must pass the following tests:

(a) The stability test prescribed in § 160.171-17(c)(8), except that only six children need be used as test subjects and they can be of either sex. The subjects must be within the ranges of weight and height prescribed in § 160.171-9(m). The heaviest subject must weigh at least 10 kg (22 lb.) more than the lightest subject. During this test the face seal, neck and chin fit are evaluated and must be comparable to the fit of the corresponding adult size suit on an adult.

(b) The buoyancy test prescribed in § 160.171-17(g).

(c) The body strength test prescribed in § 160.171-17(k) except that the cylinders must be 50 mm (2 in.) in diameter and the test weight must be 55 kg (120 lb.).

§ 160.171-23 Marking.

(a) Each immersion suit must be marked with the words "IMMERSION SUIT—COMPLIES WITH SOLAS 74/

83," the name of the manufacturer, the date of manufacturer, the model, the size, and the Coast Guard approval number.

(b) Each storage case must be marked with the words "immersion suit" and the size.

(c) The markings for the child size immersion suits required under paragraphs (a) and (b) of this section must also include the following statements in print smaller than the word "child": "(Small Adult Under 50 kg. (110 lb.))", and "Children Require Adult Assistance for Donning and Use."

(d) If an auxiliary means of buoyancy is removable and is needed to meet 160.171-11(a)(2), the marking on the suit must indicate that the suit is not Coast Guard approved unless the auxiliary means of buoyancy is attached.

§ 160.171-25 Production testing.

(a) Immersion suit production testing is conducted under the procedures in this section and Subpart 159.007 of this chapter.

(b) One out of every 100 immersion suits produced must be tested as prescribed in 160.171-17(g) and must be given a complete visual examination. The suit must be selected at random from a production lot of 100 suits and tested by or under the supervision of the independent laboratory. A suit fails this test if—

(1) The measured buoyancy of the suit differs by more than 10% from the measured buoyancy of the suit tested for approval.

(2) The adjusted buoyancy of the suit calculated using the buoyancy loss factor determined during approval testing is less than that required in 160.171-11(a)(1), or

(3) The visual examination shows that the suit does not conform to the approved design.

(c) If the suit fails to pass the test as prescribed in paragraph (b)(1) or (b)(2) of this section, 10 additional suits from the same lot must be selected at random and subjected to the test. If a defect in the suit is detected upon visual examination, 10 additional suits from the same lot must be selected at random and examined for the defect.

(d) If one or more of the 10 suits fails to pass the test or examination, each suit in the lot must be tested or examined for the defect for which the lot was rejected. Only suits that pass the test or that are free of defects may be sold as Coast Guard approved.

(e) The manufacturer must ensure that the quality control procedure described in the test plans previously submitted for approval under § 159.005-9(a)(5)(iii) is followed.

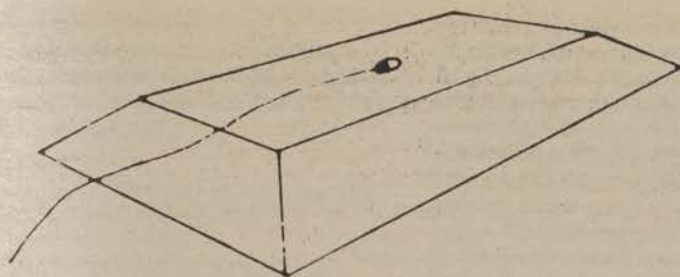


Figure 160.171(e)(1)(i). Water can for insulation test.

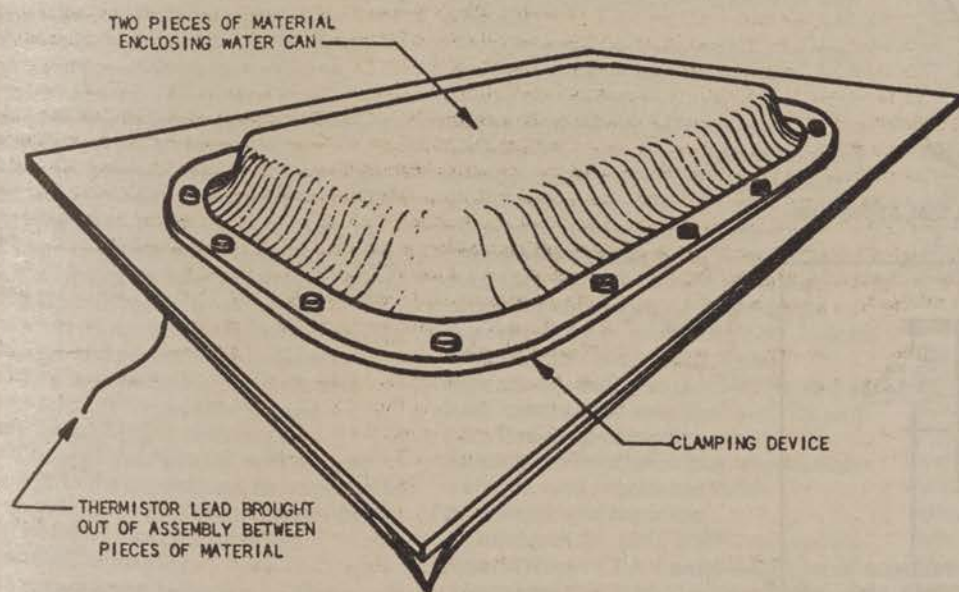


Figure 160.171-17(e)(1)(v). Insulation test assembly.

