

welding, burning, or like fire-producing actions shall be made:

(1) Within or on the boundaries of cargo tanks which have been used to carry flammable or combustible liquid or chemicals in bulk, or within spaces adjacent to such cargo tanks; or

(2) Within or on the boundaries of fuel tanks; or

(3) To pipe lines, heating coils, pumps, fittings, or other appurtenances connected to such cargo or fuel tanks.

(c) Such inspections shall be made and evidenced as follows:

(1) In ports or places in the United States or its territories and possessions the inspection shall be made by a Marine Chemist certificated by the National Fire Protection Association; however, if the services of such certified Marine Chemist are not reasonably available, the Officer in Charge, Marine Inspection, upon the recommendation of the vessel owner and his contractor or their representative, shall select a person who, in the case of an individual vessel, shall be authorized to make such inspection. If the inspection indicated that such operations can be undertaken with safety, a certificate setting forth the fact in writing and qualified as may be required, shall be issued by the certified Marine Chemist or the authorized person before the work is started. Such qualifications shall include any requirements as may be deemed necessary to maintain, insofar as can reasonably be done, the safe conditions in the spaces certified throughout the operation and shall include such additional tests and certifications as considered required. Such qualifications and requirements shall include precautions necessary to eliminate or minimize hazards that may be present from protective coatings or residues from cargoes.

3. Title 46 CFR 91.50-1(c)(1) covering hot work on cargo and miscellaneous vessels as follows:

(a) The provisions of "Standard for the Control of Gas Hazards on Vessels to be Repaired," NFPA No. 306, published by National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02269, shall be used as a guide in conducting the inspections and issuance of certificates required by this section.

(b) Until an inspection has been made to determine that such operation can be undertaken with safety, no alterations, repairs, or other such operations involving riveting, welding, burning, or like fire-producing actions shall be made:

(1) Within or on the boundaries of cargo tanks which have been used to carry flammable or combustible liquid or chemicals in bulk, or within spaces adjacent to such cargo tanks; or,

(2) Within or on the boundaries of fuel tanks; or,

(3) To pipe lines, heating coils, pumps, fittings, or other appurtenances connected to such cargo or fuel tanks.

(c) Such inspections shall be made and evidenced as follows:

(1) In ports or places in the United States or its territories and possessions the inspection shall be made by a Marine Chemist certificated by the National Fire Protection Association; however, if the services of such certified Marine Chemist are not reasonably available, the Officer in Charge, Marine Inspection, upon the recommendation of the vessel owner and his contractor or their representative, shall select a person who, in the case of an individual vessel, shall be authorized to make such inspection. If the inspection indicated that such operations can be undertaken with safety, a certificate setting forth the fact in writing and qualified as may be required, shall be issued by the certified Marine Chemist or the authorized person before the work is started. Such qualifications shall include any requirements as may be deemed necessary to maintain, insofar as can reasonably be done, the safe conditions in the spaces certified throughout the operation and shall include such additional tests and certifications as considered required. Such qualifications and requirements shall include precautions necessary to eliminate or minimize hazards that may be present from protective coatings or residues from cargoes.

Subpart C—Surface Preparation and Preservation

§ 1915.31 Scope and application of subpart.

The standards contained in this subpart shall apply to ship repairing and shipbuilding and shall not apply to shipbreaking.

§ 1915.32 Toxic cleaning solvents.

(a) When toxic solvents are used, the employer shall employ one or more of the following measures to safeguard the health of employees exposed to these solvents.

(1) The cleaning operation shall be completely enclosed to prevent the escape of vapor into the working space.

(2) Either natural ventilation or mechanical exhaust ventilation shall be used to remove the vapor at the source and to dilute the concentration of vapors in the working space to a concentration which is safe for the entire work period.

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(3) Employees shall be protected against toxic vapors by suitable respiratory protective equipment in accordance with the requirements of subpart I of this part and, where necessary, against exposure of skin and eye contact with toxic solvents and their vapors by suitable clothing and equipment.

(b) The principles in the threshold limit values to which attention is directed in § 1915.4 will be used by the Department of Labor in enforcement proceedings in defining a safe concentration of air contaminants.

(c) When flammable solvents are used, precautions shall be taken in accordance with the requirements of § 1915.36.

[47 FR 16986, Apr. 20, 1982, as amended at 61 FR 26351, May 24, 1996]

§ 1915.33 Chemical paint and preservative removers.

(a) Employees shall be protected against skin contact during the handling and application of chemical paint and preservative removers and shall be protected against eye injury by goggles or face shields in accordance with the requirements of subpart I of this part.

(b) When using flammable paint and preservative removers, precautions shall be taken in accordance with the requirements of § 1915.36.

(c) When using chemical paint and preservative removers which contain volatile and toxic solvents, such as benzol, acetone and amyl acetate, the provisions of § 1915.32 shall be applicable.

(d) When using paint and rust removers containing strong acids or alkalies, employees shall be protected by suitable face shields to prevent chemical burns on the face and neck.

(e) When steam guns are used, all employees working within range of the blast shall be protected by suitable face shields. Metal parts of the steam gun itself shall be insulated to protect the operator against heat burns.

[47 FR 16986, Apr. 20, 1982, as amended at 61 FR 26351, May 24, 1996]

§ 1915.34 Mechanical paint removers.

(a) *Power tools.* (1) Employees engaged in the removal of paints, preserva-

tives, rusts, or other coatings by means of power tools shall be protected against eye injury by using goggles or face shields in accordance with the requirements of subpart I of this part.

(2) All portable rotating tools used for the removal of paints, preservatives, rusts or other coatings shall be adequately guarded to protect both the operator and nearby workers from flying missiles.

(3) Portable electric tools shall be grounded in accordance with the requirements of § 1915.132.

(4) In a confined space, mechanical exhaust ventilation sufficient to keep the dust concentration to a minimum shall be used, or employees shall be protected by respiratory protective equipment in accordance with the requirements of subpart I of this part.

(b) *Flame removal.* (1) Hardened preservative coatings shall not be removed by flame in enclosed spaces unless the employees exposed to fumes are protected by air line respirators in accordance with the requirements of subpart I. Employees performing such an operation in the open air, and those exposed to the resulting fumes shall be protected by a fume filter type respirator in accordance with the requirements of subpart I of this part.

(2) Flame or heat shall not be used to remove soft and greasy preservative coatings.

(c) *Abrasive blasting—(1) Equipment.* Hoses and fittings used for abrasive blasting shall meet the following requirements:

(i) *Hoses.* Hose of a type to prevent shocks from static electricity shall be used.

(ii) *Hose couplings.* Hose lengths shall be joined by metal couplings secured to the outside of the hose to avoid erosion and weakening of the couplings.

(iii) *Nozzles.* Nozzles shall be attached to the hose by fittings that will prevent the nozzle from unintentionally becoming disengaged. Nozzle attachments shall be of metal and shall fit onto the hose externally.

(iv) *Dead man control.* A dead man control device shall be provided at the nozzle end of the blasting hose either to provide direct cutoff or to signal the pot tender by means of a visual and audible signal to cut off the flow, in the