

United Technologies Corporation

ENVIRONMENT, HEALTH & SAFETY GUIDELINES For CONTRACTORS



“Working Together for a Safer Environment.”



February 2013

The 2013 edition of the UTC EH&S Guidelines for Contractors handbook has incorporated several new elements and requirements designed to assist UTC in the implementation of best management practices to ensure the safety of our employees as well as the contractors working on behalf of UTC. We hope you will find this issue helpful and provide clear communication of the expectations and guidelines to meet our Contractor Safety Program goals and initiatives.

In particular, you will find all new requirements established from recently promulgated regulatory standards as well as UTC procedural requirements highlighted to emphasize these points. If you have any questions regarding any information contained within this document please contact your Contractor Coordinator or your Site Contractor Program Manager.

Additional information and specific EH&S requirements by Division and Site can be found in the Appendix section at the end of this guidebook.

We appreciate your cooperation and commitment to making UTC a safer place to work.

Updates to the handbook between annual printings will be posted on the intranet at the EH&S Guidelines for Contractor Handbook link at <https://www.ehs-env.com/contractor/UTC EHS Contractor Guidebook.pdf>. Contractors should visit this page upon their initial clearance to work at a UTC facility, and periodically thereafter.

Changes & Additions

Definitions

- Added new definitions relevant to Export Control, Shelter-in place and troubleshooting.
- Security and Identification.
- Added new contractor daily badging requirement (where applicable).
- Added camera/video pass requirement.

Emergency Response

- Added new information regarding emergency evacuation and shelter-in-place from new procedure.
- Injury & Illness Reporting.
- Added clarification of medical services for contractor employees training.
- Added expectations and requirements for OSHA 1910 and 1926 related training.

Hazard Control Programs

- Added requirements for demolition.
- Added requirements for steel erection.

Cardinal Rules

- Added and highlighted Cardinal Rule language.

Barricades

- Added requirements for barricades for Live Electrical Troubleshooting per NFPA 70E 2012.
- Added requirements for Trenches/Holes/Pits.

Cranes and Hoisting

- Added new requirements for cranes and lifts per new Crane Procedure.

Foreign Object Damage (FOD)

- Added new section.

Lock-Out / Tag-out

- Added new requirements for multiple trades LOTO events.
- Added requirements for Line Breaking and Gas line purging.

Personal Protective Equipment (PPE)

- Added new PPE requirements for protective clothing, footwear and life jackets.

Powered Industrial Vehicles (PIVs)

- Clarified existing information, added recent revisions, removed redundant requirements.

Roof Work/ Access

- Added new requirements for roof access, work and inspections on roofs per new procedure.

Scaffolding

- Added new requirements for contractor competent person inspection and tagging of scaffold system per Elevated Work procedure.

Trenching/Excavation

- Added new requirements for verification of CBYD.
- Added new requirements for authorization by contractor coordinator before commencing excavation.
- Added new requirements for evaluation by contractor's competent person for confined space classification.

Export Compliance

- New Section added.

Table of Contents

General Information

<u>Facility Contact Numbers</u>	1
<u>UTC EH&S Policy</u>	2
<u>Contractor EH&S Requirements</u>	3
<u>Definitions</u>	5
<u>Progressive Improvement Plan</u>	7
<u>Security and Identification</u>	9
<u>Housekeeping and Sanitation</u>	11
<u>Working in a Manufacturing Unit</u>	12
<u>EH&S Requirements for Miscellaneous Operations</u>	13
<u>Emergency Response and Notification</u>	16
Fires	16
Evacuation	16
Injuries	16
Spills	17
<u>Injury and Illness Record Keeping and Reporting</u>	18
<u>Accident/Incident Investigation</u>	19
<u>Training</u>	20
<u>Hazard Programs</u>	21
<u>Cardinal Rules</u>	23

EH&S Programs

<u>Aerial Lifts</u>	25
<u>Asbestos Containing Materials</u>	26
<u>Barricades</u>	28
Barricades for Hazardous Areas	28

Barricades for Trenches/Holes/Pits	28
Barricades for Overhead Work	28
Barricades for Live Electrical Work.....	29
<u>Chemical Handling/Storage/Hazard Communication</u>	31
<u>Clean Fill Materials</u>	33
<u>Compressed Gas Cylinders</u>	34
<u>Confined Spaces</u>	35
<u>Cranes and Hoisting Equipment</u>	37
<u>Dumpster Management</u>	42
<u>Electrical Safety</u>	43
<u>Elevated Work</u>	45
<u>Fire Protection and Prevention</u>	47
<u>Floors and Wall Openings/Barricades</u>	48
<u>Foreign Object Damage</u>	49
<u>Hot Work Permits</u>	50
<u>Ladders</u>	54
<u>Lockout/Tagout</u>	56
<u>Motor Vehicle Safety</u>	59
<u>Overhead Work</u>	61
<u>Personal Protective Equipment</u>	62
Minimum PPE Requirements	62
Hearing Protection.....	62
Respiratory Protection	62
Gloves	62
Protective Footwear.....	63
Hard Hats	63
<u>Powered Industrial Vehicles</u>	64

Roof Work/Access 67

Scaffolding 68

Stacks and Drains 69

Tools..... 70

Trenching, Excavating and Drilling 72

Waste Management.....74

Welding, Cutting, Brazing 77

 Gas Welding and Cutting..... 77

 Arc Welding and Cutting..... 77

Export Control..... 80

Appendices

Pratt & Whitney 81

Sikorsky..... 87

UTC Aerospace Systems 88

UTC Remediation..... 95

UTC Contractor EH&S Home Page
<https://www.ehs-env.com/contractor/>

Facility Contact Numbers

	Emergency Services	EH&S	Security	Fire Dept (non-emergency)
<u>Pratt & Whitney</u>				
East Hartford (860)	565-1111	565-3440	565-6615	565-5907
Middletown (860)	344-5111	344-4411	344-4074	344-4074
<u>Sikorsky Aircraft</u>				
AAG (845)	9911	463-6500	N/A	463-6500
CT Operations (203)	1911	386-8205	386-6461	386-6688
Derco (414)	0 or 9911	915-8168	915-8168	0 or 9911
HSI (203)	911	416-4007	416-4456	386-6688
Troy (334)	409 or 670-6409	670-6435	670-6409	N/A
WPB- FAFO (561)	1-911	625-8233	796-5400	796-2330
<u>UTC Aerospace Systems</u>				
Fairfield, CA (707)	Internal: 390	395-1895	422-1880	Internal: 390
Windsor Locks, CT (860)	654-1911	654-3852	654-5501	654-5501
<u>UTC Remediation</u>				
Division Sites	Utilize Division Site Specific Facility Contact Information.			
Discontinued Operation sites and Non-UTC sites.	Utilize Site Specific Health and Safety Plan Contact Information.			

UTC Environment, Health & Safety Policy

UTC will not be satisfied until its workplace is safe from hazards, its employees are injury-free, its products and services are safe, and its commitment and record in compliance, pollution prevention, and protection of the natural environment are unmatched.

Objectives

- Eliminate all employee & contractor injuries and ill health by making the workplace free from hazards and unsafe actions.
- Drive pollutants in manufacturing processes to the lowest achievable levels.
- Conserve natural resources in the design, manufacture, use and disposal of products and delivery of services.
- Comply with safety and environmental protection standards, applicable laws, and company policies and go beyond, when necessary, to achieve our goals.
- Hold operating managers accountable for safety and environmental performance and for providing leadership and required resources.
- Require all employees to support the policy and objectives.
- Continually improve EH&S management and performance.

The purpose and scope of the UTC Standard Practice 10, Contractor EH&S Program, is to regulate the activities of contractors who perform work on-site at UTC operating units.

Contractor EHS Requirements

Contractors are responsible for ensuring their employees, subcontractors and agents comply with this EH&S Guide and applicable Federal, State and Local regulations at all times during performance of their work.

- Each contractor will complete a Contractor EH&S assessment pre-qualification process. The pre-qualification process will identify contractors, vendors and service providers who have effective Environment, Health and Safety (EH&S) programs with demonstrated leadership and performance in their industry.
- UTC reserves the right to verify that the Contractor and all of the Contractor's employees meet contractual requirements, including orientation, training, medical testing and substance abuse screening.
- The Contractor EH&S Program at UTC is administered in English. The program includes this Contractor Handbook, online computer training, and a Contract Coordinator who will provide project management and supervision.
- Contractor employees who will be issued a picture badge or act in a supervisory role in the performance of their duties, must first complete UTC EH&S Online EH&S Training, Level III. This training covers the requirements in this handbook, and includes a test to verify comprehension. Information on how to take this training is available from EH&S, your Contractor Coordinator or Emergency Services.
- All contractors must communicate in English with the level of proficiency necessary to ensure the safety of their employees and the safety of others.
- Contractor activities and performance will be audited and evaluated through the Contractor EH&S Progressive Improvement Plan to ensure ongoing compliance with UTC policies, procedures and requirements, and to achieve a successful and injury-free workplace.
- Contractor employees may be required to sign a contractor verification card or the safety training card supplied by Security Services, the job coordinator and/or EH&S. If applicable, each contractor employee must carry the card with them at all times, as it is required in order to enter the facility through the security post.

- A Contractor Coordinator will be assigned for each project. The Contractor Coordinator will be the Contractor's primary contact on all matters related to the task.
- If there are any questions about this EH&S Guidelines for Contractor Handbook or any EH&S concerns related to an operation or activity, contact your supervisor or the UTC Contractor Coordinator.
- The requirements of this Guidelines for Contractor Handbook are in addition to the terms and conditions of any Agreement or Purchase Order between the Contractor and UTC and form a material part thereof.
- Contractors will conduct safety meetings with their employees to cover all applicable sections of this Guidelines for Contractor Handbook before any work is done on UTC property.
- Copies of the UTC EH&S Guidelines for Contractors handbook are available from Environmental, Health & Safety (EH&S) at the UTC Contractor EH&S Website.

Each contractor shall:

- Have ready access to this UTC EH&S Guidelines for Contractors handbook at all times to use as a reference source.
- Report all injuries, spills and near hits immediately to Emergency Services and your Contractor Coordinator.
- Conduct daily inspections of work areas to ensure compliance with the requirements of this guide. Review findings and corrective actions with your Contractor Coordinator.
- Provide Site Specific Job Site Safety Plans as required and review with all contractor employees associated with the project that are affected by work being performed.

Definitions

BAER (Business Area Export Representative):- UTC employee who has been appointed by his/her manager to obtain import-export compliance training and to act as his/her department's export-import compliance point of contact.

Cardinal Rule: - A rule that if violated, has the potential to cause a fatal or serious injury. As such, violators of a Cardinal Rule are subject to disciplinary action up to and including permanent suspension from working at UTC.

Contractor Coordinator – The UTC employee who is directly responsible for the activities performed on site by a contractor and the contractor's employees and subcontractors.

Foreign National: A foreign national is any person, firm, or other entity that is not a U.S. citizen, permanent resident alien, or asylee. A U.S. citizen who works for a foreign company is considered a foreign national. All foreign nationals working in the U.S. are treated as foreign nationals. Foreign nationals employed by UTC are treated as if they are receiving exported information. Exports to foreign nationals are treated as if the export is made to their country of citizenship. Note: An individual who has permanent resident alien status (holds a U.S. "green card") or who is a political asylee or refugee, is not a foreign national, and is treated as a U.S. person, for purposes of the export regulations.

Level I Contractor: Any other person performing work, or providing services who does not meet the definition of a level II or level III contractor service. Examples of level I contractors are credit union employees, office equipment repair personnel, cafeteria personnel, office staff, external auditors, etc.

Level II Contractor: Contractors whose services require them to work in the shop or other potentially hazardous work areas (e.g., process engineering consultants, equipment engineers, original equipment manufacturer service contractors) or delivery personnel who engage in material handling activities. Level II contractors do not perform "trades" type work (e.g., electrical, pipefitting, mechanical).

Level III Contractor/ Projects: Contractors and projects that involve trades type work such as general contractors, construction vendors, riggers/millwrights, painters, machine tool services vendors, and other

vendors who use power tools and/or are engaged in activities that involve potentially hazardous chemicals or energy sources.

Minor Incident – An incident (violation) that is not severe enough to be defined as a serious incident.

Protective Services: Includes UTC Fire Departments, UTC Medical Response Teams and UTC Security Departments.

Resident Contractor – is a contractor that has a permanent office or shop space in the facility.

Non-Resident Contractor – is a contractor that has been hired for a specific job or project and has no permanent office or shop floor space (e.g. electrical, plumbing, rigging contractors etc.) contractor employees shall carry proof of PIV training with them in some form (e.g. permit, wallet card, copy of training record etc.)

Contractor Review Board – The Contractor Review Board consist of the Site EH&S Managers, Facility Manager, and Contractor Administrator. The Contractor Review Board will review all contractor incident reports and assign corrective action points. Assigned points will be determined by the board based on the nature and circumstances of the incident or violation.

Serious Incident – An incident that results in an OSHA recordable injury, an environmental release that is deemed by the EH&S department to be a danger to human health or the environment, or property damage in excess of \$1000.00, including incidents that meet policy 33 & 52 reporting requirements.

Shelter-In-Place Location: An area within a building that should be with few doors and windows and away from exterior walls of the building. Area should be large enough for everyone in the designated area and have access to water supply, bathroom facilities and communications.

Site – Location of a UTC facility where work is performed.

Troubleshooting: Troubleshooting includes voltage checks and should only be conducted by Qualified Persons. Using tools to remove or install parts and/or components is not included. Manual activation of contactors, relays and motor starters is not considered troubleshooting and is prohibited.

Contractor EH&S Performance Progressive Improvement Plan

When a contractor has been observed violating any UTC or regulatory EH&S requirement, they shall be confronted by a Contractor Coordinator to cease the activity. Contractor serious violations and injuries, serious incidents or serious near misses that are a result of a Contractor violation will be reported to the site EH&S department.

UTC divisions have a Contractor Review Board (CRB) to oversee the implementation of a Progressive Improvement Plan (PIP). The CRB at each site will determine progressive improvement for contractors actions based on inspection findings and incidents. Each UTC division may choose to follow the progressive improvement plan as outlined below, or develop their own criteria. The intent of this plan is to raise the level of awareness concerning poor EH&S performance to succeeding levels of management within a contractor's organization, and thereby enabling management to implement necessary corrective actions to avoid future violations and business interruptions.

Example Performance Improvement Plan

Point Assessments

Minor Violation: 1 point

Serious Violation: 2-6 points (applied to Cardinal Rule violations)

Category Points: Violations within the same chapter of this handbook (e.g., Lockout Tagout, Confined Space, PPE)

Total Points: Total of all violations, regardless of category.

