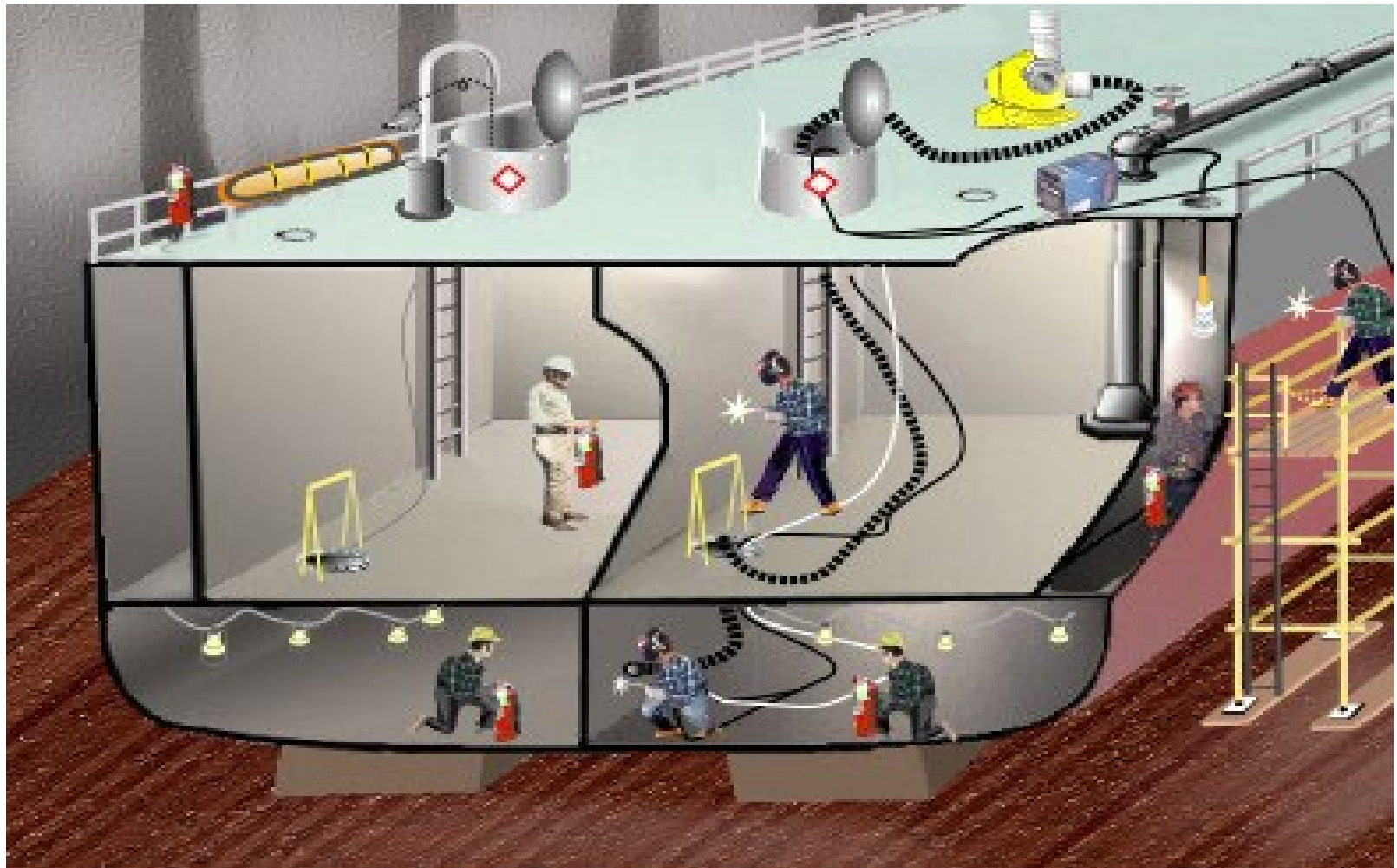


Shipyard Employment

Welding, Cutting and Heating - Subpart D

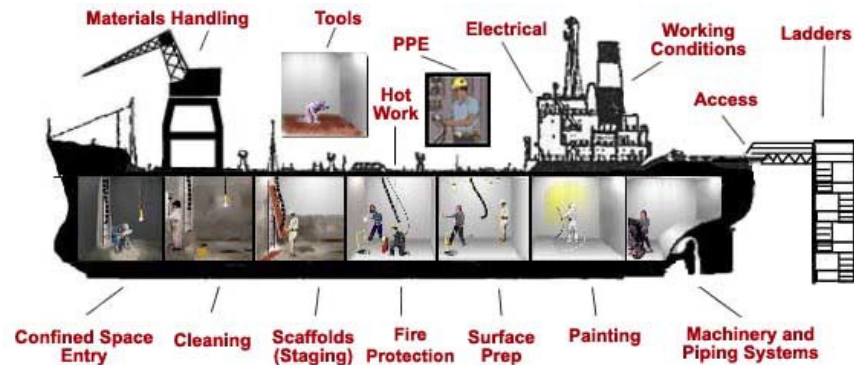


Welding, Cutting and Heating - Subpart D

- **1915.51** – Ventilation and protection in welding, cutting and heating
- **1915.53** – Welding, cutting and heating in way of preservative coatings
- **1915.54** – Welding, cutting and heating of hollow metal containers and structures not covered by 1915.12

Welding, Cutting and Heating - Subpart D

- **1915.55** - Gas welding and cutting
- **1915.56** – Arc welding and cutting
