NAVSEA
STANDARD ITEM

FY-19

ITEM NO: 009-07
DATE: ***01 OCT 2017***
CATEGORY: I

1. SCOPE:

1.1 Title: Confined Space Entry, Certification, Fire Prevention and Housekeeping; accomplish

2. REFERENCES:

2.1 Standard Items

2.2 29 CFR Part 1915, Occupational Safety and Health Standards for Shipyard Employment

2.3 29 CFR Part 1910.134, Occupational Safety and Health Standards, Respiratory Protection

2.4 NFPA Standard 51B, Standard for Fire Prevention During Welding, Cutting, and Other Hot Work

2.5 NFPA Standard 312, Standard for Fire Protection of Vessels During Construction, Repair, and Lay-up

2.6 American Conference of Government Industrial Hygienists (ACGIH) Threshold Limit Values for Chemical Substances and Physical Agents

2.7 NAVSEA OP-4, Ammunition and Explosives Safety Afloat

2.8 Underwriter Laboratories (UL) Standard 199, Automatic Sprinklers for Fire-Protection Service

3. REQUIREMENTS:

3.1 Comply with the requirements of 2.2 through 2.5 and this item to determine whether or not an explosive or other dangerous atmosphere exists in tanks, spaces, and associated piping, including adjacent tanks, spaces, and piping aboard the ship and control hot work and entry to those spaces to preclude damage to the ship or injury to personnel during the accomplishment of this Job Order.

3.1.1 Submit one legible copy, in approved transferrable media, of a list of tanks or spaces to be opened or certified to the SUPERVISOR at least one day prior to opening the tank or void.

3.1.1.1 Comply with additional requirements of ***NAVSEA Standard Items*** when accomplishing work in Collection, Holding and Transfer (CHT) and Motor Gasoline (MOGAS) tanks, spaces, or associated piping. ***(See Note 4.6)***

3.1.1.2 For fuel tanks or spaces that contain or have contained fuel, including F-76 and JP-5, in addition to the atmospheric testing required by 2.2, test for diesel fuel (CAS No. 68334-30-5; 68476-30-2; 68476-31-3; 68476-34-6, 77650-28-3) as total hydrocarbons in accordance with 2.6, and record total hydrocarbon test results on the Marine Chemist Certificate or competent person’s test/inspection record.

3.1.2 Provide initial and annual update training for Competent Persons by utilizing a National Fire Protection Association (NFPA) Certified Marine Chemist or NFPA Instructor. The length of the initial training class shall be at least 24 hours. Annual update training shall be at least 8 hours.

3.1.2.1 Maintain a current roster of designated Competent Person(s) and copies of certificates of completion for the training required in 3.1.2 for reference by the SUPERVISOR. Submit one legible copy, in approved transferrable media, of the specific documents when requested by the SUPERVISOR.

3.1.3 Post a copy of the Marine Chemist Certificate, Certified Industrial Hygienist's test/inspection record, or Competent Person's test/inspection record at each access to the affected space while work in the space is in progress. When requested, a copy of the MCC or test/inspection record shall also be delivered to a location designated by the SUPERVISOR. In the event that the space is identified to be NOT SAFE FOR WORKERS or NOT SAFE FOR HOT WORK, the space shall be posted accordingly and other affected contractors, the SUPERVISOR and Ship’s Force shall be notified immediately. The posted copy shall be clearly visible and legible.

3.1.3.1 Initial certification of spaces that require a Certified MCC or Certified Industrial Hygienist's test/inspection record in support of work operations shall be effective until conditions change which would void the certificate or test/inspection record. A Competent Person shall conduct the same atmospheric testing as required on the MCC or Certified Industrial Hygienist's test/inspection record.

3.1.3.2 For those certified spaces which employees will enter, a Competent Person shall visually inspect, test and record each space certified as ENTER WITH RESTRICTIONS or SAFE FOR WORKERS as often as necessary, and as a minimum, prior to entry by employees on a daily basis. If a space is not to be entered on any given day, it is not required to be

inspected and tested by a Competent Person. The initial MCC remains valid if conditions have not changed, unless noted on the MCC.

3.1.3.3 For those certified spaces affected by hot work, a Competent Person shall visually inspect, test, and record each space certified as SAFE FOR HOT WORK as often as necessary and, as a minimum, daily prior to commencement of hot work to ensure that conditions established by the certificate are maintained. When hot work is continuous, the affected spaces shall be visually inspected, tested, and recorded on a daily basis to maintain the SAFE FOR HOT WORK certification.

