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John F. Kennedy Space Center, Florida

Safety and Mission Assurance Directorate

KSC Construction Contractor Safety and Health Practices User Guide

Approved By:

_____/original signed by/_____
Michael E. Wetmore
Director, Safety and Mission Assurance

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1.0 GENERAL

It is Kennedy Space Center (KSC) policy to provide a safe and healthy work environment for all those who perform work on KSC including civil service and contractor personnel. As a team we all need to strive to ensure the workplace is free of unsafe and unhealthful conditions that could cause loss of life or injury to personnel or damage to facilities or equipment.

This document was developed to assist NASA Construction of Facilities (CoF) contractors in developing Site-Specific Safety and Health Plans that are designed to ensure their construction site work safety and health maintains compliance to 29 CFR 1926 (Safety and Health Regulations for the Construction Industry) and 29 CFR 1910 (Safety and Health Regulations for General Industry), National Consensus Standards, and NASA/KSC Safety Program and Policies.

Additionally, this user guide provides examples of commonly used permits and forms, contact numbers, and general instructions regarding how to meet the requirements of KNPR 8715.7, KSC Construction Contractor Safety and Health Practices Procedural Requirements and KNPR 8715.3, KSC Safety Practices Procedural Requirements.

1.1 SCOPE

The safety and health of all persons involved in all types of work at the National Aeronautics and Space Administration's (NASA's) Kennedy Space Center (KSC) is paramount. Safety is the freedom from conditions that can cause death, injury, occupational illness, damage to or loss of equipment or property, or harm to the environment. NASA's safety priority is to protect the public, international partners, astronauts, and pilots, the NASA workforce (including contractor employees working on NASA contracts), and high-value equipment and property.

This Construction Contractor Safety and Health Requirements Users Guide was compiled for use by NASA/KSC Construction Contractors in conjunction with KNPR 8715.7, KSC Construction Contractor Safety and Health Practices Procedural Requirements to assist contractors in developing Site-Specific Safety and Health Plans for their work at Kennedy Space Center (KSC) and to ensure contractors and their employees (to include subcontractors) perform all work in a safe manner compliant with 29 CFR 1926 Safety and Health Regulations for the Construction Industry, 29 CFR 1910 Safety and Health Regulations for General Industry, national consensus standards, and NASA and KSC Safety Program and Policies.

This document contains guidance and templates to assist NASA KSC construction contractors with meeting and satisfying requirements and regulations followed on the Center. The information provided is for reference only and is not intended to cover all safety requirements of OSHA and this contract. This user guide is not intended to relieve contractors of their obligations in accordance with their contract, under OSHA regulations, or any other applicable local, State, or Federal law or regulation.

1.2 APPLICABILITY

This document is applicable for use by all prime NASA KSC construction contractors and their subcontractors performing work under construction contracts awarded and administered by the NASA/KSC Procurement Office.

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1.3 RESPONSIBILITIES

It is the responsibility of the NASA prime construction contractors to ensure that the safety and health requirements identified in their Site-Specific Safety and Health Plan (SSSP) and other related plans are observed by all contractor and subcontractor employees on the jobsite.

1.4 REFERENCED DOCUMENTS

a. KNPR 8715.3, Kennedy Safety Practices Procedural Requirements

b. KNPR 8715.7, KSC Construction Contractor Safety and Health Practices Procedural Requirements

2.0 SSSP (EXAMPLE)

In accordance with KNPR 8715.7, KSC Construction Contractor Safety and Health Practices Procedural Requirements, chapter 2, the contractor's SSSP must address the policies, procedures, and techniques that will be used to assure the safety and occupational health of the contractor's and their subcontractor's workforce on the awarded contract. Additionally, the contractor must address how they will protect the NASA workforce (including contractor employees working on NASA contracts), the public, and NASA equipment and property.

An SSSP Template has been provided as Attachment A and the SSSP Section Requirements Checklist has been provided as Attachment B to assist contractors in the development of their SSSP.

3.0 FIRE PREVENTION

As stated in KNPR 8715.7, section 3.9, contractors are responsible for fire prevention and protection. A handbook has been included as Attachment C to this User Guide. It may be printed and distributed, used as a resource in the preparation of the SSSP, or included as an appendix in the SSSP.

4.0 HOT WORK PERMITS

Requirements pertaining to hot work permits are contained in KNPR 8715.3, Kennedy Safety Practices Procedural Requirements. Additional requirements pertaining to construction contractors are contained in section 3.13 of KNPR 8715.7, KSC Construction Contractor Safety and Health Practices Procedural Requirements. The following Hot Work Permits may be required for work performed at KSC.

The permits have been provided here as samples of permits commonly used by construction contractors. Official versions of these forms are available on the KSC Forms website at: http://kscforms/findex.cfm

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4.1 HOT WORK PERMIT, TORCH DOWN ROOF OPERATIONS (KSC FORM 2-270)

In accordance with KNPR 8715.7, section 3.13, item a(1):

a. A KSC hot work permit shall be obtained from Kennedy Fire Services prior to any:

(1) Hot work for roof construction or repair using a "torch down" method (KSC Form 2-270).

An example of KSC Form 2-270 has been provided in Figure 1, below.

Torch Down Roof Operations
Hot Work Permit

Organization/Company Name	Permit Number	Date/time of permit issue	Date/time permit expires
Facility/Area			
Supervisor/Operator's Name	Phone Number	Contractor Site Safety Agent	Signature
Supervisor/Operator's Signature		Permit Authorizing Individual	Name and Phone Number

	Y	N	N/A
1. On-site inspection by Permit Authorizing Individual before torch down permit is issued.	☐	☐	☐
2. Site Safety shall perform a DAILY SITE WALK DOWN to ensure personnel are complying with fire guidelines and regulations, and shall ensure the following:			
a. All fire extinguishers inspected daily prior to start of any torch down.	☐	☐	☐
b. Inspect each new torch down site following guidelines of hot work permit.	☐	☐	☐
c. Insure fire watch has been briefed and assigned to each new torch down site.	☐	☐	☐
3. Operator affirms area shall be CLEANED AFTER EACH SHIFT (ground and roof areas).	☐	☐	☐
4. ALL FLAMMABLE LIQUIDS AND PROPANE CYLINDERS shall be removed from the roof at the end of each work day.	☐	☐	☐
5. FLAMMABLE liquid containers shall be of approved safety type with an attached HMIS label with correct information.	☐	☐	☐
6. PROPANE CYLINDERS shall be separated by 20 feet from the area where FLAMMABLE LIQUIDS are being stored.	☐	☐	☐
7. No flammables within 50 feet of torch down (except propane tanks in use by torch operators).	☐	☐	☐
8. Operator shall ensure all combustibles kept 35 feet away from HOT WORK OPERATIONS.	☐	☐	☐
9. During any HOT WORK operations, a DEDICATED FIRE WATCH shall be assigned.	☐	☐	☐
10. Operators/Fire Watches shall be familiar with and trained to operate fire extinguishers.	☐	☐	☐
11. FIRE WATCH shall monitor all areas for a minimum of TWO HOURS after stopping torch down work. (i.e., breaks, lunch, end of shift).	☐	☐	☐
12. An INFRARED type heat detector shall be used to monitor for hot spots periodically during torch-down operations and during the TWO HOUR fire watch after stopping torch down.	☐	☐	☐
13. All TORCH DOWN OPERATIONS SHALL CEASE when wind speed reaches a steady state of 18 kts (21 mph).	☐	☐	☐
14. All roof openings (i.e., vents, hatches, skylights, roof access, duct work) shall be protected, and a method other than direct TORCH-DOWN shall be used near these locations.	☐	☐	☐
15. At least one multipurpose 4A:60BC FIRE EXTINGUISHER required to be within 20 feet of each torch down operation or hot work site.	☐	☐	☐
16. Subcontractor Site Safety shall ensure personnel working on roof are aware of requirements, and shall be briefed daily on how to EVACUATE THE ROOF DURING AN EMERGENCY.	☐	☐	☐
17. In the event of FIRE OR EMERGENCY call 911 or cell phone - #321-867-7911.			

Additional Comments

Code References: NFPA 241 *Standard for Safeguarding Construction, Alteration, and Demolition Operations*; NFPA 101 *Life Safety Code*, NFPA 51B *Standard for Fire Prevention During Welding, Cutting, and Other Hot Work*, 45th SWI 32-2001 *Fire And Emergency Services Program*

KSC FORM 2-270 (05/08)

FIGURE 1: HOT WORK PERMIT, TORCH DOWN WORK (KSC FORM 2-270)

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4.2 HOT WORK PERMIT, CONSTRUCTION / DEMO (KSC FORM 2-271)

In accordance with KNPR 8715.7, section 3.13, item a(2):

a. A KSC hot work permit shall be obtained from Kennedy Fire Services prior to any:

(2) Hot work for demolition, modification or new construction that includes welding, cutting, burning, open flame and heat producing operations, soldering, heat sealing, or any spark producing operation (e.g., grinding) (KSC Form 2-271).

An example of KSC Form 2-271 has been provided in Figure 2, below.

Hot Work ☐ ***New Construction** ☐ ***Demolition** ☐
Permit

Organization/Company Name	Permit Number	Date/time of permit issue	Date/time permit expires
Facility/Area			
Supervisor/Operator's Name (see Note #1)	Phone Number	*Contractor Site Safety Agent (As needed)	Signature
Supervisor/Operator's Signature		Permit Authorizing Individual	Name and Phone Number

	Y	N	N/A
1. On-site inspection by Permit Authorizing Individual before issuing permit.	☐	☐	☐
2. Operator affirms they are properly trained to operate equipment?	☐	☐	☐
3. Operator affirms equipment is inspected and in safe operating condition?	☐	☐	☐
4. Operator shall maintain good housekeeping practices throughout operation.	☐	☐	☐
5. Fire Extinguishers shall be inspected daily prior to hot work, located within 20 ft. of hot work site; and its use is understood. Type (4A:60BC, 2 1/2 gal. water, 15 lbs. CO^2), quantity _____, other _____.	☐	☐	☐
6. Flammable liquids/gases minimum distance 50 ft. from hot work or are properly protected.	☐	☐	☐
7. Operator shall remove all combustibles 35 ft. away from hot work or are properly protected.	☐	☐	☐
8. Operator shall ensure all hazardous dust, lint, and oily deposits are removed.	☐	☐	☐
9. Operator shall provide appropriate safety barriers and warning signs (as required).	☐	☐	☐
10. Operator shall visually inspect all enclosures/chases/duct work before cutting.	☐	☐	☐
11. Operator shall ensure wall/floor openings and adjacent areas are protected.	☐	☐	☐
12. Operator shall ensure detection systems (including HVAC) are safed, covered, or protected before hot work begins; and systems shall be restored to service daily.	☐	☐	☐
13. Fire suppression systems shall be kept operational (unless otherwise permitted).	☐	☐	☐
14. No hot work in explosive or oxygen enriched atmospheres (air sampling as required).	☐	☐	☐
15. Operator shall ensure all equipment, containers, pipes, hoses have liquids drained, pressure released, vapors purged, gas valves shut off, etc.	☐	☐	☐
16. All fire watches shall be briefed by supervisor/operator of potential hazards, shall read requirements of this checklist, and observes 30 minutes after completion of hot work.	☐	☐	☐
17. In the event of FIRE OR EMERGENCY call 911 or cell phone - #321-867-7911.			
*** Additional requirements for New Construction or Demolition work**			
18. Contractor Site Safety Agent shall provide a safety briefing to all operators and review the requirements of this permit.	☐	☐	☐
19. Locations to be cut using hot work shall be identified and marked (as required).	☐	☐	☐

Additional Comments

(Note #1): If Operator cannot complete work, all new operators shall read and initial next to appropriate boxes and sign this checklist below, indicating full understanding of safety procedures and requirements.

Alternate Operator Signature _____ Date _____ Alternate Operator Signature _____ Date _____

Code References: *NFPA 51B Standard for Fire Prevention During Welding, Cutting and Other Hot Work, NFPA 241 Standard for Safeguarding Construction, Alteration, and Demolition Operations, NFPA 101 Life Safety Code, NFPA 1 Uniform Fire Code, OSHA 1910.252, OSHA 1926.352, 45th SWI 32-2001 Fire And Emergency Services Program*

KSC FORM 2-271 (05/08)

FIGURE 2: HOT WORK PERMIT (KSC FORM 2-271)

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4.3 HOT WORK PERMIT, TAR KETTLE OPERATIONS (KSC FORM 2-272)

In accordance with KNPR 8715.7, section 3.13, item a(3):

a. A KSC hot work permit shall be obtained from Kennedy Fire Services prior to any:

(3) Hot work for roof construction or repair using “tar kettle” operations (KSC Form 2-272).

An example of KSC Form 2-272 has been provided in Figure 3, below.

Tar Kettle Operation
Hot Work Permit

Organization/Company Name	Permit Number	Date/time of permit issue	Date/time permit expires
Facility/Room/Area			
Supervisor/Operator's Name	Phone Number	Contractor Site Safety Agent	Signature
Supervisor/Operator's Signature		Permit Authorizing Individual	Name and Phone Number

	Y	N	N/A
1. On-site inspection by Permit Authorizing Individual before torch down permit is issued.	☐	☐	☐
2. Site Safety shall perform a DAILY SITE WALKDOWN to ensure personnel are complying with fire guidelines and regulations, and shall ensure the following:			
a. All fire extinguishers inspected daily prior to start of any tar kettle.	☐	☐	☐
b. Inspect tar kettle area and roof sites daily following guidelines of hot work permit.	☐	☐	☐
c. Insure fire watch has been assigned and briefed.	☐	☐	☐
3. Operator affirms area shall be CLEANED AFTER EACH SHIFT (ground and roof areas).	☐	☐	☐
4. Tar kettle shall be operated in a controlled area. The are shall be identified by the USE OF BARRIERS, "NO SMOKING" in operational area.	☐	☐	☐
5. Tar kettle shall be placed not less than 20 feet from the structure. A non-combustible sturdy barrier 8 feet high & 4 feet beyond each side of kettle is required if closer than 20 feet.	☐	☐	☐
6. LPG tank or tanks shall be placed NO LESS THAN 20 ft. from structure and secured.	☐	☐	☐
7. LPG tank or tanks shall be placed NO LESS THAN 20 ft. from TAR KETTLE and secured.	☐	☐	☐
8. Operator affirms all connections have been checked prior to start up of the tar kettle.	☐	☐	☐
9. Operator affirms all piping are in compliance with applicable codes.	☐	☐	☐
10. Tar kettles SHALL NOT BLOCK EXITS, means of egress, gates, roadways or entrances.	☐	☐	☐
11. NO flammables within 50 ft. (except LPG tanks), or combustibles within 35 ft. of tar kettle.	☐	☐	☐
12. STORAGE of stock shall be maintained no less than 50 feet from the tar kettle/burner equipment. One days working stock is permitted no less than 10 feet of the tar kettle.	☐	☐	☐
13. The tar kettle shall be MANNED AT ALL TIMES while in use and for 30 minutes after the burner has been shut down.	☐	☐	☐
14. Operator affirms tar kettle shall be SHUT DOWN while refueling.	☐	☐	☐
15. MINIMUM OF THREE (3) 20 lbs. multipurpose fire extinguishers shall be provided. Two extinguishers shall be placed within 25 feet of tar kettle, minimum of one extinguisher shall be placed on the roof.	☐	☐	☐
16. Operator affirms all skimmed material shall be placed on a NON-COMBUSTIBLE SURFACE and material shall be broken-up to prevent heat build-up.	☐	☐	☐
17. Subcontractor Site Safety shall ensure personnel working on roof are aware of requirements, and shall be briefed daily on how to EVACUATE THE ROOF DURING AN EMERGENCY.	☐	☐	☐
18. In the event of FIRE OR EMERGENCY call 911 or cell phone - #321-867-7911.			

Additional Comments

Code References: NFPA 241 *Standard for Safeguarding Construction, Alteration, and Demolition Operations*, NFPA 101 *Life Safety Code*, NFPA 51B *Standard for Fire Prevention During Welding, Cutting, and Other Hot Work*, NFPA 1 *Uniform Fire Code*, NFPA 10 *Standard for Portable Fire Extinguishers*, 45th SW 32-2001 *Fire And Emergency Services Program*

KSC FORM 2-272 (05/08)

FIGURE 3: TAR KETTLE OPERATION HOT WORK PERMIT (KSC FORM 2-272)

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5.0 TRAILER AND EQUIPMENT TIEDOWN PLAN (KSC-PLAN-1904)

Minimum requirements for leveling and anchorage of office trailers and other mobile and temporary structures are available in KSC-PLN-1904, Trailer/Equipment Tiedown Plan for KSC.

6.0 DOCUMENTS AND FORMS

The following information may be useful to your organization while working at KSC. This information may be posted in common areas, at the worksite, or any other area as needed

Emergency / Important Contact Phone Numbers

KSC Protective Services Control Center	911 (321-867-7911 - cell phone)
Fire Department	911 (321-867-7911 - cell phone)
Ambulance	911 (321-867-7911 - cell phone)
Police Department	911 (321-867-7911 - cell phone)
KSC Safety Office	(321) 867-SAFE (7233)
KSC Duty Office / Trouble Call	(321) 861-5050
Medical / Environmental Duty Office	(321) 867-2400
Weather Information	(321) 853-8484
Hazardous Waste / Pollution Prevention	(321) 867-7138
KSC Locator / General Information	(321) 867-4369
EOC Storm Info / Update Hotline	(321) 861-7900

Medical Facilities

Onsite Medical Dispensaries

Occupational Health Facility (OHF)
2nd and C Avenue –
Bldg. M6-495 (321) 867-3346
Monday-Friday, 7 am to 5 pm
Industrial Area

Multi-Functional Facility (MFF)
Utility Road and VAB Road
Bldg. K6-1145
(321) 861-1320 or 867-3360
Monday-Friday, 7 am to 3 pm - LC-39 Area

Offsite Vicinity Hospitals

Parrish Medical Center
951 N. Washington Ave.
Titusville, FL (321) 268-6111
24 hours/day, 7
10 miles; North on US1

Cape Canaveral Hospital
701 W. Cocoa Beach Causeway
Cocoa Beach, FL
(321) 799-7111 24 hours/day,
7 days/week
22 miles; East on SR520

Wuesthoff Hospital
110 Longwood Ave., Rockledge, FL
(321) 636-2211
24 hours/day, 7 days/week
24 miles; South on US1

Holmes Medical Center
1350 Hickory Street
Melbourne, FL (321) 434-7000
24 hours/day, 7 days/week
44 miles; South on I-95

Orlando Regional Medical Center
1414 Kuhl Ave., Orlando, FL
(407) 841-5111
24 hours/day, 7 days/week
50 miles; West on SR50

FIGURE 4: KSC EMERGENCY CONTACT PHONE NUMBERS

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KSC LIGHTNING WATCH AND WARNING LOCATIONS

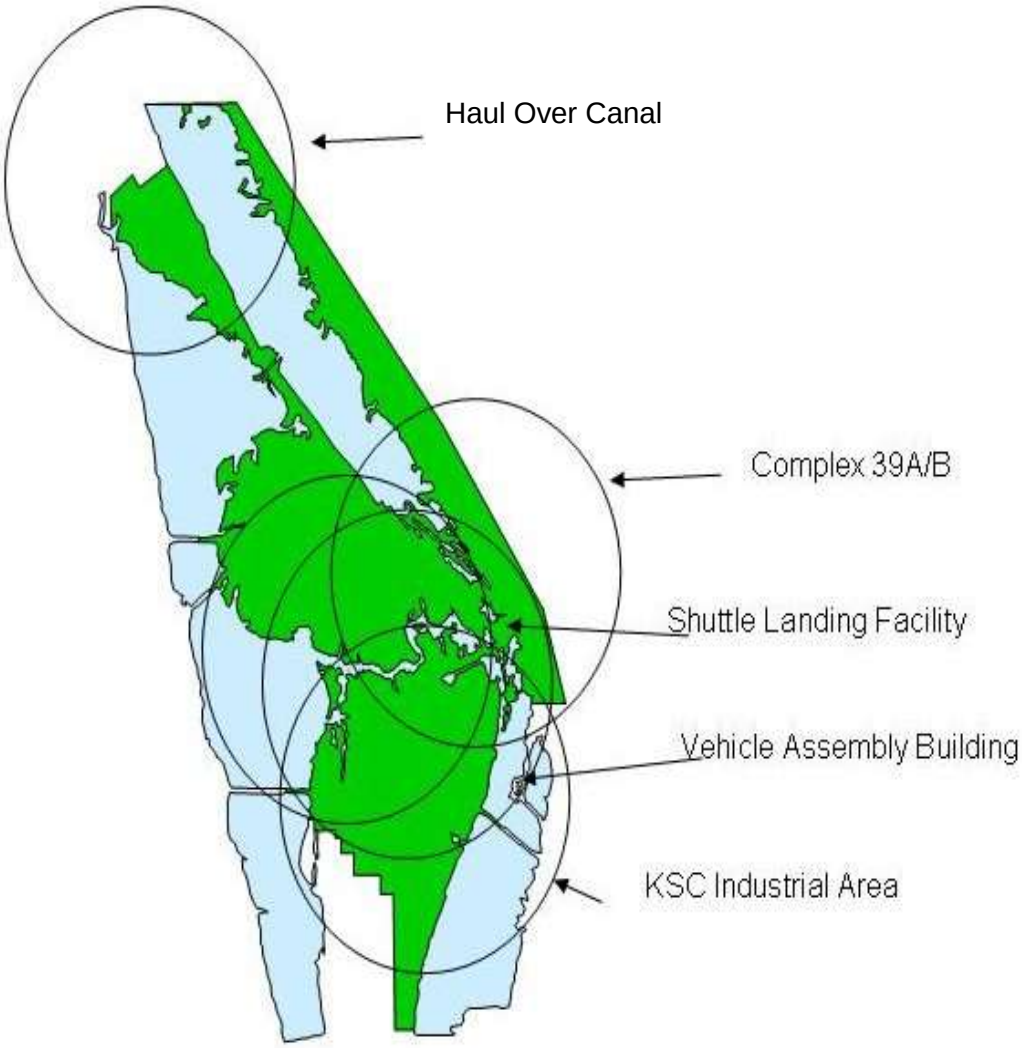

FIGURE 5: KSC LIGHTNING WATCH AND WARNING LOCATIONS

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Wind Conversion Chart

SPEED CONVERSIONS - KNOTS, MPH, KPH		
Knots	Miles per Hour	Kilometers per Hour
1	1.15	1.85
2	2.30	3.70
3	3.45	5.55
4	4.61	7.41
5	5.76	9.26
6	6.91	11.13
7	8.06	12.98
8	9.21	14.83
9	10.36	16.68
10	11.52	18.55
11	12.67	20.35
12	13.82	22.20
13	14.97	24.05
14	16.12	25.90
15	17.27	27.75
16	18.42	29.60
17	19.58	31.45
18	20.73	33.30
19	21.88	35.15
20	23.03	37.00
21	24.18	38.85
22	25.33	40.70
23	26.48	42.55
24	27.64	44.40
25	28.79	46.25
26	29.94	48.10
27	31.09	49.95
28	32.24	51.80
29	33.39	53.65
30	34.55	55.50
31	35.70	57.35
32	36.85	59.20
33	38.00	61.05
34	39.15	62.90
35	40.30	64.75

SPEED CONVERSIONS - KNOTS, MPH, KPH		
Knots	Miles per Hour	Kilometers per Hour
36	41.45	66.60
37	42.61	68.45
38	43.76	70.30
39	44.91	72.15
40	46.06	74.00
41	47.21	75.85
42	48.36	77.70
43	49.51	79.55
44	50.67	81.40
45	51.82	83.25
46	52.97	85.10
47	54.12	86.95
48	55.27	88.80
49	56.42	90.65
50	57.58	92.50
51	58.73	94.35
52	59.88	96.20
53	61.03	98.05
54	62.18	99.90
55	63.33	101.75
56	64.48	103.60
57	65.64	105.45
58	66.79	107.30
59	67.94	109.15
60	69.09	111.00
61	70.24	112.85
62	71.39	114.70
63	72.54	116.55
64	73.70	118.40
65	74.85	120.25
66	76.00	122.10
67	77.15	123.95
68	78.30	125.80
69	79.45	127.65
70	80.61	129.50

8th Edition, National Safety Council, p. 43
Table 2-A
FORCE OF WIND FOR GIVEN VELOCITIES

Knots per hour (v)	Miles per hour (V)	Feet per minute	Feet per second	Force in pounds per square foot (0.004V2)	Description
1	1	88	1.47	0.004	Hardly perceivable.
2	2	176	2.93	0.014	Just perceivable
3	3	264	4.4	0.036	
3	4	352	5.87	0.064	Gentle breeze
4	5	440	7.33	0.1	
9	10	880	14.67	0.4	Pleasant breeze
13	15	1,320	22	0.9	
17	20	1,760	26.6	1.6	Brisk gale
22	25	2,200	29.3	2.5	
26	30	2,640	44	3.6	High wind
30	35	3,080	51.3	4.9	
35	40	3,520	58.6	6.4	Very high wind
39	45	3,960	66	8.1	
43	50	4,400	73.3	10	Storm
52	60	5,280	88	14.4	Great storm
61	70	6,160	102.7	19.6	
69	80	7,040	117.3	25.6	Hurricane
87	100	8,800	146.6	40	

-From Kidder-Parker, Architects and Builders Handbook.

FIGURE 6: WIND CONVERSION CHART

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7.0 EMPLOYEE TRAINING REQUIREMENTS OSHA REFERENCES

In accordance with KNPR 8715.7, section 2.2, item a(3):

The contractor SSSP will include a Training Certification Summary that identifies all applicable employee required training for work under the contract scope. The contractor shall ensure that employees not identified on the Training Certification Summary are not assigned to perform work requiring the requisite training.

