

**Environmental, Safety and Health
Requirements for
Contractors and Subcontractors**

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October 30, 2001

Emergency Phone Numbers

Emergency within Lockheed Martin Main Plant ® dial 911 from any Lockheed Martin telephone
or (303) 977-4646 from any cell phone or pay phone.

Lockheed Martin Main Plant Emergency Phone Numbers:

Fire	911 (or use FIRE ALARM BOX) (303) 977-4646 (by cell phone)
Medical Emergency	911 (303) 977-4646 (by cell phone)
Hazardous Material Spill	911 (303) 977-4646 (by cell phone)
Environment, Safety and Health	7-4444 (303) 977-4444 (by cell phone)
Plant Protection	7-4646 (303) 977-4646 (by cell phone)

Emergency outside of the Lockheed Martin Main Plant → dial 911 from any telephone

Fire	911
Medical Emergency	911
Hazardous Material Spill	(303) 977-4444
Environment, Safety and Health	(303) 977-4444

Reminder

When reporting an emergency, remain calm; give your location, nature of the emergency, and your name. Stay in the immediate vicinity to direct emergency personnel responding to your call.

If you cannot remember these numbers, dial “0” and an operator will report the emergency for you.

The Lockheed Martin Main Plant facility (Main Plant) maintains on-site emergency response support team 24-hours per day. If you are on the Main Plant, dialing 911 or (303) 977-4646 will connect you with this support team in the form of the Lockheed Martin Plant Protection Communication Center dispatcher. Lockheed Martin emergency support personnel are solely responsible for deciding if outside support agencies are needed. Do not directly call outside law enforcement, fire or rescue organizations; doing so could cause serious delay or confusion.

After reporting the emergency to the Plant Protection Communication Center, be sure to tell the Lockheed Martin Project Manager or Construction Manager and about the situation.

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1.0 INTRODUCTION

This document provides direction to all Contractors and Subcontractors working on Lockheed Martin property. Contractors and Subcontractors working on behalf of Lockheed Martin are reminded that this document is binding as a portion of their contract or subcontract, and that strict adherence is required. Contractors and Subcontractors hired directly by the U.S. Air Force are required to adhere to the conditions established in this document, although they may not be contractually bound to Lockheed Martin Astronautics Operations (LMAO).

The document supplements the numerous Federal, State and Local environmental, safety and health laws, regulations and permit requirements incumbent upon Lockheed Martin's property and operations. Contractors and Subcontractors are at all times required to maintain full compliance with those laws, regulations and permit requirements. This includes permits that have been issued directly to LMAO. Copies of these permits can be obtained from Astronautics Environment, Safety and Health (ESH).

ESH has the authority to immediately shut down any operation that is not compliant with environmental, safety and health laws, regulations or permit requirements. If a situation develops that is considered to be imminently dangerous to human health or the environment ESH will order the operation shut down. When possible, a shutdown would be ordered through the LMAO Project Manager or Construction Manager, or through the LMAO Contract Administrator. However, if necessary, ESH will shut down the operation without consultation. Any shut down of Contractor and Subcontractor operations due to their environmental, safety or health non-compliance will be at the Contractor's and Subcontractor's expense. Shut down operations may not restart without the approval of ESH. LMAO also reserves the right to recover costs associated with environmental clean-ups, environmental damage, and agency penalties for negligent acts by Contractors and Subcontractors.

All costs of maintaining compliance with environmental, safety and health laws, regulations and permit requirements are to be included in the contract price. Contractors and Subcontractors are responsible for identifying, determining and including the reasonable costs for maintaining full compliance in their bids or proposals.

The Contractor's and Subcontractor's prime point of contact for any environmental, safety and health matters, except for emergencies, is the LMAO Project Manager or Construction Manager (henceforth referred to simply as the Construction Manager). That person knows how to contact ESH if any question or need arises.

1.1 LOCKHEED MARTIN ASTRONAUTICS OPERATIONS ENVIRONMENT, SAFETY AND HEALTH POLICY

It is the policy of Lockheed Martin Astronautics Operations to conduct its business activities and operations in a manner that:

- protects public and personnel safety and health,
- protects the environment,
- minimizes risk to the company,
- develops safe and environmentally sound products for its customers,
- prevents damage to products, protects facilities and resources from losses,
- complies fully with applicable federal, state and local environmental, safety and health laws,
- pursues continual performance improvement,
- integrates ESH considerations into business operations and processes,

Line management is responsible for compliance of the operations under their control and for the safety and health of their employees.

2.0 GENERAL PRECAUTIONS

Contractors and Subcontractors shall at all times exercise care to avoid environmental damage and to protect its employees by providing safe working conditions. This is a contractual matter that may influence your ability to obtain future work at LMAO. The Prime Contractor is responsible to ensure compliance by each subcontractor with the requirements set forth in this document.