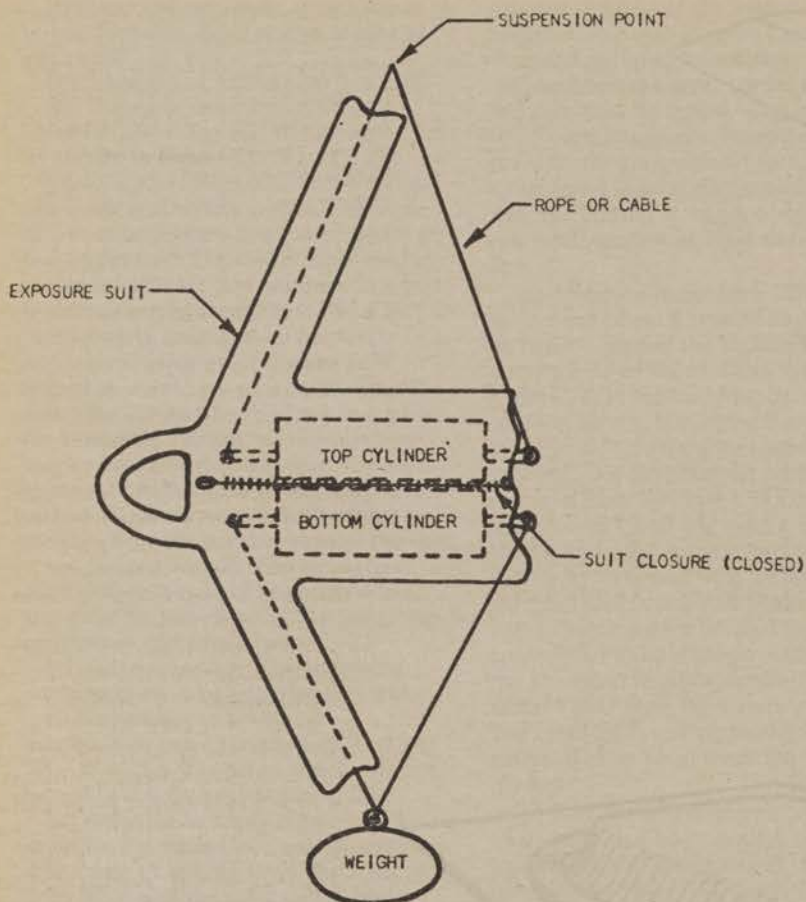


Figure 160.171-17(l)(1). Body strength test apparatus.

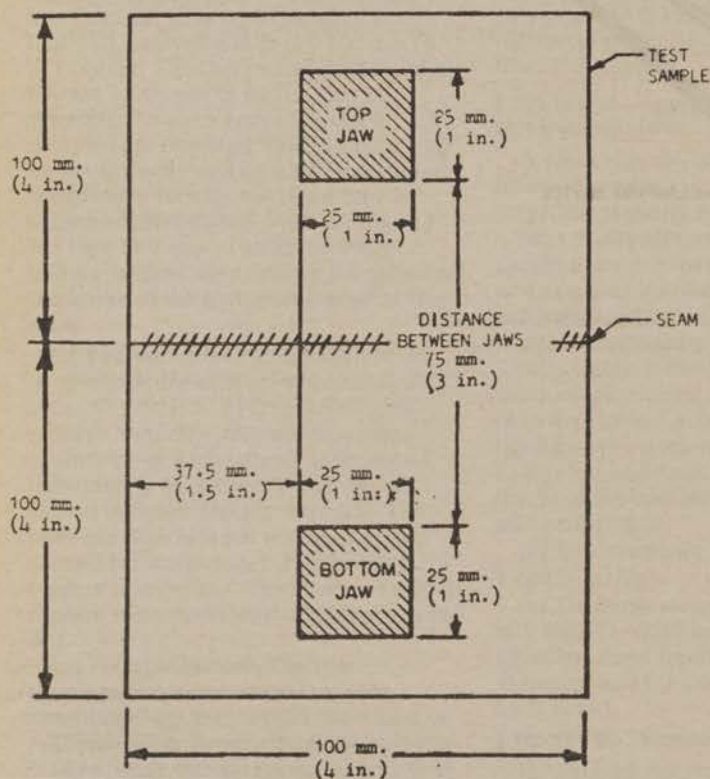


Figure 160.171-17(m)(3). Method of mounting sample for seam strength test.

BILLING CODE 4910-14-C

§ 160.174-17 [Amended]

3. In § 160.174-17, "Figure 160.071-17(m)(3)" is replaced by "Figure 160.171-17(m)(3)" in paragraphs (h) (2) and (3).

Dated: December 18, 1986.