The following list identifies the location of safety and health required training:

1910.66	Powered Work Platforms
1926.453	Vehicle Mounted and Rotating Work Platforms
1926.951	Personal Protective Equipment
1910.134	Respiratory Protection
1926.21	Confined Space
1910.147	Lockout Tagout
1910.151	Medical Services and First Aid
1910.157	Portable Fire Extinguishers
1910.178	Powered Industrial Trucks (Equipment)
1910.252	Welding, Cutting and Brazing
1910.269	Electrical Power Generation, Transmission, and Distribution
1910.332	Electrical
1910.410	Diving Operations
1910.1096	Ionizing Radiation (also 1926.53)
1910.1200	Hazard Communication - employees shall be trained on the hazards of the chemicals to which they may be exposed.
1926.20	General Safety and Health Provisions
1926.52	Occupational Noise Exposure/Hearing Conservation (see Table 3-1, KNPR 8715.7 for noise exposure limits)
1926.54	Non Ionizing Radiation
1926.56	Illumination
1926.302	Powder Operated Hand Tools
1926.454	Scaffolds - employees using scaffolding shall be trained on the type of scaffold being used.
1926.503	Fall Protection
1926.761	Steel Erection
1926.1060	Ladders
1926.1101 - 1152	Toxic and Hazardous Substances
FDOT	Florida Department of Transportation - Maintenance of Traffic

http://www2.dot.state.fl.us/proceduraldocuments/procedures/bin/625010010.pdf

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The following Training Certification Summary (Figure 7) may be used as a template to document and certify employee safety and health training. Columns and rows in the table should be altered or deleted as needed.

FIGURE 7: TRAINING CERTIFICATION SUMMARY EXAMPLE

Training Certification Summary (Example Format)

I, _____, of _____certify that OSHA compliant
(*Company Official Name*) (*Insert Company Name*)

employee training for the following topics is current and complete.

* Training expiration date required for these areas

Topic / Employee List	Employee 1	Employee 2	Employee 3	Etc.										
Asbestos Awareness														
Asbestos Worker*														
Asbestos Supervisor*														
Competent Person (Inspections)														
Competent Person (Other Specify)														
Confined Space Entrant														
Confined Space Attendant														
Confined Space Supervisor														
Cardio Pulmonary Resuscitation (CPR)														
Crane Operator														
Crane (Competent Person)														
Diving Operations														
Electrical Safety														
Electrical (Qualified Person)														
First Aid														
Excavation (Competent Person)														
Excavation (Qualified Person)														
Fall Protection														
Fall Protection (Competent Person)														
Fall Protection (Qualified Person)														

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Hazard Communication														
Hazardous Substances (Per 29 CFR 1926.1101-1152)														
Hearing Loss Prevention & Hazardous Noise														
Heavy Equipment Operator (Specify)														
Ladders														
Lockout/Tagout														
Maintenance of Traffic														
Personal Protective Equipment														
Portable Fire Extinguishers														
Powder Operated Hand Tools														
Powered Industrial Trucks														
Powered Work Platforms														
Qualified Person (Other *Specify*)														
Radiation Safety														
Respiratory Protection*														
Scaffold Builder														
Scaffold (Competent Person)														
Scaffold (Qualified Person)														
Scaffold User														
Steel Erection														

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8.0 JOB HAZARD ANALYSIS SAMPLE (NASA/KSC FORMAT)

In accordance with KNPR 8715.7, section 2.16, Job Hazard Analysis (JHA), item a:

> a. Prior to the start of work, the contractor shall perform a job hazard analysis(es) of the work to be performed. The completed JHA(s) shall be provided to KSC Institutional Safety (SA-E2) through the CO as an appendix to the SSSP prior to the start of any onsite work.

Figure 8, below, is a sample of a JHA.

8.1 JOB HAZARD ANALYSIS (ELECTRICAL WORK) EXAMPLE

In accordance with KNPR 8715.7, section 3.5.3, Energized Electrical Work Analysis and Authorization Permit Contents, specific additional requirements regarding JHAs are required for energized electrical work.

Figure 9, below, contains guidelines for completing an Electrical JHA.

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FIGURE 8: SAMPLE JOB HAZARD ANALYSIS

Company: Company X ***Project Name: Refurbish HQ Building*** ***Contract Number: NNK1012345A***		**Work Process:** **General Construction Operations Work**
Task	**Hazard Description**	**Preventive Control Measures**
Operating machinery, equipment, and powered hand tools.	• Unqualified and/or untrained operators. • Flying debris, dust, wood chips, or metal shavings getting into the eyes. • Loose clothing pulled into moving parts. • Electrical shock hazards • Motion hazards (e.g., rotating devices, cutting, or shearing blades). • Injury from slips, trips, falls, and dropped materials (e.g., water, oil, or dust).	• Only qualified and authorized personnel operate equipment. Know and utilize the manufacturer's operating, maintenance, and safety procedures. • Conduct visual check of equipment and examine all powered tools for proper safeguards (e.g., blade guards, shields, or stops). Use PPE as required (e.g., ear protection, goggles, face shield, safety shoes, work gloves). • Do not wear loose clothing, neck ties, etc. • Check electrical cords for three prongs to ensure there is a ground. Use Lockout/Tagout (LO/TO) as required. Keep cords and hoses away from heat, oil, and sharp edges. Do not allow doors to shut on cords or hoses. Never carry a power tool by the cord or yank the cord to disconnect it from the power receptacle. Tag all damaged tools as "Danger – Do Not Use or Operate". • Keep fingers and hands away from pinch point areas. Ensure work area has adequate spacing and lighting. • Maintain proper footing and balance while operating machinery. • Clean work place, equipment, and tools
Working with sharp cutting objects, blades/knives, tools, etc.	• Cuts, lacerations, amputations, and punctures.	• Ensure cutting blade surfaces are maintained. Maintain correct posture/position while cutting. Cut out and away from the user's body. Stow sharp/pointed tools in properly when not in use.

Using liquid fueled equipment.	• Inhaling toxic fuel vapors. • Fire and/or explosion. • Fuel spilled onto clothing, body, and/or eyes.	• Have adequate ventilation to prevent fume build up • Allow equipment to properly cool before re-fueling. Use approved fuel containers for stowing and service. Use grounding / bonding when required. • Where fuel may splash/drip during transfer, wear chemical splash goggles. Ensure a shower / eyewash station is readily available.
Working with or near noisy machinery or equipment	• Noise induced hearing loss and/or tinnitus (ringing)	• Conduct noise survey. Place sound barrier before using equipment. Use reduced noise equipment. Maintain equipment noise control features. Wear the proper PPE when operating the machinery.
Pneumatic tools using compressed air.	• Eye injury, lacerations, punctures, and amputations.	• Ensure trained personnel use the equipment. Follow manufacturer's instructions when operating equipment. Use the manufacturer's recommended air pressure. Wear required eye protection.
Power up and power down operations.	• Injury due to movement of equipment, electrical malfunction, improper operation, and/or cuts, burns, etc. from tools during operation.	• Ensure equipment is mounted and secured properly. Inspect wiring, controls, and avoid moving parts or sharp edges on equipment or tools. Follow manufacturer's instructions when operating equipment.
Welding and/or cutting using portable gas units. Includes brazing, oxy/acetylene, etc.	• Exposure of oxygen cylinders and fittings to oil or grease, creating a fire or explosion hazard. • Pointing welding/cutting torches at a concrete surface causing flying fragments of concrete. • Inhalation of toxic fumes or vapors from welding metals or alloys. • Fires, explosions, severe eye and skin burns, and injuries from welding operation in the proximity of combustible solids, dust, gases, air, and chemicals.	• Never use grease, cleaning solvents, or other flammable material on an oxygen valve, regulator or piping. Ensure hoses are visually checked for wear, oil/grease before use. • Follow manufacturer's procedures with respect to the sequence of operations in lighting, adjusting, and turning off torch flame. • Identify and use required PPE. • Shut off gas and oxygen when not in use. Open valves slowly. Ensure proper ventilation. Purge hoses only in open spaces away from ignition sources. When welding/brazing a cylinder, ensure it is free of all gases, oils, flammables. Do not use flame within 50 feet of flammables. Receive a hot work permit. Use PPE to minimize skin burns; e.g., pants that will cover tops of boots, flame resistant gloves, apron, leggings, certified welding/cutting goggles/face helmet. If required, ensure respirator is used.

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Operation using portable electric welding units.	• Electrical shock. • Inhalation of toxic fumes or vapors from welding metals or alloys. • Fires, explosions, severe eye and skin burns, and other injuries from welding operation that is in proximity of combustible solids, dust, gases, air, and chemicals.	• Ensure circuits are de-energized and components are grounded. Inspect switches, power cables, electrode holders for damage. • Wear certified welding and cutting goggles or face helmet as required. If required, ensure proper respirator is provided. • Use PPE to minimize skin burns, e.g., steel-toed boots, pants which cover tops of boots, flame resistant gloves, apron, and leggings. Inspect area for tripping hazards. Only a certified welder is authorized to use equipment and perform task. Assure that personnel are adequately trained and good housekeeping is practiced
Materials handling (manual) and moving.	• Personnel injuries due to load handling. • Load Variables: load distribution, weight, size, shape, shift of the load in the container, and center of gravity. • Work Place Layout: degree of movement required, obstacles, distances moved, and direction of movement • Individual Physical Variables: strength, mobility, fatigue, and motor functions. Pre-existing injuries - strains, sprains, hernias, fractures, and bruises.	• Wear all required PPE properly (e.g., safety shoes/boots, leather work gloves). • Perform pre-inspection of item to be handled to determine number of persons required to assist. Consider size / shape of object being lifted. • When using a hand truck, and secure all items • Perform inspection of area for environmental hazards such as slipping and tripping hazards. • Execute proper lifting techniques. • Train employees on personal limitations.
Crane Operations: load testing, inspection and certification.	• Unknown conditions allowing the crane to fail causing injury to personnel and damage to property.	• Verify load test data on crane and that the required preventive maintenance inspections (PMI) have been conducted. Conduct “Daily” inspection of crane and components prior to lift; giving special attention to the hook, hoist rope, sheaves, rope guides, and cable winding on drum. Verify the certification of the crane operator, riggers and flagman.
Inspect slings, spreader bars, shackles, and all other rigging to be used.	• Rigging failure if damaged, not certified, or misused. Slips, trips, and back strain potential for personnel inspecting the rigging.	• Verify / document load test dates on and visually inspect all rigging. Assure that rigging selected matches rigging identified. If inspection requires moving the rigging, use proper lifting techniques and use additional persons when needed.

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Relocating or transporting the portable crane.	• Electrocution from overhead power lines and equipment damage from overhead bridges, etc.	• Ensure security vehicles and equipment are clear of route; front, side, and rear. Secure required permits to convoy before move date. Front and rear escorts with security to provide safe traffic control along convoy streets and traffic light intersections. The route of travel shall be cleared before date of convoy, e.g., clearance of all electrical, phone, cables, and traffic signals/wires. Convoy will have electric company traveling with it to raise/reposition wires and signals on the approved route and it will not exceed maximum approved speed.
Crane lifting operations.	• Injury or equipment damage due to falling/dropped material or collision with equipment or personnel. Electrocution and equipment damage from overhead power lines, etc.	• Perform operations per procedure; ensure proper field of view is adequate or have crew with radio communications directing the crane operation. Ensure warning lights are operational, load is properly positioned, and personnel are cleared from area. Be aware of the crane parameters and the space restrictions in the lift path. For portable cranes, ensure the outriggers are fully extended on a stable surface.
Working outdoors	• Can result in heat related illnesses such as heat syncope, heat exhaustion and heat stroke.	• hydration before and during work activities, water supply near workers, work breaks depending on conditions, effort, and other risk factors.
Working at night and/or where no or limited natural light is present.	• Unsafe or incorrect action from reduced light. Evacuation or escape challenges.	• Provide adequate area lighting and/or supplemental lighting that may include task lighting to provide safe escape and/or adequate illumination for visual task.

Areas of Emphasis:

1. Analyze task and understand technical requirements for selection of proper tools, materials, and placement of operating equipment.
2. Always follow the manufacturer's instructions when operating equipment.
3. Preventive Maintenance Inspections (PMI) will be accomplished on all operated equipment in the performance of work.
4. Ensure the proper selection of protective gloves for use with solvents/chemicals; for determination of respiratory protective equipment when an inhalation hazard exists; for assessment of ergonomic hazards; assessment of noise hazards; and assessment of heat stress hazards.
5. Ensure updates of JHA when any new equipment, operations, or processes are to be performed that are not already described in this JHA.

Contractor Site Superintendent Review & Approval: _____ **Date:** _____

Contractor Site Safety Officer Review & Approval: _____ **Date:** _____

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FIGURE 9: ELECTRICAL JOB HAZARD ANALYSIS (JHA) GUIDELINES

***Company Name* – Electrical Job Hazard Analysis (JHA)**		
Project*: List Project Name*	**Contract Number*: List Contract Number***	
Activity (Job Task): Provide Job or Task Description	*Analysis Completed By: Name of Electrical Qualified Person*	
1. Procedure Step	**2. Potential Safety & Health Hazards**	**3. Preventive Control Measures**
1. List each procedural step to be performed for this job/task 2. 3. 4. 5. 6. 7. 8. 9.	1. List each corresponding hazard relating to each step in the procedure. 2. Recommend use of 1A, 1B, 1C to identify multiple hazards per task. 3A. 3B. 3C. 4. 5. 6. 7. 8. 9.	1. List each corresponding control measure relating to each step in the procedure. 2. Recommend use of 1A, 1B, 1C to identify multiple control measures per task. 3A. 3B. 3C. 4. 5. 6. 7. 8. 9.

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Company Name* – Electrical Job Hazard Analysis (JHA) Contract Number*: List Contract Number		
4. PPE/Equipment Used	**5. Inspection Requirements**	**6. Employee Training Requirements**
☐ HAZ Category 0:Clothing of non-flammable / melting material ☐ HAZ Category 1: FR shirt and FR pant or FR coverall ☐ HAZ Category 2: FR shirt and pant or coverall and cotton underwear ☐ HAZ Category 3: FR shirt, pant, coverall and cotton underwear ☐ HAZ Category 4: FR shirt, pant, cotton underwear and double layer switching coat and pants ☐ Class II Voltage Rated Gloves ☐ Type E Hardhat ☐ Safety Glasses ☐ Hearing Protection ☐ Level II Face Shield ☐ EH Rated Safety Shoes ☐ Insulating Blankets ☐ Insulated Tools ☐ Insulated Rescue Hooks ☐ Boundary Barricades ☐ Cones, Warning Tape, Signage	Daily inspections are performed on all PPE and Equipment and periodic maintenance is performed in accordance with manufacturer's recommendations and 29CFR1910.137. List other or company specific inspection requirements	All employees performing work in association with this JHA have received from a qualified person training in accordance with 29CFR1910.332 and NFPA 70E-110.6 (a roster of employees names and signatures is attached certifying that training listed above has occurred). Employees will be briefed on this JHA prior to any work commencing. List additional or company specific training required.

INSTRUCTIONS:

1. Procedure Step: List and number each work step procedure for the job or task.
2. Potential Safety and Health Hazards: List with corresponding number the hazard for each step of the process.
3. Preventive Control Measures: List with corresponding number the control measure used to mitigate or eliminated identified hazards.
4. PPE / Equipment Used: Check PPE and equipment to be used during the during the work task.
5. Inspection Required: Identify the inspection requirements performed for the PPE / Equipment Used.
6. Employee Training Requirements: Identify the required training employees have received to be able to perform job tasks in a safe manner.

Contractor Electrical Qualified Person Signature: _____ **Date:** _____

Contractor Site Supervisor Review & Approval: _____ **Date:** _____

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8.2 HAZARD CONTROL MEASURES (FOR USE IN DEVELOPING JHAS)

Information obtained from a job hazard analysis is useless unless hazard control measures recommended in the analysis are incorporated into the tasks. Managers should recognize that not all hazard controls are equal. Some are more effective than others at reducing the risk.

The order of precedence and effectiveness of hazard control is the following:

1. Engineering controls
2. Administrative controls
3. Personal protective equipment

8.2.1 Engineering Controls

Engineering controls include but are not limited to the following:

a. Elimination/minimization of the hazard -- Designing the facility, equipment, or process to remove the hazard, or substituting processes, equipment, materials, or other factors to lessen the hazard;

b. Enclosure of the hazard using enclosed cabs, enclosures for noisy equipment, or other means;

c. Isolation of the hazard with interlocks, machine guards, blast shields, welding curtains, or other means; and

d. Removal or redirection of the hazard such as with local and exhaust ventilation.

8.2.2 Administrative Controls

Administrative controls include but are not limited to the following:

a. Written operating procedures, work permits, and safe work practices

b. Exposure time limitations (used most commonly to control temperature extremes and ergonomic hazards)

c. Monitoring the use of highly hazardous materials

d. Alarms, signs, and warnings

e. Buddy system

f. Training

8.2.3 Personal Protective Equipment

a. The use of respirators, hearing protection, protective clothing, safety glasses, and hardhats are acceptable as control methods in the following circumstances:

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(1) When engineering controls are not feasible or do not totally eliminate the hazard;

(2) While engineering controls are being developed;

(3) When safe work practices do not provide sufficient additional protection; and

(4) During emergencies when engineering controls may not be feasible.

b. Use of one hazard control method over another higher in the control precedence may be appropriate for providing interim protection until the hazard is abated permanently. In reality, if the hazard cannot be eliminated entirely, the adopted control measures will likely be a combination of all three items instituted simultaneously.

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9.0 THE LOCKOUT/TAGOUT INSTRUCTION FORM (KSC FORM 28-975)

Requirements for Lockout/Tagout to be addressed in the SSSP are in KNPR 8715.3, Kennedy Safety Practices Procedural Requirements. An example of a Lockout Tag (Figure 10) and sample of Lockout/Tagout Instruction (Figure 11) follow.

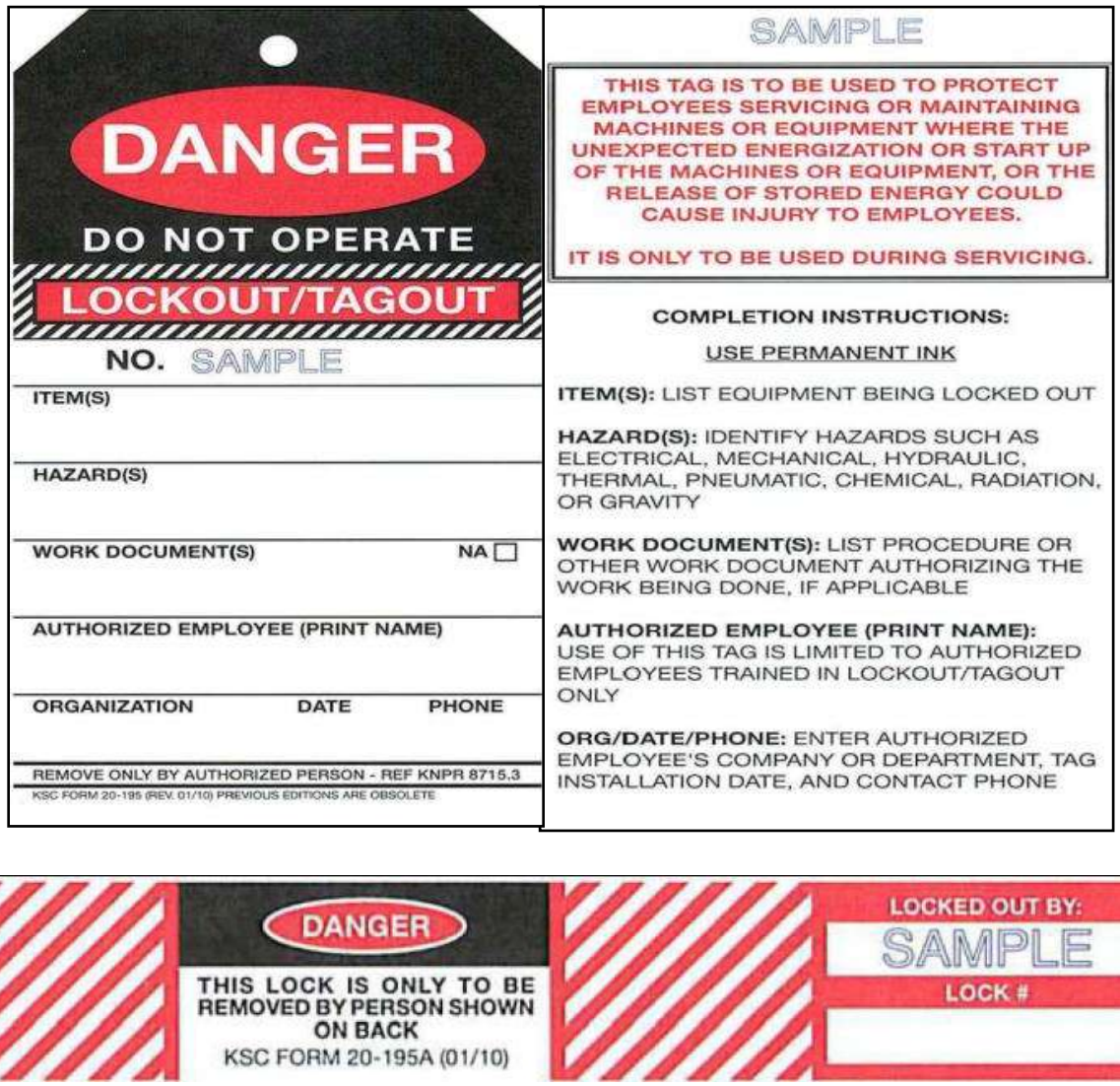

FIGURE 10: SAMPLE KSC FORM 20-195, LOCKOUT/TAGOUT TAG

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Lockout/Tagout Instruction

Step 1: Identify equipment.

Equipment/Machine:	Location:
Location:	

Step 2: Notify all affected personnel (operators/users of the equipment and/or personnel who work in the area that a Lockout/Tagout is in effect.)

Step 3: Shut down the equipment energy source(s) listed below.

Energy Source	Shut Off Point	Location

Step 4: Isolate the machine or equipment from the energy source(s) listed below.

Energy Source	Energy Isolating Device	Location	Item(s) to Secure

Step 5: Apply lock and tag to energy isolating device(s) listed in Step 4. If equipment cannot be locked out, obtain S&H approval for tagout only.

Step 6: Release or control stored energy.

Type of Energy Source	Method to Release / Control Energy

Step 7: Verify zero energy state (isolation of the equipment). Attempt to operate the equipment to verify equipment cannot be operated.

CAUTION: Return operating control(s) to neutral or off position after verifying isolation of the equipment.

Step 8: Perform maintenance task in a safe manner.

Step 9: Remove locks and/or tags. Verify all personnel are clear and accounted for prior to lockout removal.

Step 10: Notify all affected personnel (operators/users of the machine and/or personnel who work in the area that power is being restored to equipment.

Step 11: Restore power and verify proper equipment operation before departing.

Completed By: (Name)		Date	
Approved By: (Name)		ID No.	

Note: Approval authority must be the first level supervisor or above.

KSC FORM 28-975 NS (REV. 04/05) PREVIOUS EDITIONS ARE OBSOLETE

FIGURE 11: LOCKOUT/TAGOUT INSTRUCTIONS

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10.0 ENERGIZED ELECTRICAL WORK ANALYSIS AND AUTHORIZATION PERMIT

Section 3.5.3 of KNPR 8715.7 details requirements for Energized Electrical Work Analysis and Authorization Permits. A sample permit has been provided below (Figure 12).

FIGURE 12: ENERGIZED ELECTRICAL WORK ANALYSIS AND AUTHORIZATION PERMIT

ENERGIZED ELECTRICAL WORK ANALYSIS & AUTHORIZATION PERMIT
This form when completed will meet the requirements listed in NFPA 70E, Chapter 1, Article 130

ENERGIZED ELECTRICAL WORK ANALYSIS & AUTHORIZATION PERMIT

This form when completed will meet the requirements listed in NFPA 70E, Chapter 1, Article 130

Project Name		Contract Number	PCN
Facility Name	Building Number	Specify Work Location	Date of Request
Electrical Equipment and/or Circuit Description			
Energized Task Description *(Describe in detail)*			
Justification for Energized Task (Why Circuit/System Cannot be De-energized and Locked/Tagged Out) *(Use page 2 as necessary for thorough justification)*			
Preparer's Name (Qualified Electrical Person)		Site Supervisor or Management Representative	
Signature	Date	Signature	Date
Comments			

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Justification for Energized Task (Why Circuit/System Cannot be De-energized and Locked/Tagged Out)
(Use page 2 as necessary for thorough justification)

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Page 2 of 4

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Hazard Analysis

1. Maximum exposure in Volts _____ Maximum Amperage kA _____ Fault Clear Time _____ (cycles)

2. Energized Exposure Hazard (Working on or near):

Bare Bus	__	Open Terminals	__	NEMA E2 Motor Starters	__
Bare Conductor	__	Panel boards	__	Metal Clad Switch gear	__
Open circuit(s)	__	Switch boards	__	Other	__

Describe an Other Entry

_____

_____

3. Shock Hazard Analysis

_____

_____

a. Limited Approach Boundary _____

b. Restricted Approach Boundary _____

c. Prohibited Approach Boundary _____

4. Flash Hazard Analysis:

Flash Protection Boundary _____ Incident Energy Value _____

5. Hazard Risk Category: 0 __ 1 __ 2 __ 3 __ 4 __

6. PPE Minimum FR Rating _____

7. Required PPE:

V Rated Gloves	__	V Rated Tools	__	Face Shield	__	Leather Shoes	__
FR Shirt	__	FR Pants	__	Leather Gloves	__	Flash Suit	__
Hard Hat	__	Hearing Protection	__	Coveralls	__	Flash Hood	__

Specify Hearing Protection Type: Ear Plugs __ Ear Muffs __ Both __

8. Engineering/Administrative Controls Planned to Reduce/eliminate Exposure to energized Equipment:
(A Complete Electrical Work Job Hazard Analysis [E-JHA] is completed and submitted with this section)

9. Hazard Analysis completed by:

Printed name	Signature	Date

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PRE-TASK BRIEFING (To include job specific hazards)

Conducted By _____ Date _____

Attendees _____ _____

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

INSTRUCTIONS

Hazard Analysis shall be completed by a qualified Electrical Engineer

Project Name	Self Explanatory
Contract Number / PCN	Self Explanatory
Facility Name / bldg. Number	Self Explanatory
Specific Work Location	List location (facility, floor, room number). If outside, provide directions to site.
Date of Request	Enter the date the worksheet was initially submitted
Electrical Equipment Description	Give the specific name(s), number(s), (main switch number, panel number, etc.)
Energized Task Description	Give specific details of what the task is, "Validate circuit breakers for panel number, pull wires from panel, remove supply side lines from, etc.)
Justification for Energized Task	List specifics that demonstrates why de-energizing introduces additional or increased hazards or is infeasible due to equipment design operational limitations (Required by NFPA 70E)
Preparer's name	Contractor Qualified Electrical Person to perform the work
Site Supervisor or Management Rep.	Representative from the prime contractor (i.e., President, Safety Manager, etc.)
Hazard Analysis	Results of the shock hazard analysis and determination of shock protection boundaries. Results of the flash hazard analysis and determination of flash protection boundaries. (The Government will provide available information on applied system voltage, upstream circuit protective device settings, cabling distances and sizes, and available fault current, as required supporting shock hazard and flashing hazard analyses.) A description of the safe work practices to be employed.
Hazard Analysis Completed By	Self Explanatory
Pre-Task Briefing	Enter briefer name, date briefing held, and signatures of all qualified (electricians) and non-qualified personnel involved in task (HVAC, Plumbers, Carpenters, etc.)

