

LOCKHEED MARTIN AERONAUTICS COMPANY FACILITY PROTECTION OPERATING INSTRUCTION		FROM: R.D. Freeman DEPT NO.: RPM4 TO: RPM4 Personnel	INSTRUCTION NO.: 500-01
ORIGINALLY EFFECTIVE: 04-19-99	REVISION NO.: 6	REVISION EFFECTIVE: 10-06-2010	PAGE 1 OF 12
TITLE: HOT WORK OPERATIONS			

Important Notice: A hard copy of this Job Instruction may not be the one currently in effect. The current version is always the version on the server.

I. PURPOSE:

To establish procedures for issuing temporary "Hot Work Permits" for any operation which produces heat or sparks, or involves an open flame. This includes, but is not limited to B-B-Q Grills, brazing, cutting (with torch or saw), grinding, soldering, thawing pipes, torch applied roofing, roofing kettles and welding.

II. DEFINITIONS:

- A. **Hot Work Permit:** A document, issued daily, by a fire fighter for a time span not to exceed one continuous shift of a contractor or LM Aero - Marietta welder or Fire Department whichever ends first.
- B. **Hot Work Certificate** A document issued by the Fire Prevention Coordinator, Fire Protection Engineer or Assistant Fire Chief and signed by ESH, the Facilities point of contact and the responsible person for the welder for a period not to exceed 30 calendar days. A fire fighter shall inspect the site at least once each day.
- C. **Grinding** Any operation using an abrasive wheel to cut metal or concrete that may contain metal reinforcing and will create sparks.
- D. **Welding** Any operation using heat to join metal parts. The heat source may be electric or an oxygen-acetylene mix.
- E. **Cutting** Any operation that uses a torch, saw, abrasive wheel or other method to cut metal that also causes sparks.
- F. **Open Flame** Any operation not included in WELDING or CUTTING that uses an open flame to join or separate metal. Examples – soldering, sweating pipe
- G. **Burning** Any operation that destroys material by fire. Examples – charcoal/LP gas grill, burn house fires

III. REQUIREMENTS

A. Hot Work Permit:

1. General:

- a. Hot Work operations can introduce potential, uncontrolled ignition sources to the work area. In the presence of combustible and/or flammable materials, a fire too often results when proper precautions are not taken.
- b. Hot Work Permits are required for all welding activities outside permanently designated weld shops or areas where a Hot Work Certificate has been issued.
- c. Every Hot Work operation must be weighed carefully for ***need*** and ***risk***. First, consider if the Hot Work can be avoided. Is there a safer way? Can work be done with a handsaw, pipe cutter, or other such equipment? Would nuts and bolts suffice instead of a weld? If the answer to these questions is "no", can all combustibles and flammables be removed from the work area, or if practical can the work itself be moved?
- d. Every hot work operation shall:
 - i. have a fire watch in addition to the welder

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- iii. Fire Fighter shall ensure no welding will occur within 50' of aircraft.
4. **Walls and Overhead Work:**
- a. Walls and/or ceiling must be of non-combustible construction and without combustible covering or insulation. If not, they will be properly protected.
 - b. Combustibles on the other side of all walls, where heat transfer could be a possibility, must be moved to minimum of 3 ft. from wall.
 - c. Fire resistant tarpaulins will be suspended beneath work when deemed necessary by Fire Protection.
 - d. Barricades will be in place to prevent pedestrian and/or vehicle traffic from moving under overhead work.
5. **Hot Work in Enclosed/Confined Spaces:**
- a. If work is in a "confined space", then a "Confined Space Permit" must be completed before a "Hot Work Permit" can be issued.
 - b. Area within confined and/or enclosed space must be free of all flammables and/or combustibles.
 - c. Containers and/or tanks shall be purged of flammable liquids/vapors and/or chemicals and must not exceed 10 percent of the LEL.
6. **Special Precautions:**
- a. Hot work within 20 ft. of the "B Wall" shall require extraordinary precautions and a specific permit due to the construction of the wall.
 - i. if a contractor is doing the work, the contractor shall be briefed on the condition of the wall and its hazards
 - ii. blankets shall be used to cover the wall within 20 ft, horizontally of and to the floor below the operation
 - iii. a charged water hose shall be available to the welder and the standby
 - b. Operating tar kettles shall have, within 25 ft of the kettle:
 - i. at least, two (2) portable fire extinguishers with a rating of at least 20 B:C
 - ii. one (1) 2½ gallon pressurized water portable fire extinguisher, 5 gallon bucket of water or a charged garden hose
 - iii. at least one knowledgeable operator attending the kettle from the time it is lit until it has cooled down
 - iv. operating tar kettles shall not be within 10 ft of any point or route of egress from any area
 - c. Hot work permit issuance in hangars with aircrafts:
 - i. Turn off and tag out RMT 4000 units using the valve impairment process
 - ii. Ensure that any and all hot work is being performed at least **50 feet** from the closest point of an aircraft