Category Points*	Total Points*	Division Improvement Action
1		Verbal Warning to Work Crew and Contractor
2	4	Written Warning to Contractor
3	6	Contractor Meeting with site Review Board
4	15	Work Crew ¹ Suspended from site for 1 week and Contractor Suspended from bidding jobs at the site/division ² for 6 weeks
5	20	Work Crew and Contractor suspended from site for 3 months
6	25	Contractor suspended from site indefinitely

* - For violations/incidents within the last 24 months.

1 - Alternate work crew may be assigned to continue work

2 - Site or division suspension determined by review board

UTC-Wide Consequences*	Improvement Action
1 Divisional Suspension	Written Warning ¹ to Contractor Management
2 Divisional Suspensions	12 Week Division Bid Suspension
3 Divisional Suspensions	1 Year Division Bid Suspension
4 Divisional Suspensions	Permanent Division Site and Bid Suspension

* - For suspensions within the last 24 months. A suspension at any division initiates the enterprise-wide improvement action

1 - Including warning that Contractor is at risk of enterprise-wide bid suspension.

Security and Identification

Security (Identification) Services will clear contractors prior to their first day of work at UTC. Contractors must contact the Security (Identification) Services department or their Contractor Coordinator at each UTC facility to determine what (if any) restrictions apply to individual personnel. Contractors must do this in advance of assigning personnel to work on or within a UTC property or facility. Contractor personnel may be required to provide government-issued documents confirming their eligibility to access security, export controlled, or other sensitive areas of UTC's facilities. UTC reserves the right to deny access to contractor personnel who are unwilling or unable to meet U.S. Government or UTC requirements.

- All persons visiting the site will register at their entry and exit points in accordance with site requirements as specified by the Contractor Coordinator.
- Contractors will display their One-Day Contractor Badge or Picture badge at all times.
- Contractors will exchange their Contractor Identification Card for a Temporary Contractor Badge (one-day badge) at the beginning of their work day every day, and return the one-day badge in exchange for their card at the end of their day.
- Contractors will report the loss of a contractor picture badge immediately to Security Services or Contractor Coordinator.
- Unless otherwise authorized by the Contractor Coordinator, contractors are accountable for all employee badges.
- Firearms and weapons are prohibited unless authorized by the Emergency Services/Security Manager.
- Portable radios, tape decks, television sets are prohibited, unless authorized by Contractor Coordinator. Camera and video equipment (including cell phones with digital camera capability) require a UTC pass, which must be displayed at all times if issued.
- Contractors will be restricted to the area in which they are working.
- Contractors are responsible for the security of all materials, tools and equipment used for the job, whether owned or rented by the contractor.

- The Fair Labor Standards Act prohibits the employment of anyone less than 18 years of age in hazardous occupations.
- All packages, equipment and vehicles are subject to inspection by the job coordinator or Emergency Services.
- Contractors admitted to company property must conduct themselves in an orderly and safe manner. Fighting, engaging in horseplay, being under the influence of or possessing alcohol or drugs, gambling, soliciting, stealing, immoral or otherwise undesirable conduct is not permitted.
- Contractor vehicles will be parked only in areas designated by the Contractor Coordinator or by Emergency Services. After unloading tools or equipment, contractor vehicles must be relocated to their designated parking area. Vehicles may not block fire lanes.
- Authorization must be obtained from the Contractor Coordinator for any access to UTC property outside normal operating hours or on weekends/holidays.
- Contractors will not use fire hydrants without prior Emergency Services approval.
- Failure to comply with security procedures is cause for termination of contractor privileges.

UTC reserves the right to request a copy of the contractor's hazard control programs, health & safety programs, training certificates, injury logs or other EH&S-related program documentation in order to substantiate compliance with various regulatory requirements.

Housekeeping and Sanitation

- Contractors shall maintain a high standard of housekeeping on the job at all times. Daily clean up of work areas is required.
- All equipment and materials shall be stored in an orderly manner.
- Lumber shall be neatly stored when not used and nails shall either be removed or bent over to prevent puncture.
- Access to emergency equipment, exits, telephones, safety showers, eye washes, fire extinguishers, pull boxes, fire hoses, etc. shall not be blocked.
- No material shall be stored outdoors without the permission of the Contractor Coordinator. Material shall be marked with the Contractor's name and contact information. All excess materials and equipment shall be removed from the site at the end of the job.
- Each Contractor shall perform work in a manner that will minimize and control the production and migration of noise, dust and debris to adjacent work areas.
- The Contractor Coordinator will notify the contractor immediately when inspections identify unsatisfactory clean-up efforts by contractor employees.
- Restrooms are provided throughout the facility. Your Contractor Coordinator will direct you to the nearest restroom location.
- Never leave file cabinet or desk drawers open more than one drawer at the same time.
- Do not lay electrical cords across aisles or walkways.
- Report slipping or tripping hazards immediately to the area supervisor or Contractor Coordinator.
- Do not store hazardous materials in office areas without approval from EH&S.
- Report all near hits to the Contractor Coordinator.

Working in a Manufacturing Unit

- Contractors shall not access, or perform any work on, operating process or manufacturing equipment unless specifically directed by the Contractor Coordinator.
- When construction work is performed in a manufacturing unit, work shall be coordinated with the operating unit supervision.
- Contractor employees who perform process and manufacturing operations work shall be trained in the operation and maintenance of the machine they will work with prior to starting work.

EH&S Requirements for Miscellaneous Operations

Blasting - Any use of explosives, caps, blasting equipment, etc. must be reviewed and approved in advance by the Contractor Coordinator, the site EH&S Department and the site Emergency Services Department. Review shall consider local structure and neighboring community impact.

Breaking Into Pipelines - The Contractor Coordinator will review any specific line entry procedures for the site, including a review of emergency procedures, control of hazardous energy (LOTO), and material safety data sheets for materials contained in pipelines (as applicable).

- Line Breaking Permit as required
- Gas Line Purging Permit as required

Clean Rooms - The generation of dust and dirt by job activities must be minimized in clean rooms. Appropriate clean room garments must be worn and if this requirement creates a perceived safety hazard, the Contractor must immediately contact the Contractor Coordinator.

Clean Rooms shall be entered and exited through approved doorways only. All construction materials, tools, ladders, etc. entering the Clean Room shall be as clean as possible prior to entry.

Compressed Air - Cleaning of clothing with compressed air is prohibited. Compressed air that is used for material cleaning must be limited to 29 psig and appropriate personal protective equipment and chip guards shall be used.

Computer Rooms - To avoid accidentally engaging switches, breakers, buttons, etc. do not place tools or materials on or against any equipment in computer rooms. All computer equipment near any activity where conductive material might fly or fall (soldering, welding, sawing, etc.), must be completely protected from the falling material.

Concrete, Concrete Forms and Shoring - All protruding reinforcing steel, onto which employees could fall, will be capped to eliminate the hazard of impalement. OSHA compliant rebar caps shall be affixed as necessary. Employees shall not work under suspended concrete buckets. Employees will be protected with fall protection systems and

other necessary protective equipment when placing or tying reinforcing steel more than six feet above any working surface. Formwork and shoring will be designed, erected, supported, braced and maintained so that it will safely support all vertical and lateral loads. Reinforcing steel for walls, piers, columns and similar vertical structures shall be adequately supported to prevent overturning or collapse. A limited access zone will be established whenever a masonry wall is being constructed. The zone shall be equal to the height of the wall to be constructed plus four feet and shall run the entire length of the wall.

Demolition and Dismantling - An engineering and environmental survey shall be made by a competent person prior to the demolition of any structure. The survey shall determine the condition of the framing, floors, and walls and the possibility of unplanned collapse of any portion of the structure, and the presence of hazardous materials.

Electrostatic Discharge Sensitive (ESDS) areas - Always wear static discharge equipment (except electricians) and test the static discharge equipment for effectiveness. Do not touch any ESDS equipment or hardware.

Electric Utility Use - Contractors must coordinate with their Contractor Coordinator for access to appropriate electric utility sources. Accessing power from test stands or production equipment is prohibited.

Internal Combustion Engines – Operation of diesel and gasoline powered vehicles is prohibited inside buildings unless prior approval and arrangements for ventilation have been made with the Contractor Coordinator, Emergency Services and the EH&S department.

Lasers – Prior approval must be obtained from the site EH&S department before any laser equipment is used on site.

Noise - Contractor personnel shall wear appropriate hearing protection in accordance with facility rules and posted signs.

Contractors must inform Contractor Coordinator if any planned task may create a noise level greater than 85 dBA.

Any planned tasks that are expected to create noise levels greater than 85 dBA, shall have the area restricted and properly identified as deemed necessary by the Contractor Coordinator.

Radiographic Equipment - Prior approval must be obtained from the site EH&S department before any radiation-emitting equipment (X-ray

units, radioactive sources, etc.) is used on site. Approved radiation sources shall not be left unattended or on UTC property overnight.

Sprinkler Systems - Contractors shall not install or alter sprinkler systems without prints or documentation approved by the department at the site responsible for fire safety. Only licensed/qualified contractors may work on sprinkler systems.

Temporary Heating Devices - Temporary propane or resistance heating devices used on site must be approved by a nationally recognized testing agency (e.g., UL, Factory Mutual). The Contractor Coordinator must approve heater use and location in advance. A hot work permit must be issued on the day of use (see Hot Work Permit section of these guidelines).

Intrusive demolition/drilling/boring

- Prior to commencing any subsurface demolition/drilling/boring activity where the absence of utilities cannot be confirmed, the Contractor Coordinator and the contractor shall verify that subsurface surveys have been completed upon receipt of appropriate documentation and or field marking of surface grade by a scanning professional.

Demolition/drilling/boring into concrete (Interior/Exterior)

- Prior to commencing any subsurface demolition/drilling/boring activity into a concrete surface where the absence of utilities cannot be confirmed, a three-dimensional scan shall be performed by a scanning professional.

General Requirements

- Based on site history and UTC remediation, an Environmental evaluation may be required. Contact Project Coordinator for more information.
- Subsurface lines, equipment and electrical cables shall be identified and located by the Contractor Coordinator prior to beginning work that involves demolition/drilling/boring into structures.
- Contractors will not initiate work without prior approval/authorization to proceed by the Contractor Coordinator.

Emergency Response and Notification

Fires

In the event of a fire, locate and pull the nearest fire pull box or call the emergency number specific to the site you are working. This will communicate the fire emergency directly to the dispatcher.

Do not attempt to extinguish a fire yourself, unless you are trained and qualified to operate a fire extinguisher.

Evacuation

Evacuations are indicated by an audible signal followed by a specific announcement over the public address system. It is essential that all evacuation or shelter in place instructions be adhered to.

Exit quickly and in an orderly manner.

Your Contractor Coordinator will review evacuation routes and assembly areas with you.

Proceed to the nearest safe exit or shelter in place location in an orderly manner. **DO NOT** rush, push, stop, or attempt to retrieve personal items that are not in your immediate area.

When exiting a building, go to the nearest assembly area and standby for further instructions. Follow the sweeper's instructions.

DO NOT attempt to re-enter the evacuated area until you are directed to do so by a uniformed UTC Emergency Services representative or sweepers who have been directed by Incident Command.

Injuries

In the event of an injury or illness, dial the site-specific emergency phone number from any internal phone, from a safe location.

Provide the dispatcher with the following information:

- Nature of emergency (injury, spill, fire)
- Location (department name/number, building letter, column number)
- Your name and the name of the company for which you work.

Health Services is responsible for keeping track of all injuries and illnesses whether incurred by our employees or those contracted to UTC.

Only properly trained UTC emergency response personnel are qualified to clean up injury sites involving body fluids.

Spills

Chemicals may not be disposed of by dumping on the ground or into sanitary or storm drains.

A **spill** is defined as an accidental release of any product, including water, outside of its normal container except during use.

There is no minimum to the quantity that defines a spill.

All spills, including those that occur outside a building, **shall be reported immediately** by dialing the emergency response number applicable to the site where you are working and providing the dispatcher with the following information:

- Nature of emergency (injury, spill, fire)
- Location (department name/number, building letter, column number)
- Your name and the name of the company for which you work.
- Identity of material spilled/released
- Quantity of material spilled/released
- Time of the spill

Contractors shall be responsible for all spills that result from their work at any UTC facility. However, the contractor cannot start cleaning up the spill until Emergency Services has authorized them to do so, unless failure to do so immediately poses an imminent risk to human health or the environment,

If UTC determines that a spill clean-up is beyond the contractor's ability, or the contractor has failed to clean up the spill adequately, UTC shall use its own personnel or hire spill clean-up specialist.

In all cases, the contractor shall be responsible for all costs. These costs may include removal of contaminated materials as well as restoration of the area.

Injury and Illness Recordkeeping and Reporting

Contractors shall immediately notify their Contractor Coordinator of any injury, illness and any loss of or damage to UTC property, including incidents related to their subcontractors.

Contractors shall collaborate with the Contractor Coordinator in the incident investigation and root cause corrective action implementation.

An investigative report assessing the root cause and corrective action shall be submitted within 24-hours of the incident's occurrence to the Contractor Coordinator. An extension may be granted upon request.

Any unsafe conditions and activities shall be reported to the Contractor Coordinator and corrected immediately.

In the event a contractor requires medical attention for a work-related or potentially work-related injury or illness, or periodic medical evaluations, the contractor must use the clinic selected by his or her company. The UTC onsite medical clinics (where available) provide clinical evaluation and treatment to contractors in the following situations only:

- FAA mandated testing (e.g. drug and alcohol testing)
- In emergency medical situations when not transported directly offsite by the fire department/plant protection
- Hydrofluoric Acid (HF) exposure

Accident/Incident Investigation

The Contractor Coordinator accompanied by the contractor must formally investigate all incidents, injuries and spills, including near misses, in order to prevent reoccurrence. For all incidents:

- Secure the area with barricades/caution tape to preserve the scene.
- Perform a walk-through of the incident site; this may occur with Site EH&S personnel as well as the Contractor Coordinator.
- Interview witnesses, where applicable.
- Take pictures and/or create a diagram of the incident site. Pictures must be reviewed by the Contractor Coordinator prior to leaving the site or transmitted electronically.
- Submit a written incident investigation report to the Contractor Coordinator, within 24 hours of the incident occurrence.
- The report shall describe the incident and identify root cause and corrective actions, along with a timetable for implementing the corrective actions.
- With the assistance of the Contractor Coordinator, an internal divisional incident report will be completed for all incidents that result in a recordable injury, environmental release deemed hazardous by the Environmental Health and Safety department, or significant property damage.