- **1915.57** – Uses of fissionable material in ship repairing and shipbuilding



Mechanical Ventilation Requirements

1915.51(b)(1)(i)

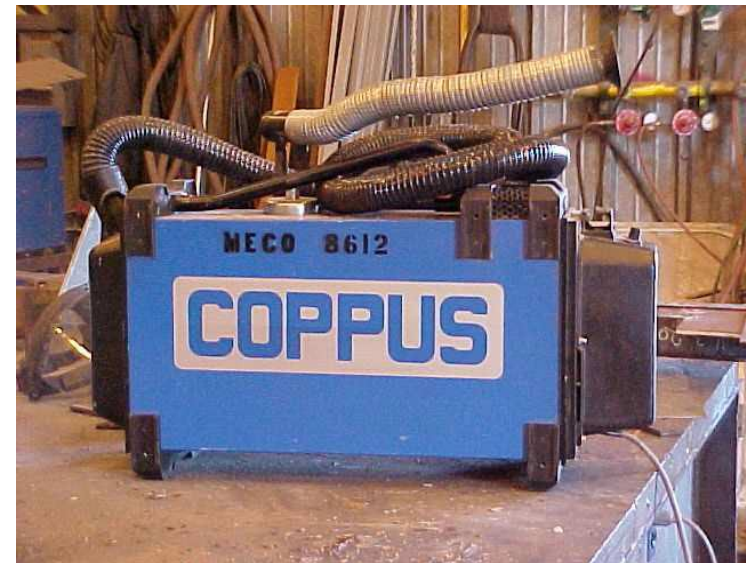
- Mechanical ventilation consist of either:
 - General mechanical ventilation systems
 - Local exhaust systems



Mechanical Ventilation Requirements

1915.51(b)(1)(ii)

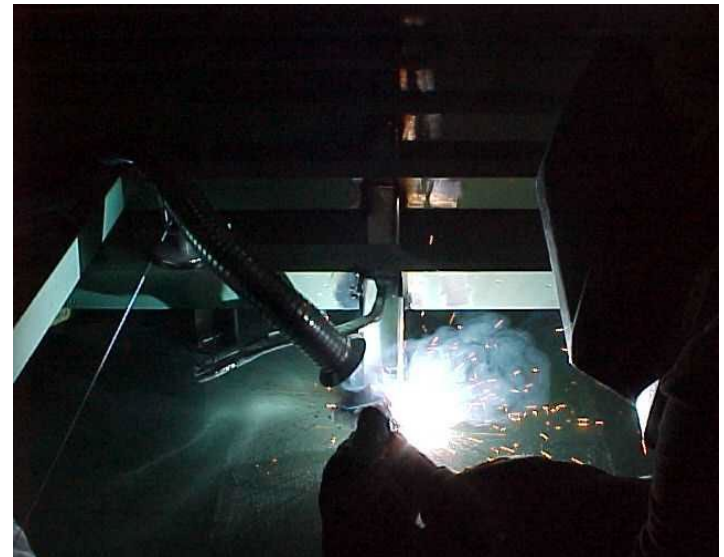
- General mechanical ventilation sufficient capacity and arranged
 - Produce number of air changes necessary
 - » Maintain welding fumes and smoke within safe limits