3.1.3.4 If a Competent Person finds that the conditions within a certified space fail to meet the applicable requirements for which it was certified, work in the space shall be stopped and may not be resumed until the space has been recertified by a Marine Chemist.

3.1.3.5 For those spaces where only Competent Person tests and inspections are required in accordance with 2.2, a Competent Person shall visually inspect and test each space as often as necessary and, as a minimum, daily prior to entry or commencement of hot work to ensure that conditions are safe.

3.1.3.6 After the Competent Person has determined initially that a space is safe for entry and finds subsequently that the conditions within the tested space fail to meet the requirements of 2.2, work shall be stopped until the conditions in the tested space are corrected, the space is retested, reinspected, and a new record of tests/inspections is recorded and posted.

3.1.3.7 Allow Navy civilian and military personnel to enter under the certificate or test / inspection record for inspection purposes.

3.1.4 Tank cleaning personnel shall be trained annually on safety practices to include a discussion of safety information identified in Subparts A, B, and Section 1915.152 of Subpart I of 2.2.

3.1.5 Maintain a current roster of the names of the Shipyard/Plant Rescue Team Members, along with contractor certification that training requirements of Subpart B of 2.2 have been accomplished and are current for each Rescue Team Member, or documentation of arrangements made for an outside rescue team to respond promptly to a request for rescue service in a contractor facility. Submit one legible copy, in approved transferrable media, of the specific documents when requested by the SUPERVISOR.

3.1.5.1 At a naval facility, the Navy will respond.

3.1.6 Spaces that are determined to contain Immediately Dangerous to Life or Health (IDLH) atmospheres shall never be entered except for emergency rescue or for short duration for installation of ventilation equipment in accordance with 2.2 and 2.3. When entering IDLH spaces for the purpose of installing ventilation, notify the SUPERVISOR prior to entry.

Notifications of rescue shall be made as soon as management becomes aware of such an event.

3.1.7 Confirm that all personnel have exited the space prior to closure of tanks, voids, and cofferdams. Designate one person to account for all personnel who may have entered the space.

3.2 Provide a written notice for each job or separate area of hot work aboard ship.

3.2.1 The notice shall state a description of the work to be done, the specific location, to include compartment number, of the hot work, and compartments adjacent to decks, bulkheads, and similar structures upon which hot work is to be accomplished, the time hot work will commence, current gas-free status of the area (if required), the absence or existence of combustible material within 35 feet in any direction of the operation (or further, if affected by the operation), and if combustible material exists, what action shall be taken to protect the material from fire, the provision and assignment of a fire watch, and the affirmation that conditions at the work site (ventilation, temporary lighting, accesses) permit the fire watch(es) to have a clear view of and immediate access to all areas included in the fire watch.

3.2.2 The notice shall affirm that a suitable, fully-charged fire extinguisher shall be available at the job site and provide for an inspection of the area 30 minutes after completion of the hot work or the cessation of hot work at the job site unless the contractor's Hot Work Supervisor surveys the affected work area and determines that there is no further fire hazard as the final action to complete the notice.

3.2.3 The notice shall be signed by a supervisor specifically designated as responsible for coordination of the hot work and the fire watch requirement for each shift where hot work is being conducted.

3.2.4 One copy of each notice shall be given to the SUPERVISOR when requested and one copy to the Commanding Officer's designated representative, and at a minimum, one copy of each notice shall also be conspicuously posted at the location where the hot work is being accomplished.

3.2.4.1 The notice to the Commanding Officer's designated representative shall precede the initiation of the actual hot work in order to permit the Commanding Officer to designate a member of the crew to observe the operation, if desired.

3.2.4.2 Deliver written notification of hot work planned Tuesday through Friday to the Commanding Officer's designated representative at least 30 minutes and not more than 24 hours preceding start of work.

3.2.4.3 Deliver written notification of hot work planned over a weekend or Monday following that weekend to the Commanding Officer's

designated representative no later than 0900 on the Friday immediately preceding that weekend.

3.2.4.4 Deliver written notification of hot work planned on a federal holiday and on the day following the federal holiday to the Commanding Officer's designated representative no later than 0900 of the last working day preceding the federal holiday.