Training

Contractors shall instruct each of their employees and sub-contractors in the recognition and avoidance of unsafe conditions and of the regulations applicable to his/her work environment to control or eliminate any hazards or exposure to illness or injury.

- All contractors and their subcontractors performing jobs on UTC premises shall ensure that all of their employees assigned to perform work have been properly trained to the OSHA regulations applicable to the hazards associated with the work they will perform prior to permitting the employee(s) to begin work.
- Training may include, but is not limited to, on-the-job (OJT) training, tool box sessions, internal or external formal training, etc. The training must meet the minimum criteria set forth by the state, federal, national, provincial, and local requirements regarding the specific subject matter.
- Contractors are required to work to the most stringent applicable sections of OSHA 1910 and 1926 at a minimum. The rules and requirements covered in this *UTC EH&S Guidelines for Contractor Handbook* are not all inclusive and there may be additional requirements specific to a project or task. Copies of OSHA standards can be obtained from OSHA's web site <http://www.osha.gov>.
- Contractor(s) and subcontractor(s) shall maintain, on the UTC premises, a summary of training information depicting the training/certification/licensure as required for all employees assigned to perform work on the project.
- Actual documentation of training is subject to review upon request by UTC. Examples of actual training documentation include class rosters, toolbox notes and attendance, certificates, official letter of completion, etc.
- Each contractor employee who performs on-site services must complete and pass the appropriate level of UTC Online EH&S Training (Level I, Level II, or Level III) on an individual basis, prior to arriving on-site and on an annual basis.

Hazard Control Programs

The remaining pages of this handbook contain specific environmental, health and safety requirements for Contractors working at UTC facilities within the United States. Contractors are responsible for being aware of and following these requirements.

Demolition Work:

Utilities shall be marked (paint, tape, ribbon etc.) at the locations where they shall be disconnected. The marking shall occur at the time when zero energy is verified and/or pipes are cleared or flushed.

Every employee who will be involved with the physical disconnection of each utility shall witness the verification

Steel Erection:

Permanent floors will be installed as the erection of structural member progresses.

Temporary floors shall be solidly packed or decked over the entire surface except for access openings.

Contractor employees shall be provided the appropriate fall protection by the contractor when the fall potential is greater than six feet, unless an exception is approved by the UTC EH&S professional and contractor EH&S professional.

During placement of steel members, the load shall not be released from the hoisting line until the members are secured with not less than two bolts, or the equivalent, at each connection and drawn up wrench tight.

Open web steel joists shall not be placed on any structural steel framework unless such framework is safely bolted or welded.

Where long span joists or trusses are used, a center row of bolted bridging shall be installed to provide lateral stability prior to slacking of hoisting line.

Tag lines shall be used for controlling loads.

Employees shall not be permitted to work under areas of steel erection unless protected by a solid floor or other equivalent protection.

Concrete cutting/coring/drilling

Saw/Drilling/Coring operators shall set up a designated “Safe Zone” with appropriate warning barriers and signage to protect others

In work areas where the exact location of underground electric power lines is unknown, employees which may contact a line shall be provided with insulated protective gloves.

Protective gloves need to be designed and manufactured according to ASTM standard D 120: Specification for Rubber Insulating Gloves

Insulating footwear should be rated “DI”, for dielectric shoes, and rated according to ASTM F 1117: Specification for Dielectric Overshoe Footwear.

Each affected employee shall wear protective footwear when working in areas where such employee’s feet are exposed to electrical hazards.

Cardinal Rules

UTC has established 5 universal cardinal rules (Confined Space, GFCI, Elevated Work, Lockout Tagout, and Machine Guarding). These are rules that if violated, have the potential to cause a fatal or serious injury. Each UTC Division may adopt additional Cardinal Rules. Refer to the Appendices section at the end of this guidebook.

Cardinal Rule Violations:

Contractor employees who are observed violating a Cardinal Rule are subject to having their contractor clearance suspended.

The length of suspension will be determined by the Contractor Review Board in consideration of facts from the incident investigation.

The employee will be required to surrender his/her contractor clearance card and if applicable, his/her picture badge. The employee will also be required to retake the online UTC Contractor EH&S Training and provide proof of completion to have their card/badge returned when the suspension expires. A violation of a Cardinal Rule may result in permanent suspension from working at UTC.

The UTC Cardinal Rules are:

Confined Space

Confined Spaces shall be identified and written procedures established and followed for entry.

Contractors who will enter Confined Spaces must perform an evaluation of the space and review the assessment with their Contractor Coordinator prior to entry.

GFCI use on ALL Hand and Portable Power Tools

Contractor employees shall use Ground Fault Circuit Interrupters (GFCIs) on all portable tools and portable electrical devices used in service/maintenance or installation activities.

Contractor employees shall use Ground Fault Circuit Interrupters (GFCIs) on all portable tools and portable electrical devices used in all

manufacturing/assembly/overhaul & repair activities where construction activities are performed, or where there is the potential for exposure to damp/wet areas or the potential for damage to cords/plugs/receptacles.

Elevated Work

Contractor employees shall use fall protection when exposed to a fall hazard (working at an elevated level of 6 feet or more).

Lockout Tagout

Prior to performing work on machines or equipment, contractor employees shall identify all hazardous energy forms, bring them to a Zero Energy State and secure them. Zero Energy State is defined as the elimination and/or control of hazardous energy such that it no longer represents a hazard to personnel.

This shall include but is not limited to mandatory use of lockout / tagout procedures when working on any electrical, mechanical, hydraulic, pneumatic, compressed gas, chemical or thermal processes.

Any violation of Lockout Tagout procedures can be a violation of the cardinal rule, including unauthorized cutting of locks or failure to utilize Lock out Tagout when required.

Machine Guarding

Contractor employees shall not tamper with or disable machine / equipment guarding while operating under normal conditions.

Aerial Lifts

Aerial lifts (boom, snorkel types, etc.) and other vehicle mounted elevated work platforms shall be used in accordance with applicable regulatory and industry recognized standards, and shall meet UTC Powered Industrial Vehicle (PIV) requirements.

All employees operating aerial lifts shall be properly trained for the lift they use.

Employees working in aerial lifts shall wear hard hats or bump caps, and shall be tied off in a restraint mode with a harness and lanyard. Restraint mode is achieved when the lanyard prevents the employee from stepping up onto the mid-rail. **Scissor lifts** may be exempt from restraint mode fall protection requirements. Refer to your contractor coordinator regarding site requirements.

Employees shall work from the floor of the lift only. Climbing out of the aerial lift or on the handrails, mid-rails or brace members is prohibited unless an approval is authorized from EH&S verifying an adequate anchor independent of the lift is used to tie off in a fall arrest mode.

Areas below overhead work will be clearly marked with safety stanchions, caution tape and signs to protect associates at grade level.

Major construction areas will be barricaded and construction signs erected to keep out all unauthorized personnel.

Use of a ground spotter is encouraged.

Asbestos-Containing Materials

- Some building materials throughout the facility may contain Asbestos-Containing Materials (ACM). Furthermore, the building material may not be labeled as containing asbestos.
- Assume that all thermal insulation (piping, elbows, joint insulation, etc.) floor and ceiling tile, window caulking, siding, and roofing materials, do contain asbestos, unless labeled as non-ACM. This list does not include every product/material that may contain asbestos. It is intended as a general guide to show which types of materials may contain asbestos.
- Some buildings may have thermal insulation sprayed on ceiling structural components (e.g. decking, I & H beams, etc.).
- The Contractor Coordinator, designated Industrial Hygienist or the site facilities department must be contacted before ceiling tiles are moved below areas that have not previously been confirmed to be free of sprayed on asbestos. Should the upper ceiling be insulated with sprayed on asbestos, only personnel trained and qualified to work with asbestos will be permitted to remove ceiling tiles and work above them, and only after authorization by the site facilities department or designation Industrial Hygienist. If the asbestos cannot be avoided to perform the work, it must be abated before the work is performed.
- No new products containing asbestos or its synonyms (crysotile, amosite, crocidolite, anthophyllite, actinolite) may be used in any facility. Some foreign country suppliers identify the names of the types of asbestos their product contains without using the word asbestos.
- Tasks involving work on existing building material must be reviewed for ACM by the Contractor Coordinator and Site EH&S personnel prior to commencing the task. Construction and demolition activities

will require prior approval by means of the site Facilities/EH&S department review procedure.

- In the event that ACM or suspect ACM material is disturbed/damaged encountered during construction or demolition, the contractor shall stop work immediately and call the Contractor Coordinator or the site emergency response number immediately.
- Contractor personnel will not attempt to clean up any such debris, or perform any repair to the suspect ACM material unless they are trained and qualified to perform asbestos abatement, and are approved by UTC for asbestos abatement projects.
- All contractor employees will vacate the immediate area while UTC personnel assess the material and the area of concern.

Barricades

Barricades for Hazardous Work Area

- Snow fencing, expandable gates or equivalent at least 42" high - New Construction Area or Unattended Work Area.
- Danger Tape - Work in progress that is continuously attended and supervised with a hazard that has a potential for moderate to severe injury (e.g., mounting hoist rails, hot work).
- Caution Tape or Cones - Work in progress that is continuously attended and supervised with a hazard that has a potential for minor injury only (e.g., mounting a bulletin board, plumbing repairs on a water fountain).
- Blocked main aisles require prior approval from the contractor coordinator and must have detour signs posted to re-route personnel to alternate emergency exits.
- Major construction areas will be barricaded and construction signs erected to keep out all unauthorized personnel. Curtain barriers must be made of flame retardant materials certified by Factory Mutual, Underwriters Laboratories or equivalent on the product label or the product specifications.

Barricades for Trenches/Holes/Pits

- If four feet or more in depth - standard rail system that meets OSHA 1910.23(e) specifications, four feet from edge of opening (*less than 4 foot distance must be approved by the Contractor Coordinator*).
- If workers are exposed to falls greater than six feet when inside the barricade, additional approved fall protection will be required for the workers.

- If under four feet but greater than one foot - Snow fencing, expandable gates, or equivalent at least 42" high, four feet from edge of pit.
- If under one foot and unattended (i.e. work is not in progress), caution tape four feet from edge of pit.
- If the barrier will interfere with a main aisle or completely block the only means of egress of a department aisle, the 4-foot minimum distance from the edge is waived. If this creates a greater hazard to personnel working inside the barrier however, alternate barricading methods may be used if authorized by the Contractor Coordinator and the EH&S department.

Barricades for Overhead work

- Contractors shall secure area with safety stanchions or caution tape and post warning signs to alert pedestrians and area occupants of overhead work. Ground spotters may also be required. The distance the barricade is set up away from the work area must take into consideration the length of materials in use and the potential for materials to be projected horizontally or to rebound from the ground surface or surrounding structures if they fall from overhead. The set-up distance should allow for these types of hazards to be contained within the barricaded area.
- When work is limited to a visual inspection without tools, Caution Tape or safety cones at a minimum of two feet from the work (no potential for falling objects) may be used.

Barricades for live electrical troubleshooting:

- Barricades shall be used whenever qualified authorized individuals are working on exposed live parts; the barricade distance will be no closer than ten feet from the live part(s).
- Barricades shall be used with safety signs where it is necessary to prevent or limit Unqualified or other employee access to work areas containing live parts. Unauthorized crossing of boundaries shall not be permitted.

Barricades for Altered Walking/Working Surfaces

- Whenever a walking or working surface is altered, it shall be barricaded with danger tape or other sufficient effective methods until the surface is restored to its original condition or better.

Barricades and Signage for Roads

- Locations where work is being performed on roads and parking areas will be, at a minimum, identified and barricaded with cones. In addition, signs that identify the road work shall be erected at locations where work is being performed that may be potentially injurious to workers and motor vehicle operators.
- Signs shall be designed and constructed of materials/devices that provide the highest degree of visibility to motorists and can withstand prolonged exposure to inclement weather conditions.
- Hand-written signs are not acceptable.
- The placement of cones and signage shall consider traffic patterns and flow in order to ensure they alert motor vehicle operators of the road work and provide them with sufficient time and space to manipulate their vehicles away from and around the identified hazard(s) in a safe and timely manner.

Chemical Handling & Storage/ Hazard Communication

- Contractors shall have a written hazard communication program and shall inform their employees of the location and availability of their program.
- Contractors shall train their employees on the physical, chemical and biological agents in the workplace.
- Material Safety Data Sheets (MSDS) shall be available at the work site for materials supplied and used by the contractor.
- The Contractor Coordinator will communicate hazards inherent to the work location and provide the contractors with access to MSDSs for materials at this site.
- All chemicals used by contractor personnel (including fuels, paints, coatings, coolants, cleaners, flooring materials, etc.) must have prior approval via the site EH&S approval process.
- Chemicals will be properly labeled and segregated to prevent potential hazardous mixing.
- Approved metal safety cans with self-closing lids and flame arrests shall be used for handling flammable liquids.
- All containers must be properly labeled as to their contents and potential chronic health and target organ effects.
- Flammable and combustible liquids shall not be used or stored in any close proximity to open flames and ignition sources.
- All unused, flammable and combustible liquids must be stored in a flammable-storage closet or removed from the premises on a daily basis.
- Flammable and combustible liquids and other hazardous materials shall be kept in closed containers when not in use.
- Upon completion of the project, all unused materials will be taken off site.
- Storage and transfer of flammable liquids will be grounded and bonded where necessary.

- Emergency safety showers and eyewash units are provided in various areas of the facility. Your Contractor Coordinator will identify their locations for you. In the case that there is not an immediate eyewash station available, your own portable eyewash station may be required.
- All affected contractor employees shall wear appropriate personnel protective equipment per their Hazard Communication Program and the MSDS of the product in use.

Clean Fill Materials (e.g. soil, sand)

Any fill material being brought on to UTC property must be free from contaminants. This may be accomplished by any of the following methods:

- Certify in writing by the contractor that the fill is free of contamination
- Taking reasonable steps to ensure fill material is clean such as composite sampling and analysis, review of fill source disclosure, or photo ionization screening of fill material, etc.
- Visual inspection of the fill material when it is placed on UTC property.