Definitions:

Work On: Servicing, adjustments, repairs, or modifications to energized electrical equipment. Any work where the hazard analysis indicates that there is a risk of contact by tools or body parts to exposed energized components. Work on does not include testing, troubleshooting, visual or IR inspections, etc. Testing/troubleshooting is further defined as a process by which specialized equpment / devices are utilized for the purpose of diagnosing, analyzing, verification, or ensuring a system, circuit or piece of equipment is working properly or improperly.

Work Near: Any activity inside the Limited Approach Boundary as listed in NFPA 70E, Table 130.2(C).

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11.0 NOTICE OF SAFETY VIOLATION (NOSV) (KSC-KDP-F-3685)

In accordance with KNPR 8715.7, contractor jobsites are subject to inspection by KSC Safety and Health personnel. KSC construction safety specialists document site inspections and/or minor safety and health violations/noncompliances on KSC Form 50-17, NASA/KSC Safety – Site Observations Daily Log Construction Contractors. The contractor's site supervisor works with the KSC construction safety specialists, the COTR, and/or CO (depending on severity) to implement corrective action(s). For serious, willful, or repeat findings, a NOSV may be issued. The NOSV requires a formal response from the contractor.

Samples of KSC Form 50-17, NASA/KSC Safety – Site Observations Daily Log Construction Contractors (Figure 13) and KDP-KSC-F-3615, NOSV (Figure 14) have been provided below.

RELEASED - Printed documents may be obsolete; validate prior to use.

NASA/KSC SAFETY - SITE OBSERVATIONS DAILY LOG
CONSTRUCTION CONTRACTORS

Project:	PCN / Contract Number:	Safety Specialist:
Prime Contractor:	Site Supervisor/Superintendent:	Subcontractor(s):
Date: Time:	Contracting Officer:	COTR:

Work Performance / Observations / Hazards / Violations / Risk / Corrections

Type	Risk	Description of Activity / Non-compliance	Corrective Action

Type
1 Abatement (Lead, PCB, etc.)
2 Asbestos
3 Compressed Gases
4 Concrete & Masonry
5 Confined Spaces
6 Cranes, Derricks & Hoists
7 Demolition
8 Egress
9 Electrical
10 Environmental Controls
11 Excavation & Trenching
12 Fall Protection
13 Fire Protection / Prevention
14 General Duty Clause
15 Hand & Power Tools

Type
16 Housekeeping
17 Illumination
18 KSC Lightning Protection
19 Lockout / Tagout
20 Machine Guarding
21 Material Handling & Storage
22 Motorized Vehicles & Equip
23 Other
24 Painting / Abrasive Blasting
25 Postings (Jobsite)
26 Power Transmission
27 PPE
28 Respirator
29 Rollover Protection
30 Sanitation

Type
31 Scaffolding
32 Signs, Signals, & Barricades
33 Stairways & Ladders
34 Steel Erection
35 Temporary Structures
36 Traffic Safety (MOT)
37 Walk / Work Surfaces
38 Welding Cutting Brazing
39 Work Over / Near Water

P Permit
T Training
OC Operator Certification
CP Competent Person
QP Qualified Person

Risk Code
NASA 5x5 Risk Matrix on reverse of form to determine risk level of violation

Corrective Action
Corrected Immediately (CI)
Correction Pending (CP)
Meeting Requested (MR)
Notice of Safety Violation

Safety Specialist Initials/Signature

Site Supervisor / Representative Signature *

* Signature requested only when safety violation occurs. Write name of representative if he/she chooses not to sign.
Signature by Contractor Representative does not constitute agreement with the violation, only that he/she has been informed.

KSC FORM 50-17 NS (02/09)

FIGURE 13: NASA/KSC SAFETY – SITE OBSERVATION DAILY LOG

RELEASED - Printed documents may be obsolete; validate prior to use.

FIGURE 14: KSC CONSTRUCTION PROJECT NOTICE OF SAFETY VIOLATION (NOSV)

KDP-KSC-F-3675
Rev. Basic

KSC CONSTRUCTION PROJECT NOTICE OF SAFETY VIOLATION (N.O.S.V.)

PART 1 – TO BE COMPLETED BY NASA SAFETY REPRESENTATIVE

1. DATE:	2. CONTROL NUMBER:
3. CONTRACT NUMBER:	4. VIOLATION TYPE/RISK CODE:
5. FACILITY NAME OR NUMBER:	6. SPECIFIC LOCATION WITHIN OR NEAR FACILITY:
7. PRIME CONTRACTOR COMPANY NAME:	8. SUBCONTRACTOR COMPANY NAME (If applicable):
9. PRIME CONTRACTOR SITE SUPERINTENDENT OR SAFETY OFFICAL & PHONE NO:	10. SUBCONTRACTOR SITE SUPERINTENDENT (if applicable) & PHONE NO:

11. UNSAFE OR UNHEALTHFUL CONDITION:

Describe the condition, the specific safety violation, and the specific requirement being violated (i.e., OSHA, NASA, KSC, etc.)

☐ Check box if this violation may affect the Safety Bonus Award

(continue on continuation page if necessary)

12. ACTIONS TAKEN TO TEMPORARILY ABATE THE HAZARD:

(continue on continuation page if necessary)

13. INITIAL RESPONSE DUE: ☐ 8 HRS ☐ 24 HRS ☐ 72 HRS

14. NASA SAFETY SIGNATURE, MAIL CODE, AND DATE:

15. NASA CONTRACTING OFFICER TECHNICAL REPRESENTATIVE (COTR) SIGNATURE, MAIL CODE, AND DATE:

16. NASA CONTRACTING OFFICER SIGNATURE, MAIL CODE, AND DATE:

PART 2 – CONTRACTOR ACKNOWLEDGEMENT OF RECEIPT

17. PRIME CONTRACTOR SITE SUPERINTENDENT OR SAFETY OFFICIAL SIGNATURE, MAIL CODE, AND DATE:

Original – Prime Contractor Site Superintendent
Copies – NASA Institutional Safety and Quality Branch; Contracting Officer (CO); COTR; inspector; and Prime Contractor General Manager, President, or owner.

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PART 3 – TO BE COMPLETED BY CONTRACTOR AND RETURNED TO CONTRACTING OFFICER WITHIN TIME SPECIFIED ABOVE IN PART 1 – BLOCK 13.
18. CORRECTIVE ACTION TAKEN OR PLANNED: Include all actions taken/planned to correct the violation at the jobsite and corrective actions taken/planned to ensure that this will not happen again. For planned actions, provide the proposed/estimated completion date.
19. PRIME CONTRACTOR SITE SUPERINTENDENT OR SAFETY OFFICIAL SIGNATURE AND DATE:
PART 4 - APPROVAL OF CORRECTIVE ACTIONS TAKEN AND/OR PLANNED
20. NASA SAFETY SIGNATURE, MAIL CODE, AND DATE:
21. NASA COTR SIGNATURE, MAIL CODE, AND DATE:
22. NASA CO SIGNATURE, MAIL CODE, AND DATE:
PART 5 - VERIFICATION THAT ACTION ITEMS ARE COMPLETE
23. ☐ **Check when all corrective actions specified in item 18 are complete and implemented.** **PRIME CONTRACTOR SITE SUPERINTENDENT OR SAFETY OFFICIAL SIGNATURE, MAIL CODE, AND DATE:**
24. NASA SAFETY SIGNATURE, MAIL CODE, AND DATE:
25. NASA COTR SIGNATURE, MAIL CODE, AND DATE:
26. NASA CO SIGNATURE, MAIL CODE, AND DATE:

Original – Prime Contractor Site Supervisor
Copies – NASA Institutional Safety and Quality Branch; Contracting Officer (CO); COTR; inspector; and Prime Contractor General Manager, President, or owner.

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PART 5 – CONTINUATION SHEET
BLOCK 11 CONTINUATION - UNSAFE OR UNHEALTHFUL CONDITION
BLOCK 12 CONTINUATION - ACTIONS TAKEN TO TEMPORARILY ABATE THE HAZARD:
BLOCK 18 CONTINUATION - CORRECTIVE ACTION TAKEN OR PLANNED: Include all actions taken/planned to correct the violation at the jobsite and corrective actions taken/planned to ensure that this will not happen again. For planned actions, provide the proposed/estimated completion date.

Original – Prime Contractor Site Supervisor
Copies – NASA Institutional Safety and Quality Branch; Contracting Officer (CO); COTR; inspector; and Prime Contractor General Manager, President, or owner.

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12.0 NASA DIRECT CONSTRUCTION CONTRACTOR MISHAP REPORT (KDP-F-3645)

In accordance with KNPR 8715.7, section 2.3, item g:

The contractor shall submit a KSC Incident Report by e-mail or fax (867-1120) within 4 hours of a Mishap / Close Call.

Completion of KDP-F-3645 (Figure 15) as instructed satisfies this requirement.

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FIGURE 15: NASA DIRECT CONSTRUCTION CONTRACTOR MISHAP REPORT

NASA Direct Construction Contractor
Mishap Report

NOTE: Fill In All Known Blocks And Submit Within Four Hours

INCIDENT DETAILS

1. DATE OF INCIDENT | 2. TIME OF INCIDENT | 3. GENERAL LOCATION *(Building, Area, Facility, etc.)* | 4. EXACT LOCATION *(street, floor, room, etc.)*

5. RESPONSIBLE ORGANIZATION | 6. CONTRACT NUMBER | 7. ORG. FILE NUMBER | 8. ORGANIZATION POINT OF CONTACT | 9. MAIL CODE | 10. PHONE

11. MISSION AFFECTED, IF KNOWN | 12. PROGRAM IMPACT, IF KNOWN (Describe impact in terms of delay, cost adjustment, etc.)

13. INCIDENT DESCRIPTION (*Do not use actual names, include in the description the sequence of events, extent of injury or property damage, cause, etc., if known.)*

IMPACT SUMMARY

14. CHECK ALL OUTCOMES FROM THIS EVENT THAT ARE KNOWN FACTS *(Do not check any box that indicates any future potential or outcome.)*

- ☐ FATALITY
- ☐ PERMANENT DISABILITY
- HARDWARE
- ☐ 3 OR MORE PEOPLE HOSPITALIZED
- ☐ 1 OR 2 PEOPLE HOSPITALIZED
- ☐ LOSS OF CONSCIOUSNESS
- ☐ FULL LOST WORKDAY(S)
- ☐ RESTRICTED WORKDAY(S)
- ☐ MEDICATION OR MEDICAL TREATMENT ADMINISTERED
- ☐ INJURY OR ILLNESS
- ☐ FIRST AID ONLY WAS ADMINISTERED
- ☐ CLOSE CALL
- ☐ SERIOUS DAMAGE TO AIRCRAFT OR SPACE HARDWARE
- ☐ SERIOUS DAMAGE TO FLIGHT OR GROUND SUPPORT
- ☐ UNEXPECTED DAMAGE DUE TO TEST FAILURE
- ☐ DAMAGE ESTIMATE OVER $1,000,000
- ☐ DAMAGE ESTIMATE BETWEEN $250K AND $1M
- ☐ DAMAGE ESTIMATE BETWEEN $25K AND $250K
- ☐ DAMAGE ESTIMATE BETWEEN $1K AND $25K
- ☐ DAMAGE ESTIMATE UNDER $1K
- ☐ AFFECTED PRIMARY OBJECTIVE(S) OF MISSION
- ☐ SIGNIFICANT PROGRAM IMPACT
- ☐ HIGH VISIBILITY (*internal or external to NASA*)

15. LEVEL OF POTENTIAL FOR THIS EVENT OR CLOSE CALL *(Using reasonable judgment, check the boxes which you believe have a HIGH probability of occurring under similar conditions.)*

- ☐ FATALITY
- ☐ PERMANENT DISABILITY
- ☐ 3 OR MORE PEOPLE HOSPITALIZED
- ☐ FULL LOST WORKDAY(S)
- ☐ POTENTIAL DAMAGE ESTIMATE OVER $250,000
- ☐ POTENTIAL DAMAGE ESTIMATE UNDER $250,000
- ☐ SERIOUS DAMAGE TO AIRCRAFT OR SPACE HARDWARE
- ☐ SERIOUS DAMAGE TO FLIGHT OR GROUND SUPPORT HARDWARE
- ☐ UNEXPECTED DAMAGE DUE TO TEST FAILURE
- ☐ AFFECT PRIMARY OBJECTIVE(S) OF MISSION
- ☐ SIGNIFICANT PROGRAM IMPACT)
- ☐ HIGH VISIBILITY (*internal or external to NASA)*

PERSON INVOLVED IN INJURY OR ILLNESS

16. NAME *(Last, First MI)* | 17. ORGANIZATION | 18. CONTRACT NUMBER | 19. JOB TITLE/OCCUPATION

20. SUPERVISOR'S NAME *(Full Name)* | 21. SUPERVISOR'S ORGANIZATION | 22. SUPERVISOR'S MAIL CODE | 23. SUPERVISOR'S PHONE

24. AGE | 25. SEX ☐ Male ☐ Female | 26. SHIFT WORKED ☐ 1st ☐ 2nd ☐ 3rd | 27. CONTINUOUS DUTY HOURS | 28. YEARS OF EXPERIENCE ☐ Under 1 ☐ Under 5 ☐ Under 10 ☐ Over 10

29. INJURY OR ILLNESS ☐ INJURY ☐ ILLNESS | 30. FROM PRE-EXISTING ☐ YES ☐ NO | 31. FATALITY? 32. DATE OF DEATH | 33. PERMANENT DISABILITY? | 34. # OF FULL LOST WORKDAYS | 35. # OF RESTRICTED WORKDAYS

36. INJURY TYPE(S) *(e.g., Abrasion, Burn, Concussion, Laceration, etc.)* | 37. AFFECTED BODY PART(S) OR BODY SYSTEM(S)

38. BRIEF MEDICAL DIAGNOSIS

39. MEDICAL TREATMENT ADMINISTERED

- ☐ TREATMENT OF INFECTION
- ☐ APPLICATION OF ANTISEPTIC
- ☐ 2ND OR 3RD DEGREE BURN(S)
- ☐ CUT AWAY DEAD SKIN
- ☐ POSITIVE X-RAY DIAGNOSIS
- ☐ APPLICATION OF SUTURES
- ☐ USE OF BUTTERFLY ADHESIVE
- ☐ REMOVAL OF FOREIGN OBJECT(S
- ☐ USE OF HEAT THERAPY
- ☐ ADMISSION TO HOSPITAL FOR MORE THAN OBSERVATION
- ☐ REMOVAL OF OBJECT IN WOUND
- ☐ USE OF PRESCRIPTION MEDICATION
- ☐ HOT OR COLD SOAKING/COMPRESS THERAPY
- ☐ USE OF WHIRLPOOL BATH THERAPY
- ☐ FIRST AID ONLY

40. OTHER MEDICAL TREATMENT ADMINISTERED

EQUIPMENT/PROPERTY DAMAGED

41. CLASS OF EQUIPMENT/PROPERTY DAMAGED

- ☐ FLIGHT HARDWARE
- ☐ GROUND SUPPORT EQUIPMENT
- ☐ FACILITY
- ☐ PRESSURE VESSEL
- ☐ MOTOR VEHICLE
- ☐ AIRCRAFT
- ☐ OTHER

42. ESTIMATED COST OF ALL DAMAGED ITEMS

- ☐ OVER $1,000,000
- ☐ BETWEEN $250K AND $1M
- ☐ BETWEEN $25K AND $250K
- ☐ BETWEEN $1K AND $25K
- ☐ UNDER $1,000

43. # OF ITEMS DAMAGED

43. SPECIFIC ITEM(S) DAMAGED

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INCIDENT REPORT SUBMITTER

44. SUBMITTED BY *(Full Name)*	45. ORGANIZATION	46. MAIL CODE	47. PHONE	48. DATE	49. TIME

INCIDENT CAUSES

50. WHAT WAS THE ROOT (DIRECT) CAUSE	51. WHAT OBJECTS OR SUBSTANCES WERE INVOLVED	52. WHAT ACTIVITIES OR UNSAFE ACTS WERE IN PROGRESS

CONTRIBUTING FACTORS

53. CONTRIBUTING FACTORS (*Summarize any factors that contributed to the occurrence of the incident*)

INITIAL CORRECTIVE ACTION

54. **INITIAL** ACTION TAKEN *(Summarize the initial action(s) taken to prevent reoccurrence of the incident)*

55. DATE INITIATED	56. DATE COMPLETED	57. PERSON TAKING ACTION *(Full Name)*	58. ORGANIZATION	59. MAIL CODE	60. PHONE

PLANNED CORRECTIVE ACTION

61. **PLANNED** ACTION TO BE TAKEN *(Summarize any planned action to be taken to prevent reoccurrence of the incident.)*

62. EST. START DATE	63. EST. COMPL.	64. PERSON TAKING ACTION *(Full Name)*	65. ORGANIZATION	66. MAIL CODE	67. PHONE

68. **PLANNED** ACTION TO BE TAKEN *(Summarize any additional planned action(s) to be taken to prevent reoccurrence of the incident.)*

69. EST. START DATE	70. EST. COMPL.	71. PERSON TAKING ACTION *(Full Name)*	72. ORGANIZATION	73. MAIL CODE	74. PHONE

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Instructions

Complete the initial written report for mishaps and close calls and submit to the CO, COTR and KSC Institutional Safety within four hours of the incident occurrence. A completed investigation and final report shall be submitted within ten working days of the incident unless an extension through Institutional Safety has been requested. Retain a copy for your own files.

DETAILS

1. DATE OF INCIDENT – Enter date of the incident in MM/DD/YYYY format. Example: 6/1/2001.
2. TIME OF INCIDENT – Enter time of incident using 24-hour clock. Example: 09:30 for 9:30AM/14:15 for 2:15 PM.
3. GENERAL LOCATION – Identify the building, area, or facility where the incident occurred.
4. EXACT LOCATION – Describe the exact location of the incident. Example: Third floor, far west corridor.
5. RESPONSIBLE ORGANIZATION – Enter complete name of organization that is reporting the incident.
6. CONTRACT NUMBER – When the organization is a contractor, enter the contract number.
7. ORGANIZATION FILE NUMBER – Assign file number using your organization's unique four-character code, the mishap number (sequential) using four digits, and the fiscal year using two digits. Example: EGB1-0001-89.

8 - 10. ORGANIZATION POINT OF CONTACT, MAIL CODE, PHONE – Identify person to contact at the organization.

11. MISSION AFFECTED – Enter the name or number of the mission, program, or project affected by the mishap. Examples: STS-32; Delta 181.
12. PROGRAM IMPACT – Describe the effect on the mission, program, or project in terms of delay or significant cost adjustment. Example: Two-week launch delay.
13. INCIDENT DESCRIPTION – Describe the event including information about the extent of damage and/or injury, conditions that led to the mishap, and cause if known at this time. Specify location of facility where medical treatment was provided. DO NOT include names of persons or personal medical information.

IMPACT SUMMARY

14. ACTUAL OUTCOMES – Mark every checkbox that represents current facts about the incident.
15. LEVEL OF POTENTIAL – Mark every checkbox that represents likely outcomes for the incident.

PERSONNEL INVOLVED IN INJURY OR ILLNESS

16. NAME – Indicated the name of the injured individual.
17. ORGANIZATION – Identify the organization of the injured individual.
18. CONTRACT NUMBER – When the organization is a contractor, enter the contract number.
19. JOB TITLE/OCCUPATION – Describe the job position of the injured individual. Example: Technician

20-23. SUPERVISOR'S NAME, ORGANIZATION, MAIL CODE, & PHONE – Provide identifying information about the supervisor of the injured individual.

24. AGE – Indicate the age of the injured individual.
25. SEX – Indicate the gender of the injured individual.
26. SHIFT WORKED – Indicate the work shift of injured individual.
27. CONTINUOUS DUTY HOURS - Self-explanatory.
28. YEARS OF EXPERIENCE – Indicate the years experience of the injured individual.
29. INJURY OR ILLNESS – Symptoms acquired in 1 work shift = injury, greater than 1 work shift = illness.
30. FROM PRE-EXISTING – Indicate if the injury is associated with a pre-existing injury or condition.
31. FATALITY? – Did the incident result in a fatality ?
32. DATE OF DEATH – If the incident resulted in a fatality, indicate date of death.
33. PERMANENT DISABILITY? – Did the incident result in a permanent disability to the injured individual ?
34. # OF FULL LOST WORKDAYS – If the injury resulted in time lost from work, indicate how many days.
35. # OF RESTRICTED WORKDAYS - If the injury resulted in work restrictions, indicate how many days.
36. INJURY TYPE(S) – Indicate the type of injury to the individual (Abrasion, Burn, Strain/Sprain etc.
37. AFFECTED BODY PART(S) or BODY SYSTEM(S) – Indicate what body part(s) were affected by the incident.
38. BRIEF MEDICAL DIAGNOSIS – Indicate the initial medical diagnosis of the injured individual.
39. MEDICAL TREATMENT ADMINISTERED – Mark each box that represents treatment administered to the injured individual. Mark the checkbox for "First Aid Only" if only First Aid treatment was administered to the individual.
40. MEDICAL TREATMENT ADMINISTERED – Describe any treatment not included in box #39.

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EQUIPMENT/PROPERTY DAMAGE

41. CLASS OF EQUIPMENT/PROPERTY DAMAGED – Mark every checkbox that represents the type of damaged.
42. ESTIMATED COST OF ALL DAMAGED ITEMS – Mark one checkbox that represents the initially estimated cost of the damage including labor costs. Provide Final Cost in follow-up report.
43. # OF ITEMS DAMAGED – Indicate the number of items damaged in the incident.
43. SPECIFIC ITEM(S) DAMAGED – Identify or describe the damaged items from box #41.
Example: If the class indicated in box #41 is Flight Hardware, then the specific item could be "Orbiter/Avionics."

INCIDENT REPORT SUBMITTER

44-47. SUBMITTED BY, ORGANIZATION, MAIL CODE, & PHONE – Provide identifying information about the person filling in this form.
48-49. DATE & TIME – Enter the date and time when the form is filled in.

INCIDENT CAUSES

50. ROOT CAUSE – Indicate the root (direct) cause of the incident (see Attachment A for list).
51. OBJECTS OR SUBSTANCES INVOLVED – indicate what objects or substances were involved in the incident.
52. ACTIVITIES OR UNSAFE ACTS IN PROGRESS – Indicate any activities or unsafe acts that involved in the incident.

CONTRIBUTING FACTORS

53. CONTRIBUTING FACTORS – Indicate any factors that contributed to the occurrence of the incident. (see Attachment A for list)

INITIAL CORRECTIVE ACTION

54. INITIAL ACTION TAKEN – Indicate what initial steps have been taken to prevent the reoccurrence of the incident.
55. DATE INITIATED – Indicate the date the corrective action was initiated.
56. DATE COMPLETED – Indicate the date the corrective action was completed.
57-60. PERSON TAKING ACTION, ORGANIZATION, MAIL CODE, & PHONE - Provide identifying information about the person taking the initial corrective action.

PLANNED CORRECTIVE ACTION

61. PLANNED ACTION TO BE TAKEN – Indicate any planned actions to prevent the reoccurrence of the incident.
62. ESTIMATED START DATE – Indicate the estimated start date for any planned corrective actions.
63. ESTIMATED COMPLETION – Indicate the estimated completion date for any planned corrective actions.
64-67. PERSON TAKING ACTION, ORGANIZATION, MAIL CODE, & PHONE – Provide identifying information about the person performing the planned corrective action.
68. PLANNED ACTION TO BE TAKEN – Indicate any planned actions to prevent the reoccurrence of the incident.
69. ESTIMATED START DATE – Indicate the estimated start date for any planned corrective actions.
70. ESTIMATED COMPLETION – Indicate the estimated completion date for any planned corrective actions.
71-74. PERSON TAKING ACTION, ORGANIZATION, MAIL CODE, & PHONE – Provide identifying information about the person performing the planned corrective action.