2.1 GENERAL SAFETY REQUIREMENTS

LMAO will not provide safety equipment to Contractor personnel nor provide any safety training except in the case of training that is unique to the working conditions at the LMAO facility. It is mandatory that the Contractor read this booklet and share its contents with personnel before assigning them to tasks at the LMAO facility. In addition, appropriate personal protective equipment (PPE) must be provided to employees before work begins.

Contractor personnel must exercise care to avoid injury to themselves or others by observing the condition of facilities, equipment and tools. If an unsafe condition exists, notify your supervisor immediately.

Contractors shall conduct weekly safety briefings with all their personnel to advise them of any hazardous operations to be performed, stressing special and general safety regulations pertaining to these operations. Attendance for each meeting and the subject presented shall be recorded and made available to LMAO. A representative of LMAO ESH will attend Contractors' safety meetings at the contractor's request.

The Contractor shall provide proof of an implemented health and safety program. LMAO ESH will perform oversight of the contractor in the form of periodic audits of Contractor operations to ensure compliance with their health and safety program. Any discrepancies will be called to the attention of the Contractor, and the Contractor shall take immediate action to correct such discrepancies.

2.2 GENERAL ENVIRONMENTAL REQUIREMENTS

Particular caution must be given to operations involving the use of chemicals, including petroleum products such as diesel fuel, paints, solvents, adhesives, etc. Chemicals must be stored in a manner that minimizes the potential for accidental spills. All petroleum, chemicals and waste shall be contained in a manner, which prevents release to the environment (water, soil or air). Keep chemical containers closed when not in use. Contractors and Subcontractors must not evaporate waste materials such as solvents, as a means of disposal.

Tanks should not be over-filled and stilt-leg tanks should be anchored properly to avoid toppling. Secondary containment berms should be constructed around storage tanks whenever practical. Any bulging, leaking or damaged petroleum, chemical or waste containers should be reported to Lockheed Martin Plant Protection Communication Center immediately (the phone numbers are **911** from an on-site phone, or **303-977-4646** from an off-site or cellular phone).

Before excavating, trenching, drilling or digging, the construction manager is required to obtain complete an Excavation and Trenching Permit. This permit provides concurrence with Communications, ESH, Plant Operations, and Roads and Grounds and lessens the number of incidents occurring in the field.

Contractor and Subcontractor employees working on Lockheed Martin facilities are required to maintain current training certifications when engaged in any regulated environmental activities where training is required by federal, state, local laws or permit restrictions. Examples include, but are not limited to:

- RCRA hazardous waste generator training
- OSHA 1910.120 training
- OSHA 1910.1200 training

2.3 ACCIDENT/INJURY REPORTING

Emergency medical assistance and fire reporting numbers will be conspicuously posted adjacent to each telephone on the construction site.

In the event of an accident or injury, the Contractor shall:

- 1) Notify LMAO ESH at 7-4444 immediately.
- 2) Make no attempt to disturb or remove equipment that caused or contributed to the accident or injury, until the area has been released by LMOA ESH.
- 3) Upon request, submit a complete report including causes and corrective actions taken to LMAO ESH.
- 4) Lockheed Martin will conduct an immediate investigation if deemed necessary.

2.4 INSPECTION DEFICIENCY LIST

Additionally, an ESH representative may issue a job site Inspection Deficiency List to the job superintendent and responsible LMAO agencies. This form will address issues of lesser gravity than a shut down order but if not corrected could lead to a shut down order.

3.0 SPECIFIC REQUIREMENTS FOR SAFETY AND HEALTH

The following section contains Contractor requirements specifically related to safety and health laws, regulations, and permits applicable to Lockheed Martin. The Contractor shall be familiar with these requirements and apply them to Contractor operations when applicable. The point of contact at LMAO ESH for all safety and health concerns is Wally Hill, who can be reached at 303-977-6345 (7-6345 from a LMAO internal phone), 720-521-5500 (pager), or 303-977-3844 (fax). If Mr. Hill cannot be reached at these numbers call 303-977-4444 (7-4444 from an LMAO telephone) as an alternate point of contact.

3.1 CHEMICAL HANDLING

Chemicals shall be stored in approved containers. Containers will be labeled as to content, strength, manufacturer, and part numbers.

Most chemicals used for cleaning, degreasing, and related operations are toxic and flammable. The Contractor shall be familiar with the safety precautions and protective equipment and clothing requirements when using these materials. Chemical vapors, gases, and dusts shall be controlled to prevent migration into occupied operational areas. The Contractor shall also be familiar with the safety precautions and protective equipment and clothing requirements when working around the commodities in the work area.