Compressed Gas Cylinders

- Compressed gas cylinders shall always be fastened securely in the proper position to appropriate carriers or restraints for the cylinder contents.
- Cylinders shall be kept away from welding or cutting operations so that sparks, hot slag, or flame will not impinge on them. When this is impractical, fire resistant shields will be provided. Cylinders will not be placed where they can contact an electric circuit.
- Cylinder valves shall be closed and valve protection caps shall be in place when compressed gas cylinders are transported, moved, stored or otherwise not in use.
- If a leak develops in a cylinder, follow emergency procedures. Call Emergency Services from any telephone within the facility from a safe location.
- Gas cylinders that are damaged or have a buildup of scale or rust, which could weaken the container, will not be used and shall be removed from this site as soon as possible.
- Cylinders will be permanently labeled, marked or stenciled to identify the gas in the cylinder. Cylinders shall be mounted and stored with the content labels facing out.
- When storing compressed gas cylinders, flammable gas such as acetylene and hydrogen will be separated from oxidizing gas such as oxygen and nitrous oxide by a distance of 20 feet, or by a fire-rated barrier.
- Cylinders shall be moved by tilting and rolling them on their bottom edges or cylinder carts must be used for their transportation. All cylinders will be handled with care.
- Cylinders shall not be transported horizontally on the forks of a fork truck
- Compressed gas cylinders shall not be taken into confined spaces unless they are supplying breathing air.
- Oxygen cylinders in storage (approved by Contractor Coordinator) shall be separated from fuel-gas cylinders or combustible materials (especially oil or grease), by a minimum of 20 feet or a

noncombustible barrier at least five feet high having a fire resistance rating of at least one-half hour.

Confined Spaces

Cardinal Rule

Cardinal Rule: Confined Spaces shall be identified and written procedures established and followed for entry.

- Contractors entering confined spaces shall provide training documentation to demonstrate competency to enter confined spaces.
- Contractors who will enter Confined Spaces must obtain a copy of the space's risk assessment (if applicable) from the EH&S department or conduct a risk analysis with the site personnel that defines the hazards associated with the space. It shall be attached to their confined space entry permit posted near the entry.
- Contractors must use own permit, monitoring and rescue equipment, unless authorized by the UTC EH&S professional.
- Contractors shall follow their own Confined Space Entry procedure when entry into a UTC designated permit-required confined space is necessary. Contractors shall provide their procedure to the Contractor Coordinator for review and approval prior to entering a permit required confined space.
- Contractor shall review the completed entry permit with their Contractor Coordinator or site EH&S personnel prior to entry.
- A copy of the permit shall be sent to Site EH&S or emergency services.
- UTC will retain a copy of permit for 1 year.
- "Permit Required Confined Spaces" are identified and marked by a sign near the entrance stating (or equivalent):

"DANGER"
Permit Required
Confined Space
Do Not Enter

- Before entering a "Permit Required Confined Space," proper training in Confined Space Entry and Lock Out/Tag Out is required.

- Non-permit required confined space entries require use of a buddy system and continuous air monitoring. Exceptions to this requirement must be in writing from the site EH&S manager.

UTC EH&S personnel reserve the right to deny entry.

Confined Space - Excavations

In certain cases, trenches and excavations may be considered a **Permit Required Confined Space** based on known or potential hazardous conditions such as a hazardous atmosphere. When this occurs, compliance with the confined space program is also required.

Workers must be confined space trained and only enter the space under a confined space permit.

The contractor's competent person shall assess the excavation to determine potential hazards which may qualify the trench/excavation as a confined space.

Cranes and Hoisting Equipment

- Contractors shall operate and maintain cranes and hoisting equipment in accordance with manufacturer's specifications and limitations.
- Operator must be certified to operate cranes.
- Equipment will be maintained and inspected in accordance with regulatory requirements.
- The Contractor Coordinator shall be notified of all proposed crane use at least one day in advance of the actual lift to facilitate a pre-work review with EH&S, Emergency Services and impacted area supervision.
- Mobile cranes, including portable crane derricks, power shovels, or similar equipment, shall not be operated within 10 feet of overhead electrical power lines.
- Riding on crane hooks and headache balls is prohibited.
- Eyes on crane hooks shall have a safety latch.
- Outriggers must be fully extended and pedestals lowered for any lift.
- Crane components used for overhead work must be rated for the load. No self-fabricated lifting devices/components shall be used.
- Cranes and derricks shall not be refueled while in operation.
- Cranes and derricks not in use shall be properly secured.
- Rated load capacities and recommended operating speeds, special hazard warnings or instruction shall be conspicuously posted on all equipment.
- Accessible areas within the swing radius of the rear of the rotating superstructure of the crane shall be barricaded to prevent an employee from being struck or crushed.
- If a crane exceeds the height of the tallest structure on site it shall have a flag in place at the apex and or equipped with a flashing beacon.

Critical Lifts:

- The following critical lifts must be proceeded by, and conducted under the guidance of a written plan developed by a qualified person and reviewed by the lift director:
 - Lifts which exceed 2 tons over critical equipment or occupied buildings
 - Lifts which exceed 75% of the rated load chart crane capacity rating
 - Hoisting of personnel by crane (man basket must be approved by manufacturer or a professional engineer)
 - Multiple crane tandem lifts
 - Work under power lines closer than 20 feet

When making a lift with a crane:

- One person shall supervise the lift. One person, proficient in hand signals, shall perform signaling. Signals will comply with ANSI standards for the type of crane used. An illustration of the signals will be posted at the job location.
- Crane operator and signal person will maintain continuous visual contact during lifting operation.
- Area shall be cleared and roped or barricaded off.
- No one shall stand or pass under suspended loads.
- See section on Elevated Work for fall protection requirements.

Slings:

- Slings shall not be loaded in excess of their rated capacities. Annual inspection tags shall be affixed to chain slings.
- All slings other than wire rope slings shall be labeled for their load capacity.
- Slings shall be padded or protected from sharp edges of loads and will not be pulled from under a load when the load is resting on the sling.

- Each day, prior to use, slings and all fastenings and rigging attachments shall be inspected for damage or defects. Damaged or defective slings will be immediately tagged "Do Not Use" and removed from service.
- Wire rope and synthetic web slings shall be removed from service and destroyed when they become worn damaged or their load markings become illegible.

Chain-falls and Come-alongs:

- Safety latches shall be installed and functional on hanging hooks and load hooks.
- Chains, cables and hooks shall be in good physical condition. Hanging hooks shall be free to pivot when lifting or pulling a load.
- Load chains and cables shall not be used as slings.
- Capacities of chain-falls and come-alongs shall be adequate for the load to be lifted or pulled. "Cheaters" shall be not used on the handles of the come-alongs.
- Chainfalls and come-alongs shall be inspected annually, and the most recent inspection date shall be clearly indicated on the equipment.

Ground Preparation

- Prior to conducting a crane operation, the ground conditions must be deemed adequate by the controlling entity, to insure the use of the crane, loads, and supporting materials.
- Ground preparation which may penetrate/compromise or destabilize the surface must include plans for underground piping electrical, water or gas. Ground penetrating radar will be used as necessary to identify underground hazards, and to determine ground stability when necessary.

Inspections:

- Cranes must be inspected daily on each shift prior to use by a competent person.

Safety Devices and Operational Aids

The following safety devices are required on all cranes operating on UTC property.

- Signal Chart
- Fire extinguisher
- Crane level indicator
- Boom and jib stops
- Integral holding device/check valve on hydraulic outrigger jacks and hydraulic stabilizer jacks
- Horn
- Rated load capacity
- Operating speed
- Any special hazard warnings

Control Areas:

- Prior to commencing a crane operation, a defined work area and controls for the hazards of the area must be established.
- The control area must be defined with control line, warning lines, railings or similar barriers to mark the boundaries of the hazard areas.

Rigging and Managing the Load

All rigging of material must be conducted by a trained and qualified rigger.

Fabricated rigging system designs shall:

- have a safety factor of 2.5
- be approved by a structural engineer if the system will attach to a building structure
- shall account for accidental side loading of up to 60 degrees from vertical even if the design is for a vertical lift only

Crane Operation

- All crane operations must have operational procedures (either manufacturer procedures or procedures developed by a qualified person) readily available (in the cab if applicable) at all times. Procedures pertaining to capacities must be signed by a registered professional engineer.
- Whenever there is a concern as to safety, the operator has the authority to stop and refuse to handle loads until a

qualified person has determined that safety has been assured.

- Every crane operation must have a dedicated signal person whenever, the point of operation is not in full view of the operator, when traveling, or anytime the operator or the person handling the load determines that it is necessary.

- When working around power lines, determine if any part of the equipment, load line or load if operated up to the equipment's maximum working radius in the work zone could get closer than 20 feet to a power line. If so, one of the below must be met:
 - De-energize the ground. Confirm from utility owner/operator that the power line has been de-energized and visibly grounded at the work site.
 - 20 Foot Clearance: Ensure that no part of the equipment load line or load gets closer than 20 feet to the power line.
 - Determine the lines voltage and the minimum approach distance permitted

Dumpster Management

- Dumpsters must not be stored over a storm drain.
- Dumpsters must be provided with an impermeable cover such as a tarp or be maintained under a roof at all times to prevent entry of storm water.
- Dumpsters must be labeled for the materials they are permitted to contain and the name of the contractor who owns them.
- If a Dumpster's cover is damaged, it must be replaced immediately.
- Drain plugs must remain intact.
- Dumpsters must be structurally sound (no puncture holes, severe dents, etc.).
- Dumpster covers must be of a design that sheds water.
- Dumpsters must be covered at all times when not being actively filled.

Electrical Safety

- **Contractors must provide ground-fault circuit interrupters (GFCI's) at all times when using electric power cords in order to protect employees from ground-fault hazards.**
- The requirements of NFPA 70E 2012 shall be followed for all live electrical work. This covers requirements for PPE, flash clothing, insulated tools, live work permits and establishing a blast radius for all work to be performed. **(See Barricades)**
- Exposed live electrical parts will be de-energized and locked out before working on or near them whenever practical.
- If determined by the Contractor Coordinator that de-energizing exposed live electrical parts introduces additional hazards, or is not feasible due to equipment design or operational limitations, specific safety related energized work practices will be developed by qualified contractor personnel and the Contractor Coordinator. Work practices will protect against direct body contact or indirect contact by means of tools or materials and be suitable for work conditions and the exposed voltage level.

Working on or near live electrical parts other than troubleshooting requires a Live Work Permit, which must be obtained through your contractor coordinator.

- Extension cords will be listed or approved as assemblies by a nationally recognized testing agency.
- Extension cords will not be used in a manner that could cause damage to the outer jacket or cause tripping hazards.
- When crossing over aisles with extension cords appropriate overhead clearance must be maintained.
- Never route extension cords through door or window openings.
- Portable electric equipment and extension cords will be approved for the work environment and kept in good condition.
- Outlets (120 volts) on construction sites that are not a part of the permanent wiring of the building or structures will have approved ground fault circuit interrupters (GFCI).

- Contractor Coordinator will designate an exclusion zone around exposed, energized sources.
- Energized panels will be closed after normal working hours and whenever they are unattended. Temporary wiring will be de-energized when not in use.
- Suspended temporary lighting will be festoon listed.
- Only qualified electrical contractor employees may enter substations and/or transformer vaults and only after being specifically authorized by the Contractor Coordinator. All others must be accompanied at all times by UTC qualified personnel.
- Use of electrical tape for temporary repair of frayed cords is prohibited.
- Extension cords shall not be fastened with staples, hung from nails or suspended by wire.
- Temporary illumination of construction areas, ramps, corridors, offices and storage areas shall be lighted to satisfy the minimum illumination intensities listed in 29 CFR 1926.56, Table D-3.
- All lamps for general illumination shall be protected from accidental contact or breakage. Metal-case sockets must be grounded.
- Temporary lights shall not be suspended by their cords, unless they are so designed. Temporary lighting circuits shall be used for lighting only.
- Extension cords must not be used for more than 90 days.

Elevated Work

Cardinal Rule

- For any employee working six feet or more above an exposed work surface, contractors shall provide primary fall protection whenever possible and secondary fall protection only when primary fall protection is not practical.
- For work that requires disconnection from an anchorage point, a full body harness with two shock absorbing lanyards and locking snaphooks shall be used. Contractors must attach the second lanyard to a suitable anchorage point prior to disconnection from the original anchorage point.
- The anchorage point must be at waist level or higher; and capable of supporting at least 5,000 lbs. per employee attached.

Primary Fall Protection System:

- Primary fall protection systems (e.g. guard rails) provide protection for walking and working surfaces in elevated areas with open sides, including exposed floor openings.
- Primary fall protection systems include, but are not limited to, fixed guardrails, as well as scaffolds, aerial lifts and other approved personnel lifting devices.

Secondary Fall Protection Systems:

- A secondary fall protection system consists of an approved full body harness and two shock-absorbing lanyards.
- A secondary fall protection system shall be worn when primary fall protection is not practical or feasible.
- Use of a secondary fall protection system shall include the prior establishment of a rescue plan for the immediate rescue of an employee in the event they experience a fall while using the system.

Life Line Systems:

- Vertical lifeline systems shall be made from materials (including the line itself) designed specifically for fall protection.
- Vertical lifeline systems must be capable of supporting at least 5,000 lbs. for one person only.

- Lifelines may be mounted either vertically or horizontally and are generally intended to provide mobility to personnel working in elevated areas.
- Horizontal lifelines must withstand at least 5,000 lbs. impact and pulled tight enough to prevent deflection.
- Horizontal lifelines shall be positioned to provide points of attachment at waist level or higher.
- Vertical lifelines used for vertical mobility will be equipped with sliding rope grabs or may consist of self-retracting reel type lanyard/lifeline attached directly to a safety harness. Retractable lifelines shall be attached to supports capable of 5,000 lbs. impact loading.
- Sliding rope grabs, approved for the size rope used, are the only method for securing a safety lanyard to a vertical lifeline. Lanyards shall not be attached to lifelines by means of knots and loops.
- All fall protection devices used in elevated work shall be inspected by a competent person prior to initial use (and annually thereafter) and by the user prior to each use.
- Defective equipment shall be tagged "Do Not Use" and immediately removed from service.
- All contractor employees who will be required to perform elevated work shall be fully trained in elevated work practices and the care and use of safety equipment.
- Safety nets shall be used only with prior approval of the Contractor Coordinator.