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4. Should the contractor/LM Aero - Marietta welder habitually not call (more than two consecutive times) upon completing the work, the Captain, shall notify the Assistant Fire Chief who shall make the decision whether or not deny a permit the next time. The Assistant Fire Chief shall advise Fire Prevention by e-mail of the decision to not to issue a permit to the offending party until a meeting has been held with Fire Prevention.
5. Assistant Fire Chief/Captain shall sign Hot Work Permit to indicate job closure and follow up has been properly executed. Include time and date in the endorsement. (Use the space "Received by Fire Prevention Coordinator")
6. Match the returned and signed Copy with the Original on the Hot Works Permit board, staple them together, original on top, with one staple in the upper left hand corner and place them in the Fire Prevention Coordinator's box
7. Ensure the completed permits from both campuses are submitted to the Fire Prevention Coordinator the next morning to be recorded.

D. HOT WORK CERTIFICATE:

1. Issued only at the request of a LM Aero - Marietta Facilities Project Manger with the concurrence of Fire Protection, Safety and the Facilities Project Manager as evidenced by signatures at the bottom each Certificate
2. Specifies by identifying recognizable landmarks or building columns, the area within which the Certificate grants control of Hot Work to the Certificate Holder
3. **Certificate Holder**
 - a. General Contractors who will be in direct control of a specific area for an extended time to facilitate the progress of the project
 - b. LM Aero - Marietta welding supervision when operations will be confined to a specific area for an extended period to facilitate the progress of the project
4. **Authorizes the Certificate Holder to oversee the operations within the area specified by**
 - a. issuing permits of his own design
 - b. direct oversight of the operation(s)
 - c. other effective means to prevent fire
5. **Requires the Certificate Holder to post the certificate in a central location and to comply:**
 - a. with LM Aero - Marietta rules (Fire Protection Standards Section 10) **and**
 - b. NFPA 51B **and**
 - c. OSHA 1926 Subpart J **and**
 - d. OSHA 1910 Subpart Q **and**
 - e. notify Fire Department at the end of each work day when all hot work operations have ended
6. **Requires the Fire Department to**
 - a. post a copy of the certificate in the Captains' office at the applicable station **and**
 - b. inspect the area at least once each day (Note the inspection in the daily pass on.) **and**

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REFERENCE DOCUMENTS

OSHA 29CFR1910 Subpart Q, **Welding, Cutting, and Brazing**

http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=10133

OSHA 29CFR1926 Subpart J, **Welding and Cutting**

http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=10914

AeroCode AC-1518, **HOT WORK** <http://cml.lmaero.lmco.com/release/cgi-bin/aerorelease?75938>

NFPA 1 (Current Edition) **Fire Prevention Code**

NFPA 13 (Current Edition) **Standard for the Installation of Sprinkler Systems**

NFPA 51B (Current Edition) **Standard for Fire Prevention During Welding, Cutting, and Other Hot Work**

NFPA 241 (Current Edition) **Standard for Safeguarding Construction, Alteration, and Demolition Operations**

LM Aero - Marietta Fire Protection Standards, Section 10 **Hot Work Policy and Procedures**

LM Aero - Marietta Fire protection Department

*LM-AERO WELDER***HOT WORK PERMIT**Permit No. Type of Operation: ☒ Grinding ☒ Welding ☐ Cutting ☐ Open Flame ☐ Burning

Issued to

(name of person)

Best Welder Ever

Representing:

RFM 5

(name of Contractor or LM Aero Dept. No.)

Tel. No.: ()

(4) 1235

Permit is valid from 0700 until 1500 on the date of issue only.

Location where work will be performed: (be specific about the location of work - Bldg., Floor, Column and approximate distance from column(s))

B1, 1, B04/B1, 2M, Cd36

Received by Fire Prevention Coordinator:

Assistant Fire Chief
Signature

Brief description of job: (be specific when describing the job being performed)

Installing condensate drain

Fire Watch

I. Am ready

☐ LM Aero - Marietta Standby

(Identify who will provide this fire watch)

LM Aero - Marietta Assessment upon arrival: Area ready for work? Yes ☒ No ☐ (describe conditions found upon arrival at work site)

Comments:

Hang welding blanket below and 10 ft. either side of work area.

Basic Requirements:

1. Compliance with 29CFR1910.252, .253, .254; NFPA 51B, Fire Protection Standard No. 10.
2. Area free of combustibles ($\geq 35'$) and flammable liquids/gases ($\geq 50'$).
3. All floor and wall openings within 35' of the job site shall protected by barriers.
4. Contractor/welder shall have applicable extinguisher on site - excluding those on walls.
5. Notify LM Aero - Marietta Fire Protection (4-3970) upon completion of work and follow up inspection by fire watch/supervisor.

I certify the area cited above has been prepared for a hazardous operation in accordance with the above checklist and instructions provided with this HOT WORK PERMIT.