3.2.4.5 The notice shall be effective for 24 hours unless a shorter period is specified in the contract or the gas-free status of the work area or system requires stopping the work. A new notice is required if work is interrupted due to loss of gas-free status.

3.3 Provide trained fire watches, at all affected areas where hot work is being accomplished. Provide fire extinguishing equipment as described in 2.2, 2.4, and 2.5.

3.3.1 The program utilized to train fire watches shall be in accordance with the requirements of 2.2 and 2.4, and include steps to be taken by the fire watch and hot work operator prior to accomplishment of hot work, proper selection and use of fire extinguishing equipment and other safety equipment, relationship between the fire watch and hot work operator, proper fire reporting procedures and other sounding of fire alarms, and reporting of fires to the ship's Quarterdeck. A means of communicating between all fire watches and their corresponding hot workers shall be provided. This training shall include theory and practical (hands-on) fire suppression techniques. This training shall be provided to all newly assigned fire watches, with annual updates provided to personnel. Provide visible means of identifying trained fire watches, i.e., badge, sticker, vest, etc.

3.3.1.1 Submit one legible copy, in approved transferrable media, of the training program when requested by the SUPERVISOR.

3.3.2 Each fire watch attending worker(s) accomplishing hot work shall be equipped with a fully-charged and operable fire extinguisher, have immediate access and an unobstructed view of the affected hot work area to which they are assigned and shall remain at the job site for 30 minutes from the time the hot work is completed unless the contractor's Hot Work Supervisor surveys the affected work area and determines that there is no further fire hazard.

3.3.2.1 The fire watch shall not accomplish other duties while hot work is in progress.

3.3.3 Where several workers are accomplishing hot work at one site, the fire watch shall have a clear view of and immediate access to each worker accomplishing hot work.

3.3.3.1 No more than 4 workers shall be attended by a single fire watch.

3.3.4 In cases in which hot material from hot work may involve more than one level, as in trunks, machinery spaces, and on scaffolding, a fire watch shall be stationed at each level unless positive means are available to prevent the spread or fall of hot material.

3.3.5 In cases where hot work is to be accomplished on a bulkhead or deck, combustible material shall be removed from the vicinity of the hot work on the opposite side of the bulkhead, overhead, or deck, and a fire watch shall be posted at each location.

3.3.5.1 If multiple blind compartments are involved in any hot work job, fire watches shall be posted simultaneously in each blind area.

3.3.6 Comply with the firefighting and fire prevention requirements of 2.7 prior to hot work operations in or adjacent to areas containing ammunition or explosives.

3.3.6.1 Hot work shall not be conducted during any logistics or maintenance movement of ammunition or explosives.

3.3.7 No hot work shall be performed without an operational general announcing system, i.e., Ship’s 1MC, or a documented communication strategy approved by the SUPERVISOR.

3.4 Locate oxygen, acetylene, fuel gas, toxic, oxygen depleting (OD) gas supply systems off the ship. Manifolds connected to pierside supply systems may be placed on board ships as long as they are located on a weather deck and equipped with a shutoff valve located on the pier. The pierside shutoff valve shall be in addition to the shutoff valve at the inlet to each portable outlet header required by 2.2.

3.4.1 Oxygen, acetylene, fuel gas, toxic, and OD gas supply systems shall be stored to prevent collisions by trucks, forklifts, falling objects, etc.

3.4.2 ***Liquid oxygen*** (LOX) tanks shall be staged in designated locations on the quay wall/pier to be determined jointly by the contractor, Ship's Force, and the SUPERVISOR.

3.4.3 When gas cylinders are in use on board ship, they shall be located on the weather decks or in a location determined jointly by the contractor, Ship's Force, and the SUPERVISOR and shall be secured in cylinder racks, and in an upright position. The number of in-use cylinders shall be limited to those which are required for work in progress and which have pressure regulators connected to the cylinder valves. On-board reserve gas cylinders shall not exceed one-half the number of in-use cylinders and shall be located in a remote area of the weather decks or in a location determined

jointly by the contractor, Ship's Force, and the SUPERVISOR. Reserve acetylene cylinders shall be secured in an upright position.

3.4.4 When not in use, gas cylinders and manifolds on board shall have valves closed, lines disconnected, protective cover (cap) in place, and shall be secured. Acetylene cylinders shall be secured in cylinder racks and in an upright position.