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NASA Direct Construction Contractor Mishap Report
Attachment A: Root Cause and Contributing Factor List

COMMUNICATION: General
COMMUNICATION: Paging Warning Inadequate
COMMUNICATION: Problem Reporting/Tracking Inadequate
COMMUNICATION: Schedule Conflict
COMMUNICATION: Task Coordination/Planning Inadequate
COMMUNICATION: Task Supervision Inadequate
COMMUNICATION: Test Team Briefing Inadequate
ELECTRIC COMPONENT: Energized Machinery
ELECTRIC COMPONENT: Fuse/Substation/Bus Panel
ELECTRIC COMPONENT: Power Line/electrical Wiring
ENVIRONMENTAL/MATERIAL CONTROL: Confined Spaces
ENVIRONMENTAL/MATERIAL CONTROL: General Air Contamination
ENVIRONMENTAL/MATERIAL CONTROL: Skin Exposure To Materials
EQUIPMENT FAILURE: Design Deficiency
EQUIPMENT FAILURE: General
EQUIPMENT FAILURE: Maintenance
EQUIPMENT FAILURE: Material Defects
EQUIPMENT FAILURE: Material Failure
ERGONOMIC INJURY: Carpal Tunnel Syndrome
FIRE/EXPLOSION: Chemical Change
FIRE/EXPLOSION: Fuel/Oxidizer Near Ignition Source
FIRE/EXPLOSION: General
FIRE/EXPLOSION: High Heat Source
FIRE/EXPLOSION: Pressure Release/Implosion
HANDLING: Design Deficiency
HANDLING: Deviation from Procedure
HANDLING: General
HAZARDOUS OPERATION: Arrangement
HAZARDOUS OPERATION: Deviation from Procedure
HAZARDOUS OPERATION: General
HAZARDOUS OPERATION: Improper Clothing
HAZARDOUS OPERATION: Improper Guarding
HAZARDOUS OPERATION: Improper Illumination
HAZARDOUS OPERATION: Improper Protection
HAZARDOUS OPERATION: Improper Ventilation
HAZARDOUS OPERATION: Unsafe Equipment
HUMAN FACTORS: Distraction
HUMAN FACTORS: Fatigue
HUMAN FACTORS: General

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NASA Direct Construction Contractor Mishap Report
Appendix A: Root Cause and Contributing Factor List

HUMAN FACTORS: Lack of Attention
HUMAN FACTORS: Lack of Authority
HUMAN FACTORS: Lack of Experience
HUMAN FACTORS: Misjudgment of Conditions
HUMAN FACTORS: Safety Violation
HUMAN FACTORS: Working Environment
MACHINERY: Machine Welders
MACHINERY: Metal Grinding/Finishing
MACHINERY: Metal Shaping/Forming/Assembly
MACHINERY: Non-metal Grinding/Finishing
MACHINERY: Non-metal Shaping/Forming/Assembly
MANUAL ARC & GAS WELDER, CUTTER, OR BRAZER
MANUALLY ASSEMBLED/DISASSEMBLED: Clamps
MANUALLY ASSEMBLED/DISASSEMBLED: Connectors
MANUALLY ASSEMBLED/DISASSEMBLED: Fasteners
MANUALLY ASSEMBLED/DISASSEMBLED: Other Parts
MATERIAL HANDLING: Crane/Hoist/Conveyor/Transfer Line
MATERIAL HANDLING: Manual Material Handling
MATERIAL HANDLING: Power Material Handling Vehicle
NATURAL PHENOMENON: Earthquake
NATURAL PHENOMENON: General
NATURAL PHENOMENON: Hail
NATURAL PHENOMENON: Lightning
NATURAL PHENOMENON: Rain
NATURAL PHENOMENON: Wind
ORGANIZATIONAL DEFICIENCY: Expired Certification
ORGANIZATIONAL DEFICIENCY: General
ORGANIZATIONAL DEFICIENCY: Lack of Certification
ORGANIZATIONAL DEFICIENCY: Lack of Training
OTHER: Other
PERSONNEL CARRIERS: Highway Vehicle
PERSONNEL CARRIERS: Mobile Work Platform
PERSONNEL CARRIERS: Support Vehicle
PORTABLE TOOLS: Non-powered
PORTABLE TOOLS: Powered
PROCEDURE: General
PROCEDURE: Procedure Deficiency
PROCEDURE: Requirements Inadequate
PROCEDURE: Technical Data Deficiency

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NASA Direct Construction Contractor Mishap Report
Appendix A: Root Cause and Contributing Factor List

TOXIC MATERIAL: Design Deficiency
TOXIC MATERIAL: General
TOXIC MATERIAL: Improper Handling
WALKING WORK SURFACE: Elevated Surfaces
WALKING WORK SURFACE: Floor And Wall Opening
WALKING WORK SURFACE: Floor Surface
WALKING WORK SURFACE: Ladders
WALKING WORK SURFACE: Stairs

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13.0 LIFT OPERATIONS DOCUMENTATION TEMPLATE

In accordance with KNPR 8715.7, section 3.2, item w:

> w. Crane operations involving critical lifts […] shall have a lift plan submitted for review and acceptance to the CO in consultation with the KSC Lifting Devices and Equipment Manager (LDEM) and the Institutional Safety Office (SA-E2).

A sample form, Kennedy Space Center Lift Plan for Outside Contractors, has been provided below as Figure 16.

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FIGURE 16: KSC LIFT PLAN FOR CONSTRUCTION CONTRACTORS

Kennedy Space Center Lift Plan for Construction Contractors

This document is for use by CoF construction contractors performing work on Kennedy Space Center. It is recommended for all lifts and will satisfy the lift planning requirements in accordance with OSHA and NASA regulations and contract requirements. A lift plan is mandatory when: 1) lifting personnel with basket or platform, 2) the load exceeds 75% of the crane's capacity in a given configuration, 3) the lift requires more than one crane, 4) during demolition when the actual weight or structural integrity of the load are in doubt, 5) when the operation is within a boom length of power lines, or 6) when lifting over active work areas, occupied buildings, or public roadways, 7) lifts of submerged or partially submerged objects. For further assistance, please contact the KSC Institutional Safety Office at 867-SAFE.

1. Company Name	Name of Person Preparing this Lift Plan	2. Date
3. Project Name and Job Location		
4. Load Description		
5. Crane Description - Type, Manufacturer, Model # *(multiple crane lifts require separate plan for each crane)*		
6. Lift Description *(attach diagram of lift and load placement)*		

LOAD			**CRANE (continued)**		
7. Load Condition *(describe)*			27. Radius at Set-down		ft
8. Known Center of Gravity? *(Attach diagram)*			28. Capacity at minimum boom angle / maximum radius (Attach copy of actual load chart used)		lbs
9. Source of Load Weight *(attach a copy of drawings, calculations, bill of lading, etc.)*			29. Maximum load on crane for this lift (Gross Load from Block 20)		lbs
10. Load Weight Empty		lbs	30. Percentage of the crane's rated capacity in this configuration		%
11. Weight of Load Contents / Fluids		lbs	**JIB/FLY**		
12. Weight of Auxiliary Block		lbs	31. Erected _____ Stowed _____ Stored _____		
13. Weight of Main Block		lbs	32. If jib / fly is used: Length = _____ Angle = _____		
14. Weight of Lifting Beam (See Block 50)		lbs	33. Rated capacity of jib / fly from chart = _____		
15. Weight of Slings / Shackles / Other Rigging (See Blocks 42 thru 52)		lbs	34. Weight of Jib if installed but not in use		lbs
16. Deduction for Jib / Fly (if applicable) (See Block 33)		lbs	**CRANE SETUP/OTHER CONSIDERATIONS**		
17. Weight of Hoist Rope (if applicable)		lbs	35. Soil conditions / level / underground hazards / Crane mat required?		
18. Weight of Auxiliary Head/Rope (if applicable)		lbs	36. Outriggers (full / partial) / pads / matting / on rubber? ☐ Yes ☐ No		
19. Additional Deductions (list if applicable)		lbs	37. Buildings, equipment, or structure to lift / swing over?		
20. Gross Load (Add Block 10 thru 19)		**lbs**	38. Travel required? ☐ Yes ☐ No		
CRANE			39. Working quadrants / swing restrictions?		
21. Boom Configuration			40. High voltage / electrical hazards/other hazards?		
22. Boom Length		ft	41. Other Considerations? (Headroom, winds, taglines, traffic, etc.) Add to Block 6		
23. Counterweight		lbs	**RIGGING**		
24. Boom angle at Pick-up		°	42. Slings (number, size, type)		
25. Radius at Pick-up		ft	43. Slings rated capacity per configuration (See Block 45)		
26. Boom angle at Set-down		°	44. Total Weight of slings		lbs

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RIGGING (continued)			REQUIRED ATTACHMENTS
45. Hitch (vertical, basket, choker) Sling Configuration Angle _____ %			53. Load placement diagram showing location of pick & final place points
46. Shackles (number, size)			54. Rigging diagram with sling angles, expected loads, & load CG
47. Shackles rated capacity			55. Photocopy of actual load charts used to calculate crane capacity
48. Total Weight of Shackles		lbs	56. Rigging certifications
49. Spreader Beam/Other rigging required? (Type, Size, Capacity)			57. Rigging load limit charts [Safe Work Load Limit]
50. Weight of Spreader Beam/other rigging		lbs	58. Crane certification (Annual/Daily Checklist)
51. Connection to Load capacity each (lugs, bollards, pad eyes, none)			59. Operators certification
52. Total Weight of all rigging (Add lines 44, 48, 50 and 51		lbs	60. Rigger certification
			61. Narrative of life procedures (See item 6)
			62. Source of load weight (See Items 8 & 9)
			63. Others

Instructions for Kennedy Space Center Lift Plan for CoF Construction Contractors

1. Name of contractor performing the lift. Include name of person preparing this lift plan.
2. Date lift plan was prepared.
3. Project name and actual location of lift.
4. Describe the load and any special considerations.
5. Self-explanatory.
6. Brief description of pickup and placement of load. Attach diagrams as necessary.
7. Describe the load and any special considerations (e.g., dry, solid, filled with liquid, empty, stable, unstable, etc.).
8. Is the load's center of gravity known? If so where is it documented? Attach diagram. **(On Lift Plan Worksheet)**
9. Document the source of load weight (e.g., drawings, calculations, bill of lading, etc.).

10. - 18. Self-explanatory. **(On Lift Plan Worksheet)**

19. List all additional deductions and weights.
20. Add Block 10 through Block 19. **(On Lift Plan Worksheet)**
21. Describe boom configuration. Refer to manufacturer's terminology.

22. - 27. Self explanatory. **(On Lift Plan Worksheet)**

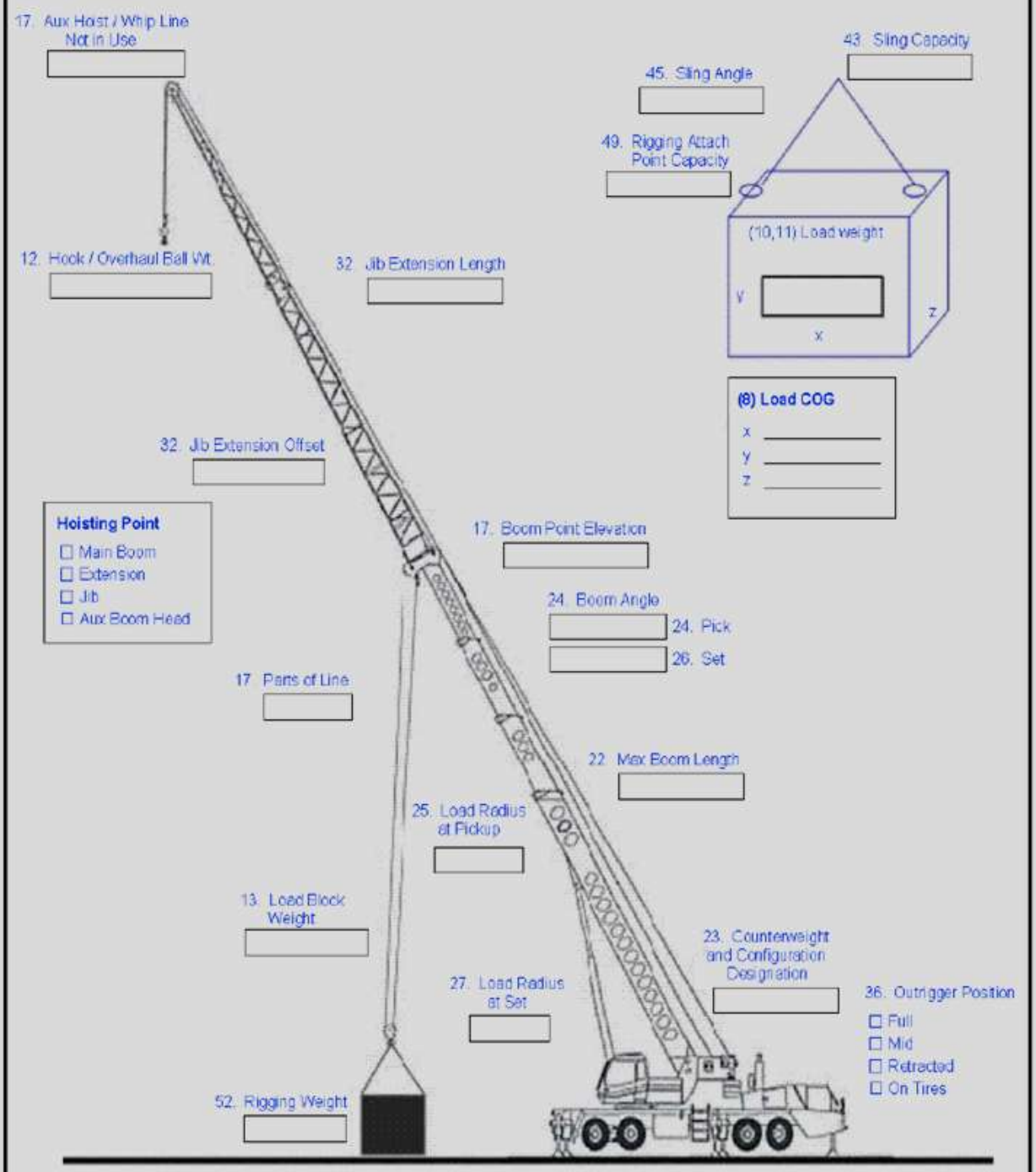
28. Crane's rated capacity at minimum boom angle / maximum radius. Figure worst case between pick and place.
29. Copy Gross Load from Block #20.
30. Block #29 divided by Block #28.
31. Check to indicate jib / fly erected, stowed, or stored off the crane.
32. If the Jib is used, enter the length of the boom in feet and the angle in degrees. **(On Lift Plan Worksheet)**
33. List the Jib capacity from the Fly from chart.
34. The weight of the jib if it is installed on the boom but is not being used during the lift. **(On Lift Plan Worksheet)**
35. Describe site, soil, stability conditions and any underground hazards or concerns.
36. Describe outrigger setup and required matting if applicable. **(On Lift Plan Worksheet)**
37. Describe considerations for buildings, structures, or equipment which will be under the load during the lift.
38. Describe crane travel with load on the hook if required.
39. Describe planned crane working quadrant(s) and any swing restrictions.
40. Describe any electrical hazards or concerns in close proximity to the crane.
41. Describe other considerations of note such as restricted head room, use of taglines, reduced wind limitations, traffic control, etc.
42. Describe slings to be used.
43. List the maximum rated capacity the sling can lift in lbs. **(On Lift Plan Worksheet)**
44. The weight of the sling to be used.
45. The type of hitch to be used and its sling configuration angle (choker, vertical, basket). **(On Lift Plan Worksheet)**
46. Describe shackles to be used, number and size.
47. The maximum rate capacity each shackle can lift in lbs.
48. The total weight of all shackles used.
49. List Spreader beam / other rigging used. State type, size, and capacity.
50. Self explanatory.
51. Self explanatory. **(On Lift Plan Worksheet)**
52. The total weight of all rigging that will be used.

53. - 63. Self explanatory.

KSC FORM 50-101 NS (02/10) Page 2 of 3

RELEASED - Printed documents may be obsolete; validate prior to use.

Lift Planning Worksheet



Refer to operator's manual and all notes and warnings for crane-specific information

KSC FORM 50-101 NS (02/10) Page 3 of 3

RELEASED - Printed documents may be obsolete; validate prior to use.

14.0 EXCAVATION PERMITS

14.1 UTILITY LOCATE / EXCAVATION PERMIT REQUEST (KSC FORM 26-312V3)

In accordance with KNPR 8715.7, section 3.7, item b(1):

(1) Anytime digging is performed, for any reason and to any depth, an approved Utility Locate/Excavation Permit Request, (KSC Form 28-312V3) is required.

A sample form, Kennedy Space Center Utility Locate/Excavation Permit Request, has been provided below as Figure 17.

RELEASED - Printed documents may be obsolete; validate prior to use.

FIGURE 17: UTILITY LOCATE/EXCAVATION PERMIT REQUEST

UTILITY LOCATE/EXCAVATION PERMIT REQUEST

1. Date	2. Master Planning Site Plan No.	3. Project (PCN) No.	4. Work Order No.	5. Check One ☐ Permit to Dig ☐ Locate Only/ No Digging

6. Requester's Name **(REQUIRED)**	7. Email **(REQUIRED)**	8. Phone No. **(REQUIRED)**	9. Fax No. **(REQUIRED)**

10. Requester's Company **(REQUIRED)**	11. Mail Code/Address

12. Technical Contact **(REQUIRED)**	13. Email **(REQUIRED)**	14. Phone No. **(REQUIRED)**	15. Fax No. **(REQUIRED)**

16. KSC NASA Contact Name **(REQUIRED)**	17. Email **(REQUIRED)**	18. Phone No. **(REQUIRED)**

19. Building No. **(REQUIRED)**	20. Grid No. **(REQUIRED)**	21. Secondary Location (Bldg. No./Add. Info.) **(REQUIRED)**

22. Estimated Start Date **(REQUIRED)**	23. Estimated End Date **(REQUIRED)**

24. Emergency request justification ***(if required)***

25. Reason for permit/Statement of work **(REQUIRED)**

MAP/SKETCH, WITH AREA TO BE LOCATED/EXCAVATED CLEARLY MARKED, IS ATTACHED (REQUIRED)

See next page for completion and process instructions.

KSC FORM 26-312V3 NS (REV 08/09) PREVIOUS EDITIONS ARE OBSOLETE

RELEASED - Printed documents may be obsolete; validate prior to use.

INSTRUCTIONS

Please complete as many fields as possible.

NOTE: ALL FIELDS INDICATING "(REQUIRED)" MUST PROVIDE INFORMATION.

Block 1	Date submitted.
Block 2-4	Provide related Site Plan, PCN or Work Order Numbers.
Block 5	Check one. If you are NOT going to dig, but need an underground utility locate, check "Locate Only".
Block 6-18	Enter the name, email address, phone, fax number, company name, and address of the person who will be receiving this permit including KSC NASA Contact for Project.
Block 19-20	Enter the building number where work will be performed (or closest building number).
Block 21	Enter additional information as necessary.
Block 22	Enter the date excavation is expected to begin.
Block 23	Enter the date excavation is expected to be complete. Permit will be closed on this date. End date may not be longer than one year from the start date.
Block 24	If excavation is of an emergency nature and requires priority, enter justification.
Block 25	Enter a description of why this permit is being requested, i.e., what work will be performed and why.

REQUIRED: ATTACH A MAP/SKETCH WITH AREA TO BE LOCATED/EXCAVATED CLEARLY MARKED.

1. Email, fax or hand-carry this request, along with a map, drawing or sketch to the Excavation Permit Request (EPR) Administrator using the contact information below.
2. You may contact the EPR Administrator using the contact information below if you have any questions on the dig permit process.
3. To schedule an appointment with the Excavation Permit Inspectors to locate underground utilities and/or obtain an approval signature on this permit to dig, Requester should phone the Excavation Permit Inspectors' Office (321-476-4494/3799) at least 72 hours prior to digging.
4. Requester should notify the EPR Administrator when excavation is complete.
5. Permits may be extended for up to one year by calling the EPR Administrator, but all permits will be closed upon expiration unless notified.

EPR Administrator

Location	**KSC Headquarters, M6-0399, Room 3145**
Mail Code	**ISC-4026**
Phone	**(321)867-2406**
Fax	**(321)867-1175**
Email	**KSC-ISC-DIGPERMIT@mail.nasa.gov**

Emergency requests will be processed on a real time basis
through the ISC Duty Office 861-5050, Fax (861-1627)
or Email - KSC-ISC-DutyOffice@mail.nasa.gov

KSC FORM 26-312V3 NS (REV 08/09) PREVIOUS EDITIONS ARE OBSOLETE

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14.2 EXCAVATION PERMIT RESTRICTIONS

Figure 18, below, identifies excavation restrictions for contractors with approved excavation permits.

UTILITY LOCATE/EXCAVATION PERMITS ENG-I-MP07

APPENDIX A: CATEGORY CODES

EXCAVATION PERMIT CATEGORY CODES:

For permits with more than one category code, the most restrictive category code applies. If you have questions about assigned category codes, contact the Excavation Permit Inspectors at 321-289-7829 or 321-749-4840. For the latest launch and landing schedule, contact the ISC Duty Office at 321-861-5050.

LAUNCH

Category Code I Seventy-two (72) hours prior to Launch and Return to Launch Site (RTLS), excavation will stop at, around or involving the following KSC facilities:

1. Launch Control Center - LCC (K6-0900)	5. Unified S-Band (MILA Area)	9. Tel IV & South Repeater Station (N6-1118)	13. VAB (K6-0848) and VAB Utility Annex (K6-0947)
2. LC 39 Active Pad Complex & all 8 Repeater Stations	6. Press Site (all buildings, roads, parking areas in and around the area)	10. Communication Distribution and Switching Center - CD&SC (M6-0138)	14. Operations & Checkout O&C (M6-0355)
3. VAB Repeater - VABR (K6-1193)	7. Obiter Processing Facility 3 - OPF3 (K6-0696)	11. Payload Facility Supporting Launch (M7-0777 & M7-0360)[1]	15. Central Instrumentation Facility (M6-0342)
4. C-5 Substation (K6-1141)	8. Banana River Repeater Station (M7-0531)	12. CCF - Converter Compressor Facility (K7-0468)	16. Shuttle Landing Facility - SLF (runway and all associated buildings and infrastructure)

1 - Mission Specific - including but not limited to these facilities. (M7-0777 - Transporter/Canister Facility, and M7-0360 - Space Station Processing Facility (SSPF)).

Excavation may resume at facilities 1-15 four hours after launch. Excavation will not occur at the SLF (16) until after landing.

Category Code II LC-39 Active Pad - All excavation (except emergencies) will stop when the Space Shuttle Vehicle (SSV) rolls out to Pad. Excavation may resume following Pad safing and washdown after launch.

Category Code III LC-39 Deactive Pad - Excavation will cease 2 hours before sunset on Launch -1 day, or 12 hours prior to Launch from the active Pad, whichever is earlier. Excavation may resume 4 hours after launch from the active pad.

Category Code IV No restrictions on excavation due to launch/landing at any time, unless directed otherwise by Procurement/Contracting Officer.

Category Code V *You must call the Air Force Duty Office at 853-5211 DAILY prior to digging.*

Air Force Launch Operations - Excavation and switching of critical power will cease on launch critical days (L-1, launch count to include launch day, and program specific test days) at the following KSC facilities and utilities:

1. Unified S-Band (MILA Area)	2. Press Site (all buildings, roads, parking areas in & around the area)	3. Banana River Repeater Station (M7-0531)	4. Utility corridors **east** of Orsino Substation Across NASA Parkway	5. KARS 1 park
6. Tel IV & South Repeater Station (N6-1118)	7. Area **south** from LC-39B along Phillips Parkway.	8. Pump Station 7 (K8-1740)	9. Utility corridors **east** from the Converter Compressor Facility -CCF (K7-0468) to Pad 39A	

These periods may be determined by contacting Cape Support, 853-5211, or the Automated Information System, 853-5511, 24 hours a day. When launches are scheduled for weekends or Mondays, the previous Friday will be considered L-1 and the weekends will be critical.

LANDING

Category Code VI Except for the SLF, excavation may proceed in all areas up to 2 hours prior to sunset on landing -1 day, or 12 hours prior to landing, whichever is earlier. Except for the SLF, excavation may proceed at all facilities 1 hour after a successful landing. Excavation will stop at, around and/or involving the SLF and involved facilities, at the start of Launch Countdown. Excavation may proceed in this area with approval from the SLF Operations at 867-2100.

FIGURE 18: EXCAVATION PERMIT RESTRICTIONS

RELEASED - Printed documents may be obsolete; validate prior to use.

14.3 EXCAVATION CHECKLIST

As specified in KNPR 8715.7, the protection of personnel during excavations is a serious concern with any excavation activity. Daily inspections are required and good record keeping is mandatory. The Excavation Checklist (KSC Form 28-814) has been made available to assist in this effort.

An example of the Excavation Checklist has been provided below as Figure 19.

EXCAVATION CHECKLIST

Project: _____ Weather: _____

Measurements of Trench: Depth _____ Length _____ Width _____

Soil Type: _____ See attached "Soils Analysis Checklist"

Type of Protective System Used: _____

General Inspection of the Jobsite

Yes	No	N/A	
☐	☐	☐	Excavations, adjacent areas, and Protective Systems inspected by the Competent Person daily, prior to the start of work.
☐	☐	☐	Competent Person has the authority to remove workers from the excavation immediately.
☐	☐	☐	Surface encumbrances supported or removed.
☐	☐	☐	Employees protected from loose rock or soil that could possibly pose a hazard by falling or rolling into the excavation.
☐	☐	☐	Hard hats worn by all employees.
☐	☐	☐	Spoils, materials, and equipment set back a minimum of 2' from the edge of the excavation.
☐	☐	☐	Barriers provided at all remote excavations, well, pits, shafts, etc.
☐	☐	☐	Walkways and bridges, over excavations 4' or more in depth, must be equipped with guardrails.
☐	☐	☐	Warning vests, or other highly visible garments, provided and worn by all employees exposed to public vehicular traffic.
☐	☐	☐	Employees required to stand away from vehicles being loaded or unloaded.
☐	☐	☐	Employees prohibited from working or walking under suspended loads.
☐	☐	☐	Employees prohibited from working on the faces of sloped or benched excavations above other employees.
☐	☐	☐	Warning system established and utilized when mobile equipment is operating near the edge of an excavation.

Utilities

☐	☐	☐	Utility companies contacted and/or utilities located.
☐	☐	☐	Exact location of utilities marked when approaching the utilities.
☐	☐	☐	Underground installations protected, supported, or removed when the excavation is open.

Means of Access and Egress

☐	☐	☐	Lateral travel distance to a means of egress does not exceed 25', for excavations 4' or more in depth.
☐	☐	☐	Ladders, when used, must extend 3' above the edge of the trench and be secured.
☐	☐	☐	Structural ramps used by employees must be designed by a Competent Person.
☐	☐	☐	Structural ramps used for equipment must be designed by a Registered Professional Engineer (RPE).

Competent Person (Signature/Date) _____

KSC FORM 28-814 NS (REV. 01/05) PREVIOUS EDITIONS ARE OBSOLETE

FIGURE 19: EXCAVATION CHECKLIST

RELEASED - Printed documents may be obsolete; validate prior to use.

15.0 KSC/CCAFS CONFINED SPACE ENTRY PERMIT / AUTHORIZATION

In accordance with KNPR 8715.7, section 3.1, contractors requiring entry into and work in confined spaces are required to include a Confined Space Entry Program as part of the SSSP.

Working with the COTR, the Contractor is also required to complete a Confined Space Hazard Evaluation Request (KSC Form 28-750). This form will be used when requesting atmospheric testing support through NASA (MESC Industrial Hygiene Office). An example form is contained below as Figure 20.