J.W. Kime,

Rear-Admiral, U.S. Coast Guard, Chief, Office of Moving Safety, Security and Environmental Protection.

[FR Doc. 87-370 Filed 1-9-87; 8:45 am]

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DEPARTMENT OF COMMERCE**National Oceanic and Atmospheric Administration****50 CFR Part 228**

[Docket No. 60974-6224]

Small Takes of Marine Mammals Incidental to Specified Activities

AGENCY: National Marine Fisheries Service (NMFS), NOAA, Commerce.

ACTION: Final rule.

SUMMARY: NMFS is amending the regulations that govern and allow the taking of ringed seals incidental to seismic activities on the ice in the Beaufort Sea to allow such taking for an additional 5 years. The current regulations expired December 31, 1986. The Marine Mammal Protection Act of 1972 (MMPA) directs the Secretary of Commerce or Interior, depending on the species involved, to allow the incidental take of small numbers of marine mammals if the Secretary makes certain findings and prescribes regulations relating to permissible methods and requirements for monitoring and reporting. NMFS is allowing an additional 5-year period, without any change to the regulations, in response to a request for rulemaking received from the National Ocean Industries Association (NOIA).

EFFECTIVE DATE: January 1, 1987 through December 31, 1991.

FOR FURTHER INFORMATION CONTACT: Margaret Lorenz, F/M4, NMFS, 202/673-5349.

SUPPLEMENTARY INFORMATION: Background

Section 101(a)(5)(A) of the MMPA [16 U.S.C. 1371(a)(5)(A)] directs the

Secretary to allow, upon request, the incidental, but not intentional, taking of small numbers of marine mammals by U.S. citizens who engage in a specified activity (other than commercial fishing) within a specified geographical region. This permission may be granted for periods of not more than 5 consecutive years. Such taking may be allowed only if the species involved is not depleted and if the Secretary, after notice and opportunity for public comment, (a) finds that the total taking will have a negligible impact on the species, its habitat, and the availability of the species for subsistence uses; (b) prescribes regulations setting forth permissible methods of taking and other means of effecting the least adverse impact practicable on the species and its habitat, paying particular attention to rookeries, mating grounds, and other areas of similar significance; and (c) prescribes regulations pertaining to the monitoring and reporting of such taking. Section 3(12) of the MMPA [16 U.S.C. 1362(12)] defines the term "take" as meaning to harass, hunt, capture or kill any marine mammal or to attempt any of these.

NMFS published regulations on May 18, 1982 (47 FR 21248), to implement section 101(a)(5)(A) by establishing a mechanism for the submission and evaluation or requests and establishing requirements for specific regulations and Letters of Authorization to conduct allowed activities (50 CFR Part 228, Subpart A). At that time, NMFS also published regulations allowing and governing the taking of ringed seals incidental to on-ice seismic activities (50 CFR Part 228, Subpart B). These regulations, which expired at the end of 1986, covered the specified activity and specified geographical region, permissible time for taking, permissible methods, and requirements for monitoring and reporting.

On March 31, 1986, NMFS received a request from NOIA for the initiation of a rulemaking that would authorize, for an additional 5 years (1987-1991), the take of ringed seals incidental to on-ice seismic exploratory operations and associated activities in the Beaufort Sea. The request was made on behalf of the memberships of NOIA and the International Association of Geophysical Contractors (IAGC). The specific activity involves collecting

seismic reflection data on ice from portable camp facilities and, using primarily, vibrator-type energy source equipment. NOIA anticipates that the maximum amount of area covered over the Outer Continental Shelf areas off the North Slope in Alaska in any given year would be 1,800 square miles. Generally, the dates that include safe ice conditions for exploration are from January 1 through May 31. The area in the Beaufort Sea ranges from Pt. Barrow east to Demarcation Point. Since the ringed seal (*Phoca hispida*) stays beneath the ice during winter months and pups are born there from late March through May, there is concern that female seals may react to the acoustic stimulus and abandon their pups before they are able to survive on their own.

On April 21, 1986, NMFS published a notice announcing receipt of NOIA's request for rulemaking and invited interested persons to submit comments concerning the request (51 FR 13539). On October 31, 1986, NMFS published a proposed rulemaking and invited comments (51 FR 39762). NMFS also published notices of the proposed rulemaking in the Anchorage Daily News, The Tundra Times, and the Fairbanks Daily News Miner.

Summary of Final Rule

The rule amends the expiring regulations to allow the small incidental take of ringed seals as sanctioned by the MMPA for an additional 5 years. Only the effective date provision of the existing regulations has been changed. The regulations apply only to the incidental taking of ringed seals by U.S. citizens engaged in on-ice seismic exploratory and associated activities over the Outer Continental Shelf of the Beaufort Sea of Alaska from the shore outward to 45 miles and from Point Barrow east to Demarcation Point, from January 1 through May 31 of any calendar year.

The incidental, but not intentional, taking of ringed seals from January 1 through May 31 by U.S. citizens holding a Letter of Authorization will be permitted during the following activities:

(1) On-ice geophysical seismic activities involving vibrator-type, airgun, or other energy source equipment shown to have similar or lesser effects; and