3.5 Each fuel gas and oxygen hose run shall be positively identified with durable unique markings that include maintenance activity name, service type, location, and shore side shut-off points. Tags shall be located (at a minimum) at the source, point of entry aboard ship, at each connection point (including quick disconnects), and termination point.

3.5.1 Unattended fuel gas and oxygen hose lines or torches are prohibited in confined spaces.

3.5.2 Unattended, charged fuel gas and oxygen hose lines or torches are prohibited in enclosed spaces for more than 15 minutes.

3.5.3 All fuel gas and oxygen hose lines shall be disconnected at the supply manifold at the end of each shift.

3.5.4 All disconnected fuel gas and oxygen hose lines shall be rolled back to the supply manifold or to open air to disconnect the torch; or extended fuel gas and oxygen hose lines shall not be reconnected at the supply manifold unless the lines were given a positive means of identification when they were first connected and the lines are tested using a drop test to ensure the integrity of fuel gas and oxygen burning system. Alternate procedures must be approved by the SUPERVISOR.

3.5.5 Upon completion of oxygen-fuel gas system hook-up, accomplish a pressure drop test to include the torch, hoses, and gages.

3.5.5.1 Apply pressure to the system. Back off pressure by turning off the valve supplying gases to the system. If the pressure on the gage drops, a leak in the system exists. If the pressure on the gage does not drop, the system is tight.

3.5.5.2 After applying pressure, wait 2 minutes to ensure pressure does not drop.

3.5.6 The use of gas hose splitters is prohibited.

3.6 Each inert gas/oxygen depleting (OD) hose run shall be positively identified with durable unique markings that include maintenance activity name, service type, location, and shore side shut-off points. Tags shall be located (at a minimum) at the source, point of entry aboard ship, at each connection point (including quick disconnects), and termination point.

3.6.1 Unattended inert gas/OD hose lines or torches are prohibited in confined spaces.

3.6.2 Unattended, charged inert gas/OD hose lines or torches are prohibited in enclosed spaces for more than 15 minutes.

3.6.3 All inert gas/OD hose lines shall be disconnected at the supply manifold at the end of each shift.

3.6.4 All disconnected inert gas/OD hose lines shall be rolled back to the supply manifold or to open air to disconnect the torch; or extended inert gas/OD hose lines shall not be reconnected at the supply manifold unless the lines were given a positive means of identification when they were first connected and the lines are tested using a drop test to ensure the integrity of inert gas/OD systems. Alternate procedures must be approved by the SUPERVISOR.

3.6.5 Upon completion of inert gas/OD gas system hook-up, accomplish a pressure drop test to include the torch, hoses, and gages.

3.6.5.1 Apply pressure to the system. Back off pressure by turning off the valve supplying gases to the system. If the pressure on the gage drops, a leak in the system exists. If the pressure on the gage does not drop, the system is tight.

3.6.5.2 After applying pressure, wait 2 minutes to ensure pressure does not drop.

3.6.6 The use of gas hose splitters is prohibited.

3.7 Use fireproof or fire-retardant covering in accordance with MIL-C-24576, such as fireproofed canvas, fire-resistant synthetic fabrics, non-combustible fabrics, metal covers in accordance with ASTM D6413, or other suitable materials, to protect ship’s equipment from falling sparks or other potential sources of fire. Coverings shall be in place prior to commencing hot work and be maintained throughout the hot work evolution. Proper documentation of fire retardancy shall be available for review upon request.

3.7.1 Non fire-retardant temporary wooden structures located on the pier, dry dock edge, or in the dry dock (not including dry dock blocks) shall be a minimum of 35 feet from the ship to prevent spread of fire.

3.7.2 Lumber, plywood, and staging boards, except that used for pallets, shall be fire retardant in accordance with Category Two, Type II, of MIL-L-19140.

3.7.3 Storage of material aboard ship shall be limited to that which is required for work in progress. Materials, trailers, temporary lights, flammable liquids, fueling of vehicles, and the rigging of hoses/welding leads/temporary lights aboard the ship shall comply with the

following: Material, including that stowed in bins that are placed and held temporarily on hangar decks, well decks, or tank decks shall not exceed 8 feet in height. A 20-foot-wide lane shall be maintained the length of hangar decks to act as a fire break. Material shall occupy a deck space not to exceed 25-feet by 25-feet with adjacent 6-foot-wide aisles on each side for ready hose line access.