Fire Protection and Prevention

- Do not block emergency exits unless authorized by Contractor Coordinator.
- Access to firefighting equipment, fire control and emergency vehicles shall be maintained at all times.
- Contractor shall familiarize employees with the method used at the facility for reporting a fire, the location of fire alarms and the requirements for the conduct of employees in the event of an alarm.
- Contractors shall provide their own fire extinguisher for protection against hazards they introduce to the job location.
- Contractor fire extinguishers shall be inspected annually by a certified person, and visually inspected monthly and documented by the contractor.
- Flammable and combustible liquids dispensed at one time in quantities greater than 5 gallons shall:
 - Be dispensed in an area separated from other areas of operation by 25 feet or by construction having at least a one-hour fire resistance rating.
 - Be stored in approved safety cans or drums.
 - Be controlled with ventilation to prevent the development of concentrations above 10% of the lower flammable limit.
 - Be only transferred between containers that are electrically interconnected.
- Flammable liquids shall be kept in closed containers when not in use and shall not be allowed, under any circumstances, within 50 feet of an open flame or ignition source.
- In the event of an alarm, contractor shall evacuate the area. Contractors are also required to evacuate during drills.
- All barriers/sheeting/tarps shall be flame/fire retardant and marked accordingly

Smoking and Tobacco use is not permitted anywhere on UTC property

Floor and Wall Openings/Barricades

- A cover or a standard railing and toe board shall guard floor openings. The railing shall be provided on all exposed sides, except entrances to stairways.
- Wall openings, from which there is a drop of more than four feet, and the bottom of the opening is less than three feet above the working surface, shall be guarded.
- A standard railing or equivalent shall guard every open-sided floor or platform four feet or more above an adjacent floor or ground level. A toe-board shall be provided wherever persons can pass beneath the open sides or there is moving machinery or equipment which falling material could create a hazard.
- Employees shall be protected at all open sides and edges during the performance of built-up roofing work on low-pitched roofs.
- Contractors will post, install, and maintain signs, signals and barricades to detour passage of persons and vehicles at locations where potential hazards exist.
- Barricades shall be placed where necessary to warn employees against hazardous conditions and activities, such as overhead work, floor and wall openings and trenches.

Foreign Object Damage

Foreign Object Damage (FOD) – Any damage attributed to a foreign object that can be expressed in physical or economic (monetary) terms which may or may not degrade a product's required safety and/or performance characteristics.

Many of our products are sensitive to debris that can be produced during contractor work activities in manufacturing areas. The following requirements must be implemented for all work performed in manufacturing areas to protect our products from FOD:

- All items brought into the work area should be accounted for; this includes personal items (watch, jewelry, cell phone, food, etc).
- Tools - All hand and power tools should be accounted for during work. At the end of the day or operation, ensure that all tools, bits, fixtures are accounted for and returned to proper storage locations.
- Tool breakage- should a tool break or be determined to be missing (or any personal items), contact the Contractor Coordinator to ensure that the tool and all parts can be located.
- Parts/Materials:
 - All product or otherwise critical surfaces near work areas must be properly protected against debris or contact.
 - Debris that is produced during work needs to be cleaned at logical intervals to preclude migration to sensitive areas.
 - Control of parts - nuts, bolts, straps, tie-wraps, should be contained to prevent spillage and should be monitored to prevent migration.
 - Consumables - rags, sanding materials, nails, etc should be used and discarded during cleaning intervals with debris, including end of shift.

- Every effort should be taken to prevent contractor work items from migrating or mingling with shop tools, parts and compartments. Should this occur, work should cease and control and/or separation of contractor/shop materials should take place.
 - Do not move any shop parts or equipment
 - Do not place any items on surfaces used for UTC processes
 - Do not remove any items from areas posted as quarantine
- When performing elevated work including scaffolds, cranes, hoists, aerial lifts and overhead work: Increased diligence regarding the above will be required. No tools, parts or materials should be taken overhead that are not needed or accountable since their descent will make relocation of those parts even more difficult.
- Every effort should be made to prevent any and all debris or parts to fall from overhead/aerial work areas.
- At the completion of work, all items are cleaned and accounted for. All work areas are cleaned of debris and consumables that were produced during work.

Hot Work Permits

Contractors shall comply with the facility's hot work permit requirements as described below.

- A hot work permit shall be requested from the site department designated by the Contractor Coordinator for any activity that produces a source of ignition. Such activities include but are not limited to:
 - Gas welding and cutting
 - Electric arc welding
 - Heating torches and other open flames
 - Tar pots and kettles
 - Other activities that produce a spark.
- In some work activities, other hazards must be addressed before hot work may be safely undertaken. These hazards may involve:
 - Energized equipment
 - Pressurized or contaminated piping
 - Entry into confined spaces.
- Hot work permits are issued for one contractor's continuous work shift for a specific operation and will be displayed at the job site.
- Hot work permits are not transferable across Contractor shifts.
- Suitable fire extinguishing equipment (e.g., fire blankets, non-combustible heat shields, flash curtains and fire extinguishers) shall be provided by the contractor and shall be immediately available in all welding, cutting and brazing locations.
- The following fire prevention activities shall be completed before hot work can begin:
 - Combustibles shall be moved at least 50 feet from the hot work operations. If combustibles cannot be removed, they shall be protected using flame-retardant covers or curtains.

- Flammable liquids shall be removed from the area or totally isolated from the vicinity of the hot work. Emergency Services is to be notified if any fire extinguishing equipment has been discharged.
- Tarpaulins used as hot work barriers will be flame resistant.
- Lines previously containing a flammable or combustible fluid or powder must be purged, protected by inert gases, and verified safe for exposure to ignition sources.
- Floor, wall and other openings shall be closed or covered, including floor drains.
- Combustible dust shall be cleaned from the vicinity of the hot work operations.
- Surrounding floors made of combustible construction shall be protected with a flame-retardant cover.
- Where electrical equipment is not involved, the floors may be swept clean and wetted with water.
- Contractor's employees shall be informed of the location of the nearest fire alarm pull box.
- Contractors are required to bring their own fire extinguishers of the appropriate class for the hazards involved.
- Fire watch and operator shall be trained in use of portable fire extinguishers.
- Emergency Service shall be notified if a fire extinguisher is used in response to an incident directly related to hot work in progress.
- For hot work involving open flame or high heat generation, a fire watch may be required during the conduct of the work as determined by Emergency Services. A fire watch is required for a minimum of 60 minutes after completion of the job, as directed

by our insurance carrier with checks occurring each 30 minutes for a total of 4 hours after the completion of the work. The contractor shall provide the manpower for the watch.

Ladders

- A stairway or ladder shall be provided for access where there is a break in elevation of 19 inches or more and no ramp, runway, sloped embankment or personnel lift is provided.
- Portable metal or conductive ladders shall not be used near energized lines or equipment.
- Fabricated ladders are prohibited.
- Conductive or metal ladders shall be prominently marked as conductive and all necessary precautions shall be taken when used in specialized work.
- No ladders other than Type 1 or Type 1A shall be used. Fiberglass or non-conductive ladders are mandatory for electrical tasks or when working in close proximity to electrical services where accidental electrical contact is a foreseeable event.
- Ladders will be secured to keep them from shifting, slipping, being knocked or blown over. Ladders will never be tied to facility services piping, conduits, or ventilation ducting. Ladders will be lowered and securely stored at the end of each workday.
- Ladders will not be placed in front of doors or door openings unless the door is either monitored by an attendant or blocked open to prevent contact with the ladder. If all traffic around the ladder work area cannot be re-routed, the ladder must be secured to prevent accidental knock down. The Contractor Coordinator will arrange closure of aisles, walkways and selection of alternative traffic routes. Appropriate warning signs, tape and cones will be deployed around ladder work to define exclusion zones.
- Stepladders will not be used as straight ladders. The top or first step below the top of ordinary stepladders will not be used as a step or a stool.
- Ladders will only be used for the purposes for which they are designed.
- Extension ladders will not be separated.
- The following requirements shall apply to the use of all ladders:

- Ladders used for access to an upper landing surface shall have side rails that extend at least three feet above the landing surface.
- Ladders shall be maintained free of oil, grease and other slipping hazards.
- Non-self-supporting ladders shall be tied off or otherwise secured to prevent accidental displacement.
- Non-self-supporting ladders shall be used at an angle where the horizontal distance from the top support to the foot of the ladder is approximately one quarter of the working length of the ladder.
- When ascending or descending a ladder, the user shall face the ladder and shall use at least one hand to grasp the ladder; user shall not carry any object or load that could cause him/her to lose balance and fall.
- Ladders will be visually inspected by a competent person and approved for use before being put into service. Each user shall inspect ladders visually before using.
- Ladders with structural defects shall be tagged "Do Not Use," immediately taken out of service, and removed from the site by the end of the day.
- Wooden ladders shall not be painted.
- Any employee working on a ladder at a height greater than 20 feet shall use appropriate fall protection equipment.

Lockout/Tagout of Hazardous Energy Sources

Cardinal Rule

- Before working on machines or equipment Contractors shall isolate all forms of hazardous energy, secure them with locks and tags, then verify Zero Energy State.
- Contractors shall restrict access to work areas by unauthorized employees where energy sources have been de-energized.
- All affected employees shall be notified. Where applicable, the area shall be secured and signs posted to alert employees that a de-energizing activity is in progress.
 - Contractors shall obtain specific site lockout instructions from the Contractor Coordinator.
 - Standardized lockout devices and "Danger" tags shall be used to prevent the operation of switches, valves, pieces of equipment, etc., where personal injury may occur or equipment may be damaged.
 - For work that involves multiple trades and or contractors:
 - During multiple trade lockout tagout events, a Primary Authorized employee must be designated to oversee the event, and each employee who will perform work that exposes them to the controlled energy must verify or witness zero energy state for each hazardous energy sources he or she will be exposed to.
 - A lead authorized employee shall be designated for each party that is part of the group.
 - Each lead shall verify that a zero energy state has been achieved for each hazardous energy source that must be locked out that is associated with his or her party's work.
 - If any party does not have an employee that is qualified to perform the verification (e.g. an employee qualified to assess electrical hazards), then the lead employee and each member of his/her party must witness the verification

performed by a designated qualified employee of one of the other parties or qualified UTC employee.

- The Contractor shall add verification of these completed steps before work may begin to their Site Safety Plan.
- Contractor Coordinators should coordinate these requirements at a pre-job hazard review.
- Each contractor and subcontractor employee performing operations where equipment or systems require de-energizing shall place his/her own lock and tag on each energy source requiring de-energizing; each employee shall sign and date the tag. The tag shall include the employee's name, the name of the contractor they work for, the date the lock is installed and the reason for lockout is required.
- Only standard "Danger - Do Not Operate" (black, red and white) tags will be used.
- If equipment for de-energizing is in a confined space, the confined space will be cleared of all employees prior to testing the energy source for deactivation.
- Stored energy systems and equipment, such as electrical capacitors, mechanical springs, steam lines, and hydraulic systems, shall be put in a "zero energy" state.
- Contractor employees shall remove only their own locks and tags when they complete their work.
- Used danger tags will be destroyed; tags will not be reused unless designed for reuse.
- Extended lock out requirements shall be coordinated with the Contractor Coordinator.

Line Breaking - Whenever authorized employees intend to perform work associated with the intentional opening of a pipe, line, or duct that is or has been carrying flammable, combustible, corrosive, or toxic material, or any fluid at a volume, pressure, temperature, or unknown substance capable of causing injury, a line breaking permit is required.

Line breaking permits The line breaking permit shall be properly and completely filled out by the authorized employee performing the

work and posted in a close visible location to where the line breaking work is occurring.

The permit will be valid for the duration of the job or until the shift changes, whichever occurs first.

The line breaking permit is to be cancelled whenever a condition changes the original scope of work or a hazard is identified outside of the controls established in the line breaking permit

Gas line purging permit required for all work done to lines containing flammable gasses.

Line Breaking Permit Issuer – The line breaking permit must be approved by the line breaking permit issuer. The line breaking permit issuer is an authorized employee. However, the line breaking permit issuer cannot be the authorized employee performing the work requiring a line breaking permit.

- Upon completion of the line breaking permit required work, the line breaking permit shall be submitted to the Site EH&S LOTO program owner for proper filing and record retention.

Motor Vehicle Safety

- Contractor employees shall park their personal vehicles only in those areas designated by UTC Emergency Services or the Contractor Coordinator. UTC assumes no responsibility for vehicles, or articles in vehicles, parked on UTC property.
- Vehicles and equipment shall not block exits, walkways, loading areas, fire hydrants, fire lanes or emergency equipment.
- Operators of vehicles with high overhead clearance must pre-plan travel routes on site to ensure overhead utilities, obstructions and or personnel will not be at risk of impact.
- Contractor diesel and gas powered vehicles are prohibited inside buildings unless prior approval and arrangements for ventilation have been made with the Contractor Coordinator, Emergency Service and the EH&S department.
- Contractors will not perform maintenance or repairs of vehicles while on UTC property unless approved by the EH&S department.
- Drivers shall obey all traffic regulations and signs, and carry a current driver's license for any vehicles they operate.
- Drivers shall not use mobile phones while operating vehicles on company property. Hands free devices are not allowed.
- All vehicles are subject to inspection when entering or leaving the location.
- Vehicle's engines shall be turned off when parked.
- Mobile sources (i.e. delivery vehicles, construction equipment, security vehicles, and even personal vehicles) cannot idle for more than 3 consecutive minutes when not in motion.
 - Idling is only allowed during the following situations:
 - *Vehicle is motionless due to traffic conditions*
 - *Mechanical difficulties*
 - *Operation of defrosting equipment, heating or cooling equipment*
 - *Operate auxiliary equipment that is located in or on the vehicle (e.g. crane operation, lift gate operation)*

*•When the outside temperature is below 20°F
•The vehicle is undergoing maintenance
To warm the engine up to manufacturer's recommended
operating temperature*

- Passengers are not allowed to ride in beds of pick-up trucks.
- Drivers shall be mindful of pedestrian traffic at all times.
- Equipment, including rentals, brought to this facility, used inside or outside, will be identified with the name of the contractor utilizing the equipment.
- All accidents will be reported immediately to the site emergency number.
- Vehicles brought on site carrying equipment must be inspected daily.
- All cargo and equipment on vehicles shall be properly loaded and secured. Vehicles shall not be overloaded.

Overhead Work

- Loads shall not be suspended over any persons or over occupied building areas.
- Contractors shall secure area with safety stanchions or caution tape post warning signs to alert pedestrians and area occupants of overhead work and may be required to provide a ground spotter. The distance the barricade is set up away from the work area must take into consideration the length of materials in use and the potential for materials to be projected horizontally or to rebound from the ground surface or surrounding structures if they fall from overhead. The set-up distance should allow for these types of hazards to be contained within the barricaded area.
- When work is limited to a visual inspection without tools, Caution Tape or safety cones at a minimum of two feet from the work (no potential for falling objects) may be used.

Personal Protective Equipment

Contractors shall furnish and require the use of personal protective devices and equipment (PPE) by their employees and by their subcontractor employees.