3.2 CONFINED SPACE ENTRY

LMAO has a permit required Confined Space Entry Program. If the area is posted or considered a confined space by LMAO, the Contractors/Subcontractors shall consider the space as a confined space under their program. Necessary entries into identified confined spaces by Contractors/Subcontractors will be by permit only, approved by LMAO ESH. Contractors/Subcontractors shall provide proof of a written confined space entry program and shall complete the permit before entry. Contractors/Subcontractors shall forward a copy of the permit to LMAO ESH for information purposes. Contractors/Subcontractors are required to provide their own personal protective equipment and sampling/monitoring equipment as required. Call extension 7-4444 or coordinate with the Construction Manager.

3.3 CRANES AND HOISTING EQUIPMENT

Contractors whose work scope includes the use of cranes and hoisting equipment are required to:

- 1) Thoroughly train personnel operating cranes, hoists, and other lifting equipment in the use of this equipment before operating it.
- 2) Never carry loads over personnel.
- 3) Be responsible and aware of utility lines. Booms are not to be operated within 10 ft of power lines.
- 4) Make inspection records and proof load data available for all cranes and lifting equipment to LMAO ESH upon request.

3.4 ELEVATED WORK AREAS

Contractor personnel working in elevated work areas shall ensure that tools or other objects will not fall onto persons working below. This shall be accomplished by using either platforms with toe boards, barricading the site to prevent persons from entering or being in the area below the work, tethering tools and equipment, or any other positive means of ensuring no one working below can be injured by a dropped tool or article.

Tools shall not be dropped or tossed from elevated work areas. They shall be tethered and lowered to the floor, or baskets may be used to lower tools.

Lifelines, safety belts, harnesses, and lanyards shall be used to prevent personnel falls from unguarded work surfaces more than 6 feet above the floor. Safety devices such as these shall not be used to lower material or equipment from the elevated work area. All devices shall meet applicable regulations.

Safety nets must be used when work is more than 25 feet above grade or floor level and the use of safety belts, harnesses, guarded scaffolds or other means are impractical.

3.5 EXCAVATING AND SHORING

Excavations of over 5 feet in depth, unless in solid rock, hard shale, hardpan, cemented sand and gravel, or similar materials, shall be either shored, sheeted and braced, or sloped to the angle of repose. All shoring and bracing shall be designed to be effective to the bottom of the excavation. Sheeting, sheet piling, bracing, shoring, trench boxes, and other methods of protection (including sloping) shall be based on calculation of pressures exerted by and the condition and nature of the materials to be retained, including surcharge imparted to the sides of the trench by equipment and stored materials.

When excavating the following considerations shall be made:

- 1) Material used for sheeting piling, bracing, shoring, and underpinning shall be in serviceable condition, and timbers used shall be sound and free from large or loose knots.
- 2) Excavated material or other material shall not be stored nearer than 2 feet from the edge of any excavation, and shall be stored and retained to prevent it from falling or sliding back into the excavation and to prevent excessive pressure on the sides of the excavation.
- 3) Sides and slopes of excavations shall be maintained in a safe condition by scaling, benching, or barricading.
- 4) Foundations adjacent to where the excavation is to be made below the depth of the foundation shall be supported by shoring, bracing, or underpinning as long as the excavation remains open.
- 5) Additional precautions, such as shoring and bracing, shall be taken to prevent slides or cave-ins, or when trenches are made in locations adjacent to backfilled excavations that are subjected to vibrations from railroad or highway traffic, the operation of machinery, or other sources.
- 6) Temporary guardrails or barricades and lights maintained from sunset to sunrise shall be placed at all excavations that are exposed to paths, walkways, sidewalks, driveways, or thoroughfares.
- 7) Where employees are required to be in trenches 4 feet deep or more, ladders extending from the trench floor to at least 3 feet above the top of the excavation shall be installed and located to provide an exit without more than 25 feet of lateral travel.
- 8) Trenches, ditches, etc., that men or equipment are required or permitted to cross shall be provided with walkways or bridges with handrails.
- 9) Tunneling shall be performed in accordance with local, State, and Federal laws.

3.6 USE OF EXPLOSIVES

No explosives other than those approved by LMAO are allowed on LMAO Property, and then only after LMAO ESH approval. The Contractor is responsible for complying with all applicable Federal, State, local and LMAO regulations pertaining to the storage, handling, and transport of explosives. The term “explosive” includes any or all of the following: dynamite, black blasting power, ANFO pellet powder, blasting caps, electric blasting caps, and detonating fuse. The term “electric blasting cap” includes both instantaneous electric blasting caps and all types of delay

electric blasting caps. The term “primer” means a cartridge of explosive in combination with a blasting cap or an electric blasting cap. (Other types of explosives not specifically identified herein will not be permitted on LMAO premises without prior approval). The term “explosive” is further defined as any chemical compound, mixture, or device, the primary or common purpose of which is to function by explosion (i.e., with substantially instantaneous release of gas and heat).