3.7.4 Prior to bringing equipment or working material aboard ship, its crating and packing shall be removed. If the equipment or material may be damaged during handling, the crating and packing shall be removed immediately after the equipment or working material is brought aboard and taken ashore for disposal. A small quantity of pallets may be staged in a location determined jointly by the contractor, Ship's Force, and the SUPERVISOR aboard ship for use in materials handling operations.

3.7.5 Install sprinkling systems on temporary structures constructed or staged onboard for the purpose of material stowage.

3.7.5.1 Identify sprinkler and open sprinkler pendent, upright or sidewall type. The type shall be most suitable for the shape and configuration of the protected area. Pendent and upright sprinklers shall have 180 degree full cone spray patterns. The sprinkling density shall be 0.2 gpm/sqft and the sprinklers shall be arranged to cover the entire level of the temporary structure and all contents. Follow the manufacturer’s instructions for spacing of sprinklers, distance from the overhead of the protected area, and distance from stowed material or obstructions. Place placards on the interior of the protected area and note the height that material cannot be stacked above.

3.7.5.2 The system shall be a dry deluge type, manually operated by a quarter-turn sprinkler valve located outside and near the access to the structure. The system shall be continuously charged up to the sprinkler valve, from the ship’s permanent or temporary firemain, using temporary piping or a non-collapsible hose suitable for the pressure and flow. Piping downstream of the sprinkler valve shall be metal. Aluminum shall not be used for piping. Place a placard at the sprinkler valve identifying the protected area and providing instructions on operating the sprinkler valve. Provide freeze protection with the water supply

3.7.5.3 Automatic sprinklers, with the heat responsive and activating elements removed, may be substituted for open (deluge) sprinklers.

3.7.5.4 CONEX boxes/MILVANs staged within the ship for material storage or other operational purposes shall be of all steel exterior construction and be capable of being completely sealed closed. Only Class A type combustibles and non-combustibles are permitted to be stored within such structures and they shall remain completely sealed closed when not being physically manned. When such structures are used as manned office or operating spaces (including temporary Enclosed Operating Stations), they shall be equipped with smoke detection in accordance with 2.8 and shall have

at a minimum, one fire extinguisher of appropriate size and class at each access. The use of kitchen appliances (microwaves, coffee makers, hot pots, etc.) and hot work within the unit is prohibited.

3.7.5.5 Smoke alarms, approved by Underwriter's Laboratory, shall be installed in enclosures and shall be audible outside the enclosures.

3.7.6 Install sprinkling system on each temporary structures constructed or staged onboard not for the purpose of material stowage. The sprinkling density shall be 0.1 gpm/sqft and the sprinklers shall be arranged to cover the entire level of the temporary structure and all contents. The system shall be a wet automatic type. The system shall be continuously charged up to the sprinkler, from the ship’s permanent or temporary firemain. Place a placard at the sprinkler valve identifying the protected area and providing instructions on operating the sprinkler valve. Provide freeze protection with the water supply. Operation of the sprinkler system shall sound an audible alarm outside the structure. Install smoke detection system inside the structure. Provide audible alarms both inside and outside the structure. Provide portable AFFF and CO2 extinguishers interior to the structure near the access.

3.7.7 The quantity of flammable and combustible liquids brought onboard shall be kept to a minimum, shall not exceed that necessary for one shift’s use, and shall not be left unattended.

3.7.8 Fueling of vehicles or transfer of fuel between containers shall be accomplished at designated sites on weather decks or in a location determined jointly by the contractor, Ship's Force, and the SUPERVISOR. Notify ship's Officer of the Deck prior to the fueling or transfer operation. When fuel is transferred between containers, the containers shall be bonded and grounded to prevent static discharge. Fueling operations shall be conducted at designated sites on exposed weather decks. All fuel shall be transferred aboard ship in approved safety containers. Direct fueling of vehicles aboard ship shall be avoided but may be utilized during operations via an approved fuel storage tank on the weather deck (flight deck, Helo deck, or deck edge elevator) provided the following safety precautions are provided and maintained by the performing activity:

3.7.8.1 Fuel storage tanks shall be either of double wall construction or have integral cofferdam sized to exceed tank capacity.

3.7.8.2 Locate fuel storage tanks in a location approved by the SUPERVISOR, open to atmosphere on an exposed weather deck and not in interior spaces where a build-up of fuel vapors would be of concern.