PPE shall not be modified or used in any manner other than which it was designed.

Long pants and shirts with sleeves are required

Employees shall wear US Coast Guard approved life jackets or vests when the danger of drowning exists (when working over or near water).

Minimum PPE Requirements

- Employees shall wear safety glasses with side shields that meet the specifications of ANSI Z87.
- Safety glasses with side shields shall be worn under welding hoods and face shields.
- Safety glasses with side shields shall be worn under chemical goggles unless the goggles are manufactured with high impact lenses.
- Safety glasses with side shields shall be worn throughout the manufacturing facility and in outdoor work areas, except in the office and cafeteria areas, unless performing work activities.
- Tinted safety glasses are not permitted indoors, unless needed for the job hazards.

Hearing Protection

- Hearing protection is required in designated and posted high noise areas and when performing high noise producing activities.

Respiratory Protection

- Contractors shall have a Respiratory Protection Program that includes proper training of employees if employees are at risk of exposure to airborne contaminants.
- Contractors shall provide their employees with respiratory protection to protect them from exposure to harmful dust, mist, fumes, gases or

vapors when engineering and administrative controls are not adequate.

- Site EH&S representatives will advise the contractor of specific location requirements for respiratory protection.

Gloves

- Contractors shall ensure that their employees wear gloves to protect their hands from lacerations, chemical agents, heat, cold, etc.
- Gloves should not be worn around moving machine parts such as belts, pulleys and gears.

Protective Footwear

ANSI Z-41 rated safety shoes or work boots are required for construction and maintenance activities.

Due to the various hazards in shop areas and the different types of shop floor material, footwear worn in shop areas must:

- be closed toe
- be closed heeled
- have a substantial sole (e.g. no moccasins)
- have a maximum heel height of 2 inches, including the sole.
- have a minimum heel floor contact dimension of 1.5 inch by 1.5 inch

Hard Hats

- ANSI Z-89 rated hard hats are required on all construction sites and shall be worn as designed, unless an exemption is approved by EH&S.

Roadwork/Parking/ Material Loading & Unloading areas

- Individuals performing work in roads and parking areas as well as performing material loading and or unloading shall don high-visibility safety apparel in accordance with ANSI/ISEA 107-2004.

Powered Industrial Vehicles (PIVs)

- Operators must be properly qualified / authorized and abide by all traffic rules. Be aware of surroundings and always yield to pedestrians.
- Contractors must provide their own PIVs that are in proper working order and comply with safety standards. Contractors are not permitted to use UTC vehicles without authorization from the designated manager for that facility. (Extension of requirement in Tools section) Hold Harmless Agreement must be signed.
- Powered industrial vehicles include, but are not limited to, fork trucks, electric buggies, aerial lifts, stackers, motorized hand trucks, earth-moving equipment, cranes and hoisting equipment.

PIV Registration Requirements:

- Contractors must follow the PIV registration requirements for each UTC division, found in the Appendices section of this guidebook.

PIV Operators:

- Operators of PIVs shall be trained in their safe operation, and shall carry proof of training with them in some form (a permit, wallet card, copy of a training record, etc.) and provide such proof upon request.
- PIV operators must abide local rules (e.g., speed limits, restricted areas).
 - PIV operators are not allowed to talk on a cell phone, use ear buds or wear headphones while operating any PIV to avoid distracted driving. However, noise protection devices such as earmuffs or earplugs are permitted where required.
- PIV operators shall wear their seat belt at all times during operation when their PIV is provided with one by the manufacturer.

PIV Inspections:

- Contractors are responsible for daily inspections of PIVs and a record of this must be kept in the vehicle at all times. (Sample available upon request).

- PIVs shall be checked by the operator at the beginning of each shift to ensure that all parts, equipment and accessories that affect safe operation are in proper operating condition and free from defects.
- The Contractor EH&S inspection process will verify compliance with this requirement. All defects shall be corrected before the vehicle is placed in service.
- Any vehicle found deficient must be removed from the site and will not be allowed back until the items have been repaired and a new inspection and maintenance report has been presented.
- This requirement applies to all contractor vehicles whether owned, rented, or leased.
- All PIVs shall have periodic maintenance and maintain a record of the PM in accordance with manufacturer's requirements

PIV Operational requirements:

- PIV speed will be limited to 5-6 mph/10-kph (approximately twice walking speed) inside the building including but not limited to manufacturing areas, high pedestrian areas, and areas with other potential significant risks.
- Contractor equipment brought in for temporary use only is exempt from speed limiting control devices but the PIV shall have administrative controls in place to control speed (speedometer) and operations must comply with the 6 MPH speed limit.
- All buggies, flatbeds, fork trucks, stackers and golf carts including those used in parking lots and roadways must have a yellow flashing (non-strobe) light that indicates that it is in operation.
- All fork trucks, electric buggies, carts and earth moving equipment must have an audible alarm when operating in reverse. Audible alarms must be of sufficient sound level to be heard over ambient noise.
- LPG tanks shall be stored outdoors at a location specified by the Contractor Coordinator. All LPG tanks on PIV's must be replaced outside.

- Diesel and gas powered vehicles are prohibited inside buildings unless prior approval and arrangements for ventilation have been made with the Contractor Coordinator, Emergency Services and the EH&S department.
- Areas within the facility where vehicles will be operated shall be assessed for hazardous conditions, and only vehicles designed for use under any identified hazardous conditions may be used in that area.
- All fork trucks that have a sit down, non-elevating operator position are required to have a restraint system (such as a seatbelt) installed and available for use.
- All fork trucks shall have protective overhead guards to prevent objects from falling onto the operator.
- Parked forklifts shall have forks resting at ground level and parking brake set.
- Vehicles shall not be left running while unattended.
- In the event of an indoor facility emergency notification, vehicles shall be pulled over to the side of the aisle and motors switched off.
- Actively leaking vehicles and equipment are prohibited from exiting the facility.
- The contractor is responsible for repair and containing any leaking vehicle or equipment before exiting the facility. Emergency response personnel shall be notified by dialing the emergency phone number for the facility.
- Riding construction equipment as a passenger is prohibited.
- Towing or otherwise pulling loads with the forks on a forklift is prohibited.
- PIV use shall be restricted or minimized during shift changes to minimize pedestrian exposure to PIV traffic.
- PIVs (propane, diesel) shall not be allowed to idle for 3 minutes or more.
- PIVs must be equipped with non-marking for inside operation.
- Modifications to PIVs are prohibited unless approved by the manufacturer of the PIV. Documentation must be kept with the PIV.

- Makeshift fork extensions and use of C-clamps are prohibited.
- PIVs are not allowed in parking lots or roadways without prior written permission from EH&S.

Roof Work/Access

- Roof Work/Access requires prior authorization from your Contractor Coordinator.
- Contractor employees working alone on the roof must get prior approval from their Contractor Coordinator.
- Employees are not permitted on the roof in severe weather unless authorized by a Contractor Coordinator.
- Refer to the Elevated Work section of this guidebook for fall protection requirements and acceptable fall protection methods.
- Personnel accessing roofs with an unprotected edge to perform work must proceed directly to their work area. While in transit, they shall focus their immediate attention on staying as far away from unprotected edges as possible and continue moving toward the designated work area without stopping until they arrive. Once they reach the work area, they must comply with an acceptable means of fall protection.

Each UTC division has specific fall protection requirements and leading edge approach distances. Refer to the appendix for specific requirements.

Scaffolding

- Fall protection must be used during erection and dismantling of supported scaffolds. Exemptions by competent person in accordance with OSHA Scaffold Standard require prior authorization from Contractor Coordinator and EHS.
- The footings or anchorage for scaffolds shall be sound, rigid and capable of carrying the maximum intended load without settling or displacement.
- Guardrails and toe-boards shall be installed on all open sides and ends of scaffold platforms that are more than four feet above the ground or floor.
- Scaffolds shall be provided with an access ladder or equivalent safe access. Employees shall not climb or work from scaffold handrails, mid-rails or brace members.
- When freestanding, manually propelled scaffolds are used, the height shall not exceed four times the minimum base dimension.
- Employees shall not ride on mobile scaffolds when they are being moved.
- After a scaffold has been erected, and before any employee or contractor can begin working on that scaffold, the scaffold shall have a scaffold information tag completed and attached to the scaffold.
- The scaffold information tag shall be signed by a contractor competent person and attached conspicuously to the lower level of the scaffold. A tag shall be good for a maximum of 30 days. A new tag must be re-issued after 30 days.
- A contractor competent person, before each work shift, shall inspect scaffolds and scaffold components for visible defects, and after any occurrence, which could affect the structural integrity of the scaffold.
- Any scaffold part or component that is in poor condition shall be taken out of service and tagged out of service until it has been repaired or replaced by a qualified person

Stacks and Drains

- Operational exhaust systems shall not be compromised in any way without prior approval from your Contractor Coordinator.
- Stacks and drains shall not be painted, installed, relocated, or altered in any manner or their identification changed without prior approval from your Contractor Coordinator and the Environmental Health and Safety Department.
- Jobs that require removal or installation of stacks require coordination with the EH&S department for proper stack identification management.

Tools

- Hand tools shall be kept in good condition, i.e., sharp, clean, oiled, dressed and not abused.
- Tools subject to impact (chisels, star drills, and caulking irons) tend to "mushroom" and shall be kept dressed to avoid flying spalls. Any tool that has already mushroomed shall be immediately taken out of service.
- Tools shall not be used beyond their capacity; e.g., extending the handle using a piece of pipe or other means. Use the proper tool for the job.
- Tools and other materials shall not be left on stepladders, scaffolds, roofs or other places where they may be dislodged and fall.
- Non-sparking tools are required in areas where flammable solvents are handled and where sparks could create an explosion.
- Wooden handles of tools shall be kept free of splinters and cracks, and be kept tight in the tool.
- Contractors shall maintain all portable power tools, electrical cords and pneumatic hoses in good condition and proper working order.
- Faulty or damaged tools and hoses shall be tagged "Do Not Use" and removed from service immediately.
- When powered tools are designed to accommodate guards, they shall be equipped with the manufacturer's guards in operable and original condition, when the tool is in use.
- Contractors must provide ground-fault circuit interrupters (GFCI's) at all times when using portable hand held electric power cords in order to protect employees from ground-fault hazards.
- Cords and hoses shall be protected from damage and shall be routed through the job area in a manner that prevents tripping hazards and cord or hose damage.
- Portable electric power tools shall be double-insulated or electrically grounded using three-conductor cord and three-prong plugs.
- Double-insulated tools shall be clearly marked.

- Pneumatic power tools shall be secured by some positive means to prevent the tool from becoming accidentally disconnected.
- Tools shall not be hoisted or lowered by their hoses/cords.
- All pneumatically driven nail guns, staplers and other similar equipment provided with automatic fastener feed, which operate at more than 100 psi of pressure at the tool, shall have a safety device on the muzzle to prevent the tool from ejecting fasteners, unless the muzzle is in contact with the work surface.
- Powder actuated tools require advanced written approval prior to use.
- Powder actuated tool operators shall possess a certificate for operation.
- Warning signs shall be posted when powder actuated tools are in use.
- Powder actuated tools shall never be left unattended. When not in use, they shall be secured under lock and key.
- Powder actuated tools shall not be used in explosive or flammable atmospheres.

Contractors are not permitted to use UTC tools and equipment without authorization from your Contractor Coordinator.

Trenching, Excavating and Drilling

Exterior trenching, excavating or drilling

- **Some State Laws requires the contractors to contact “Call Before You Dig” (or similar programs) prior to any trenching, excavating, digging or drilling activities.**
- The Contractor and Contractor Coordinator shall clearly mark on the surface grade in paint the boundary limits of the planned work area with “CBYD”.
- Prior to commencing any subsurface excavation/digging/ trenching activity the Contractor Coordinator and the contractor shall verify that subsurface surveys have been completed upon receipt of appropriate documentation and or field marking of surface grade by a scanning professional.
- **Check with your Contractor Coordinator for state requirements.**

Trenching, excavating or drilling into concrete (Interior/Exterior)

- Prior to commencing any subsurface excavation/digging/ trenching/drilling activity into a concrete surface a 3 dimensional scan shall be performed by a scanning professional.

General Requirements

- Underground lines, equipment and electrical cables shall be identified and located by the Contractor Coordinator prior to beginning work that involves trenching, excavating or drilling into structures.
- Contractors will not initiate work without prior approval/authorization to proceed by the Contractor Coordinator.
- Contractor shall assign a competent person to all trenching and excavation work. This person shall be clearly identified to all employees assigned to the job.
- Walls and faces of trenches and excavations, four or more feet deep, shall be shored, sloped or shielded as required by the type of soil encountered. All loose dirt shall be a minimum of two feet from the edge to prevent falling back into the trench.

- Prior approval from the Contractor Coordinator and EH&S personnel is required before commencing, or continuing, with trenching deeper than four feet.
- A confined space entry permit shall be required where oxygen deficiency or a hazardous atmosphere exists or could exist.
- A stairway, ladder, ramp or other safe means of egress shall be located in trench excavations that are four feet or more in depth so as to require no more than 25 feet of lateral travel for employees.
- Daily inspections shall be conducted by a competent person for evidence of a situation that could result in possible cave-ins, indications of failure of protective systems or other hazardous conditions.
- Employees shall not be permitted underneath loads handled by lifting or digging equipment.
- Employees shall be protected from excavated or other materials and equipment that could cause a hazard by falling or rolling into the excavation.
- Physical barriers shall be placed around or over trenches and excavations. See “Barricades” for details. Flashing light barriers shall be provided at night.
- Erosion control measures to minimize storm water pollution shall be reviewed approved by the Contractor Coordinator prior to implementation.

Waste Management

- Contractors shall have a waste management policy that ensures they do not adversely affect the health and safety of contractor employees, UTC employees, the public, or the environment.
- Contractors must have pre-approval from their Contractor Coordinator and EH&S for processes that will generate waste of any kind, discharged water, or will result in air emissions.
- Waste material will be categorized as hazardous and/or non-hazardous with the assistance of site EH&S personnel and placed into appropriate containers as instructed by site EH&S personnel.
- No waste material shall be disposed of or transported off-site without the approval of the Contractor Coordinator.
- Contractors shall provide trash removal containers for construction debris and general trash.
- All waste generated on location shall be disposed of as approved by the Contractor Coordinator and site EH&S.
- For waste approved for disposal by the contractor, a report must be issued to the Contractor Coordinator indicating date, a description of the waste, the amount in weight (lbs.), the transporter and the destination facility, including their name, address and phone number.
- Wastes (includes rinse from washing of equipment, PPE, tools, etc) are not to be poured into sinks, drains, toilets, or storm sewers, or onto the ground.
- Solid or liquid wastes that are hazardous or regulated in any way are not to be disposed of in refuse dumpsters.
- All spent (used) or unused chemicals must be disposed of in accordance with all applicable solid waste and hazardous waste regulations.