The evaluation request form will also assist the Contractor in completing, a KSC/CCAFS Confined Space Entry Permit/Authorization (KSC Form 16-287). An example of this form is contained below as Figure 21.

NASA (or MESC IH) does not authorize entry or issue the entry permit. This is the responsibility of the employer of the employees performing the confined space entry. The permit must be completed and signed by the confined space entry supervisor (organization performing the confined space operations).

Where NASA (through MESC Industrial Hygiene) performs air monitoring as a part of a confined space entry operation, the MESC IH will fill out and sign the Atmospheric Conditions section of the permit.

RELEASED - Printed documents may be obsolete; validate prior to use.

KSC/CCAFS CONFINED SPACE HAZARD EVALUATION REQUEST

Facility Name	Facility Number

Location/Name

Describe the Function of the Space

☐ Is the space a controlled access area? If so, list Name/Organization _____

☐ Has a hazard assessment been performed? If so, list Name/Organization _____

☐ Is the area configured to allow employees to physically enter to perform work?

☐ Are entry and egress routes restricted or otherwise configured so as to hinder rapid egress or personnel or entry of rescue personnel in the event of an emergency?

☐ Is the primary design function of the space for some purpose other than human occupancy?

☐ Are hazards present which are related to the primary design function of the space?

Where hazards are present do they include:

☐ Hazardous atmospheres? ☐ Engulfment? ☐ Entrapment? ☐ Other Hazards?

☐ Are hazards eliminated prior to entry through positive controls (isolation, lockout/tagout, etc.)?

Is access to the space regulated as a:

☐ Permit-required confined space? ☐ Non-permit confined space? ☐ Controlled access area?

☐ Telecommunications space (1910.268)? ☐ Electrical power transmission space (1910.269)?

Identify all hazards which may be present in the space. Include those which are inherent to the function to the space as well as those which may arise in the space during personnel entry.

Hazardous Atmosphere	Hazardous Materials	Other Physical Hazards	
☐ Flammable Gas	☐ Corrosive	☐ Engulfment	☐ Ordnance
☐ Toxic Gas	☐ Reactive	☐ Entrapment	☐ High Pressure
☐ Chemical Vapor	☐ Flammable	☐ Poor Lighting	☐ Sloping/Shoring
☐ Dust	☐ Compressed Gas	☐ Slipping/Tripping	☐ Automatic Equip. Startup
☐ Welding Fume	☐ Radioactive	☐ Electric Shock	☐ Process Steam
☐ Low Oxygen	☐ Biohazard	☐ Work at Heights	☐ Hot/Cold Surfaces
☐ High Oxygen	☐ Sludge/Residue	☐ Noise Above 85 dBA	☐ Other
	☐ Other	☐ Protrusions/Sharp Objects	

Identify the hazard control measures required for entry into and work in the space

☐ Written Entry Procedures	☐ Blinding/Blanking	☐ Atmospheric Monitoring	☐ Ventilation
☐ Mechanical Linkage Removal	☐ Lockout/Tagout	☐ Fire/Rescue Standby	☐ Illumination
☐ Personal Protective Equipment	☐ Hotwork Permit	☐ Lifelines	

OMI/WAD Name/Number Where Used _____

Prepared By	Organization/Mail Code	Date	Phone Number

WHEN COMPLETE RETURN TO IHA-022

KSC FORM 28-750 NS (REV. 04/10) PREVIOUS EDITIONS MAY BE USED

FIGURE 20: KSC FORM 28-750, KSC/CCAFS CONFINED SPACE HAZARD EVALUATION REQUEST

RELEASED - Printed documents may be obsolete; validate prior to use.

KSC/CCAFS Confined Space Entry Permit/Authorization
Assessment form for all confined space entries

Entry Permit No.

Entry Permit action	Date / Times
Start	
Auto-Expiration	
Cancellation with Entry Supervisor initials ____	

√ *Follow company procedure for final disposition of this documentation*

Rescue and Emergencies
- ❑ Call 911 or (cellular) 867-7911 for emergencies
- ❑ Call 861-8718 or 853-9253 to advise FS of entry
- ❑ Required at confined space
- ❑ Other Rescue Service

911 or 867-7911(cellular)

Confined Space Information	Space Name:
Facility:	
CS POC Org:	Type Space:
Description:	

Entry Information	Entering Org.	Phone:
Purpose of entry:		
Attendant(s): Authorized Entrant(s):		

(use other format as needed)

Hazards of Space & Entry *(Check hazard & identify source/contributor)*

Previous Content:

❑ Hot work: Type _____ ❑ Inside space ❑ Outside space

Potential Hazards	Contributor / Source	Potential Hazards (Cont.)	Contributor / Source
❑ Engulfment		Physical / Configuration	
❑ Entrapment		❑ Poor lighting	
Atmospheric		❑ Poor communication	
❑ O_2 Deficiency / Enrichment		❑ Noise	
❑ Flammable		❑ Hot / Cold; Surf / Environment	
❑ Toxic		❑ Slip / Trip	
❑ Dust / Fibers		❑ Protrusions / Sharp objects	
Materials		❑ Working at heights	
❑ Flammable		❑ Falling objects	
❑ Corrosive / Reactive		❑ Electric shock	
❑ Radioactive		❑ Equip. start-up / Mechanical action	
❑ Biological		❑ High pressure gas	
❑ Sludge / Residue		❑ Restricted movement	
		❑ Weather	

Atmospheric Conditions	Time				Test By:
Parameter	Limits	Conc.	Conc.	Conc.	Equipment/Cal Due
Oxygen	19.5 - 23.5%				
LFL	10%				
CO	25 ppm				
H_2S	10 ppm				

Industrial Hygiene Signature (if applicable): Name / Phone:

Additional Atmospheric Monitoring Requirements	Details
❑ Continuous	
❑ Periodic, _____	
❑ If ventilation changes	
❑ Re-entry, each	
❑ If change suspected *(All data to be attached)*	

Comments:

Hazard Controls / PPE *(Check entry requirements and methods to control/eliminate the identified hazard. Fill-in if applicable and as needed)*

Ventilation	Respiratory Protection	Lighting	Other PPE	Rescue Equipment
❑ Mechanical temporary	❑ Cartridge _____	❑ Portable light, area	❑ Garment, _____	❑ Verbal Comm, _____
❑ Electric	❑ Half-Face (NPR)	❑ Permanent light	❑ Boots, _____	❑ Signal Comm, _____
❑ Engine / Fuel	❑ Full-Face (NPR/PAPR)	❑ Natural light	❑ Welding hood	❑ Body harness
❑ Natural	❑ SCBA	❑ Flashlight	❑ Gloves, _____	❑ Anchor point
❑ Fixed ventilation	❑ Airline (SAR)	❑ Lightstick, corded	❑ Eye protection	❑ Tripod, available
❑ Flow _____	❑ Dust mask	❑ Exterior light	❑ Hearing protection	❑ Wristlet; ❑ Anklet
❑ _____	❑ _____		❑ _____	❑ _____

Entry / Exit	Isolation / LOTO *(hazard elimination system / method)*	Other Entry Requirements:
❑ Access ladder	❑ Electrical	
❑ Body harness / Entry tripod	❑ Pneumatic	
❑ Raised platform	❑ Piping	
❑ Pickboards	❑ Mechanical	
❑ Pre-task briefing	❑ Hydraulic	

CS Classification *(General / Initial)*	OSHA Standard	Entry Classification
❑ Permit Space	*1910.146*	❑ PRCS entry
❑ Non-Permit Space	*1910.146*	❑ APPS entry
❑ Telecom Manhole/Vault	*1910.268*	❑ Temp NP entry
❑ Electrical Manhole/Vault	*1910.269*	❑ NPS entry
❑ Construction Site Space	*1926*	❑ TCCS entry
❑ _____	_____	❑ EPCS entry
		❑ CSS entry
		❑ _____

Other CS Standards
- ❑ KHB 1840.1 *Industrial Hygiene Handbook*
- ❑ AFOSH 91-25 *Confined Spaces*

Note:
- All OSHA standards apply to organizations performing work at Spaceport. Omission of standards on this form does not imply inapplicability to workers and their work conditions.
- This permit is void / canceled if conditions change to an extent that the hazards are no longer adequately controlled, at the time of the stated expiration at the end of the permitted task, or otherwise canceled by the entry supervisor.
- Any problems encountered during an entry must be noted on, or attached to the permit, and reported to your safety and health office.
- All entrants, attendants and entry supervisors must follow the confined space entry procedures of their employer.

Other OSHA Standards Applied to Entry:

❑ 29 CFR 1910.147 Lock-out/Tag-out ❑ 29 CFR 1910.134 Respiratory Protection ❑ 29 CFR 1910.252 Welding ❑ _____

Safety Signature (if applicable):	Authorizing Entry Supervisor Signature:
Name / Phone:	Entry Supervisor Name(s) / Phone:

KSC FORM 16-287 (REV. 09/09) PREVIOUS EDITIONS ARE OBSOLETE Original - User/Organization Color Copy - Industrial Hygiene Support Office Hardcopy - Posted at space

FIGURE 21: KSC/CCAFS CONFINED SPACE ENTRY PERMIT/AUTHORIZATION

RELEASED - Printed documents may be obsolete; validate prior to use.

ATTACHMENT A: SSSP (TEMPLATE)

The following template will provide guidance during the development of the SSSP.

Note: <u>Bold and *italicized*</u> words found in this example document denote areas the contractor needs to replace with the specific requested information.

Site-Specific Safety and Health Plan (SSSP) for project:

_____

Project Title

_____ - _____

PCN **Contract Number**

_____

Company Name

The following listed Official is *<<Company's Name>>* authority for approval of this SSSP for the above listed project.

_____

Name of Company Official **Title** **Signature**

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8. Controlled Areas #
9. Drinking Water #
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12. Hazard Communication #
13. Heat Stress #
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Project-Specific Safety and Health Sections

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32. Fall Protection #
33. Fire Protection and Prevention #
34. Hand and Power Tools #
35. Hazardous Substances #
36. Hearing Conservation #
37. Hot Work Permits #
38. Industrial Hygiene #
39. Ladders and Stairways #
40. Lockout / Tagout (Control of Hazardous Energy) #
41. Personal Protective Equipment (PPE) #
42. Process Safety Management #
43. Radiation Protection #
44. Respiratory Protection #

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45. Rollover Protection for Mobile Equipment #
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47. Steel Erection #
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49. Welding and Cutting Operations #
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List of Appendixes #

***NOTE*: The Contractor should list here any enclosures / appendices that the plan calls for (this may include training certifications, JHAs, fall protection plans, demolition plans, etc). These appendixes are contractor specific so no example formats are provided in the following example document.**

RELEASED - Printed documents may be obsolete; validate prior to use.

Safety and Health Sections

1. General Project / Safety and Health Information

<<Company Name>> SSSP is a detailed plan of safety and health information, requirements, and regulations that ***<<Company Name>>*** will follow while conducting all work under NASA/KSC Procurement Office contract ***<<Project Title>>*** located in ***<<building name and/or number>>***.

a. The work this SSSP covers includes ***<<describe here the general scope and statement of work to be performed on the project>>.***

b. This plan is written to address the safety and health aspects of this project's work requirements. Our Corporate Safety and Health plan and program, along with Federal, NASA/KSC, state, and local specific safety and health requirements were used in developing this plan.

c. This plan applies to all construction contractor personnel performing working on the site to include all subcontractor employees. ***<<Company Name's and their designated site supervisor employee name>>*** will be responsible for ensuring all employees follow all applicable safety and health regulatory requirements to include this SSSP.

d. All work under this contract will be performed safely so as not to create a hazard to personnel health or property (NASA and contractor). All work will be conducted in accordance with NASA and KSC provisions contained in the contract, all applicable sections of OSHA regulations, and other applicable local, state, and federal laws. ***<<Company Name>>*** will implement safe working practices and furnish equipment to assure a safe working environment.

e. ***<<Company Name>>*** will ensure employee compliance with this SSSP to include employees of any subcontractor that will perform work as part of this project.

f. ***<<Company Name>>*** intends to hire the following sub-contractors to perform the work identified on this project. This list includes additional sub-contractors hired by our project sub-contractors. This list will be updated when any new sub-contractor(s) are identified and hired.

Sub Tier Seller Name	Type Work Performed
1. ***<<Company A>>***	***Demolition of Existing Facility***
2. ***<<Company B>>***	***Concrete and Masonry***
3. ***<<Company C>>***	***Electrical***
4. ***<<Company D>>***	***Fire Systems***
5.	
6.	

Definitions:

<<The contractor may include a section here that defines key terms within the plan to clarify items for their employees and subcontractors>>

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2. Voluntary Protection Program

a. ***<<Company Name>>*** understands that Kennedy Space Center has implemented a comprehensive safety and health management system and is recognized by the Occupational Health and Safety Administration (OSHA) as a "Voluntary Protection Program (VPP) Star Worksite." Our company further understands that the VPP program promotes effective worksite-based safety and health by encouraging employers and employees to reduce the number of occupational safety and health hazards at their places of employment.

b. Though our company is not required by contract to be VPP certified we will:

(1) Follow the safety and health requirements of our host organization.

(2) Ensure employees are trained that they can report safety and health issues without fear of retaliation and that they can report anonymously.

(3) Support and comply with NASA/KSC contractor oversight program.

(4) Identify, correct, and track uncontrolled hazards on our jobsites in a timely manner.

(5) Comply with NASA/KSC in resolving any non-compliant work practices.

3. Contractor Employee Training

a. All ***<<Company Name>>*** and subcontractor employees engaged in jobsite activities will have received the required training that allows them to be safe during work activities. Personnel will not perform any work activity on the jobsite until they have received the training required for their job responsibilities and activities.

b. ***<<Company Name>>*** has enclosed a list of employees (including subcontractor employees) that will be performing work on the site (*see* ***<<appendix # >>***). The list certifies that the employees have received all required training, and a documented copy of the list will be updated before new employees or sub-contractors begin performing work on the jobsite.

c. Also listed in this document are the names and training certification of special role employees such as the site supervisor, competent persons, qualified persons, and heavy equipment operators, applicable to this contract.

d. ***<<Site Supervisor's Name>>*** will ensure that new site employees' training is verified prior to the employees being allowed to work on the site.

e. All of our safety and health training is performed by organization employees or outside companies qualified by training and/or experience in the area for which training is conducted.

f. The training records certified by ***<<name official of the company>>*** includes the employee name, date of training, type of training received, and expiration dates of training.

g. ***<<Company Name>>*** plans to use temporary employees on this project. The site supervisor will ensure these employees are trained or verify and certify (document) that they have been trained in basic OSHA and this SSSP requirements for the tasks that they will be performing at the jobsite. ***<<Include this paragraph as applicable>>***

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4. Accident / Incident (Mishap / Close Call) Reporting

a. In the event of a serious injury, employees will immediately notify the site supervisor and call 911 or (321) 867-7911 (cell phone on KSC) or (321) 853-0911 (cell phone on CCAFS). Ambulances are on call 24 hrs/day; 7 days/week on both KSC and Cape Canaveral Air Force Station (CCAFS).

b. The site supervisor will report severe mishap incidents (property damage greater than $250,000 or personnel injury/illness equivalent requiring inpatient hospital care or permanent or partial disability) within 1 hour to the Center Institutional Safety Office (321) 867-SAFE, the project CO, and COTR by telephone or in person.

c. Less severe mishap or close call incidents (potential for or actual property damage greater than $1,000 or personnel injury/illness equivalent to or exceeds a nonfatal OSHA-recordable occupational injury and does not meet the criteria of a more severe mishap identified above) will be reported to the Center Institutional Safety Office, CO, and COTR within 4 hours of the event (or by 7:30 AM the next workday for incidents occurring during shifts other than first shift) by telephone (321) 867-SAFE or in person.

d. In the event of an accident or mishap, the site supervisor will ensure immediate action is taken to secure potentially dangerous conditions (e.g., disconnect electrical power, secure machinery) in order to protect employees. The scene of an accident or mishap will be secured and remain intact until released by KSC Safety, KSC Security, and the Contracting Officer (CO) or a designated representative. The site supervisor will ensure all potential incident witnesses remain at the worksite until interviewed and released by the NASA Safety Investigator.

e. The site supervisor will submit to the CO and KSC Institutional Safety Office (SA-E2) a KSC Incident Report, KDP-F-3638, by hand, e-mail, or fax (321) 867-1120 within 4 hours of the mishap / close call. If the report is submitted by non-secure means all personal identification of the employee injured will be removed (name, social security number, etc.).

f. ***<<Company Name>>*** will notify their company president/top-level management or program manager of all incidents that are deemed immediately dangerous to the life and/or health of their employees.

g. ***<<Company Name>>*** will investigate less severe mishap or close call incidents (unless directed otherwise by the NASA Safety Office) in order to determine the root cause and furnish the CO with a written report within 30 days of the mishap or close call by completing page 2 of the KSC Incident Report, KDP-F-3638, which will include the investigation findings and proposed or completed corrective actions.

h. ***<<Company Name>>*** will perform trend analysis of their mishaps / close calls to identify potential reoccurring safety issues and share the analysis results with all worksite employees.

5. Weather Policy

a. ***<<Company Name>>*** will ensure employees on the jobsite are protected from adverse weather conditions. That includes winds in excess of 35 knots, heavy rain/hail, tornados, or the potential for lightning within 5 nautical miles that could affect the area within 30 minutes.

b. The site supervisor will have a means emergency communication and of receiving the KSC weather advisories and warning alerts at all times during work performance. ***<<Company***

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Name>> will receive these alerts from a weather warning pager or text message received on a cell phone. These actions are coordinated through the project COTR.

c. The site supervisor will alert employees of adverse weather conditions and heat stress advisories in the area. The site supervisor will take appropriate action to protect employees when alerted.

d. ***<<Company Name>>*** will adhere to the work restrictions based upon the table below.

WIND LIMITATIONS TABLE

Steady State	**Gusts**	**Limitations**
18 knots (20.7 mph)	22 knots (25 mph)	No erection of, or work on floats, spiders, and /or scaffolding; nor lifting of personnel in buckets, crane baskets, etc.
20 knots (23 mph)	25 knots (28.7 mph)	No mobile/portal crane hoisting or crane operations. No high ranger or crane operations.
30 knots (34.5 mph)	35 knots (40.3 mph)	No work on facility roofs, structure tops, unprotected areas, or outside hand rails (materials on roofs are secured or removed).
35 knots (40.3 mph)	40 knots (46 mph)	Contractor Supervisors will immediately conduct a walk down of their area for unsecured items.
40 knots (46 mph) and above	45 knots (51.7 mph) and above	Immediate actions will be taken to secure at ground level all loose or unanchored items, equipment, supplies, and/or materials.

Lightning Restrictions

a. Phase One Lightning Advisory: Announced when conditions are present or within 5 nautical miles of the announced location which may produce cloud to ground lightning strikes within the next 30 minutes. Only operations that can be terminated immediately upon notification of Phase Two can be continued.

b. Phase Two Lightning Warning: Announced when lightning has been observed within 5 nautical miles or conditions exist which are predicted to produce lightning within 5 nautical miles. This advisory is a warning that employees outdoors will take immediate cover. Personnel access to roofs or top levels of structures is prohibited. Electrical systems maintenance and any other operation requiring personnel risk of lightning exposure are prohibited.

Tornado Notification

a. Tornado Watch: Conditions exist for a tornado. Prepare for a tornado warning.

b. Tornado Warning: Tornado has been sighted. Personnel will take cover immediately in approved structures.

Hurricane Condition (HURCON) Policy

a. During the Atlantic Hurricane Season (June 1 through November 30) Florida is subject to extreme destruction associated with hurricanes. ***<<Company Name>>***, our employees, and

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subcontractors will comply with instructions from the CO and follow the NASA/KSC Hurricane Policy.

b. Hurricane Condition IV: Hurricane is forecasted to make landfall or impact the immediate area within 72 hours. Prepare site by securing structures and loose objects. Perform the necessary housekeeping. Prepare for evacuation.

c. Hurricane Condition III: Hurricane is forecasted to make landfall or impact the immediate area within 48 hrs. Evacuate site when directed by the CO and leave KSC.

d. ***<<Company Name>>*** will tie down trailers and equipment with anchorage that complies with KSC-PLN-1904, Trailer/Equipment Tiedown Plan for the Kennedy Space Center.

6. Clothing

a. All employees conducting work on this project will wear appropriate clothing. Appropriate clothing consists of at minimum long pants, short (at least four inches in length) or long-sleeved shirt (no tank tops), and a style of shoe determined by the type of work being performed. Overly loose fitting, torn, or ragged clothing will not be acceptable.

b. The site supervisor will check daily that workers have the proper clothing suitable for tasks and hazard level of work being performed.

c. Fire retardant clothing will be worn for designated tasks that present a potential for arc flash, flash fire, or explosion to minimize the effects of arc flash, flash fires, and burns from contacting hot equipment and material. This is also addressed in the sections for electrical and welding work.

7. Construction Site Safety

a. The site supervisor will ensure the safety of all personnel from all organizations while within the boundaries of the worksite. This is to include control of who is on site, what PPE, special conditions, and restrictions will be observed while on site.

b. The designated site supervisor(s) for the jobsite is (are) ***<<List name(s) of employee(s)>>***. A site supervisor will be on site at all times during construction. If the site supervisor cannot remain at the site, a designated authorized representative with the responsibilities, accountability, and authority of the absent supervisor will be identified. If such an individual is not designated, all construction work will be halted until the site supervisor returns.

c. The site supervisor or authorized representative while performing supervisory tasks will not perform other labor type duties (i.e., laborer or equipment operator).

d. ***<<Company Name>>*** will permit only those employees designated qualified to operate equipment and machinery. A qualified operator is one being knowledgeable of the equipment's/machine's operations, operations manual, limitations, restrictions, and safety requirements.

e. Personnel will not use cell phones/texting devices while performing work, inspections, testing, system walk downs, or surveying on construction sites. Since the effort necessary for roofing demands full and undivided attention, cell phones will not be used by any personnel on

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roof surfaces except for emergency calls. Necessary business calls or replying to pages or telephone calls may be accomplished only from a safe area on the site.

f. All employees are encouraged to submit suggestions or report issues regarding site and facility safety and health to the project site supervisor, the NASA/KSC assigned Safety Specialist, or by calling the KSC Institutional Safety Office (SA-E2) at (321) 867-SAFE (7233) without any fear of retribution.

g. Employees that are performing work in or transitioning through a construction site controlled by another contractor will comply with the safety and health requirements of that worksite and apply common sense to avoid injuries. In addition when working in the vicinity of or transitioning through an area where KSC operations are in progress, employees will comply with the safety and health requirements and direction of the NASA controlling authority of the area.

h. The site supervisor will maintain at all times a means of communication to contact emergency services and emergency numbers will be posted at the worksite in a location where all employees have access. The site supervisor will develop a means of communication to disseminate information throughout the worksite (handheld radios, bulletin boards, etc.).

8. Controlled Areas

Employees will not enter posted controlled areas, nor will the integrity of any installed protective system (e.g., guardrails, safety signs, warning lights) be rendered inoperable, without proper written approval from the CO in consultation with the appropriate facility management and the KSC Institutional Safety Office (SA-E2).

9. Drinking Water

a. ***<<Company Name>>*** will ensure employees have access to potable drinking water when in the performance of the job sufficient for the number of employees at the jobsite.

b. Drinking water will be dispensed from a fully enclosed sanitary water container in the vicinity where the work is being performed into individual paper or plastic cups or individual use water bottles or bottles of waters. Common drinking cups or dipping water by individual drinking cups, dippers, canteens, etc., is prohibited. Where single service cups (disposable/to be used only once) are supplied, a sanitary container for the unused cups and a bag or container for disposing of the used cups will be provided.

c. Hydration is critical in the prevention of heat related illness, and employees will be encouraged to properly hydrate before they begin work efforts and to maintain adequate hydration throughout the workday.

10. Evacuation (Facility or Area)

a. For all work conducted inside a facility, ***<<Company Name>>*** will assign a point of contact (POC) prior to the beginning of work. Should evacuation of any area be necessary for reasons other than tornadoes, employees will follow the facility evacuation procedures and meet the POC at the marshalling area or at least 200 feet from the hazard. The site supervisor or designated POC will ensure accountability of employees. The POC will brief employees (including subcontractors) on evacuation and marshalling areas on the first day work begins.

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b. The project supervisor or designated POC will notify the KSC on scene Commander if all employees are not accounted for. Employees will not return to work inside or within 200 feet of the facility until the on-scene commander gives the "ALL CLEAR".

11. First Aid and Medical

a. Prior to starting work, ***<<Company Name>>*** will make provisions for prompt medical attention in case of employee injury. Emergencies will be reported by dialing 911, (321) 867-7911 (cell phone on KSC) or (321) 853-0911 (cell phone on CCAFS).

b. All emergency contact telephone numbers will be posted at the jobsite in an area accessible and conspicuous to all personnel.

c. For non-emergency, walk-in medical care, personnel may report to the KSC Occupational Health Facility (OHF) located at the corner of 2nd St. SE and C Ave. SE during normal office hours (0700 – 1600 hrs). After hours or on weekends, call the numbers listed in "11a" above. Emergency Medical Services (EMS) personnel evaluate for first aid or transport to nearest medical facility.

d. The site supervisor(s) will:

(1) Ensure employees know to report any injury to their supervisor immediately.

(2) Ensure employees report to the nearest Occupational Health Facility (OHF) facility immediately during clinic hours and after hours or on weekends call the numbers listed in "11a" above and EMS will evaluate for first aid or transport to nearest medical facility if necessary.

(3) Follow the requirements for KSC Accident/Incident (Mishap / Close Call) Reporting.

(4) Ensure any employee that is transported off base after hours report to the OHF the next duty day the OHF is open and comply with all follow-up visits.

(5) Ensure the employee is compliant with restrictions as ordered by the physician.

e. ***<<Company Name>>*** has developed a first aid program for the worksite. The first aid program is designed to reflect the known and anticipated risks of the specific work environment. Adequately trained person(s) are available to render first aid. First aid training includes instruction in general and workplace hazard specific knowledge and skills. First aid supplies are available in adequate quantities and are readily accessible.