3.7 FIRE SAFETY REGULATIONS

The LMAO Fire Department has overall responsibility for Fire Safety at the Main Plant facility. At the Main Plant facility, the LMAO Fire Department will give Contractors and their employees specific instructions concerning any operation which tends to compromise fire safety practices. The following requirements regarding fire safety apply to all Contractors, Subcontractors and their employees:

- 1) Smoking is not permitted in any building on LMAO property. Smoking is permitted outdoors only - away from doorways and smoking materials shall be disposed of in containers provided for that purpose.
- 2) Welding equipment used on the premises must be of an approved type and in first class operating condition. When overhead welding operations are to be performed, arrangements should be made through the Construction Manager for removal of combustible materials and flammable trash to a safe location. Contractors are responsible for furnishing a fire blanket to cover materials which cannot be removed from the work area and which might be damaged by overhead welding operations.
- 3) When welding operations are performed with oxygen and acetylene tanks, the tanks must be properly secured and equipped with shutoff wrenches. Each oxygen and acetylene tank must be shut off at the tank when operations are completed for the day. Electrical arc welding equipment must also be shut off when not in use.
- 4) Prior to working on any fire protection system, or drawing water from a fire hydrant, arrangements must be made through the Construction Manager to obtain authorization from the LMAO Fire Department.
- 5) During painting operations, drop clothes must not be suspended from, or draped over, sprinkler pipes.
- 6) All sprinkler heads in the vicinity of the job must be properly covered with paper bags prior to the start of a spray painting operation. These bags must be removed immediately upon completion of the painting operation.
- 7) Fire extinguishers and other special equipment must be covered prior to start of a painting operation and must be uncovered immediately upon the completion of each operation.
- 8) Flammable waste materials must be disposed of at the end of each day in accordance with LMAO ESH requirements (see section 4.2).
- 9) Tools used for cleaning operations in flammable vapor or combustible residue areas must be of the non-sparking type. Extension cords and electrical equipment used in stacks, tanks, or other areas where flammable vapors may be present must have Underwriter’s Approval for class I, Group D Hazardous Location.
- 10) All fire lanes, aisles, exits and stairways must be kept clear and in good repair at all times.
- 11) The Contractor shall coordinate any activities that would impede the flow of traffic (vehicular or pedestrian) with LMAO Plant Protection to ensure safety/emergency response has been considered.

NOTICE

Welding and open flame permits are required to be obtained from the LMAO Fire Department prior to the start of any work. Call extension 7-4646 to obtain hot work permits.

3.8 HAZARDOUS MATERIALS NOTIFICATION

The Contractor is hereby notified that asbestos-containing materials such as insulation floor tiles, ceiling tiles, and equipment are located throughout LMAO Facilities. If suspected asbestos-containing materials are encountered, all work shall stop and the LMAO ESH department shall be notified immediately. Provisions for asbestos control will be arranged by LMAO.

The Contractor is notified that certain painted surfaces throughout LMAO facilities may contain lead. If suspected lead-containing materials are encountered, all work shall stop and the LMAO ESH department shall be notified immediately. Provisions for lead control will be arranged by LMAO.

The Contractor shall be responsible for notifying Subcontractors of all the requirements related to potential hazards such as asbestos, lead, or chemicals that may be encountered in the project.

Any use of radiation producing equipment such as x-ray machines, radiation sources, density gauges, lasers, and/or high intensity lights by the Contractor and its Subcontractors shall be approved by LMAO ESH prior to use on LMAO property.

The use of all potentially hazardous materials (i.e. solvents, paints, epoxies, etc.) by the Contractor and its Subcontractors must be approved by LMAO ESH. Conditions of approval may require the Contractor to employ ventilation controls and/or use or apply these materials during off-shift hours.

3.9 HOUSEKEEPING

Good housekeeping shall be maintained at all times. At the end of each shift, areas shall be swept and materials stacked in an orderly manner. The work area shall be kept clean and free of loose tools, boards, wood tailings, metal scraps, and other debris. This eliminates the creation of tripping hazards. In addition, hoses and extension cords shall be bridged as appropriate and shall be removed and coiled at the end of the task.

Good housekeeping is the best protection against fire. Dispose of oily rags or other objects that have become saturated with flammable liquids, in appropriate containers according to LMAO ESH requirements (see Section 4.2).

Sharp objects, such as nails, which protrude from packing materials, equipment, or other construction debris shall be removed or bent.

Lumber and bagged materials shall be stored to prevent them from falling or protruding into aisles and walkways. Flammable materials shall be stored in approved safety containers. These containers shall be isolated from combustible materials such as wood, paper, trash, etc. These areas shall also be kept free of weeds and other vegetation.