3.7.8.3 Fuel storage tanks shall be inspected and verified by safety personnel to meet safety requirements.

3.7.8.4 Perform and document weekly inspections of the fuel storage tanks.

3.7.8.5 Provide 2 dry chemical fire extinguishers, each with an Underwriter's Laboratory rating of at least 60 B:C, for each fuel storage tank.

3.7.8.6 Post signs at each storage tank designating ownership and contact numbers in the event of an emergency.

3.7.8.7 Stage an Oil and Hazardous Substance Spill Response Kit at each fuel storage station.

3.7.8.8 Install metal coamings 4 inches high, tack welded and caulked to the deck, around all through-deck access openings to control flammable liquid spills. Modifications from this requirement based on location of the access openings may be approved by the SUPERVISOR.

3.8 Utilize the ship's permanent and emergency lighting and power as the preferred systems. Plan and execute work in such a manner that the ship's permanently installed lighting and power systems will be out of service for the minimum amount of time.

3.8.1 Install temporary lighting for ship's lighting systems that are non-operational or require additional illumination.

3.8.2 Provide 2 sources of lighting to all spaces that normally have 2 sources for ship's lighting systems that are non-operational. The lighting may be the ship's permanent and emergency lighting systems or a combination of temporary and ship's permanent lighting, provided that separate power sources are utilized for each system. The removal of lighting from spaces or compartments that could impede damage control efforts, personnel egress, and/or casualty responder access shall require approval by the SUPERVISOR prior to removal.

3.8.3 Permanent or temporary lighting shall meet the illumination requirements of 2.2.

3.9 Accomplish temporary access requirements as follows:

3.9.1 Temporary access cuts may be made in fire zone boundaries provided they are equipped with fume-tight steel closures when installed. Boundary degradation by use of temporary access cuts or passage of service lines shall be permitted only upon granting of a written waiver by the SUPERVISOR, in conjunction with the Commanding Officer's designated representative, for a limited time.

3.9.1.1 Submit one legible copy, in approved transferrable media, of a record of boundary openings and their locations to the SUPERVISOR and one additional copy to the Commanding Officer's designated

representative. Resubmit boundary opening data when any changes, additions, or deletions of boundary openings occur.

3.9.2 Ensure at least one unobstructed access on ships designed with 3 or fewer accesses to each main and auxiliary machinery space and at least 2 unobstructed accesses on ships designed with 4 or more accesses to each main and auxiliary machinery space.

3.9.3 Stage fire retardant material adjacent to the ship to provide for temporary closure of access cuts, hatches, and other hull penetrations created by contractor work (e.g., access cuts and open hatches due to running of temporary services).

3.10 Accomplish a fire prevention and housekeeping inspection during each shift whenever work is in progress. Once each manned/regular workday, the inspection shall be made jointly with the SUPERVISOR and the Commanding Officer's designated representative. Deviation from this requirement for availabilities less than 30 days in duration must be adjudicated by the SUPERVISOR.

3.10.1 Submit one legible copy, in approved transferrable media, of request for deviation to the SUPERVISOR.

3.10.2 Submit one legible copy, in an approved transferrable media, of a written report of the discrepancies and corrective actions, using Attachment A, to the SUPERVISOR and the Commanding Officer's designated representative within 4 hours after completion of the inspection.

3.10.3 Provide a safety representative to accomplish the fire prevention and housekeeping inspection who at a minimum has completed the training required in para 3.1.2 and the following OSHA Training Institute (OTI) courses or NAVSEA approved equivalents: 5410; Occupational Safety and Health Standards for the Maritime Industry, 3095; Electrical Standards.

3.10.3.1 Submit one legible copy, in approved transferrable media, of the certificates of completion for the required courses upon request by the SUPERVISOR.

3.11 Determine fire zone boundaries as follows:

3.11.1 The SUPERVISOR, Ship's Force, and the contractor shall establish fire zone boundaries prior to start of production work.

3.11.1.1 For ships having fire zones by design, the designated bulkheads shall be used as fire zones. Ships under 600 feet in length that do not have fire zones by design shall have a minimum of 2 fire zone boundaries. Ships 600 feet and over in length that do not have fire zones by design shall have a minimum of 3 fire zone boundaries.

3.11.2 Fire zone boundaries shall be continuous through the vertical extent of the ship, from the keel up to the highest weather deck, excluding the superstructure.

3.11.2.1 For ships that have established fire zone boundaries that run from keel up through the superstructure, the fire zone boundaries as depicted on the ship's damage control diagrams shall be observed.