12. Hazard Communications

<<The contractor describes in this section their approach to implementing the requirements of the OSHA Hazard Communication standard (29 CFR 1910.1200) for the work to be performed at the KSC worksite. The description needs to include:

a. Employee Training

b. List of Hazardous Materials to be used on the KSC worksite

c. Submittal of Material Safety Data Sheets>>

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13. Heat Stress

<<The contractor describes here their heat stress prevention policy. The description needs to include:

a. Use of KSC-issued weather warning pagers.

b. Training and education in the hazard, risk factors, effects of heat stress including signs and symptoms and the actions that should be taken, and prevention methods.

c. Approach to providing potable water, work breaks and other accommodations for preventing heat related illness.>>

14. Housekeeping

a. Good housekeeping practices will be observed by all employees at all times. Employees will use only approved marked containers for disposal of wastes in accordance with appropriate regulations.

b. The work area will be maintained in a manner that minimizes hazards and allows employees to safely work. Routine clean up of the jobsite will be done daily at the end of each shift.

c. During the course of construction, form and scrap lumber with protruding nails and all other debris will be kept cleared from work areas, passageways, and stairs in and around buildings or other structures.

d. During the course of construction, all protruding reinforcing steel (rebar) that creates an impalement hazard for employees will be guarded to eliminate that hazard.

e. Combustible scrap and debris will be removed at regular intervals during the course of construction.

f. At the completion of construction, the contractor will clean up the construction area of all excess construction debris and return to grade level all above surface protrusions which are not permanent fixtures.

15. Inspections (Worksite)

a. The site supervisor will conduct or ensure a daily inspection of the jobsite, materials, and equipment is conducted to identify existing or potential hazards.

b. The inspection will be accomplished by the designated competent person (general). At least weekly, the site supervisor will document the completion of this inspection.

c. A competent person (general) is one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees and who has authorization to take prompt corrective measures to eliminate them.

16. Inspections (NASA Safety Representatives)

a. ***<<Company Name>>*** understands the jobsite is subject to inspection by KSC Safety and Health personnel at any time.

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b. ***<<Company Name>>*** also understands that safety violations will be documented. The site supervisor will work with KSC Construction Safety Specialists, the COTR, and/or CO (depending on severity) to implement corrective action(s).

17. Job Hazard Analysis (JHA)

a. Prior to the start of work, the ***<<Company Name>>*** will perform a job hazard analysis of the work to be performed. The completed JHA will be provided to KSC Institutional Safety Office (SA-E2) through the CO as an appendix to this SSSP prior to the work occurring.

b. A JHA is a technique that focuses on job tasks as a way to identify hazards before they occur. It focuses on the relationship between the worker, the task, the tools, and the work environment. ***<<Company Name>>*** goal is to identify all uncontrolled hazards, then take the steps/actions to eliminate or reduce the hazards to an acceptable risk level.

c. ***<<Company Name>>*** JHA(s) contains each of the sections identified below:

(1) Task (Activity) Description: Specify the work to be performed such as operating machinery, equipment, and powered hand tools.

(2) Hazard Description: Using the tasks listed, identify the hazards related to the work being performed such as flying debris, dust, wood chips, metal shavings getting into the eyes).

(3) Hazard Controls: The preventive measures taken to eliminate or mitigate the hazard to an acceptable operational level for example know and utilize the manufacturer's operating, maintenance, and safety procedures and use personal protective equipment (PPE) as required, such as ear protection, goggles, face shield, safety shoes, and work gloves.

18. Maximum Work Hour Policy

<<Company Name>> will comply with NASA/KSC employee work hour limits.

a. No employee will work in excess of 12 consecutive hours in any one day. A minimum of 8 hours off time will be allotted between work shifts.

b. No employee will work in excess of 60 hours in any one work week.

c. No employee will work more than 7 consecutive days without one full day off.

d. No employee will work in excess of 240 hours during any 4 consecutive work weeks or 2500 hours in any rolling 12 month period.

e. A written request for exceptions to the above policy will be submitted for approval to the CO in consultation with KSC Institutional Safety Office (SA-E2).

19. Pre-task Meetings

Prior to the start of each work day, when a task changes during operations, prior to any hazardous task, or prior to any confined space entry, ***<<Company Name>>*** will conduct a pre-task (toolbox) meeting and communicate all job related safety issues with all employees involved. Where a task involves a confined space entry, completion of this meeting will be noted on the confined space entry permit. This meeting at a minimum will cover:

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a. Work tasks planned for the day to include sequence and hazard management.

b. Weather issues that could affect that day's work.

c. PPE required for that day's work task(s).

d. Safety hazard awareness (from JHA).

20. Safety Meetings

a. The site supervisor will conduct and document weekly safety meetings for all employees at the jobsite, to include employees of subcontractors. The meeting will discuss safety and health related issues as well as any incidents (and subsequent corrective actions taken) that have occurred at the site.

b. The first meeting will occur prior to beginning work on the first day on the job. Also, if during performance of the contract, a break of more than five working days occurs, the site supervisor will conduct a safety meeting on the first day back on the job.

c. The documentation of safety meetings will include a short summary of the items covered, the date and location of the meeting, the name and signature of the person conducting the meeting, and a roster of attendees. Documentation of these safety meetings will be kept at the construction site for review.

21. Safety Systems – (Permanently Installed)

a. ***<<Company Name>>*** will protect and in no way invalidate the integrity of any installed safety systems or personnel safety devices such as firefighting equipment and sensing devices, fire alarm centers, fire water supply, guard rails, safety chains, warning lights, and safety signs. Prior CO approval will be obtained when access to device-guarded systems is required.

b. In the event ***<<Company Name>>*** or NASA/KSC makes a determine (with CO approval) that it is necessary to temporarily remove or invalidate any personnel safety devices in order to accomplish a task, alternate means of protection prior to removing or invalidating any permanently installed safety devices or equipment will be developed, in place, and approved prior to any work occurs.

22. Sanitary Conditions and Facilities

a. ***<<Company Name>>*** will ensure our employees have access to sanitary facilities in the performance of the job. In the absence of accessible facilities, ***<<Company Name>>*** will provide temporary restroom facilities at the jobsite.

b. One chemical toilet, adequately serviced, for every 20 employees or less is required with a hand washing facility located adjacent to chemical toilet. If showers are needed, a shower facility will be provided for each 10 employees of each sex.

c. Whenever employees are required to wear protective clothing because of the possibility of contamination with toxic materials, ***<<Company Name>>*** will provide change rooms equipped with storage facilities for street clothes and separate storage facilities and or disposal containers for the protective clothing.

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23. Temporary Structures, Trailers, and Work Areas

a. All temporary structures and trailers will be clearly marked with our company's name and an emergency contact phone number. Trailers will be pre-approved by the KSC COTR and the Facility Manager for parking locations and tied down if stationary for a period in excess of two weeks. A dig permit will be requested and approved prior to tying down any trailer or temporary structure.

b. ***<<Company Name>>*** worksite for this project will be clearly marked by a posted sign(s) with the following information. This information will be posted in an area visible to both contractor and NASA/KSC employees.

(1) ***<<Company Name>>***

(2) ***<<Prime Contractor Site Supervisor's name and contact phone number>>***

(3) ***<<Prime Contractor Safety Supervisor's name and contact phone number (if applicable)>>***

(4) ***<<NASA/KSC Project Contracting Officer's (CO) name and contact phone number>>***

(5) ***<<NASA/KSC Contract Officer Technical Representative's (COTR) name and phone number>>***

(6) ***<<NASA/KSC Safety phone number (321-867-SAFE)>>***

24. Vehicle Operations

a. ***<<Company Name>>*** will adhere to permit requirements, restrictions, and conditions for overweight, oversized, or slow moving vehicles as identified in contract clause JC-6, Traffic Restrictions, and in KNPR 1600.1, KSC Security Procedural Requirements.

b. ***<<Company Name>>*** will adhere to the prohibition of movement of oversized or slow moving vehicles on KSC roadways between the hours of 0600-0900 and 1500-1800, Monday through Friday.

c. ***<<The remainder of the SSSP should only contain the following areas applicable to the work performed on this project>>***

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Project-Specific Safety and Health Sections

25. Confined Space Entry

a. ***<<Company Name>>*** work on this project requires entry into and work in confined spaces. ***<<Company Name>>*** has enclosed an OSHA Compliant Confined Space Entry Program (Plan) that implements the requirements of (29 CFR 1910.146, 1910.268, and 1910.269), KNPR 1840.19, KSC Industrial Hygiene Program, KNPR 1820.4, KSC Respiratory Protection Program and KNPR 8715.3, KSC Safety Practices Procedural Requirements as ***<<appendix # >>*** to the project SSSP.

b. <<If the contract requires work in telecommunications manholes, identify here how your company will comply with the provisions of CFR 1910.268(o)>>

c. <<If the contract requires work in electrical and/or communications manholes, the following statement will be included in the plan>>

<<Company Name>> will notify and obtain approval from the Power Coordinator (321-867-7300) and from Communications Control (321-867-4141) respectively prior to performing any work.

d. <<As a part of its Confined Space Entry Plan, the contractor will describe its approach to implementing the requirements of the OSHA Permit-Entry Confined Space regulation. The plan will address:

(1) Employee training

(2) Site plan showing locations of confined spaces under scope of contracted work

(3) Pre-entry hazard assessment and entry requirements

(4) Approach to use of Government-provided services for atmospheric testing, or alternatively, the contractor's approach to performing atmospheric testing for confined space entry.

(5) Approach to coordinating confined space entry work with KSC Environmental Health, Fire Services, Power Coordinator, and Communications Control.

(6) Where the contractor will act as a controlling employer with operational control over the permit space during multiple employer entry, describe your approach to coordinate entry operations (for example, hazardous operations, required PPE, employee training, rescue, emergency services, and all other aspects of the entry) with each entrant's employer.>>

e. ***<<Company Name>>*** will perform their ***<<own atmospheric testing>> OR <<use the Government provided services including environmental health monitoring and consultation>> (identify which will be used)*** support for testing of atmospheres in confined spaces.

f. ***<<Company Name>>*** will ensure all water is pumped out of the confined space prior to entry checks.

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26. Cranes and Lifting Operations

a. ***<<Company Name>>*** will conduct all crane and lifting equipment operations and maintenance in compliance with manufacturer's recommendations, Subpart N of 29 CFR 1926, applicable ASME standards, and NASA-STD-8719.9, NASA Standard for Lifting Devices and Equipment.

b. ***<<Company Name>>*** will use only certified (licensed) and trained personnel to operate mobile cranes and other lifting equipment. Operator will be trained and certified by a recognized certification organization that normally performs this function. Our list of certified personnel and equipment they will be utilizing is as follows:

<<Employee>>	***<<Equipment Employee is Certified to Operate>>***
<<Employee>>	***<<Equipment Employee is Certified to Operate>>***
<<Employee>>	***<<Equipment Employee is Certified to Operate>>***
<<Employee>>	***<<Equipment Employee is Certified to Operate>>***

c. ***<<Company Name>>*** riggers are trained and certified in their discipline, and flagmen are trained in applicable crane or lifting equipment operation procedures.

d. All cranes and lifting equipment are certified for operational use by ***<<list appropriate authorizing agency>>.***

e. An operator will man the controls of any lifting device while a load is suspended and/or when the equipment is operational.

f. No personnel will perform work or be located under a suspended load at any time.

g. A daily, monthly, and annual equipment inspection is conducted and results documented and available at the jobsite. Cranes will be inspected by a competent person (cranes). These inspections will follow manufacturer's suggestions and include at a minimum the areas listed in chapter 5.4 of NASA-STD-8719.9.

h. ***<<Company Name>>*** maintains a documented system to track crane problems or discrepancies. Prior to an operation, the crane operator will review any previously noted problems or discrepancies to determine possible impact on the planned activity.

i. ***<<Company Name>>*** maintains the following documentation on the jobsite anytime a piece of lifting equipment is operational: Operator certification, equipment certification, inspection, and load test documentation.

j. Load charts for all cranes will be located in the crane cab whenever a crane is to be operated.

k. Hand signals to crane operators will be those prescribed by the applicable ANSI standard for the type of crane in use.

l. A pre-task briefing will be performed and documented prior to commencing crane operations. The briefing will include at a minimum:

(1) An overview of the task to be performed.

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(2) The methods used to accomplish the task.

(3) Who each member of the crew is and where they will be positioned.

(4) What task each member of the crew will perform.

(5) Who is in charge of the operation.

m. The working area around any lifting operation will be controlled by ***<<list means of control>>***. Only personnel essential to the lifting operation will be inside the controlled area. If the controlled area cannot be maintained, the lifting operation will be discontinued.

n. The site supervisor will be in overall charge of lifting operation on the jobsite and will ensure all personnel involved are instructed in the proper positioning, rigging, and moving to be done.

o. This person will ensure:

(1) The crane has met all its maintenance, test, and inspection requirements and is to be operated within its rated capacity and the operator is properly certified.

(2) The vicinity of the lift is controlled and the operator remains at the controls the entire time the load is suspended.

(3) The crane operator and signalmen have communications with each other. If communications are lost, the lifting operation will be immediately stopped.

(4) All personnel within the controlled lifting area are wearing the appropriate personal protective equipment (e.g., hardhat, safety shoes, and gloves).

(5) A pre-task briefing was performed and all personnel are knowledgeable of the operation to be performed, tasks to be done, route to be traveled, and safety considerations.

(6) At no time will any part of the crane or load pass within the designated minimum safe approach distance of an electrical power line unless the line is de-energized and visibly grounded on both sides of the area of possible contact.

p. All crane operations will comply with the NASA/KSC Adverse Weather requirements and this plan. When moving cranes, adhere to the crane manufacturers wind limits for both operations and positioning.

q. A written lift plan will be submitted and approved by the CO in consultation with the KSC Lifting Devices and Equipment Manager (LDEM) and KSC Institutional Safety Office (SA-E2) for all crane operations involving critical lifts, as defined in Appendix A of KNPR 8715.7.

r. Cranes will not be used to hoist employees on a personnel platform unless approved in advance by the CO in consultation with the KSC Lifting Devices and Equipment Manager (LDEM) and KSC Institutional Safety Office (SA-E2).

s. Cranes left outdoors will be secured by the operator when operations are complete. Cranes of any height will be lowered during the hours of darkness. If this is not feasible, the crane will be lit in accordance with Federal Aviation Administration (FAA) regulations.

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27. Demolition

a. ***<<Company Name>>*** will conduct all demolition operations in compliance with Subpart T to 29 CFR 1926.

b. Prior to permitting employees to start demolition operations, ***<<Company Name>>*** will have an engineering survey completed by a competent person (general) of the structure to determine the condition of the framing, floors, and walls, and possibility of unplanned collapse of any portion of the structure. Any adjacent structure where employees may be exposed will also be similarly checked. ***<<Company Name>>*** will submit this survey to the CO for review.

c. The demolition activities involve hazardous materials, such as silica, mold, or toxic substances regulated under 29 CFR 1926.1101 through 1152 ***<<list specific materials involved and remove the rest>>***. A plan for safe handling and containment of those hazardous materials will be approved and in place prior to beginning of the demolition ***(see also section 3.11, Hazardous Substances of this example document for specific additional plan requirements).*** The plan for handling/containment of all hazardous materials will be in full compliance with applicable Federal, State of Florida, NASA, and/or other authorized regulatory agencies current standards.

d. During demolition, continuing inspections by a competent person (general) will be made as the work progresses to detect hazards resulting from weakened or deteriorated floors, or walls, or loosened material. No employee will be permitted to work where such hazards exist until they are corrected by shoring, bracing, or other effective means.

e. If materials are to be dropped more than 20 feet to any point lying outside the exterior walls of the building, an enclosed chute of wood, or equivalent material, will be used. Chutes will be constructed and used in accordance with 29 CFR 1926.852.

f. When operations are not in progress, the area surrounding the discharge end of a chute will be securely closed off.

g. When debris is dropped through holes in the floor without the use of chutes, the area onto which the material is dropped will be completely enclosed with barricades not less than 42 inches high and not less than 6 feet back from the projected edge of the opening above. Signs warning of the hazard of falling materials will be posted at each level. Removal will not be permitted in this lower area until debris handling ceases above.

h. Where wall openings present a hazard of employees falling through, the opening will be protected to a height of approximately 42 inches.

i. All floor openings not used as material drops will be covered over with material substantial enough to support the weight of any load which may be imposed. The material will be properly secured to prevent its movement.

j. Employee entrances to multistory structures being demolished will be completely protected by sidewalk sheds or canopies, or both, providing protection from the face of the building for a minimum of 8 feet. All such canopies will be at least 2 feet wider than the building entrances or openings (1 foot wider on each side thereof) and will be capable of sustaining a load of 150 pounds per square foot.

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k. ***<<Company Name>>*** employees will only use stairways, passageways, and ladders, designated as means of access to the structure. All other access ways will be entirely closed at all times.

l. Walkways or ladders will be provided for employees to safely reach or leave any scaffold or wall.

m. Any structural member being dismembered will not be overstressed.

n. No workers will be permitted in any area which can be adversely affected by demolition operations when balling or clamming is being performed. Only those workers necessary for the performance of the operations will be permitted in this area at any other time.

28. Dive Operations (Commercial)

a. This section applies to diving and related support operations conducted in connection with this project. ***<<Company Name>>*** will conduct dive operations in accordance with 29 CFR 1910.401 through 440.

b. ***<<Company Name>>*** has developed a safe practices manual ***(see Appendix #)*** that will be maintained at the dive location for each dive team member. The safe practices manual contains a copy of CFR 1910.420 through 440, Commercial Dive Operations, the (OSHA) standard ***<<Company Name>>*** policies for implementing the requirements of the OSHA standard.

c. Each dive team member has the experience and training necessary to perform assigned tasks in a safe and healthful manner, the use of tools, equipment, and systems relevant to assigned tasks, techniques of the assigned diving mode, diving operations and emergency procedures.

d. All dive team members are trained in cardiopulmonary resuscitation and first aid (American Red Cross standard course or equivalent). Dive team members who are exposed to or control the exposure of others to hyperbaric conditions are trained in diving-related physics and physiology.

e. ***<<Site superintendent>>*** OR ***<<Designated person in charge>>*** **(list name of appropriate person)** will be at the dive location in charge of all aspects of the diving operation affecting the safety and health of dive team members. The designated person-in-charge has experience and training in the conduct of the assigned diving operation.

<u>Requirements to complete Prior to Diving</u>

<<Company Name>> will comply with the following requirements prior to each diving operation:

a. A list will be kept at the dive location of the telephone or call numbers of the following: An operational decompression chamber (if not at the dive location); accessible hospitals; available physicians; available means of transportation; the nearest U.S. Coast Guard Rescue Coordination Center.

b. First aid supplies, first aid kit appropriate for the diving operation and approved by a physician will be available at the dive location. An American Red Cross standard first aid handbook or equivalent, and a bag-type manual resuscitator with transparent mask and tubing will be available at the dive location.

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c. ***The planning of dive operations will include an operations hazard analysis that takes into account:***

(1) ***Surface and underwater conditions and hazards, Breathing gas supply (including reserves), thermal protection, diving equipment and systems, dive team assignments and physical fitness of dive team members (including any impairment known to the employer), repetitive dive designation or residual inert gas status of dive team members, decompression and treatment procedures (including altitude corrections), emergency procedures, hazardous activities.***

(2) ***Other activities in the vicinity which are likely to interfere with the diving operation.***

d. Prior to commencing dive operations, team members will be briefed on:

(1) The tasks to be undertaken.

(2) Safety procedures for the diving mode.

(3) Any unusual hazards or environmental conditions likely to affect the safety of the diving operation.

(4) Any modifications to operating procedures necessitated by the specific diving operation.

(5) Prior to making individual dive team member assignments, ***<<Company Name>>*** will:

(a) Inquire into the dive team member's current state of physical fitness

(b) Indicate to the dive team member the procedure for reporting physical problems or adverse physiological effects during and after the dive.

e. A standby diver will be available whenever a diver is in the water.

f. The breathing gas supply system including reserve breathing gas supplies, masks, helmets, thermal protection, and bell handling mechanism will be inspected prior to each dive ***(remove if non-applicable).***

g. When diving from surfaces other than vessels in areas capable of supporting marine traffic, a rigid replica of the international code flag "A" at least one meter in height will be displayed at the dive location in a manner which allows all-round visibility, and will be illuminated during night diving operations.

Procedures to be followed during-Dive Operations

a. The diver will be provided support for entering and exiting the water. The means for exiting the water will extend below the water surface. A means will be provided to assist injured divers from the water or into a bell.

b. An operational two-way voice communication system will be used during dive operations and to obtain emergency assistance.

c. Decompression, repetitive, and no-decompression tables (as appropriate) will be at the dive location. A depth-time profile, including when appropriate any breathing gas changes, will be maintained for each diver during the dive including decompression.

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d. Use of electrical tools, equipment, or explosives will be done in accordance with all applicable federal, state, and local regulations.

e. Dive termination and post-dive procedures will be done in accordance with 29 CFR 1910.422 and 423 respectively.

29. Electrical Safety

a. All electrical work will be performed in accordance with National Electric Code (NEC), National Fire Protection Association (NFPA), OSHA, and contract referenced documents.

<<The SSSP will include a project-specific electrical work job hazard analysis performed by a qualified safety professional.

Contractors performing work on or near Electric Power Generation, Transmission, and Distribution (such as Orsino Substation, C-5 Substation, the Emergency Power Plant, and overhead and underground 15 kilovolt (kV) power distribution systems) will provide a written program for such work as part of their SSSP that is compliant with the requirements of 29 CFR 1910.269; 29 CFR 1910.332 through 29 CFR 1910.334; and ANSI C2 (National Electrical Safety Code).

The electrical safety program specifically addressing the Article 130 requirements for any energized electrical work to be performed by written work permit only. This will include applicable hazard analyses and associated approach boundary and personal protective equipment (PPE) determinations.>>

b. Circuits will be placed in an electrically safe condition by de-energizing, applying lockout/tagout, and verifying lack of voltage using suitable test equipment prior to grounding or performing any work on electrical conductors or electrical circuits.

c. ***<<Company Name>>*** will complete and have approved an electrical system outage work permit for all required outages during the prosecution of work that affects utility systems, such as electrical, water, fire detection and protection systems, and air handling systems will require an electrical system outage work permit. Work will be scheduled to hold outages to a minimum. Request for utility outage permits will be made in writing to the CO at least 14 working days in advance of the time required. The request will include the system involved, area involved, approximate time of outage, and the nature of the work involved.

NOTE: Submittal of an outage request does not approve the outage or mean it will take place. Due to the nature of the operations at KSC, ***<<Company Name>>*** may not know until the day before the requested date if the outage will take place as scheduled. All outages will take place outside regular working hours.

d. Energized parts to which an employee might be exposed will be put into an electrically safe work condition before an employee works on or near them. ***<<Company Name>>*** will only request an exception when it can be demonstrated that de-energizing introduces additional or increased hazards or is infeasible due to equipment design or operational limitations.

e. If energized parts are not placed in an electrically safe work condition (i.e., due to increased or additional hazards or infeasibility), the work to be performed will be considered energized electrical work and will be performed under a written Energized Electrical Work Analysis & Authorization Permit Energized Electrical Work Permit only. Energized parts that operate at

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less than 50 volts to ground need not be de-energized if there will be no increased exposure to electrical burns or to explosion due to electric arcs.

f. If the exposed energized circuits are not de-energized, additional safety related work practices are to be implemented to protect employees who may be exposed to the electrical hazards involved. These work practices are documented in the project electrical JHA and specify actions that will protect employees against contact with energized circuit directly with any part of their body or indirectly through some other conductive object.

g. ***<<Company Name>>*** qualified person (electrical) will conduct a shock hazard analysis to determine the voltage to which personnel will be exposed, boundary requirements, and the personal protective equipment necessary in order to minimize the possibility of electric shock to personnel. Results of the shock hazard analysis are included in this SSSP and will be used to complete the electrical JHA.

h. ***<<Company Name>>*** qualified person (electrical) will conduct a flash hazard analysis in order to protect personnel from the possibility of being injured by an arc flash. The analysis will determine the flash protection boundary and the personal protective equipment that people within the flash protection boundary will use. Personnel working with, on, or around energized circuits will wear appropriate arc flash personal protective equipment as required by NFPA code 70E.

i. For energized work, the site supervisor will conduct a pre-work briefing and document what was covered and the employees who received the prior to starting work.

j. Work performed on or near live parts by qualified persons (electrical) related to tasks such as testing, troubleshooting, voltage measuring, replacing incandescent/florescent light bulbs etc., will be permitted to be performed without an energized electrical work permit, provided appropriate safe work practices and personal protective equipment is used. Employees who are exposed to energized electrical circuits for these activities will wear EH rated shoes or stand on nonconductive matting in addition to wearing the appropriate PPE.

k. The qualified electrical person will use test equipment to test the circuit elements and electrical parts of equipment to which employees will be exposed and will verify that the circuit elements and equipment parts are de-energized. The test will also determine if any energized condition exists as a result of inadvertently induced voltage or unrelated voltage backfeed even though specific parts of the circuit have been de-energized and presumed to be safe. If the circuit to be tested is over 600 volts, nominal, the test equipment will be checked for proper operation immediately before and after this test.

l. Prior to reenergizing equipment, the qualified electrical person will conduct tests and visual inspections, as necessary, to verify that all tools, electrical jumpers, shorts, grounds, and other such devices have been removed, so that the circuits and equipment can be safely energized.

m. Ground fault circuit interrupters (GFCIs) will be utilized on all temporary power. All extension cords will be heavy duty rated and used in conjunction with GFCIs.

30. Equipment

a. The list below represents ***<<Company Name>>*** list of all specialty or heavy equipment (contractor owned, leased, rented, etc.) proposed for use on the contract. ***<<Examples of***

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items on the list are forklifts, lulls, cranes, earth moving equipment, and other power industrial trucks.>>

1. **<<List Equipment Here>>**

2. **<<List Equipment Here>>**

3. **<<List Equipment Here>>**

b. All operators of equipment are trained. Documentation of training is submitted in accordance with the training and applicable equipment section of this document.

c. ***<<Company Name>>*** will ensure equipment has daily and manufacturer's recommended inspections performed.

d. The use of any tool, material, or equipment which is not in compliance with applicable regulatory requirements will be prohibited on the site. Defective equipment will be removed from service and/or tagged out using KSC Form 20-165 or an equivalent tag to render them inoperable.