NOTE: No eating or drinking shall be allowed in areas in which hazardous materials are used.

3.10 LABELS

This section has been designed to help Contractors understand the chemical labeling system at LMAO. The purpose of the chemicals labels is to provide information on chemical identity, manufacturer name, and primary hazard warning. This has been accomplished through the use of two types of labels: Manufacturer labels and LMAO chemical labels.

3.10.1 MANUFACTURER LABELS

By law, the manufacture's label is required on all chemicals when received at LMAO. If this label is not removed, covered or destroyed, it is the only label required on the chemical. The label shall contain:

- 1) Material/Chemical Name;
- 2) Manufacturer's name;
- 3) Primary Warnings.

3.10.2 CHEMICAL LABELS




The label is required on containers only when a chemical is transferred to a secondary container or when a manufacturer's label is accidentally removed, covered, or destroyed. The chemical label shall contain:

- 1) Material/Chemical Name;

- 2) Manufacturer's Name (Trade Name Products Only);
- 3) Primary Hazard Warning;
- 4) Data Sheet (DS) Number.

The chemical label will have the following elements - the location of each of the elements is shown in figure 1.

- 1) Material chemical name.
- 2) Hazard warning: This is a 5 digit numeric code that indicates the severity of the hazard. **Please note: the larger the number, the greater the hazard.** There are codes for three hazards: Health, Flammability, and Reactivity. The criteria for this coding may be reviewed at the LMAO ESH at 7-4444.
- 3) DS Number: This is the data sheet number used to access the MSDS in the LMAO Material Safety Data Sheet Data Base (Olympus)
- 4) Date: The date the label was printed.
- 5) Appropriate warning statements.
- 6) Manufacturer's name - if other than a generic chemical.

1. Material Chemical Name	ACETONE
2. Hazard Warning	
Blue	 HEALTH
Red	 FLAMMABLE
Yellow	 REACTIVITY
3. Data Sheet Number	C00007
4. Print Date	11 Mar 88
5. Warning Statements	Keep Away From Fire, Sparks, and open Flame Avoid Contact with Eyes, Skin, or Inhalation of Dust or Vapor
6. Storage	Flammable

3.11 LOCKOUT/TAGOUT

Lockout/Tagout will be accomplished in accordance with 29 CFR 1910.147, The Control of Hazardous Energy. Contractors will exchange information with their LMAO contract representative regarding their respective lockout/tagout procedures. LMAO requires that all Lockout/Tagout tags contain contact information such as Contractor name, phone number, and name of person applying the Lockout/Tagout.

3.12 MATERIAL SAFETY DATA SHEETS

Contractors are required to provide LMAO ESH with advance copies of material safety data sheets (MSDS) for all hazardous materials used on the job. Materials requiring MSDSs include, but are not limited to, adhesives, cleaners, coatings, caustics/corrosives, paints, primers, resins, sealants, solvents, welding rods, or lubricants. Materials will be

approved for use prior to being brought onto the job site. The prime Contractor is responsible for supplying MSDS and all other pertinent safety and health information to its Subcontractors. LMAO ESH may at times, request documentation showing that the contractor has provided their employees, agents, and/or Subcontractors with the information required herein.

MSDSs for the chemicals you may come in contact with at LMAO, have been supplied to the prime Contractor for your contract. Copies of these MSDS can also be found on the LMAO Olympus Home Page at <http://olympus/>. In addition, copies of Contractor MSDSs must be available at the work site for Contractor employee availability.

If the use of hazardous materials, not previously supplied to LMAO becomes necessary during the job, the MSDS for those products must be forwarded to LMAO ESH for review and approval prior to those materials being brought on site.

3.13 PROCESS SAFETY MANAGEMENT

Contractors required to work in an area with processes covered by OSHA 1910.119, Process Safety Management (PSM) will be required to supply LMAO ESH with detailed information. This documentation may include, but is not limited to injury and illness rates, Contractor qualifications and references, training records, detailed work plans and/or Health Safety plans. LMAO ESH shall provide the appropriate process safety management training to Contractors for LMAO specific PSM issues.

3.14 PROTECTIVE CLOTHING AND EQUIPMENT

Contractor personnel shall wear appropriate safety equipment, and the contractor shall furnish safety equipment for their employees to use. LMAO will not provide safety equipment. The Contractor shall ensure its personnel are trained in the use, cleaning, and storage of all PPE.

Eye, face, head, hand, and foot protection shall be approved by the appropriate ANSI standard. Respirators shall be NIOSH approved. Hearing protectors shall have a noise reduction rating assigned to them and shall reduce noise levels to meet the requirements of the permissible noise exposures as outlined in 1910.95, Hearing Conservation Program.