Mechanical Ventilation Requirements

1915.51(b)(1)(iii)

- Local exhaust ventilation, freely movable hoods
- Placed by welder /burner close to work
- Sufficient capacity and arranged to remove fumes and smoke
- Keep concentration of fumes and smoke in breathing zone within safe limits



Welding, Cutting and Heating in Confined Spaces

1915.51(c)(2)

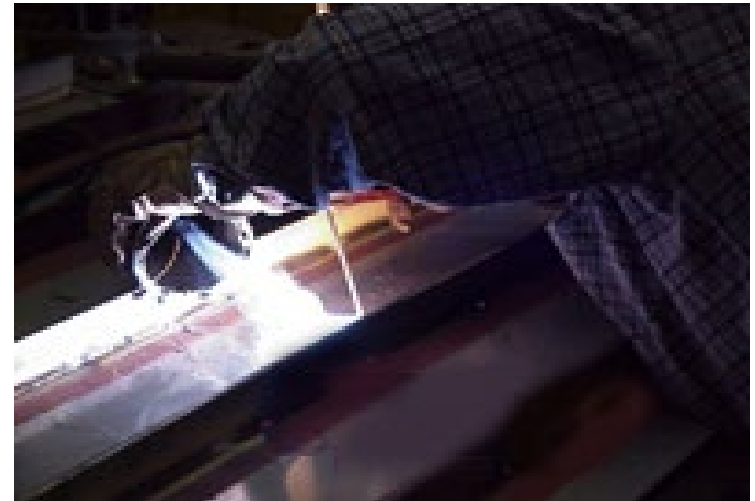
- Means of access provided to confined space
- Ventilation ducts proper arranged



Welding, Cutting or Heating of Metals of Toxic Significance

1915.51(d)(2)

- Local exhaust ventilation required or air line respirators
 - Metals containing lead
 - Cadmium-bearing/coated metals
 - Metals coated w/mercury-bearing metals
 - Beryllium-containing base or filler metals



General Welding, Cutting, and Heating in Way of Preservative Coatings

1915.53(d)(1)

- Enclosed spaces
 - Toxic coatings stripped 4" from area of heat application

Or

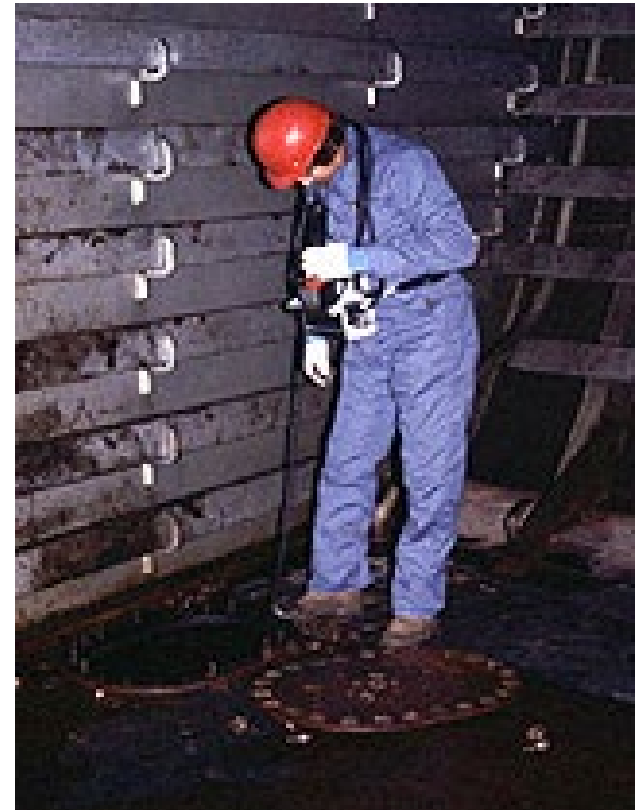
- Protected by air line respirators



General Welding, Cutting, and Heating in Way of Preservative Coatings

1915.53(e)(1)