3.11.2.2 On aircraft carriers, provide for closing of hangar division doors in case of fire in the event division doors being repaired by the contractor are mechanically inoperative. As a minimum, rig chain falls to manually close doors in the event of fire. Exceptions shall be permitted only upon execution of a written waiver approved by the SUPERVISOR.

3.11.3 Indicate each fire zone by installing a sign adjacent to each entrance. Mark each sign with international orange tape.

3.11.3.1 Service line(s) shall not be run through fire zone boundaries unless quick disconnects are installed in temporary service lines within 6 feet of the opening, door, or closure. The quick disconnects shall be marked with international orange tape and be positively identified with durable unique markings that include the maintenance activity name, service type, location, and shore side shut-off points. All service line(s) shall be able to be secured and pulled back within 3 minutes. Fuel gas/oxygen/compressed gas hoses, steam lines, hoses pressurized above 140 PSI, or hoses carrying hazardous/flammable materials ***(as defined in Subpart P of 2.2)*** shall not be run through fire zone boundaries. Hose numbers or sizes shall not restrict free and easy access or closure of fire zone boundary doors.

3.11.3.2 Request for deviation shall be in writing to the SUPERVISOR and shall include the following; rational for deviation, location(s) and duration of each deviation, description of services that will violate any fire zone boundary, hazards associated with services, and the hazard mitigation plan(s).

3.1**2** Ensure access to temporary and Ship’s Force firefighting equipment is not obstructed or restricted.

3.12.1 Ensure Ship’s Force firefighting equipment is not relocated without written authorization from the SUPERVISOR. Provide a secure, Ship’s Force accessible temporary storage facility for firefighting equipment that is moved from its original location.

3.1**3** Conduct a firefighting and fire prevention conference in conjunction with the arrival conference or no later than 5 days after start of the availability for availabilities in excess of 30 days. This conference shall familiarize Ship’s Force with the contractor’s fire safety and fire response plan for fire prevention and firefighting and with the procedures that will be in use by the contractor and the region/installation or municipal fire and

emergency services, as well as familiarize the contractor and the region/installation or municipal fire and emergency services with the ship arrangement, shipboard fire prevention, and firefighting systems, equipment, and organization, and familiarize all parties with the scope of work and aspects of the work or ship conditions that have significance in fire prevention and firefighting.

3.13.1 The conference shall specifically address the following matters:

3.1**3**.1.1 Fire alarm and response procedures

3.1**3**.1.2 Contractor firefighting capability and procedures

3.1**3**.1.3 Region/installation or municipal fire and emergency services firefighting capability and procedures

3.1**3**.1.4 Firefighting jurisdictional cognizance and incident command procedures

3.1**3**.1.5 Communication system for fire reporting and control or firefighting efforts

3.1**3**.1.6 Shipboard arrangement including access routes, availability or firefighting systems (installed and temporary), fire zone boundaries, and communication systems

3.1**3**.1.7 ***Each*** shipboard firefighting organization, system, drill, and equipment to include rehabilitation procedure.

3.1**3**.1.8 Ship, space, and equipment security consideration

3.1**3**.1.9 Compatibility of ship, contractor, and region/installation or municipal fire and emergency services firefighting equipment

3.1**3**.1.10 Industrial work scope, including location of ship, and effect on firefighting systems, access, and communications

3.1**3**.1.11 The roles, responsibilities, and membership of the Fire Safety Council (FSC). Include the requirement to obtain permission from the FSC to perform work that affects the fire safety posture (e.g., securing the firemain, securing the 1MC, undocking, transferring fuel/lube oil) of the ship.

3.1**3**.1.12 Hotwork monitoring and confined space practices.

3.1**3**.2 The firefighting and fire prevention conference shall include a table top fire drill.

3.1**4** Conduct a tour of the ship for Naval installation fire and emergency services/or municipal fire department personnel, the SUPERVISOR, Ship's Force, and contractor key personnel assigned specific responsibilities during fires to familiarize personnel concerned with the ship's normal access and anticipated condition while industrial work is in progress.

3.1**5** Provide a portable 300 KW diesel generator with associated cables, lugs/plugs to supply emergency power during transits to and from dry dock when ship's emergency power cannot be used or anytime during the availability that the ship's power is not available as an emergency back-up to installed shore power.