Most construction jobs require hard hats, due to the possibility of personnel being stuck by falling objects, such as nuts, bolts, tools, etc. When working in close proximity to electrical circuits, hard hats shall be constructed of a non-conductive material.

Safety shoes shall be worn when required. Sandals, open-toe shoes and sneakers are prohibited. Leather work shoes 6 inches or higher, with soles sufficiently heavy to give adequate foot protection and with safety toes are recommended.

Gloves may be required. The type of gloves to be used depends on the job. Generally, rubber, plastic, or similar gloves are used for handling chemicals, corrosives, and related products; leather and cloth gloves are used for handling sharp, rough, or abrasive-type materials; electrical lineman gloves are used for working in close proximity to electrical circuits. Gloves should never be worn while working on, around, or in close proximity to moving machinery.

Different types of glasses, goggles, and shields have been designed to minimize eye hazards. Eye protection for welding operations require safety cup-type goggles with the proper tinted lens for the type of welding being done, and a welder's helmet with the properly tinted lens; chipping and grinding jobs require clear lens cup-type goggles and a clear plastic face shield; jobs involving hammering, sawing, etc., require clear lens safety spectacle-type glasses.

If your assignment requires you to work in a close proximity to storable propellants, LMAO will identify the hazardous commodity and will provide information on potential use or protective equipment. But it is the

Contractor's responsibility to provide the appropriate compatible protective equipment, and determine the level of protection for their employees based on their function and potential exposure.

3.15 VEHICLE OPERATION

Contractor vehicles which have limited visibility must be equipped with back-up alarms or a flagman must accompany the vehicle when backing to clear the way.

Vehicles powered by internal combustion engines (except properly tuned propane) shall not be used, parked, or stored inside buildings or confined spaces, unless gases are piped outside the building. Specific exceptions for short-term intermittent operations require LMAO ESH approval.

4.0 SPECIFIC REQUIREMENTS FOR ENVIRONMENTAL MANAGEMENT

The following section contains Contractor requirements specifically related to environmental laws, regulations, and permits applicable to Lockheed Martin. The Contractor shall be familiar with these requirements and apply them to Contractor operations when applicable. The point contact at LMAO ESH for all environmental management concerns is Kent Woods, who can be reached at 303-977-4858 (7-4858 from a LMAO internal telephone), 720-521-6325 (pager), or 303-977-3844 (fax). If Mr. Woods cannot be reached at these numbers call 303-977-4444 (7-4444 from a LMAO telephone) as an alternate point of contact.

4.1 AIR POLLUTION CONTROL

Air pollution emissions include: gases, solid particles (dust, smoke, and fumes), liquid droplets, and excessive odors. Contractors shall fully comply with all laws, regulations and permit restrictions incumbent upon Lockheed Martin's operations and property. Notable requirements include, but are not limited to the following:

- 1) **Emission Logs:** Contractors must document chemical usage on forms provided by the Construction Manager. The information required on this form is: month and year the chemical was used, chemical name (including complete trade name), chemical material safety data sheet number (to be obtained from the Construction Manager), and quantity of chemical used. The completed forms for each month shall be submitted to the Construction Manager by the 10th day of the following month. The Construction Manager will then turn the forms in to LMAO ESH.
- 2) **Fugitive Dust Control:** Dust caused by soil excavation, roadway construction, hauling on unpaved roads, and other dust-producing activities shall be controlled by the Contractor using covers and water spray. No oils or binders may be used on Lockheed Martin property.
- 3) **Visible Emissions (opacity):** A visible emission is any atmospheric discharge which causes an obscuring of the background or sky. Contractor equipment and operations shall not exceed the State and Federal maximum limit of 20% opacity.
- 4) **Open Burning:** Under no circumstances shall Contractors burn any materials, except as a routine consequence of welding or cutting operations or when applying flame-activated coatings
- 5) **Odors:** Contractors shall not cause malodorous emissions.
- 6) **CFC Program:** The Contractor performing work on refrigeration systems shall comply with all relevant regulations regarding chlorofluorocarbons (CFCs), such as R-11, R-22, R-123, etc. Relevant regulations include, but are not limited to, those established by the following agencies: Colorado Department of Public Health and Environment, U.S. Environmental Protection Agency, and U.S. Occupational Safety and Health Administration. Service and repair of air conditioning or refrigeration systems which involves components of the system that contain refrigerant must be performed by EPA certified and trained technicians. Certified technicians must have a copy of their certificates at the job site. A written record of service performed on refrigeration equipment must be provided to the Construction Manager. The Contractor shall obtain recordkeeping requirements from the Construction Manager.