31. Excavation

a. All excavation work will conform to the requirements set forth in 29 CFR 1926 Subpart P.

b. ***<<Company Name>>*** will obtain an approved Excavation Notification Worksheet, Dig Permit (KSC Form 28-812NS) anytime any ground is dug into for any reason at any depth. Permits will remain on site for review for the duration of the permit. Any deviations from the approved excavation routing will be approved in advance. Adherence to excavation permit conditions is mandatory.

c. Workers will hand dig all excavations within 24 inches in all directions of a marked located utility line. Workers will also hand dig a pilot trench when called for on the dig permit for all underground utility work along the centerline of new trenches and down to the elevation of the bottom of the new utility.

d. The pilot trench will be carefully opened to determine the existence and location, if any, of existing active underground utilities which will be protected and kept in service. Machine excavation may proceed only after it is assured that the pilot trench has satisfactorily located and protected all such existing utilities.

e. Protection will be provided to protect employees from loose rock or soil that could pose a hazard by falling or rolling from an excavated face. Material and equipment will be kept at least 2 feet from the edge of excavations.

f. Daily inspections of excavations, the adjacent areas, and protective systems will be made by a competent person (excavation) for evidence of a situation that could result in possible cave ins, indications of failure of protective systems, hazardous atmosphere, or other hazardous conditions. A record of this inspection will be maintained at the jobsite.

g. A stairway, ladder, ramp, or other safe means of egress will be located in trench excavations that are 4 feet or more in depth, so as to require no more than 25 feet of lateral travel. All excavations 5 feet or greater in depth will have adequate shoring or be sloped at an angle not steeper than 1.5 to 1 vertical. Soil on KSC is classified as type C.

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h. If any obstructions, interferences, or unforeseen conditions are encountered (e.g., concrete thrust blocks, direct buried cable below grade, or unidentified utilities), excavations will cease and the Project Construction Inspector and/or COTR will be notified.

i. A thrust block is a configured piece of concrete located underground at water and sewer utility piping to prevent movement from line pressure fluctuations. When excavating soil at locations known to contain buried water or sewer lines, DO NOT remove any buried concrete without prior approval.

32. Fall Protection

***<<Elements required in a site-specific fall protection plan are contained in Figure 8.6: Sample Site-Specific Fall Protection Plan in KNPR 8715.3,* KSC Safety Practices Procedural Requirements. >>**

33. Fire Protection and Prevention

<<Address here the requirements found in section 3.0 of this document: KSC Fire Prevention for Contractors Handbook.>>

34. Hand and Power Tools

a. All portable power tools, whether company-furnished or employee-owned, will be maintained in a safe condition and will meet all applicable ANSI and/or OSHA Standards (29 CFR 1926 Subpart I) for design and use.

b. Tool guards will be in place and functional at all times when in use.

c. All electric tools will be double insulated or grounded.

d. Extension cords used for portable power tools will be ground fault (GFCI) protected unless the cord is plugged into a ground fault protected outlet.

e. Powder actuated tools will only be operated by employees who have been trained to operate these tools and verified by the Site supervisor(s) as trained. ***<<Identify here the standard means of identifying the powder levels of loads used.>>***

f. Loads (ammunition) will be stored in locked metal containers (limited to 1000 rounds unless stored in an approved explosive storage area), and only the quantity necessary for the specific job will be taken to the jobsite. Keep all explosive materials away from heat sources.

g. Ammunition will remain in the personal control of the authorized operator. It will never be left unattended at the jobsite. Each authorized operator is personally responsible to keep positive control on all ammunition until unused portions are returned to the locked containers in the storage area. Do not leave ammunition in vehicles for extended periods of time.

35. Hazardous Substances

Asbestos Containing Material (ACM):

<<The contractor will provide a written asbestos management and abatement implementation plan as an attachment to the SSSP.

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As a part of its asbestos abatement plan, the contractor will describe their approach to implementing the requirements of 29 CFR 1926.1101, the Code of Federal Regulations (CFR) National Emission Standards for Hazardous Air Pollutants (NESHAP) 40 CFR 61 Subpart M, the Florida Administrative Code (FAC) requirements FAC 62-257, and the Florida Statute (F.S.) 469 Asbestos Abatement and F.S. 376.60 Asbestos Removal Program Inspection and Notification Fee. The plan will at a minimum address:

a. The scope of work to be performed, including work locations, and site plans showing containments, regulated areas, safety placards/notices and sign locations.

b. Verification of all required asbestos work licensing.

c. Method(s) of handling, packaging, labeling, and disposing of asbestos containing materials (ACM).

d. Pre-work hazard assessment and description of engineering controls, work practices, and selection of PPE.

e. Employee training.

f. Plan for project and employee exposure monitoring.

g. Approach to coordinating abatement planning with KSC Environmental Health, Fire Services, and any resident government or contractor organization.

h. Approach to coordinating pre-work containment inspections and post abatement clearance with KSC Environmental Health.>>

Steel Structure Maintenance (Abrasive Blasting / Surface Preparation / Spray Painting):

<<The contractor will provide a written Toxic Metal Health and Safety plan as an attachment to the SSSP.

As a part of its Toxic Metal Health and Safety plan, the contractor will describe its approach to implementing the requirements of 29 CFR 1926.62 and 1926.1101 – 1152, as applicable. The plan will address:

a. Employee training.

b. The scope of work to be performed, including work locations and site plans, showing containments, regulated areas, safety placards/notices and sign locations.

c. Pre-work hazard assessment and description of engineering controls, work practices, and selection of PPE. Include negative hazard assessments and objective data for exemption from monitoring requirements, if applicable.

d. Plan for project and employee exposure monitoring as well as contamination (emissions) control measures (i.e., protecting government personnel / equipment or doffing of protective clothing).

e. Approach to coordinating pre-work containment inspection with KSC Environmental Health.>>

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Concrete and Masonry Work Involving Exposure to Silica Dusts

<<When work requirements have a potential for producing silica dust from drilling, grinding or mechanically abrading concrete and mortar, the contractor will describe its approach to manage silica dust exposure hazards as a part of its SSSP. The description will at a minimum include:

a. The scope of work to be performed, including work locations, site plans, and controlled work areas, safety placards/notices and sign locations.

b. Pre-work hazard assessment and description of engineering controls, work practices, and selection of PPE.

c. Plan for project and employee exposure monitoring.>>

36. Hearing Loss Prevention and Hazardous Noise

<<When work requirements have a potential for exposure to hazardous noise, the contractor will describe its approach to manage noise exposure hazards as a part of its SSSP. The description will at a minimum include:

a. Approach to implementing the requirements of the OSHA noise standard and KSC noise exposure limits.

b. Employee training and education regarding noise hazards and protection measures.

c. The scope of work to be performed, including noise hazard sources, safety placards/notices and sign locations.

d. Pre-work hazard assessment and description of engineering controls, work practices, and selection of PPE.

e. Plan for project and employee exposure monitoring.>>

f. If high noise may impact resident workers, describe plans to eliminate and/or minimize the effects on these adjacent workers.

37. Hot Work Permits

a. ***<<Company Name>>*** will obtain a KSC Hot Work Permit(s) from Kennedy Fire Services prior to any:

(1) Hot work for roof construction or repair using a “torch down” method (KSC Form 2-270).

(2) Hot work for demolition, modification, or new construction that includes welding, cutting, burning, open flame and heat producing operations, soldering, heat sealing, or any spark producing operation (e.g., grinding). (KSC Form 2-271)

(3) Hot work for roof construction or repair using “tar kettle” operations (KSC Form 2-272).

b. ***<<Company Name>>*** will work with the project COTR to obtain all applicable hot work permits.

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c. ***<<Company Name>>*** understands that the Fire Inspector who issues the permit will perform an onsite inspection and briefing prior to issuing the permit and will inspect the site periodically to ensure hot work requirements are being met and prior to any permit renewal.

d. ***<<Company Name>>*** will comply with all requirements identified on the permit and have the permit posted in a visible and accessible area on the jobsite to employees and inspectors for the duration of operations for which it was issued.

e. All combustible material will be cleared from the hot work area. Fire resistant guards, curtains, or shields will be used where appropriate.

f. All combustibles (trash, debris, wood, etc.) will be removed daily.

g. All flammable liquids and propane cylinders will be removed from roofs at the end of each work day.

h. Flammable gas containers will be of the approved safety type with spark arresting screen in filler neck, cap and vent cap intact, and an attached HMIS label with correct information.

i. The fire watch (where applicable by permit) will be familiar with fire watch duties and will be trained to operate the approved fire extinguishers.

j. A fire watch will monitor all areas where hot work has been performed for the minimum time specified in the permit after hot work is stopped. This includes breaks, lunch, and end of shift.

k. ***<<Company Name>>*** will maintain onsite the type and number of fire extinguishers identified in the permit that is required for the type of work and size of the area of work being performed.

38. Industrial Hygiene

a. ***<<Describe your approach that provides employees with an environment in which occupational health hazards are identified, evaluated, and eliminated or controlled in such a manner that personnel do not suffer adverse health effects as a result of their employment. The description will include at a minimum:***

(1) Method(s) used to conduct workplace inspections and review of operations / procedures to identify hazardous material and physical agents.

(2) Method(s) to ensure MSDS for materials used in the workplace are reviewed to identify health hazards, symptoms of exposure, and requirements for safe use of the material.

(3) A job hazard analysis (JHA) of tasks that require use of hazardous materials and physical agents. The JHA must identify applicable administrative policy such as required training, access controls, engineering such as special ventilation, work practice controls such as housekeeping, and PPE such as use of respiratory protection) needed to perform the task safely.

b. Personnel exposures to chemical and/or physical agents will at all times be restricted to levels below regulated exposure limits and as low as reasonably achievable.

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39. Ladders and Stairways

a. ***<<Company Name>>*** will ensure that each employee using ladders is trained on recognizing the fall hazards, proper placement, use and construction of, maximum intended load and the standards of 29 CFR 1926.1052 and 1053 as applicable (see training certifications).

b. Ladders

(1) Ladders will be inspected daily and prior to each use and any found to have structural defects will be “tagged out” and remove from the jobsite.

(2) Ladders including job made ladders will be compliant with 29 CFR 1926.1053.

(3) Employees working on ladders will always maintain three points of contact with the ladder, (e.g., one hand and two feet, two hands and one foot). Employees also will keep the belt buckle or the centerline of the body between the rails and will not overreach, put one foot on the ladder and the other on an adjacent surface or object, or carry material, equipment, or tools by hand up or down a ladder.

(4) When selecting ladders, the job application will always be considered, (e.g., use fiberglass ladders for electrical work, Type I ladders for heavy duty work).

(5) Ensure stepladders are used in the fully opened and locked position and that personnel do not stand, sit, or work on or above the last two steps from the top of a stepladder.

c. Stairs

(1) Stairs will be provided for access to office trailers or other transportable work locations.

(2) Riser height and tread width will be uniform throughout any flight of stairs including any foundation structure used as one or more treads of the stairs.

(3) All treads will be slip resistant and the nosing will be of non-slip finish.

(4) All parts will be free of hazardous projections such as protruding nails.

(5) Stairs with 4 or more risers or more than 30 inches in height will be equipped with at least 1 handrail and 1 stair rail system along each unprotected side or edge.

(6) Handrails and top rails will be capable of withstanding a force of 200 pounds in any downward or outward direction along the top edge.

(7) Midrails, screens, mesh, or equivalent structural members will be provided between the top rail and the stairway steps.

(8) Stairway platforms will be no less than the width of a stairway and a minimum of 30 inches in length measured in the direction of travel.

(9) Standard railings and midrails will be provided on the open sides of all exposed stairways and stair platforms.

(10) Handrails and midrails will be provided on at least one side of closed stairways preferably

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on the right side descending.

40. Lockout / Tagout (Control of Hazardous Energy)

a. ***<<Company Name>>*** will perform all Lockout/Tagout (LOTO) actions in accordance with 29 CFR 1910.147 and KNPR 8715.3, section 8.5.

b. ***<<Company Name>>*** will evaluate the system or equipment and develop written LOTO procedures performing work requiring LOTO on NASA systems/equipment. The lockout procedures will include at a minimum:

(1) A specific statement of the intended use of the control procedure.

(2) Notification of all affected personnel who work in the area where LOTO is in effect that power is being removed.

(3) Specific procedural steps in sequential order for shutting down the system/equipment energy sources (energy isolation device). An orderly shutdown must be utilized to avoid any increase in hazards to employees as a result of the energy termination.

(4) Identify all the LOTO devices that will be used energy isolation device where they will be applied ensuring all isolation (de-energized) from the relevant energy source(s).

(5) Identify the employee(s) that will affix the LOTO devices for each energy isolating device.

(6) LOTO devices will be affixed in such a manner as to clearly indicate to all personnel that the operation or movement of energy-isolating devices from a de-energized (safe or off) position is prohibited. Where the tag cannot be affixed directly to the energy isolation device it will be placed as close as safely possible and clearly obvious to personnel which energy isolation device it is in use for.

(7) All potentially hazardous stored or residual energy will be relieved, disconnected, restrained, and otherwise rendered safe following of the application of LOTO devices to each energy-isolating device.

(8) Prior to starting work an authorized employee will verify a “zero energy state” (all areas isolated and de-energized).

(9) If there is the potential for the accumulation of stored energy to a hazardous level, a continuous verification process of energy isolation will be continued until the completion of the activity or that the hazard no longer exists.

c. Energy restoration procedure (only authorized personnel will perform)

(1) Inspect the work area to ensure all nonessential items have been removed and to ensure systems/equipment are operationally intact.

(2) Check work area to ensure all personnel are safety positioned or removed from the area.

(3) After LOTO devices are removed and prior to systems/equipment start, affected employees will be notified that the lockout/tagout devices have been removed.

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d. The written LOTO procedure(s) will be coordinated with the project COTR and KSC Institutional Safety Office (SA-E2) prior to any work being done.

e. Equipment capable of being locked out will be locked out prior to performing maintenance or any other activity potentially putting personnel at risk.

f. If equipment lockout cannot be accomplished, the actions identified in the Electrical Safety section of this document apply.

g. ***<<Company Name>>*** will coordinate all facility outages through the project COTR.

h. When LOTO is required for more than one employee working on a system or equipment, each employee will place a lock and tag (multiple lockout device) on the equipment. When the work is completed, locks and tags will be removed and the equipment re-energized in accordance with the written lockout/tagout procedure.

i. ***<<Company Name>>*** will use KSC Form 20-195, KSC Lockout/Tagout Tag to control hazardous energy. The tags will be obtained from the project Safety Specialist. This tag is the only tag authorized for lockout/tagout on KSC. The lockout locks used by ***<<Company Name>>*** will only be used for that purpose.

j. ***<<Company Name>>*** will be responsible for providing any additional equipment (multiple lockout devices, valve covers, chain lengths, etc.) or any other compliant device for lockout of a hazardous energy source.

k. ***<<Company Name>>*** will document tag use on the Lockout/Tagout Control Record (KSC Form 28-915). These forms are available from the Safety Specialist assigned to the contract.

l. A LOTO Control Record will be used to document use of tags. Tags will be used only once then destroyed. At the end of the contract work, ***<<Company Name>>*** will return any unused tags and a copy of the completed LOTO Control Record to the project Safety Specialist.

m. No employee will affix or remove the LOTO device of another employee. A LOTO lock and/or tag will only be removed by the authorized employee that installed it. However, when circumstances dictate no other alternative, the following procedures will be followed and documented by the site supervisor:

(1) The site supervisor or a member of management will be the minimum level authorized to remove a subordinate's LOTO lock and tag. The site supervisor or manager removing the LOTO lock and tag will personally ensure the energizing of the system does not pose a hazard to other employees.

(2) Determine the location of the authorized employee that installed the LOTO lock and tag. Call that employee, at home if necessary. Explain the seriousness of the requirement to remove their LOTO lock and tag. If possible, have the authorized employee return to the jobsite and remove the device.

(3) If the employee can be contacted but is unable to return to the jobsite, notify the employee of the intent and rationale to forcibly remove their LOTO lock and tag. If the employee cannot be contacted, they <u>will</u> be informed of the lock removal <u>immediately</u> upon returning to work for the next scheduled shift.

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(4) Follow the documented procedure sequence of steps for removal of a LOTO lock and tag that the authorized employee that installed it would have used.

(5) The authorized employee's supervisor that forcibly removed the lock will sign the LOTO log acknowledging the actions taken to remove the LOTO lock and tag. Additionally, the log will be annotated that energy has been restored to the system.

n. The following will be accomplished before beginning a lockout/tagout operation:

(1) Ensure a pre-operations briefing has been performed and the required closeout documentation has been completed and documented.

(2) Ensure all personnel are familiar with the worksite. Conduct a dry run walk through, as necessary.

(3) The presence of a tag on a system or component does not in itself guarantee the equipment is de-energized, but indicates only that the tagged disconnect is not to be operated or reconnected to the energy source. Before performing any work, on electrical systems, employees will use an appropriate test instrument to ensure the circuit is de-energized.

(4) Under no circumstances will a Danger "Do Not Operate" Lockout/Tagout tag be left on normally operating systems or equipment. All tags and locks will be removed prior to restoring power to any systems or equipment. Equipment in test will remain tagged out until ready for return to service.

(5) Tags will be completely filled out using a permanent marker. All entries will be legible.

(6) Prior to installing or removing a Danger "Do Not Operate" Lockout/Tagout tag across an interface of another government/contractor organization, approval will be received from the organization having responsibility for the interface.

(7) Each affected employee will be instructed in the purpose and use of the energy control procedure being utilized.

o. ***<<Company Name>>*** will ensure employees are trained in and aware of lockout/tagout requirements as set forth in applicable OSHA standards, KNPR 8715.3, and this document.

Documentation of employee lockout/tagout training is provided (see Training Certification section).

p. ***<<Company Name>>*** will ensure specific procedures and notification requirements are conducted with the Institutional Support Contractor (ISC) when work includes Electrical Power Transmission/Distribution System Switches. These system switches will not be operated or LOTO performed without specific authorization by the ISC Power Coordinator.

41. Personal Protective Equipment (PPE)

a. ***<<Company Name>>*** will take all necessary precautions to protect employees and will provide at employer's expense any personnel protective devices and safety equipment required.

b. ***<<Company Name>>*** will assess the worksite to determine if hazards are present which would necessitate the use of PPE. Hard hats, eye protection, safety shoes, respiratory protection, hearing protection, etc. will be used as required.

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c. PPE will be used only when other health hazard controls, such as engineering controls, have been shown to be infeasible or inadequate in eliminating or controlling the health hazard.

d. ***<<Company Name>>*** will verify the required written job hazard analysis(or analyses) has/have been performed and that any PPE identified as required based on the analysis is listed.

e. ***<<Company Name>>*** is responsible to ensure that any PPE required is provided, used, and maintained in a sanitary and reliable condition. This includes any employee-owned PPE.

f. Personal Protective Equipment will be stored in a manner to prevent PPE from damage, dust, sunlight, chemical contamination, or extreme temperatures.

g. ***<<Company Name>>*** will ensure that all employees on the job have been trained in the appropriate use of any required personal protective equipment.

h. ***<<Company Name>>*** will document that all employees have received and understood the PPE training provided.

i. Employees will wear approved hard hats as required in the performance of their work. Type G (replaced type A) or E (replaced type B) hardhats as applicable will be used. Type C hardhats will not be used on construction sites at KSC.

j. Approved industrial type safety glasses with side shields meeting the requirements of ANSI Z87.1 will be worn by personnel applicable to the task being performed.

k. ***<<Company Name>>*** highly recommends that all employees wear safety toed shoes or boots. Safety toe work shoes may be required depending on the type of work being performed. When there is a potential for injury to the feet, safety type shoes will be worn.

l. Gloves or other acceptable protection appropriate to the task being performed will be worn anytime there is a potential for hand injury. Personnel who perform tasks with knives will wear a non-cut glove (e.g., Kevlar type).

m. Gloves will not be worn around revolving, rotating, or moving tools or equipment where the glove fabric/material might become caught in the movement of tool blades, discs, or mechanical parts.

n. Fire retardant clothing will be worn for designated tasks that present a potential for arc flash, flash fire, or explosion.

o. When welding, a welding hood with a number 10-12 lens will be worn. Welders on site will wear a hardhat beneath their welding hoods.

42. Process Safety Management

a. ***<<Company Name>>*** employees, when working in areas covered by the OSHA Process Safety Management (PSM) Standard, will receive an employee awareness briefing on PSM prior to any work occurring.

b. ***<<Company Name>>*** will inform all employees of the known potential fire, explosion, or toxic release hazards associated with a facility in which the contract work is to be performed.

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c. ***<<Company Name>>*** employees will be briefed on the applicable provisions of the facility emergency action plan. This will be accomplished by a facility safety briefing prior to the commencement of work.

d. ***<<Company Name>>*** will ensure that any new employees brought to the jobsite receive facility safety training prior to entering designated process areas.

e. The project supervisor will ensure that all subcontractor employees follow the safety rules of the facility including all safe work practices.

f. The project supervisor will inform the project CO, COTR, and assigned Safety Specialist of any unique hazards to the facility presented by the contractor's work, or of facility hazards found during the contractor's work.

43. Radiation Protection

<<Describe your approach to complying with the requirements of KNPR 1860.1 and/or 1860.2, as applicable. As a part of your description, include:

a. A list of sources of ionizing and/or non-ionizing radiation.

b. Coordination of source Use/Authorizations with the KSC Radiation Safety Officer.

c. Implementation of safe use requirements described in applicable Use/Authorizations.

NOTE: This is applicable if the contract involves the use of ionizing or non-ionizing radiation producing equipment, devices, materials, or operations such as radiographic projectors, lasers, radiofrequency (RF)/microwave transmitters, XRF (X-ray fluorescent) detection systems, or radioactive materials. Contractors not involved in these activities should enter "N/A" under this section heading. ***>>***

44. Respiratory Protection

<<Describe your approach to complying with the requirements of the OSHA respiratory protection program (29 CFR 1910.134).

a. Include assessment of hazardous operations or processes that require use of respiratory protection PPE and how selected the respirators are to be used.

b. Define exposure monitoring plan in accordance with the applicable requirements of 29 CFR 1926.1000 and demonstrate the proper selection of respiratory PPE.

c. Identify that records will be maintained at the worksite and will be available for government inspection.

d. Define plans for use of KSC facility breathing air systems (d. through g., as applicable).

e. Define approach for ensuring that connectors used in contractor-supplied breathing air systems are incompatible with connectors present on either KSC gas systems or on contractor supplied systems that are used to supply non-respirable gases.

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f. Include written certifications to show the contractor-provided breathing air system have been recently inspected and meet Grade D breathing air standards. Alternately, discuss approach for on-site testing of contractor-supplied breathing air by the Government.

g. Explain approach to tag or label connector ends of all lines and flexible hoses of contractor-provided breathing air or non-respirable gas distribution systems. The tags or labels will clearly identify the contents of the lines or hose.>>

45. Rollover Protection for Mobile Equipment

a. Rollover protection devices and seatbelts will be in place on all special purpose equipment at all times. Equipment includes crawler and rubber tired tractors, with or without attachments, such as front end loaders, blades, self propelled earth movers, including pan scrapers, bottom dumps, side dumps, rollers, and graders.

b. Special purpose equipment without rollover protection devices will not be allowed on the construction site.

c. Seatbelts will be utilized on any equipment that is in operation to include when in transit from one location to another on or off KSC.

46. Scaffolding

a. ***<<Employee Name>>*** is ***<<Company Name>>***'s designated competent person (scaffolding) for the erection and inspection of any scaffolding systems on this project.

b. No scaffolding will be erected, moved, dismantled, or altered except under the supervision of the competent person (scaffolding).

c. All scaffolds and scaffold components to be used are designed to support at least four times the maximum intended load.

d. Scaffolds will be inspected for visible defects by the competent person (scaffold) before each work shift and after any occurrence which could affect the scaffold's structural integrity. Scaffold users will confirm that a competent person (scaffold) has inspected the scaffolding during that work shift before they access the scaffolding.

e. The inspection will be documented and available to employees that access the scaffold. ***<<A recommended documentation process includes a tag attached to the scaffold that shows the inspector's name and date/time of each inspection.>>***

f. Guardrails and toe boards will be installed on all open sides and ends of platforms more than four feet above the ground or floor. All planking used is scaffold grade, or equivalent.

g. Scaffolds will not be moved while employees are on them unless the scaffold is a rolling tower type scaffold and ALL of the following conditions are met:

(1) The maximum scaffold height does not exceed twice the minimum base width/length.

(2) The surface on which the scaffold is being moved will be within three degrees of level, and free of pits, holes, and obstructions.

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(3) Employees on scaffold will be made aware of the move.

(4) Forces will be applied at points well below five feet above the base of the structure.

(5) No portion of the employee on the scaffold may extend outward beyond the wheels, casters, or other supports.

h. The minimum clearance from power lines for any scaffold component is as follows:

(1) Insulated Lines less than 300 volts	3 feet
(2) Insulated or non-insulated lines less than 50kV	10 feet
(3) Insulated or non-insulated lines greater than 50kV	10 feet + 4 inches (ea. kV > 50 kV)

i. Ladders or any makeshift device such as a box or barrel will not be used to increase the working level height of employees on the scaffold. All work will be accomplished from the scaffold deck.

j. No employee will climb the outside, the frame work, or cross braces of a scaffold. All scaffold access will be by ladder, walkway, ramp, or stairs.

k. No material will be stored on scaffold decks. Material staged on the scaffold deck for immediate installation or use that is not installed or used will be removed from the scaffold when work is stopped for the day.

l. All employees who perform work (scaffold user) while on a scaffold are trained in accordance with the requirements identified in 29 CFR 1926.454.

m. Documentation of employee scaffold user training is provided as part of the safety training section of this document.

47. Steel Erection

<<The contractor will have a Steel Erection Plan that includes a complete final copy of specifications and drawings issued for construction by the design PE and a preconstruction conference and site inspection held between the erector and the contractor and others such as the project engineer and fabricator to develop and review the site-specific erection plan.

a. A Steel Erection Plan will include site lay out drawings detailing at a minimum:

(1) Access roads into and through the jobsite for safe delivery and movement of cranes, derricks, trucks, and other necessary equipment, the material to be erected methods for vehicular and pedestrian control.

(2) A firm, properly graded, drained area, readily accessible to the work, with adequate space for safe storage of materials and safe operation of the erector's equipment.

b. A Steel Erection Plan will additionally include the following elements:

(1) Material deliveries, staging, storage.