- Competent person test atmosphere in enclosed space
 - Does not contain explosive vapors
 - Preservative coatings removed sufficient distance from heated area



Welding, Cutting and Heating of Hollow Metal Containers and Structures

1915.54(a)

- Hollow structures containing flammable substances
 - Filled with water or cleaned before hot work



Welding, Cutting and Heating of Hollow Metal Containers and Structures

1915.54(b)

- Before heat applied to hollow structure
 - Vent opening provided



Welding, Cutting and Heating of Hollow Metal Containers and Structures

1915.54(c)

- Before welding, cutting, heating or brazing on structural voids
 - Competent person inspect object
 - Test for flammable liquids or vapors if necessary



Gas Welding and Cutting

1915.55(a)(1)

- Transporting, moving and storing compressed gas cylinders
 - Valve protection caps in place and secure



Gas Welding and Cutting

1915.55(a)(2)

- Cylinders being hoisted
 - Secured on cradle, slingboard or pallet
- Not hoisted by magnets or chocker slings



Gas Welding and Cutting

1915.55(a)(4)

- Cylinders transported by vehicle
 - Secured in position



Gas Welding and Cutting

1915.55(a)(6)

- Before cylinders are moved
 - Firmly secured on special carrier
 - Regulators removed
 - Valve protection caps in place



Gas Welding and Cutting

1915.55(a)(7)

- Suitable cylinder truck, chain or steadying device
 - Keep cylinders from being knocked over while in use



Gas Welding and Cutting

1915.55(b)(2)

- Cylinders placed where cannot become part of electrical circuit
- Electrodes not struck against cylinder



Gas Welding and Cutting

1915.55(d)(3)

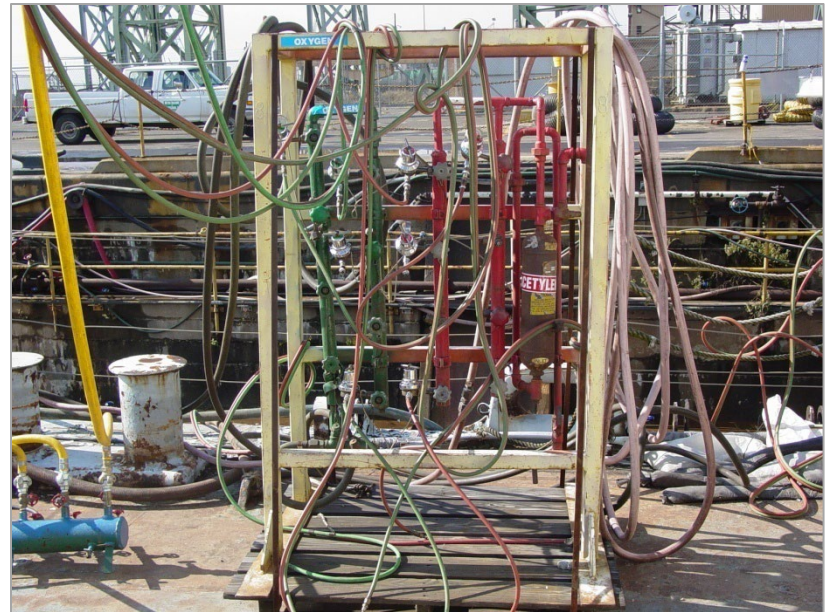
- Fuel gas used from cylinders through torches
 - Pressure reduced through suitable regulator
 - Regulator attached to cylinder valve



Gas Welding and Cutting

1915.55(e)(1)

- Fuel gas and oxygen manifolds
 - Name of substance in letters at least 1" high
 - Painted on manifold or sign attached



Gas Welding and Cutting

1915.55(e)(4)

- Fuel gas and oxygen manifolds
 - Header hose connections capped when not in use



Gas Welding and Cutting

1915.55(f)(1)

- Fuel gas and oxygen hose easily distinguishable from each other
 - Color or surface characteristics
- Hoses not interchangeable