4.2 HAZARDOUS WASTE MANAGEMENT

Contractors often bring materials on-site that are defined as *hazardous waste* if any excess material remains. Some commonly used materials are also capable of contaminating other substances and causing them to become hazardous waste. Examples of such materials include but are not limited to paints, solvents and sealers, as well as rags, soil and other items that have been in contact with those materials. Contractors are advised to closely manage their material purchases to avoid bringing excessive quantities on-site. Use materials and processes that minimize hazardous waste.

Some demolition debris can also be hazardous waste due to its composition or previous contamination. The Contractor should ascertain whether or not this will be an issue during the bid process.

Unless the contract or subcontract specifies that the Contractor shall provide for disposal of their hazardous waste, Lockheed Martin assumes control of hazardous wastes generated on-site. Therefore, in most cases, the Contractor cannot take any waste chemicals off-site. The Contractor can remove unused chemicals if they reasonably anticipate a future need for the chemicals at another job site. Otherwise, Lockheed Martin will manage these chemicals on-site as well.

Contractors shall expeditiously notify the Construction Manager that hazardous waste or excess hazardous material is going to be generated. Please note that this includes empty containers that formerly held hazardous substances. The Construction Manager is responsible for contacting LMAO ESH for waste management support. Lockheed Martin will arrange for proper pick-up, labeling and management of the wastes, materials and empty containers. Contractors are advised to err on the conservative side in determining if hazardous waste or hazardous material is potentially present.

4.3 STORMWATER, DRAINAGE, EROSION AND WATER POLLUTION CONTROL

There are three basic problem areas that require caution:

- 1) Discharge of illegal substances to the sewer system (this includes both sanitary and industrial/chemical sewers).
- 2) Discharge of illegal substances to storm drains or surface waters (like Brush Creek). This particular problem is confounded by situations that develop after rainstorms occur (see below for a typical example).
- 3) Modification of watercourse without having the required permit or approval document.

Contractors and Subcontractors sometimes engage in activities that can run afoul of these three problem areas. Specific examples include, but are not limited to: washing paint brushes in bathroom sinks, draining construction sites with pumps and hoses to a creek, and damming a creek. An example of a rainstorm-assisted problem is as follows: Concrete trucks rinsing out in un-approved areas. Some of the rinses do not set up and create a high pH discharge to a watercourse during a rainstorm.

Contractors and Subcontractors shall follow the **Dos and Do Nots** prescribed below.

- 1) **DO NOT** discharge or rinse any chemical, fuel or petroleum product to any sewer or drain, without first advising the Construction manager, and obtaining his approval to do so. The Construction Manager is to coordinate approval of the discharge activity with LMAO ESH. Contractors are advised, however, that in most instances the activity will not be approved by LMAO ESH due to very stringent State of Colorado discharge regulations.
- 2) **DO NOT** discharge any fluid to the watercourses or the land surface without first advising the Construction Manager, and obtaining his approval to do so. This includes de-watering construction sites after rainstorms. Contractors are advised, however, that in most instances the activity will not be approved by LMAO ESH due to very stringent State of Colorado stormwater regulations.
- 3) **DO NOT** modify a watercourse even temporarily. This means no dams and no side cuts in the channel.
- 4) **DO NOT** apply herbicides, pesticides and fertilizers to the land in a manner that would allow these substances to run off to the sewer system, the storm drains or a surface water body. This includes direct run-off and run-off caused by storms.
- 5) **DO** clean out concrete trucks only in designated areas.
- 6) **DO** store all chemicals, petroleum products and waste to prevent discharge of any stored material.
- 7) **DO** contact LMAO ESH to trench or excavation de-watering.

- 8) **DO** prevent silting of watercourses by providing erosion and sediment controls, such as silt fences and straw bales at construction sites. Anti-silting controls should conform to the following standards:
 - a) Mulching of all disturbed areas should occur within 14 days after final grade is reached on all portions of site not permanently stabilized.
 - b) Seeding must occur within one year on all disturbed areas and stockpiles not permanently stabilized. Temporary erosion control measures must be maintained until permanent control measures are in place.
 - c) Roads and stockpiles should be covered as early as possible with the appropriate aggregate base or vegetative cover.
 - d) Vehicle tracking of mud and dirt onto paved surfaces should be cleaned periodically; for sites greater than two acres, a rock pad should be built at points of ingress and egress.
 - e) Sediment entrapment facilities such as terracing, slope drains, straw bale barriers, silt fences, filter strips, sediment traps and sediment basins shall be used to capture silt leaving a disturbed area.
 - f) Waterways should not be crossed with construction vehicles. If there are no alternatives contact ESH two weeks in advance.
 - g) Inlets of stormwater sewers should have sediment entrapment facilities installed to prevent sediment-laden water from entering the inlet.
- 9) **DO** stabilize disturbed areas before others are disturbed.
- 10) **DO** install all perimeter erosion controls prior to grading.
- 11) **DO** maintain all erosion and sediment controls to assure continued performance until disturbed land is permanently stabilized.
- 12) **DO** obtain a stormwater permit from the State of Colorado for any construction project that will disturb more than five acres, or one acre for projects in progress or commencing after July 1, 2002. If a stormwater permit associated with new construction is obtained, the site must be inspected every two weeks, or after every storm event that has the potential to cause erosion, whichever is more frequent; findings must be corrected within seven calendar days of identification. Documentation of inspections must be available for audits.