I.W. Supervise

08/09/06

Supervisor (print name) and sign

Date

Permit Issued:

08/09/06 / 0655

Date

Time

Permit Denied:

Date

Time

Fire fighter: Great F. Fighter

Radio Call Number:

888

*** POST THIS PERMIT WHERE IT WILL BE READILY VISIBLE***

☐ Original - Fire Protection Department ☐ Copy - posted on site

LM Aero - Marietta Fire protection Department

HOT WORK PERMIT**CONTRACTOR WELDER**Permit No. 08/10/06Type of Operation: ☐ Grinding ☒ Welding ☒ Cutting ☐ Open Flame ☐ BurningIssued to
(name of person)

Qualified Welder

Representing:

I. M. Contractor

Tel. No.: () (777) 555-1235

(name of Contractor or LM Aero Dept. No.)

Permit is valid from 0650 until 1600 on the date of issue only.

Location where work will be performed: [be specific about the location of work - Bldg., Floor, Column and approximate distance from column(s)]

B27, 1, N15-N20

Received by Fire Prevention
Coordinator:Assistant Fire Chief
Signature

Brief description of job: (be specific when describing the job being performed)

Installing condensate drain

Fire Watch

I. Am ready

☐ LM Aero - Marietta Standby

(Identify who will provide this fire watch)

LM Aero - Marietta Assessment upon arrival: Area ready for work? Yes ☒ No ☐ (describe conditions found upon arrival at work site)

Comments:

Hang welding blanket below and 10 ft. either side of work area.

Basic Requirements:

1. Compliance with 29CFR1910.252, .253, .254; NFPA 51B, Fire Protection Standard No. 10.
2. Area free of combustibles ($\geq 35'$) and flammable liquids/gases ($\geq 50'$).
3. All floor and wall openings within 35' of the job site shall be protected by barriers.
4. Contractor/welder shall have applicable extinguisher on site - excluding those on walls.
5. Notify LM Aero - Marietta Fire Protection (4-3970) upon completion of work and follow up inspection by fire watch/supervisor.

I certify the area cited above has been prepared for a hazardous operation in accordance with the above checklist and instructions provided with this HOT WORK PERMIT.

W. H. Supervise

08/10/06

Supervisor (print name) and sign

Date

Permit Issued: 08/10/06 / 0630

Date

Time

Permit Denied: _____ / _____

Date

Time

Fire fighter: T.B. FirefighterRadio Call Number: 999

*** POST THIS PERMIT WHERE IT WILL BE READILY VISIBLE ***

☐ Original - Fire Protection Department☐ Copy - posted on site

LM Aero - Marietta Fire protection Department

HOT WORK PERMIT

Permit No. _____

Type of Operation: ☐ Grinding ☐ Welding ☐ Cutting ☐ Open Flame ☐ BurningIssued to
(name of person)

Qualified Welder

Representing:

I. M. Contractor
(name of Contractor or LM Aero Dept. No.)

Tel. No.: 777 655-1235

Permit is valid from 0650 until 1600 on the date of issue only.

Location where work will be performed: (be specific about the location of work - Bldg., Floor, Column and approximate distance from column(s))

B27, 1, N15-N20

Received by Fire Prevention
Coordinator:Assistant Fire Chief
Signature

Brief description of job: (be specific when describing the job being performed)

Installing condensate drain

Fire Watch

I. Am ready ☐☐

LM Aero - Marietta Standby

(Identify who will provide this fire watch)

LM Aero - Marietta Assessment upon arrival: Area ready for work? Yes ☐ No ☐ (describe conditions found upon arrival at work site)

Comments:

Hang welding blanket below and 10 ft. either side of work area.

Basic Requirements:

1. Compliance with 29CFR1910.252, 253, 254; NFPA 51B, Fire Protection Standard No. 10.
2. Area free of combustibles ($\geq 35'$) and flammable liquids/gases ($\geq 50'$).
3. All floor and wall openings within 35' of the job site shall protected by barriers.
4. Contractor/welder shall have applicable extinguisher on site - excluding those on walls.
5. Notify LM Aero - Marietta Fire Protection (4-3970) upon completion of work and follow up inspection by fire watch/supervisor.

I certify the area cited above has been prepared for a hazardous operation in accordance with the above checklist and instructions provided with this HOT WORK PERMIT.

W. H. Supervise

08/10/06

Supervisor (print name) and sign

Date

Permit Issued:

08/10/06 0630

Date

Time

Permit Denied:

Date

Time

Fire fighter:

T.B. Firefighter

Radio Call Number:

999

Fire Watch follow up:

I. Am Ready

Fire fighter follow up:

F. Fighter

Signature
(30 minutes after work completed)Signature/Call No.
(60 minutes after work completed)

*** POST THIS PERMIT WHERE IT WILL BE READILY VISIBLE ***

☐ Original - Fire Protection Department☐ Copy - posted on site