- Contractor may be responsible for handling and offsite disposal of non-regulated construction debris (e.g., concrete, steel, wood, plastic) that they generate. Disposal method shall be approved by EH&S.
- Regulated materials generated will be placed in pre-labeled, DOT-approved containers provided by UTC through the Waste Operations departments.
- Exceptions to this include roll-off or other containers specifically arranged through the job's contract.
- Site EH&S personnel will manage the removal and disposal of regulated materials or chemicals unless specifically arranged otherwise.
- Waste containers brought on site by the contractor shall be identified with the contractor's name.
- Sinks in restrooms and drains will not be used for disposal of any materials.
- Deliberate and/or unauthorized discharges and releases to the environment are prohibited.
- When a contractor uses a UTC waste container (indoor or outdoor), the contractor shall ensure that it be kept closed at all times. When the container is full, the contractor shall write in the "Full Date" on the container's label and notify their Contractor Coordinator for removal and storage of the full container. Contractor will be asked for the container's location and number located on the lower right side of the white label.
- Waste materials that no longer have use such as paints, spray paint cans (including empty ones), used varnish, thinners, other types of solvents, oil, antifreeze, kerosene or rags contaminated with any of these materials are controlled waste. Contact your Contractor Coordinator for more information on their disposal.
- Containers stored outdoors shall be covered at all times to keep out precipitation, except when actively in use. This includes roll-off containers. The following are key factors for meeting this requirement:
 - Containers shall be covered upon delivery and until removed from site. The party that supplies the container (Contractor Coordinator, Contractor, etc.) shall provide the cover.

- The Contractor Coordinator shall inspect containers upon delivery for damage and discrepancies and approve them for use by the contractor.
- Active use includes adding or removing materials and the time that transfers of material are made to and from the container as long as there is no current or forecasted precipitation. In other words, anyone who places material in the container is responsible for replacing the cover immediately afterward, unless materials will be added for extended periods throughout the day, in which case the cover must be replaced after the last load of the day is placed in the container. However, the cover must be replaced immediately after each load is placed in the container if there is current or forecasted precipitation, regardless if materials will be added for extended periods throughout the day.
- If the cover is flexible (e.g., a tarp), it must be kept taut to minimize pooling of precipitation. Any pooling that does occur must be eliminated before the cover is removed.
- All dumpsters with a drain plug shall have the plug secured and an attached cover.
- Containers shall be located in areas that minimize the risk to storm drains in the event leakage occurs and/or the area storm drain must be protected against any unplanned leakage during storage or transfer.
- Immediate responsibility for maintaining protection belongs to the Contractor while the project is underway. When the project is completed or is not manned, the Contractor Coordinator assumes the responsibility until the container is removed from the site or the contractor mans the project again.
- Removal of soils from, or adding soils to, storage areas requires approval from UTC for each job. Soil removed and placed in these areas is characterized for specific uses and is subject to tracking. Dumping of concrete and debris in these areas is not allowed. Contact your Contractor Coordinator or the EH&S department for guidance.

Welding, Cutting and Brazing

- A hot work permit must be obtained prior to welding, cutting, soldering, brazing operations, open flame work, and use of spark/heat producing equipment or powder actuated tool operations.
- The permit must be countersigned by the Contract Coordinator.
- Suitable fire extinguishing equipment shall be immediately available in all welding, cutting and brazing locations.
- Objects to be welded, cut or heated shall be moved to a designated safe location, or, if they cannot be readily moved, all movable fire hazards in the vicinity shall be taken to a safe place. If fire hazards cannot be removed, a pre-job assessment shall be performed and control measures established to protect the immovable fire hazards from heat, sparks and slag.
- Personnel working around or below the welding, burning, or grinding operation shall be protected from falling or flying objects.
- Should a pre-job assessment identify that an unsafe accumulation of contaminants could develop, then suitable mechanical ventilation or respiratory protective equipment shall be provided.

Gas Welding and Cutting:

- All hoses and torches carrying acetylene, oxygen, fuel gas, or any substance that may ignite or be harmful to employees shall be inspected at the beginning of each shift.
- Defective hoses and torches shall be tagged "Do Not Use" and immediately removed from service.
- Acetylene cylinders shall not be stored on their side.
- Torches shall be lighted from friction lighters and not by matches or from hot work.
- Directional gas flow fittings (back-flow valves) shall be provided on hoses to prevent reverse gas flow or back flow.
- Torches shall be turned off and removed from confined spaces when not in use.

Arc Welding and Cutting:

- Arc welding and cutting operations shall be shielded by non-combustible or flame-retardant screens to protect employees and other persons working in the vicinity from the direct rays of the arc. When curtains or other barriers may not be feasible, "Don't Watch the Arc" or similar signage shall be used at safe approach distances to warn passerby's about the hazards of looking into the arc.
- Arc welding and cutting cables shall be of the completely insulated, flexible type, capable of handling the maximum current requirement of the work in progress. Cables in need of repair shall not be used.
- The power supply switch to the equipment shall be opened when the welder or cutter has to leave the work or to stop work for any appreciable length of time, or when the welding or cutting machine is to be moved.
- All ground return cables and all arcs welding and cutting machine grounds shall be in accordance with regulatory requirements.
- Ground connections shall be made directly to the material being welded.

Export Compliance

All UTC employees, contractors, and third parties within the U.S. are subject to U.S. export laws and regulations

It is essential that all contractor personnel understand and comply with all elements specified by the UTC International Trade Compliance group.

Watchlist Screening:

Watchlist Screening refers to the process of determining whether parties to a potential transaction with UTC are listed on various “watchlists” established by the U.S. Government.

MK Denial reviews:

All contractor personnel will be subject to review by UTC using MK Denial for inclusion on the Denied Persons list. This will be performed initially and on an annual basis.

- Prior to granting access to UTC facilities, network, data, software, or commodities
- Prior to being enrolled in UTC-provided training

Access Controls:

The U.S. Government prohibits foreign nationals from having access to certain "technical data" or controlled commodities without a specific export license. "Access" means any contact with technical data via visual, oral, or other means. This includes receipt or review of documentation, briefings, plant tours, etc. Electronic transmission of technical data to a foreign national via facsimile or electronic mail is subject to export restrictions.

Visitor Registration

All visitors to UTC’s facilities must be registered in the Visitor Registration System. This includes U.S. persons, permanent resident aliens (i.e. “green card” holders), and non-U.S. persons.

Export Controlled Areas

Export controlled areas are marked with a sign.

Example



Photographic equipment:

- Camera and video equipment (including cell phones with digital camera capability) require a pass provided by UTC, which must be displayed at all times if issued.
- Photographs/video shall not be taken of any data, equipment or process unless authorized in advance.
- All publications/ presentations or documents that contain photographs shall be reviewed by a BAER prior to distribution or dissemination.

Technology control

If a Foreign National (FN) Contractor requires access to technology or a controlled technology area, the sponsor must coordinate in advance with the appropriate Business Unit Export Manager and ITC to obtain an approved Technology Control Plan. Please note that creation and approval of this plan can take several weeks. Please note that one component of obtaining an approved plan is to have an approved Non-disclosure agreement between the FN Contractor and UTC.

Pratt & Whitney CT Ops Appendix

Ariel Lifts

Employees working in aerial lifts shall wear hard hats or bump caps, and shall be tied off in a restraint mode with a harness and lanyard. Restraint mode is achieved when the lanyard prevents the employee from stepping up onto the mid-rail.

Employees shall work from the floor of the lift only. Climbing out of the aerial lift or on the handrails, mid-rails or brace members is prohibited unless an “out-of-basket” permit has been issued verifying an adequate anchor independent of the lift is used to tie off in a fall arrest mode. (Note: Out of basket permits are not allowed at NBEC)

Asbestos

East Hartford, CT: There is sprayed on thermal system insulation on the ceiling structural components in Office Building B.

Electrical Safety

East Hartford, CT: Electrical work in substations must be performed by a least a Journeyman Electrician. A substation qualified UTC individual must accompany all others, including non-electrical workers. Job briefing shall be conducted and documented prior to any substation entry.

Evacuation Guidelines

Spills and Releases - Listen to the PA announcement. Directions will be either for evacuation or shelter in place. If the release is in the facility one or more buildings could be evacuated to the exterior. Once this has been established, employees should move to their exterior assembly areas. If the release is outside the facility, you will be told to remain in the building or move to your shelter in place location. Remain indoors until the Incident Command has determined that it is safe to leave the building.

Bomb Threats - Listen to the PA announcement or for direct instructions from Protective Services. Directions will either be for evacuation or shelter in place.

Suspicious Packages/Powders - Listen to the PA announcement or for direct instructions from the Emergency Services. Directions will either be for evacuation or shelter in place. Report suspicious packages/powders to emergency services immediately.

Suspicious/Dangerous Person - Self Evacuate, if safe to do so. Leave the building and seek cover. If you cannot safely evacuate, Hide Out. Hide in areas out of view of the dangerous person. Lock or block entry to your hiding space. Lay on the floor under desks or similar spaces. Take Action as a last resort and only when your life is in imminent danger. Attempt to incapacitate the dangerous person. Act with physical aggression, do not try and talk to them.

Active Shooter - Self Evacuate, if safe to do so. Leave the building and seek cover. If you cannot safely evacuate, Hide Out. Hide in areas out of view of the active shooter. Lock or block entry to your hiding space. Lay on the floor under desks or similar spaces. Take Action as a last resort and only when your life is in imminent danger. Attempt to incapacitate the active shooter. Act with physical aggression, do not try and talk to them.

Explosion - Listen to the PA announcement. Directions will either be for evacuation or shelter in place. If the explosion is internal to the facility one or more buildings could be evacuated. Once this has been established, employees will move to their exterior assembly areas. If the explosion is outside of the facility, you will be told to remain in the building or move to your shelter in place location. Remain indoors until Incident Command has determined that it is safe to leave the building.

CBRNE (Chemical, Biological, Radiological, Nuclear and Enhanced Conventional Weapons) Listen to the PA announcement. Directions will either be for evacuation or shelter in place. If the event is internal to the facility one or more buildings could be evacuated. Once this has been established, employees will move to their exterior assembly areas. If the event is outside of the facility, you will be told to remain in the building or move to your shelter in place location. You will remain indoors until Incident Command has determined that it is safe to leave the building.

Tornado - Listen to the PA announcement for directions. Prior to the storm hitting you will be asked to move to your shelter in place location.

After the event, listen for instructions. If your building has been damaged, you are to proceed to your outside assembly area and await further instructions. Be aware of your surroundings and avoid hazards such as live electrical, debris and similar hazards

Hurricane - Listen to the PA announcements if on site or local news on TV or radio for instructions on coming into work. Prior to the storm hitting you will be asked to move to your shelter in place location. After the event, listen for instructions. If your building has been damaged, you are to proceed to your outside assembly area and await instructions. Be aware of your surroundings and avoid hazards such as live electrical, debris and similar hazards

Earthquake - Do not evacuate the building during the earthquake. If possible, move to your shelter in place. Do not go up or down stairs. If you cannot move to your shelter in place, move away from windows, tall objects that can fall over and similar hazards. Get under a desk or table and hang onto it, or move into a hallway or get against an inside wall. If you are outside of a building, get into the open, away from power lines, light poles or anything else that could fall on you. Once the event is over, determine if there is any damage to the building you are in. Look for broken windows, cracks in the walls, fallen ceiling panels, electrical power outage and similar items. Call the site-specific emergency number. If an evacuation is necessary, it will be announced over the PA.

Excavations and Soil

East Hartford, CT: All excavations, soil removals, and subsurface work must be reviewed and approved by PW. Soil and groundwater may contain pollutants that require workers to have specialized training, hazardous communication, personal protective equipment, and/or special instructions for proper handling of soils and groundwater at the site. Some examples of these activities include: machine pit excavations, fence post installations and removals, underground utility work, soil and groundwater sampling, etc.

Export Compliance

All visitors to Pratt & Whitney's facilities must be registered in the Visitor Registration System. This includes U.S. persons, permanent resident aliens (i.e. "green card" holders), and non-U.S. persons.

Powered Industrial Vehicles

PW Contractor Coordinator must register resident and non-resident contractor PIVs in the PW PIV registration database.

Initial inspection must be completed by the PW Contractor Coordinator and entered into the registration database.

All contractor PIVs shall be identified with the Company Name and PIV Number on four sides of the PIV. The letters shall be a minimum of two inches high. The PIV number will be issued through the PIV Registration Database by the Contractor Coordinator.

PIVs designed solely for the transport of employees are not allowed on the property.

All resident contractor PIVs being used on a permanent basis including electric buggies/carts operating inside the facility capable of traveling faster than 6-mph/10-kph must be equipped with a physical speed limiter device (mechanical/electronic governor, keytroller) by July 1, 2014.

Contractor equipment brought in for temporary use only is exempt from speed limiting control devices but the PIV shall have administrative controls in place to control speed (speedometer) and operations must comply with the 6 MPH speed limit.

PIVs must be equipped with non-marking tires (East Hartford must have ground strap) for inside operation.

PIVs are not allowed in parking lots or roadways without prior written permission from EH&S in East Hartford.

All buggies, flatbeds, fork trucks, stackers and golf carts including those used in parking lots and roadways must have a yellow flashing (non-strobe) light that indicates that it is in operation. PIVs designed solely for the transport of employees are not allowed on the site.

PIVs are not allowed in parking lots or roadways without prior written permission from EH&S.

PIV Operators:

- Resident contractors who will operate a powered industrial vehicle (PIV) must complete an Operator Permit Application – PW F4786) with their supervisor and forward medical clearance, proof of training and appropriate OJT forms for each type of PIV listed on the PW F4786 form to Site EHS or processing. A permit will be issued to the contractor.
- If a contractor employee is terminated the Site PIV program owner must be notified to deactivate the employee in the PIV permit database.
- PIV operators must receive a vision test initially and once every 3 years. They must see (with corrective lenses if necessary) 20/40 or better at a distance with one or both eyes, have depth perception of 4 or better on Titmus II vision tester, and peripheral vision of 70 degrees or better.
- Contractors must maintain a copy of an annual inspection performed by a qualified person on each vehicle brought on site. A copy of this inspection must be on the vehicle at all times. Inspections must have been performed within the last 12 months.