4.4 POLYCHLORINATED BIPHENYLS (PCB) WASTE MANAGEMENT

Polychlorinated Biphenyls are a group of stable chemicals that are hazardous under normal circumstances and extremely hazardous if they catch on fire. Most major sources of PCB's such as older electrical transformers have been removed from Lockheed Martin property. However, some sources are still present and require special precautions, particularly during demolition activities. Specific sources that may still be present include:

- Capacitors
- Circuit Breakers
- Electrical Cables
- Hydraulic Systems
- Heat Transfer Systems
- Fluorescent Light Ballasts

Contractors shall take the following precautions:

- 1) No item containing or contaminated with PCB's shall be brought onto Lockheed Martin property.
- 2) Contractors and Subcontractors shall pay attention to the list of specific sources (from above) and advise the Construction Manager if any of these items are encountered during demolition or renovation.
- 3) Unless fluorescent light ballasts are specifically labeled "no PCB's" (or some variant thereof), they shall be assumed to be the older style of ballast that contains PCB's.
- 4) Any items that contain or are suspected of containing PCB's and which are being removed during renovation or demolition shall be managed properly. Contractors shall obtain guidance from the Construction Manager on how to proceed. The Construction Manager will coordinate with LMAO ESH regarding proper containers, labeling and storage requirements.

- 5) No item, substance or waste containing or contaminated with PCB's (including light ballasts) shall be disposed of in plant dumpsters.
- 6) If PCB's are spilled, immediately contact the Plant Protection Command Center at **911 (303-977-4646** from an off-site or cellular telephone). Do not attempt a cleanup yourself because special regulations and technologies govern PCB spill cleanups. If released PCB's are otherwise encountered, contact the emergency command center immediately. An example might involve opening a ceiling and discovering a black tar-like substance on a structural member below a distorted fluorescent light ballast. In any event, promptly report the event to the Construction Manager.

4.5 ASBESTOS CONTAINING MATERIALS ABATEMENT AND MANAGEMENT

The following are the standard requirements with which a contractor or subcontractor must comply when conducting work associated with asbestos:

- 1) The Contractor or Subcontractor shall at all times comply with all relevant regulations regarding asbestos abatement. Relevant regulations include, but are not limited to, those established by the following agencies: Colorado Department of Public Health and Environment, U.S. Environmental Protection Agency, U.S. Department of Transportation, U.S. Occupational Safety and Health Administration.
- 1) Colorado Air Quality Control Commission Regulation No. 8, Part B, contains specific requirements for abatement activities, including but not limited to: certification, notification, permitting, work practices, spill response, and waste handling. In addition, the Federal asbestos National Emission Standard for Hazardous Air Pollutants (NESHAP) program (40 CFR Part 61 Subpart M) is incorporated by reference into Regulation No. 8, Part E. The Federal program may contain additional requirements applicable to abatement activities meeting certain criteria. The contractor or subcontractor is responsible for complying with all applicable portions of Regulation No. 8 and the Federal NESHAP program.
- 2) Lockheed Martin will provide and store on-site the empty waste containers necessary for the abatement. Contact the Construction Manager to arrange for container delivery.
- 3) LMAO ESH will provide the Contractor with specific guidance regarding the handling of waste asbestos. Such guidance will vary due to factors such as project size and location, and will normally be provided during the project job walk, or supplemental job walk. The following guidelines are generally applicable:
 - a) The Contractor must stencil all containers with the job location, job number, or contract number.
 - b) The Contractor must maintain a logbook of the contents placed in each container (e.g. material type, volume, approximate weight), and make the logbook available to ESH upon completion of the abatement project.
 - c) The Contractor must move filled containers to a designated, project-specific staging area. Staging areas will be established by mutual agreement between LMAO ESH and the Contractor. These may be inside a facility for smaller projects, or outdoors in a secured impound for larger projects. The Contractor will usually be asked to establish the outdoor impoundment (e.g. locked chain link fence) near the project site, under the abatement contract or subcontract.
 - d) The Contractor must protect filled containers from damage, weather, and surface water by use of items such as drum covers, tarps, plastic sheets and palettes.
- 4) The Contractor must ensure that the complete original page of the asbestos waste manifest is returned to Construction Manager or LMAO ESH.
- 5) LMAO ESH can be reached at 7-4444 regarding asbestos issues.