4. NOTES:

4.1 In addition to CHT and MOGAS tanks, Hydrogen sulfide (H_2S) may be found in AFFF, seawater, and firemain systems.

4.2 Booklet of General Plans and Tank Sounding Tables are available for review at the office of the SUPERVISOR.

4.3 A "quick disconnect" is a coupling or connecting device/system designed to permit easy and immediate separation of lines without the use of tools and to ensure the contents do not escape.

4.4 Shipboard fixed extinguishing systems such as Halon and CO2 are to be secured or isolated only at the discretion of the ship's Commanding Officer or designated representative. Employees should be trained as required by 2.2 before entering/working in spaces with active shipboard fixed extinguishing systems.

4.5 The term "annual" means once a year, not-to-exceed 12 months.

4.6 When accomplishing work in Collection, Holding and Transfer (CHT) and Motor Gasoline (MOGAS) tanks, spaces, or associated piping is required; the use of Standard Item 009-88 of 2.1 "Collection, Holding and Transfer (CHT) and Motor Gasoline (MOGAS) Tanks, Spaces, and Piping, including Sewage or MOGAS-Contaminated Tanks, Spaces, and Piping; certify" will be specified in the Work Item.

Fire Zone Boundaries

ESH Discrepancy and Corrective Action Log

Attendees

Ship name/hull number:
Location:
Prime Contractor:

Date: Time:

No.	Point of Contact	Date Identified	Date Corrected	Location	Discrepancy	Corrective Action

Type Codes: 1-Housekeeping, 2-Fire Prevent./Fire Equipment, 3-Hot Work., 4-FZ Boundary, 5-Electrical, 6-Compress Gas/Hoses/Bottles/Manifolds, 7-Scaffolding, 8-Egress/Exit, 9- Walking/Working Surfaces, 10-PPE, 11- Containment, 12-Unguarded/Edges/Holes/Openings/Fall Protection, 13-Confined/Enclosed Spaces, 14-Lines & Leads Hazards, 15-Equip. Adrift & Rollback, 16-Ventilation, 17-Machine Guarding/Hand Tools, 18-Crane/Rigging, 19-Environmental & Hazardous Material/Communication, 20-Environmental Protection, 21-General Safety

ATTACHMENT A

ESH DISCREPANCY AND CORRECTIVE ACTION LOG INSTRUCTIONS

1- Fire Zone Boundaries: List the designated Fire Zone Boundaries.
2- Attendees: List Company and or Command and names of personnel present for walk thru.
3- Ship Name/Hull Number: Indicate ship name and hull number of the location of the walk thru.
4- Location: Indicate location where ship is moored or docked, i.e. name of contractor facility or pier at Naval Base or Station.
5- Prime Contractor: Indicate prime contractor who has the contract with the SUPERVISOR.
6- Date: Indicate date of walk thru being accomplished.
7- Time: Indicate start time (24 hour clock) of walk thru being accomplished.
8- No. (number): List sequentially, each discrepancy noted during the walk thru. Number will continue where the numbering left off the previous day, until the end of the availability.
9- Point of Contact: Indicate Company/Command identified with the discrepancy.
10- Date Corrected: Date condition was corrected. If condition is not corrected, condition will be carried over to the next walk thru until condition is corrected.
11- Location: Indicate location of the condition, i.e. space number or frame number.
12- Discrepancy: Indicate condition that needs corrective action, be specific as necessary.
13- Corrective Action: Indicate corrective action taken to correct the condition and who is responsible for the corrective action.
14- Code: Indicate code, located at the bottom of ATTACHMENT A that condition can be grouped with, i.e. lines on deck causing trip hazard would use code 14- Lines and Leads Hazards.

Type Codes: 1-Housekeeping, 2-Fire Prevent./Fire Equipment, 3-Hot Work., 4-FZ Boundary, 5-Electrical, 6-Compress Gas/Hoses/Bottles/Manifolds, 7-Scaffolding, 8-Egress/Exit, 9- Walking/Working Surfaces, 10-PPE, 11- Containment, 12-Unguarded/Edges/Holes/Openings/Fall Protection, 13-Confined/Enclosed Spaces, 14-Lines & Leads Hazards, 15-Equip. Adrift & Rollback, 16-Ventilation, 17-Machine Guarding/Hand Tools, 18-Crane/Rigging, 19-Environmental & Hazardous Material/Communication, 20-Environmental Protection, 21-General Safety