Roof Work

Employees and contractors working on roofs 6ft. and higher with an unprotected edge shall be protected from falls by one of the following methods. Unprotected edges include unguarded skylights and hatches

- (a.) Construction of an approved temporary guardrail system
- (b.) Personal fall protection equipment

Contractor employees working alone on the roof must get prior approval from their Contractor Coordinator.

Employees are not permitted on the roof in severe weather unless authorized by a Contractor Coordinator.

Personnel accessing roofs with an unprotected edge to perform work must proceed directly to their work area. While in transit, they shall focus their immediate attention on staying as far away from unprotected edges as possible and continue moving toward the designated work area without stopping until they arrive. Once they reach the work area, they must comply with one of the following fall protection methods:

- If the work area is greater than 15 feet from an unprotected edge, personnel must tie off in a fall restraint mode that will prevent them from reaching an unprotected edge. If a suitable anchor point is not feasible, a warning line (Appendix B) shall be erected around the area that is at least 15 feet from any unprotected edge, and all work must be done within the warning line. Management must approve the use of a warning line system on the hazard assessment document.
- If the area is closer than 15 feet from an unprotected edge, personnel must use secondary fall protection. When secondary fall protection is being considered, preference should first be given to fall restraint with a restraint lanyard, followed by fall positioning with a retractable lanyard, and lastly fall arrest with a shock-absorbing lanyard.

Personnel accessing roofs to perform inspections or assessments of workplace conditions are exempt from using fall protection as long as all the following criteria is met:

- Inspection is being performed before or after work has taken place.
- The employee making the inspection or assessment is aware of roof conditions, and is competent in recognizing and abating fall hazards.
- Inspector activities are limited to visual inspection, basic measurements and note taking.
- Any discussion, meeting, conversation or phone call while inspecting shall take place at least 15 feet from an unprotected edge.
- While in transit, the inspector shall stay as far from unprotected edges as possible. Employees approaching an unprotected edge shall travel in a perpendicular direction only.

Sikorsky Aircraft Appendix

Cardinal Rules

Sikorsky has adopted a 6th Cardinal Rule: Powered Industrial Vehicles / No Material in the Aisle. Material must not be left in an aisle at any time.

Elevated Work / Roof Work

Contractor employees shall use fall protection when exposed to a fall hazard working at an elevated level of 4 feet or more.

Fall protection must be utilized when working within 10' of a leading edge.

Trenching, Excavating and Drilling

All CT Sites: CT State Law requires the contractor to contact "Call Before You Dig" 1-800-922-4455 two full working days prior to any trenching, excavating, digging or drilling activities.

UTC Aerospace Systems Appendix

Asbestos

The Contractor is responsible for providing two hours asbestos awareness training, per OSHA requirements, to all Contractor personnel working at the facility who might reasonably be expected, during their course of work, to come in contact with asbestos containing material (ACM). Contractor personnel performing work including, but not limited to, custodial, maintenance and cable work would be required to have the asbestos awareness training.

Compressed Air Systems

UTAS sites have both low and high pressure compressed air. Contractors shall not connect any compressed air equipment to the facility systems without prior written approval of the Contractor Coordinator and Facilities Engineering.

Contractor EH&S Requirements

Fairfield, CA: Contractor employees may be required to sign a contractor verification card or the safety training card supplied by Security Services, the job coordinator and/or EH&S. We provide a safety briefing card to each contractor who has had the safety training. They are required to produce this card at the gate prior to being allowed to work on the site.

Fairfield, CA: All contractors are required to complete and pass Level III.

Cranes and Hoisting

The Contractor Coordinator shall be notified of all proposed crane use at least one week in advance of the actual lift to facilitate a pre-work review with EH&S, Emergency Services and impacted area supervision.

Mobile cranes, including portable crane derricks, power shovels, or similar equipment, shall not be operated **within 20** feet of overhead electrical power lines.

Electrical Safety

During rearrangements, if exposed conductors and wires need to be left temporarily protruding through walls, floors or ceilings, they shall be de-energized, properly terminated and insulated at the wire ends and positioned so as not to cause physical hazards. All electrical wire shall be properly protected and a sign placed on them stating whether the whip is live or dead.

Newly installed electrical panels shall be marked with signs stating "Panel Energized" once power feed wires are installed into the panel, regardless of whether the system is locked out or not. The sign shall remain in place until the entire project is completed or equipment is released to the owner, whichever comes first.

Excavations and Soil

All excavations, soil removals, and subsurface work must be reviewed and approved by UTAS and/or UTC Remediation. Soil and groundwater may contain pollutants that require workers to have specialized training, hazardous communication, personal protective equipment, and/or special instructions for proper handling of soils and groundwater at the site. Some examples of these activities include: machine pit excavations, fence post installations and removals, underground utility work, soil and groundwater sampling, etc.

Fire Protection

Twenty four hour advance notice to Emergency Services and/or Site EH&S is required for any work/alterations involving the fire protection sprinkler system.

General Material Handling Information

Items extending more than two feet out of the confines of trucks or equipment shall be marked in such a way that persons walking by will not accidentally walk into the material.

Contractors will be requested by Site Emergency Services Department personnel to produce written authorization by the Project Coordinator when transporting material off the site.

Contractors are not allowed to conduct operator training for powered industrial vehicles on UTAS property without written authorization to do so from the EH&S.

All contractor operated, owned, or leasing powered industrial vehicles shall have signage or stenciling listing the company name of the contractor responsible for the equipment, as well as the original manufacturers name plate(s) attached.

Mobile Cranes and Air Lifts

The Site EH&S department and, where applicable, the Site Emergency Services Department shall be notified by the designated representative five business days before commencing any crane or air lift operation.

For any site located within a 3 mile radius of an airfield approval must be obtained from Site EH&S department and, where applicable, the Site Emergency Services Department for any lift above the facility structures. A lift plan must be prepared and approved by the Site EH&S, Emergency services, and Facility Engineering. Approved plans must be submitted 45 days prior to the planned lift (unless it is an emergency). Submission to the FAA shall be coordinated by the Project Coordinator.

The flight path of any proposed airlift operation must be reviewed and approved by the Contractor Coordinator, the site emergency services department, and the airport.

Personnel shall be evacuated from areas under any flight path, crane swings and drop zones during lifts.

Lifts shall not take place if sustained wind speeds are in excess of 20 mph or gust of 30 mph are predicted.

OSHA VPP/ISO18001 Requirements

Contractors who work more than 1,000 hours in any calendar quarter at a UTAS facility are required to provide health and safety data as identified in the OSHA VPP/ISO18001 requirements to the Site EH&S Manager when requested but not less than annually. This data includes the contractor SIC/NAICS code, hours worked, hours worked at UTAS site and injury and illness data for the company as a whole as well as the work done at the site.

Personal Protective Equipment

In additions to construction areas, hard hats are required when performing overhead work, while working from man-lifts, on equipment platforms, above ceilings and when working near high voltage lines. When hard hats are required, a chinstrap is also required if the hard hat does not have a ratchet stay suspension system.

Contractors and vendors may purchase approved safety shoes at competitive process negotiated by UTAS – check with your site Contract Coordinator.

Pesticides and Herbicides

Environmentally friendly pesticides and herbicides are required to be used in all landscaping and rodent/pest control operations. Several sites have endangered species in and around the site – the Contractor will review site specific operations prior to choosing a method for control for plants and pests. The Contractor shall provide the following to the UTAS Contractor Coordinator and Site EH&S, PRIOR to any application of pesticides or herbicides:

- MSDS for all products being applied
- Pesticide Application Business Registration Certificate
- Commercial Pesticide Applicator Supervisory License

Pre-work Assessments

It is the Contractor's responsibility to conduct a safety and environmental meeting with his/her employees and subcontractors prior to beginning any work on UTAS property. This meeting shall be in the presence of the UTAS Contractor Coordinator, and the supervisor of the applicable area, if available, to cover all sections of this guide and any potential hazards specific to the work area.

The UTAS Contractor Coordinator and the Contractor shall use the Pre-Work Environmental, Health and Safety Checklist as contained in WI634 to determine the risks that apply to the project.

Gasoline, liquid petroleum, gas or other internal combustion engines are not permitted inside any building without prior written approval from Site EH&S.

A clearance of at least 18 inches shall be maintained around all automatic sprinkler heads.

Contractors are required to have at least two people at the job site when installing, reworking or repairing sprinkler systems in any buildings.

Roof Work

Do not approach within 10 feet of the leading edge without fall protection.

Restrictions for Factory Area Ceiling Painting

Prior to start of work, the Contractor shall review the area with the UTAS Contractor Coordinator to ensure that the Contractor understands what equipment or devices in the area are to be masked or otherwise protected. The Contractor shall be responsible for all costs associated with cleaning, repairing, or replacing any devices, equipment, and parts that are painted or damaged by over spray.

Contractors shall protect all of the following devices in the work area (Contractor is responsible for the complete removal of such protection from all covered devices at the conclusion of painting in that area):

- All gauges, valve handles, hand wheels, valve number tags and valve stems
- All identifying tags and labels on any ceiling mounted device, piping, or piece of equipment
- All sprinkler heads, smoke/heat detectors, nozzles, fire alarm lights, or any other fire/emergency services equipment or devices
- Steam traps or steam trap identification labels, Electron-pneumatic valve actuators

- Overhead compressed air pressure controllers labeled IC300, 400, 500, 501, IC302, and IC301
- Column identification markings and Emergency Services marker stripes on columns
- Factory light fixtures, fans, and clocks

Contractors shall not paint any of the following:

- Any wiring not in conduit, including data/telecommunications cable, power cable, or cables in cable trays. (There may be cases where single telephone/data cables are impossible to protect from painting. It will be up to the judgment of the UTAS Contractor Coordinator to make decisions in these cases.)
- All electrical distribution equipment, including transformers, switches, bus heads, bus duct, light fixtures, control panel or control cabinet, or any electrical component
- Monorail or bridge crane hoist systems, including runway rail, bridges and monorails, may be painted only after receiving prior approval from the UTAS Contractor Coordinator. Pendants, tag lines, electrical wiring, electric cables and electric bus bars shall not be painted.

Scaffolds

Stationary metal scaffolds shall not be secured to any building or any building support structure without approval of facilities engineering.

No scissors lift shall be used on a UTAS facility unless the lift is equipped with an audible warning device. This device may be initiated by the operator, (E.g., a horn) or may be a warning device that operates automatically whenever the scissors lift is moving forward or backward. The warning sound must be capable of being heard in a normal factory environment.

Site Access

The only contractor vehicles that shall be allowed inside the Security Perimeter will be those vehicles that haul materials, equipment and heavy company tool chest to the work site.

Contractors shall follow site badge and parking permit requirements. All One-Day Contractor Badges and parking permits must be turned in at the end of each workday.

Contractors working in any Power House, Hazardous Waste Facility, Wastewater treatment Plant, Special Fluids Lab, or any other area identified by Site EH&S as High Hazard must sign IN and OUT at the appropriate watch station.

Tools and Equipment

Hard hats are required when using ladders.

Contractors using any approved radiation-emitting equipment shall possess a valid NRC license and a calibrated radiation meter.

Work Stoppage

UTAS associates have the authority to stop UTAS contractor operations in the event of a serious EH&S violation. The UTAS associate, upon invoking work stoppage, must immediately notify the UTAS Contractor Coordinator and/or Site EH&S.

The Contractor Supervisor shall notify the responsible UTAS Contractor Coordinator of any unsafe conditions encountered beyond the control of the Contractor to correct. Contractor will contact Site EH&S Department and/or the EH&S manager if the Contractor feels the UTAS Contractor Coordinator is not adequately addressing the concern or hazard. Senior management for the Contractor may cease the Contractor activity until mutually agreed between the Contractor and Site EH&S that the condition is corrected, without ramifications against contract deadlines.

UTC Remediation

Applicability

UTC Remediation Contractors must follow the requirements of the UTC Remediation: Standard Operating Procedure, Contractor Environment, Health and Safety Program (SOP).

UTC Remediation Contractors are required to comply with the Contractor EH&S requirements of the UTC Division facility where the work is being performed. Additional requirements specific to UTC remediation contractors are outlined in the SOP.

Training

UTC Remediation contractors and sub-contractors are required to take and successfully pass the UTC Level 3 on-line training prior to performing work for the UTC Remediation Group. In certain instances on a case by case basis, the UTC Remediation Project Manager is allowed to exercise discretion as to the training required.

Conduct of Work

Pre-work Assessment

Assessment should be done at the start of a new project. On Business Unit sites, this process can be fulfilled under Business Unit program requirements. A Contractor Project Scope and Pre-Assessment form

should be completed jointly by the Contract Coordinator and the contractor representative. Alternatively the contractor representative may complete the form and submit to the UTC Remediation Project Manager for approval.

JSA/JHA Development

Contractor shall perform Job Hazard Analyses (or the equivalent) for all projects performed at UTC Remediation project sites.

Site Specific Health and Safety Plan (HASP and HASP minimum standards checklist

Contractor shall develop a site specific HASP for all work performed at UTC Remediation project sites. A site-specific HASP is required for all on-going remediation projects. Minimum standards for site specific HASPs are included in a checklist to be submitted with the HASP. The Site Specific HASP Minimum Standards Checklist should be used for this purpose.

Assessment/Inspection Process

Health and safety assessments will be conducted by two means: site inspections and post task/project de-briefing.

1) On Site Reviews/Inspections

An on-site review/inspection will be conducted by a Remediation Project Manager, Contractor's CIH/CSP, or third party designee, during the performance of the work by the Contractor. The review/audit will consist, at a minimum, of the review of the site specific HASP, observation of the Contractor while performing a specific work task(s), evaluation of the work task with respect to JHA information within the HASP, compliance with Business Unit or other host site specific health and safety requirements, and preparation of documentation of the review/audit process conducted. The Contractor Job Site Inspection form is to be used for this purpose.

2) Post Work De-briefing Review

A post work, debriefing review will be conducted by a Remediation Project Manager, Contractor's CIH/CSP, or third party designee, after work or a certain task has been completed at a site by the Contractor. The post work review will consist of a line of questioning of the Contractor with respect to the work performance relative to the site specific HASP and documentation of the discussion. HASP performance questioning should consist of extracting information regarding the work

performed, potential hazards, mitigation of those hazards, and opportunities to provide lessons learned. In order for the review to be effective, the Remediation Project Manager should have a copy of the HASP for reference as well as the basis for discussion of the work aspects. The Post Project Evaluation form should be used for this purpose.

Notes