Gas Welding and Cutting

1915.55(f)(3)

- Hoses carrying fuel gas and oxygen
 - Inspected at beginning of each shift
 - Defective hose removed



Gas Welding and Cutting

1915.55(g)(1)

- Clogged torch tip openings
 - Cleaned with suitable cleaning wires, drills

or

- Other devices designed for purpose



Gas Welding and Cutting

1915.55(g)(2)

- Torches inspected at beginning of each shift
 - Leaking shutoff valves
 - Hose couplings
 - Connections
- Defective torches not used



Gas Welding and Cutting

1915.55(g)(3)

- Torches lit from friction lighter or approved devices



Gas Welding and Cutting

1915.55(h)

- Oxygen and fuel gas pressure regulators
 - Proper working order while in use



Arc Welding and Cutting

1915.56(a)(2)

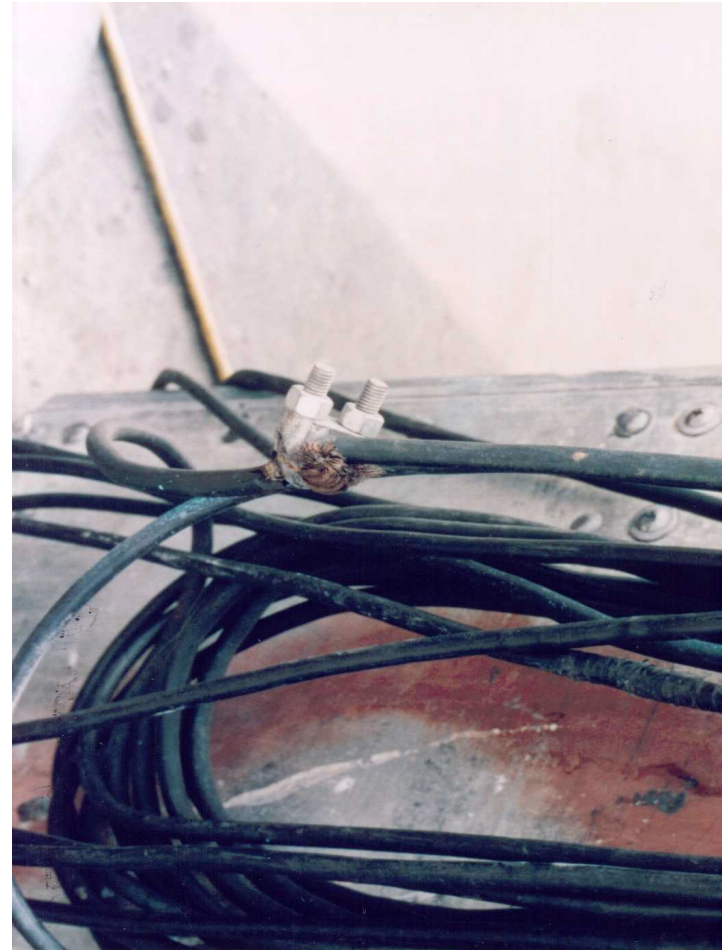
- Current carrying parts through portion of holder
 - Fully insulated against maximum voltage



Arc Welding and Cutting

1915.56(b)(2)

- Cable free from repair or splices
 - Minimum distance of 10' from cable end



Arc Welding and Cutting

1915.56(b)(3)

- Connections or spliced lengths of cable
 - Substantial insulated connectors
 - Capacity equivalent to cable used



Arc Welding and Cutting

1915.56(d)(1)

- Electrode holders left unattended
 - Electrodes removed
 - Electrode holder not make contact with employees or conducting objects



Arc Welding and Cutting

1915.56(e)

- Welding and cutting operations shielded whenever practicable
 - Noncombustible or flame-proof screens



Uses of Fissionable Material

1915.57(a)

- Exposure to sources of ionizing radiation
 - Provisions of Nuclear Regulatory Commission (10 CFR Part 20) apply



Uses of Fissionable Material

1915.57(b)

- Activity involving radioactive material
 - Performed by competent person specially trained
 - » Proper and safe operation of equipment



Thank You For Attending!

Questions?

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