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(2) Coordination with other trades and construction activities.

(3) Crane and derrick selection and placement.

(4) Site prep and path for overhead loads.

(5) A pre-plan of all overhead hoisting and operations.

(6) Critical lift plans including rigging supplies and equipment.

(7) An erection sequence including guying, bracing, bridging, anchor rod and anchor bolt mods, columns and beams (including joists and purlins), connections, decking, ornamental and miscellaneous iron.

(8) A description of the fall protection procedures that will be used in compliance with 29CFR 1926.761.

(9) Special procedures for hazardous non-routine tasks.

(10) A certification for each employee who has received training for performing steel erection operations as required by 29CFR 1926.761.

(11) A list of qualified and competent persons.

(12) A description of procedures that will be utilized in the event of rescue or emergency response.>>

Prior to commencement of steel erection, ***<<Company Name>>*** will ensure the following written notifications have been received:

a. Concrete footings, piers, and walls and the mortar in masonry piers and wall as attained, on the basis of an appropriate ASTM standard test method of field cured samples either 75 percent of the intended minimum compressive design strength of sufficient strength to support the loads imposed during steel erection.

b. Any repairs, replacements, and modification of the anchor bolts were conducted in accordance with 29 CFR, Subpart R, Steel Erection 1926.755(b)

48. Vehicle Mounted Elevating and Rotating Work Platforms

a. General Requirements for Elevating Work Platforms (EWP) (***include only applicable parts)***

(1) “Field Modification” of aerial lifts for uses other than those intended will be permitted only after the modification has been certified in writing by the manufacturer or by a nationally recognized testing laboratory in accordance with all applicable provisions of ANSI A92-2.

(2) If a request to evaluate a “field modification” is submitted to the manufacturer and a response is not received within a reasonable time period, a Professional Engineer will be assigned to evaluate the unit and calculate a process to modify the unit, adding the necessary fall protection devices necessary to safely use the lift.

(3) Boom and basket load limits specified by the manufacturer will not be exceeded.

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(4) Electrical tests performed on high voltage bucket trucks will be made in conformance with the requirements of ANSI A92-2.

(5) When operating aerial lifts under, over, by, or near energized electric power lines, the operator will not approach closer than the restricted approach boundary as defined in NFPA 70E, Table 130.2(C).

(6) A personal fall arrest system is required for all employees in any lift. This will include a body harness and lanyard with deceleration device affixed to the manufacturer-provided anchor point.

(7) If the employee must exit the lift, the employee will use the double lanyard system. The employee will remain attached to the lift with one lanyard, and will only exit the lift in accordance with the approved safety plan. Employees will not climb over the railings of the lift to exit the lift.

b. Operations

(1) Lift controls will be tested each day prior to use to determine that such controls are in safe working condition.

(2) Fall protection equipment will only be used by personnel that have been properly trained (see training certification). Fall protection equipment will be inspected prior to each use.

(3) Attaching fall arrest or positioning lanyards to an adjacent pole, structure, or equipment while working from an aerial lift will not be permitted.

(4) Employees will always stand firmly on the floor of the basket and will not sit or climb on the railings or edge of the basket or use planks, ladders, or other devices for a work position.

(5) The brakes will be set and outriggers, when required, will be positioned on pads or a solid surface.

(6) Wheel chocks will be installed before using an aerial lift on an incline.

(7) An aerial lift truck will not be moved when the boom is elevated in a working position with employees in the basket.

(8) Articulating boom and extensible boom platforms, primarily designed as personnel carriers, will have both platform (upper) and lower controls. Controls will be plainly marked as to their function. Lower level controls will not be operated unless permission has been obtained from the employee in the lift, except in case of emergency.

c. Work Practices

(1) Employees will keep all parts of the body inside the platform during raising, lowering, and positioning. This provision does not apply to an occupant of the platform performing the duties of a signal person.

(2) Employees will always stand firmly on the floor of the basket and will not sit or climb on the edge or railings of the basket or use planks, ladders, or other devices to gain additional elevation or for a work position.

d. Inspection and Maintenance

RELEASED - Printed documents may be obsolete; validate prior to use.

(1) Vehicle-mounted elevating and rotating work platforms will be inspected daily or each shift and will not be placed in service if the inspection shows any condition adversely affecting the safety of the vehicle. The following items will be inspected:

(a) Operating controls and associated mechanisms for conditions interfering with proper operation.

(b) Visual and audible safety devices for malfunction.

(c) Hydraulic or pneumatic systems for observable deterioration or excessive leakage.

(d) Fiberglass and other insulating components for visible damage or contamination.

(e) Missing or illegible operational and instructional markings.

(f) Electrical systems of/or related to the aerial device for malfunction, signs of excessive deterioration, dirt and moisture accumulation.

(g) Visual inspection of bolts, pins, and other fasteners for loose, deformed, or missing fasteners and other locking devices.

(2) Any suspected items will be carefully examined or tested and a determination made by a qualified person as to whether they constitute a safety hazard. All unsafe items will be replaced or repaired before use.

(3) Where vehicle mounted elevating and rotating work platforms are used daily on more than one shift, they will be examined at the beginning of each shift and if defects are found they will be immediately reported and corrected.

(4) Inspections will be documented, signed, and kept with the equipment at the worksite.

(5) If operators change during the same shift, the new operator will review the inspection document and initial it if the status of the vehicle did not change.

e. Training Requirements

(1) Only properly trained employees will operate an aerial lift (see training certifications).

(2) Training in fall protection equipment is required before operating in an aerial lift.

49. Welding and Cutting Operations

a. All welding and cutting operations will be conducted in accordance with Occupational Safety and Health Administration 29 CFR 1926 Subpart J, KSC Fire Prevention Procedures for Contractors, The National Fire Protection Association 51B.

b. Only employees properly trained and certified to operate welding and torch equipment will operate such equipment.

c. A KSC Hot Work Permit(s) will be obtained from Kennedy Fire Services prior to any hot work for demolition, modification, or new construction that includes welding, cutting, burning, open flame and heat producing operations, soldering, heat sealing, or any spark producing operation (e.g., grinding). (KSC Form 2-271)

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d. The contractor will ensure flammable materials are at least 50 feet and combustibles 35 feet from welding operation. Exceptions are only authorized when approved by the KSC Fire Inspector when:

(1) The flammable and combustible materials cannot be relocated.

(2) The work cannot be accomplished by any other means.

(3) The flammable and combustible materials are protected by the use of welding blankets or other fire inspector approved methods.

e. Welding and cutting operations will not be conducted in the vicinity of flammable liquids, gases, vapors, or oxygen enriched atmospheres.

f. Prior to any torch cutting/welding on any painted surface, the coating will be removed a minimum of 4 inches in each direction from the cut/weld point or personal protective equipment requirements in OSHA standard 29 CFR 1926.62 and 1926.354 must be complied with.

g. All work will be properly shielded from observation of the bare arc by adjacent or passing personnel.

h. Arc welders will conduct inspections daily before beginning operations to ensure their equipment is clear of defects and safe to use and will report any defects to supervision.

i. All portable cylinders used for storage and transportation of compressed gasses will be constructed and maintained in accordance with the regulations of the U.S. Department of Transportation.

j. Cylinders will be legibly marked with either the chemical or trade name of the gas contained. Cylinder labeling/marking will be on the shoulder of the cylinder (***or list other means if this is not practical)*** and marked by a means which is not easily removed.

k. Compressed gas cylinders will be equipped with valves and/or connections that comply with ANSI requirements.

l. Acetylene is flammable and highly explosive when mixed with air. As such, it will be handled and stored safely as follows:

(1) Acetylene will be stored in a vertical position.

(2) Never use acetylene at a pressure higher than 15 psig.

(3) Where cylinders have been lying in a horizontal position, they will stand in an upright position for at least two hours prior to use.

m. Oxygen cylinders in storage will be separated from fuel gas cylinders or other combustible materials a minimum distance of 20 feet or by a non combustible one half hour rated fire resistant barrier at least 5 feet tall.

n. Cylinders will be placed in storage when there is no reasonable anticipation of use within a 24 hour period.

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o. Cylinders in use or transport will be stored in an upright position and secured by chain or bracket so as to keep them from falling.

p. When transporting cylinders by a crane or derrick, a cradle, boat, or suitable platform will be used. Slings, chokers, ropes, or electric magnets will not be used for this purpose.

q. Valve protection caps will always be in place when not in use or interconnected. Cylinders will not be dropped, struck, handled roughly, or permitted to strike each other violently.

r. Valve caps will be used to protect valves from damage and not used as a lifting device. Valve protection caps will be installed before moving the cylinder unless the cylinder is secured on a special truck.

50. Working over or Near Water

a. A serviceable United States Coast Guard (USCG) approved life vest or buoyant work vest will be worn by all employees who are required to work within six feet of an unprotected edge that is over or near water and there is a danger of drowning if an employee were to fall.

b. In addition to life or buoyant work vests, a throwable ring buoy with 90 feet of rope attached for emergency rescue will be maintained within 200 feet of the worksite.

c. The life/work vests and ring buoys will be inspected for defects that might alter their strength or buoyancy prior to and after each use. Defective equipment will be discarded and replaced immediately.

d. A rescue skiff will be immediately available (able to perform rescue within four minutes of the employee entering the water) in the water or adjacent to the work area to assist in emergency rescue.

51. Work Zone Maintenance of Traffic (MOT)

a. Work on this project will include work that will be accomplished on or within 15 feet of the roadway. A work zone safety Management of Traffic (MOT) plan is in accordance with pre-designed plans found in FDOT Design Standard for Traffic Control through Work Zones; Index 600. All MOT planning and implementation will be done in accordance with Florida Department of Transportation standards.

b. All employees working within 15 feet of a roadway or street will wear reflective vests compliant with ANSI/ISEA 107 – 2004 Class 2 High-Visibility Safety Apparel. Class 3 is required for flaggers performing work at night.

c. ***<<Company Name>>*** person managing traffic control set up is trained to the intermediate or advanced MOT level. The Intermediate/Advanced trained MOT person will verify/ensure the control zone is correctly set up prior to the start of each work day.

d. Only trained flagmen will be used to control traffic through work zones. The flagman will have no other duties assigned while the traffic control zone is established.

e. Training certification is included in the training section of this SSSP.

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ATTACHMENT B: SSSP SECTION REQUIREMENTS CHECKLIST

SITE-SPECIFIC SAFETY & HEALTH PLAN REQUIREMENTS CHECKLIST (MANDATORY)	YES	NO
General Information	X	
Voluntary Protection Program Policy	X	
Contractor Employee Training	X	
Accident / Incident (Mishap / Class Call) Reporting	X	
Weather Policy	X	
Clothing	X	
Construction Site Safety	X	
Controlled Areas	X	
Drinking Water	X	
Evacuation (Facility or Area)	X	
First Aid & Medical	X	
Hazard Communications	X	
Heat Stress	X	
Housekeeping	X	
Inspections (Contractor Worksite)	X	
Inspections (KSC Safety Representative)	X	
Job Hazard Analysis	X	
Maximum Work Hour Policy	X	
Pre-Task Meetings	X	
Safety Meetings	X	
Safety Systems (Permanently Installed)	X	
Sanitary Condition and Facilities	X	
Temporary Structures, Trailers and Work Areas	X	
Vehicle Operations	X	

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SITE-SPECIFIC SAFETY & HEALTH PLAN REQUIREMENTS CHECKLIST (PROJECT SPECIFIC)	YES	NO
Confined Space Entry (Permit Required and Non-Permitted)		
Cranes and Lifting Operations		
Demolition		
Dive Operations		
Electrical Safety		
Equipment		
Excavation		
Fall Protection		
Fire Protection and Prevention		
Hand and Power Tools		
Hazardous Substances (Working With or Removing)		
Hearing Loss Prevention and Hazardous Noise		
Hot Work Permits (ID Type:)		
Industrial Hygiene		
Ladders and Stairways		
Lockout / Tagout (Control of Hazardous Energy)		
Personal Protective Equipment (PPE)		
Process Safety Management		
Radiation Protection		
Respiratory Protection		
Rollover Protection for Mobile Equipment		
Scaffolding		
Steel Erection		
Vehicle Mounted Elevating and Rotating Work Platforms		
Welding and Cutting Operations		
Working Over or Near Water		
Work Zone Maintenance of Traffic (MOT)		

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ATTACHMENT C: KSC FIRE PREVENTION PROCEDURES FOR CONTRACTORS

Kennedy Space Center
Fire Prevention Procedures
For Contractors

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EMERGENCY REPORTING

All Emergencies: ***911***

Cellular Phone: 321-867-7911

NON-EMERGENCY ADMINISTRATIVE PHONE NUMBERS:		
• Fire Station 1:	KSC	867-4335
• Fire Station 2:	KSC	867-7725
• Fire Station 3:	KSC	867-6277
• Fire Prevention:	KSC	861-4684

Firefighting, medical, or security personnel can be contacted using the above emergency and non-emergency numbers dialed from administrative phones found in most KSC facilities. Contractors will ensure their personnel are familiar with the location of the nearest fire reporting or administrative telephone and the emergency reporting numbers. The following information is provided to ensure proper fire prevention practices are adhered to while working on Kennedy Space Center and satellite installations.

Report all fire or emergencies immediately, no matter how small or if already extinguished.

When reporting a fire, give the following information:

1. Name of the person reporting the emergency.
2. Location of the emergency (building number, occupancy, location, etc.).
3. What is the emergency?
4. Who will meet the Fire Department when they arrive to direct them to the location of the emergency.

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1.0 GENERAL FIRE PREVENTION PRACTICES

Contractors are responsible for on-site fire prevention and protection while in the process of executing contracts on Kennedy Space Center and satellite installations. Fire prevention and protection policies contained in this handout have been established in accordance with NASA directives, OSHA Code of Federal Regulations, and NFPA Fire Codes.

1.1 Pre-Work Conference

a. The prime project contractor is responsible for briefing his/her employees and subcontractors on fire prevention and protection responsibilities.

b. Project sites will be inspected periodically by fire inspectors to ensure compliance with fire prevention measures.

c. Contract Management will be notified of any areas found to be substandard.

1.2 Housekeeping

Cleanliness is essential to fire prevention. Cleanup of the site will be performed daily or as required. Trash and waste materials inside buildings will be moved to the disposal area at the end of the workday. Upon completion of workday, the contractor will perform a walk-through inspection to check for cleanliness and good housekeeping practices.

1.3 Handling and Storage of Flammable Liquids

a. Elevated fuel storage tanks will be:

(1) Grounded/Bonded

(2) Free of leaks (hose, nozzles, and valves)

(3) Equipped with "No Smoking within 50 feet." signs

(4) Located at least 50 feet from buildings and combustibles

(5) Posted with proper placards/labels

(6) Diesel tanks will be no closer than 10 feet from any facility

b. Small containers of fuel will be **STORED** in Underwriters Laboratories or Factory Mutual and NFPA 30 approved (listed) Flammable Storage Cabinets labeled **"Flammable - Keep Fire Away"**

c. Flammables and any other volatile material will not be stored or left overnight in any building, facility, or structure. They must be removed from worksites at the end of each day and stored in an area previously designated by the Contracting Officer and the KSC Fire Prevention Office. Or they must be removed from the installation.

d. All spills must be reported immediately by calling 911 or (cell) 321-867-7911. How to report a spill? See JDP-KSC-P-3008.

e. Stored containers will be sealed or covered. Leaking containers will be removed from the

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storage area.

f. Wiping rags, drop cloths, paint brushes, and rollers will be stored in covered metal containers at the end of each working day.

g. When floor finishes containing combustible or flammable liquids are used, all sources of ignition will be eliminated and the area well ventilated.

1.4 Smoking

NOTE: Smoking is restricted in many areas of d KSC and is prohibited in all facilities.

a. Smoking is permitted only in designated areas approved by the Fire Prevention Section. Smoking is strictly forbidden on the roof of all facilities.

b. Designated smoking areas will have conspicuous and legible signs posted designating area, and an adequate number of metal containers with self-closing cover devices will be readily available for disposal of smoking material.

c. Each metal container shall have stenciled on it ”SMOKING MATERIAL ONLY.”

d. All cigarette lighting items (e.g., lighters, matches) shall be surrendered to the Gate Security Guard or at entry control points in areas where smoking or flame producing devices are forbidden.

e. At the end of every shift of duty day, all collected smoking material shall be completely extinguished, saturated with water, and removed for disposal in dumpsters.

1.5 Hot Work Operations

1.5.1 Welding, Cutting, Brazing Operations and Open Fires:

a. All welding and cutting operations must be in accordance with Occupational Safety and Health Administration 1910.252, 1926.352, Kennedy Handbook 1710.2, the National Fire Protection Association 51B, and 45 SWI 32-2001.

(1) The Contractor must instruct welder(s) on safety, health, and fire protection matters.

(2) A Permit will be retained at worksite until work is completed.

(3) Flammables must be 50 feet and combustibles 35 feet from welding operation. In certain instances when welding, cutting and/or brazing operations are within 100 feet of flammables or 35 feet of combustible materials and the operation cannot be relocated, exceptions will be approved if the combustibles are protected by the use of welding blankets or other approved methods and only if the work cannot be accomplished by other means. Operations will not be allowed in the vicinity of flammable liquids, gases, vapors or oxygen enriched atmospheres.

(4) If the fire detection protection system is required to be shut off during the operation, the contractor is responsible for notifying the Contracting Officer who will make arrangements for having the system turned off and restored to an operational condition at the end of the day.

b. Hot Work Permits (KSC Form 2-271) are required for all welding, cutting, burning, and brazing operations that are performed outside an area specifically designated for such

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operations. **Permits and renewal requests are to be scheduled through the ISC Duty Office at 861-5050, 72 hours prior to performing the work**. Permits will be issued by fire inspectors for all areas except Launch Support Operations contract controlled fenced areas on KSC, (i.e., Vehicle Assembly Bldg., Rotation Processing Services Facility, Pads A and B, Orbiter Processing Facility, Launch Control Center, and inside M7-961, M7-1061, and M7-1212). Permits may be issued for a period of up to 30 days.

c. The contractor shall provide a fire watch (see Annex A) with the appropriate type fire extinguisher present during all welding and cutting operations. The fire watch will remain on site for at least 30 minutes after completion of the operation to ensure that all sources of ignition are eliminated.

d. In areas where combustibles are present, they will be removed or covered with metal sheets or other noncombustible materials. Vegetation will be wetted down prior to performing welding and cutting.

e. Welding and cutting equipment will be inspected frequently and kept in proper operating condition, free of oils and grease.

f. When the use of any device results in sparks, molten slag, hot chips, etc., the user will prevent them from scattering or coming into contact with persons or combustible material.

g. Open fires are prohibited except when approved in writing by KSC Fire Prevention Office.

1.5.2 Tar Kettle Operations

a. Tar kettle shall be operated in a controlled area. The area shall be identified by the use of barriers.

b. The tar kettle is to be placed not less than 20 feet from the structure. A sturdy barrier 8 feet high and 4 feet beyond each side are required if closer than 20 feet.

c. The Liquefied petroleum gas (LPG) tank or tanks shall be placed no less than 20 feet from the structure and properly secured.

d. The LPG tank or tanks shall be placed 20 feet from the tar kettle with a barrier between them. All tanks shall be properly secured and located to prevent vehicles from hitting them.

e. All connections are to be checked prior to start up of the tar kettle.

f. All piping shall be in compliance with codes.

g. Tar kettles shall not block exits, means of egress, gates, roadways or entrances.

h. There shall be “NO” flammables liquids within 50 feet or combustibles within 35 feet of the tar kettle. Tar block working stock is permitted no closer than 10 feet of the tar kettle. There will be “NO SMOKING” in the work area.

i. Tar block storage shall be maintained no less than 50 feet from the tar kettle/burner equipment.

j. The tar kettle will be manned at all times while in use and for 30 minutes after the burner has been shut down.

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k. The tar kettle shall be SHUT DOWN while refueling.

l. Three 20lb. ABC fire extinguishers shall be provided and maintained by the company operating the tar kettle. Two extinguishers shall be placed within 25 feet of the tar kettle; one extinguisher shall be placed on the roof.

m. All skimmed material shall be placed on a non-combustible surface and material shall be broken-up to prevent heat build-up.

n. The worksite shall be cleaned after each shift (ground area and roof area).

o. In the event of a fire or emergency while on KSC or CCAFS call 911(Cell phone - 321-867-7911).

1.5.3 Torch Down Operations

a. An on-site inspection must be performed by a Fire Inspector before a **HOT WORK** permit is issued (or re-issued).

b. A designated Safety Specialist shall perform a DAILY SITE WALKDOWN to ensure personnel are complying with fire guidelines and regulations.

c. REMOVE all combustibles daily (trash, debris, wood, etc.).

d. All **Flammable Liquids and Propane Cylinders** must be removed from the roof at the end of each work day.

e. Flammable Gas containers must be of the approved safety type with an attached **HIMS** label with correct information.

f. Propane Cylinders shall be separated by 20 feet from the area where **Flammable Liquids** are being used or stored.

g. All Combustibles / **Flammables** used on the roof must be kept at least **35 feet** away from any **Hot Work Operations**.

h. During any **Hot Work** operations, a **Dedicated Fire Watch** shall be assigned.

i. The **Fire Watch** shall be familiar with fire watch duties, and shall be trained to operate the approved fire extinguishers.

j. A Fire Watch shall monitor all areas that hot work had been performed for a minimum of two hours after stopping hot work (i.e., breaks, lunch, end of shift).

k. An INFRA-RED type heat detector shall be used to monitor for hot spots periodically during torch-down operations and during the two hour fire watch after stopping hot work.

l. Personnel working on the roof shall be given instructions on the above requirements and briefed on how to **Evacuate the Roof in the Event of an Emergency**.

m. Personnel shall be informed of the EMERGENCY CELL PHONE NUMBER to call: 911 or 321-**867-7911**.

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n. A 20 lb. **Fire Extinguisher** (compliant with NFPA 10) is required at each torch down operation or hot worksite.

o. All roof openings (i.e. vents, hatches, skylights, roof access, duct work) shall be protected, and “Torch and Flop” or method other than **Torch-Down** shall be used near these locations.

1.6 Fuel Powered Equipment

a. Fuel powered equipment such as air compressors, hoists, pumps, etc. shall be located so that exhaust stacks are well away from combustible material and facility air intakes.

b. Refueling shall not be accomplished while engine is running or hot.

c. Equipment shall be free of fuel and oil leaks.

d. Shall not be used inside buildings or facilities or under facility overhangs.

1.7 Electrical Wiring

a. Temporary wiring required during construction and major repairs shall be installed and supervised by a qualified electrician.

b. Temporary wiring shall be protected with circuit breaker or fuses.

c. Temporary wiring and extension cords shall be protected against mechanical damage.

d. The use of multiple plugs shall be controlled to prevent the overloading of circuits.

e. Service/extension cords that are damaged or spliced shall be removed from service.

f. Portable electrical devices such as saws, sanders, drills, compressors, etc. shall be disconnected at the end of each workday.

1.8 Fire Hydrants Adjacent to Construction Sites

a. Fire hydrants shall only be used with the approval of the **KSC Assistant Chief of Fire Protection at 321-861-4684.**

b. Fire hydrants shall not be blocked. A minimum clearance of 25 feet shall be maintained at all times.

c. The contractor shall place a three-way valve on hydrants used to support construction activities (after approval has been given).

d. At the end of the workday, hoses shall be disconnected from the fire hydrant and the caps replaced.

e. Fire hydrants shall only be opened with a hydrant wrench.

1.9 General

a. Personnel will not tamper with fire alarm detection and suppression systems unless official contract work is to be performed on these systems. The project inspector must make

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arrangements with ***KSC Protective Systems*** at least five working days prior to scheduling an acceptance test of fire alarm systems or sprinkler systems.

b. Any road or access to facilities that will be blocked due to construction or digging shall be reported to the **ISC Consolidated Control Center (867-7627)** at least 24 hours before actual work begins.

c. The use of temporary heaters for personnel warmth will be coordinated with the Fire Inspector and must comply with the National Fire Codes.

d. Portable fire extinguishers and fire detection/suppression devices shall be kept clear and unobstructed at all times.

e. The KSC Fire Prevention Office is available for assistance in any matters pertaining to good fire safety practices. They can be reached at 861-4684 Monday through Friday from 0700 to 1530 hours. After 1500 hours, and on weekends, for questions about fire safety, call 861-8718 or 867-4103.

1.10 Fire Extinguishers

a. Fire Extinguishers (compliant with NFPA 10) shall be provided and maintained by the contractor for use on the jobsite.

b. A fire extinguisher belonging to a facility shall not be considered adequate fire protection in lieu of a contractor provided fire extinguisher for all hot work operations

c. Fire extinguishers and other firefighting equipment shall be visible and accessible at all times.

d. Personnel shall be trained on classification of fires, fire extinguishers, and their uses.

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2.0 CLASSES OF FIRES

CLASS	COMBUSTIBLE MATERIAL	PROPER FIRE EXTINGUISHER
Class A	Wood, Paper, Cloth	ABC Dry Chemical, Water
Class B	Flammable Liquids	ABC Dry Chemical, CO2
Class C	Energized Electrical Equipment	ABC Dry Chemical, CO2
Class D	Combustible Metals	Specialized Dry Powder

Any questions concerning fire prevention or your responsibilities in these matters while operating on KSC, contact the **Assistant Chief of Fire Prevention at 861-4684.**

Note: If a Hot Permit has been requested for a specific time, and at that time Fire Prevention support is not on site, please call the **KSC Fire Prevention Office at 861-4684**.

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3.0 PRE-CONSTRUCTION CONFERENCE REPORT

Project Title:

_____

Project Control Number: _____

Contract Number: _____

Facility Number: _____Location:_____

Prime Contractor: _____

Subcontractor(s): _____ _____ _____

_____ _____ _____

Project Inspector: _____ Phone _____

Contract Administrator: _____ Phone #_____

Start Date: _____ Duration:_____

Remarks: _____

Date: _____BRIEFED BY: _____

The prime contractor was briefed on safe fire prevention procedures to be practiced on KSC and given a brochure (Fire Prevention Procedures for Contractors) which explains procedures in more detail. Emergency reporting numbers and procedures were also explained.

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4.0 Explanatory Material - Hot Work 35 Foot Rule Illustration

Annex A Explanatory Material

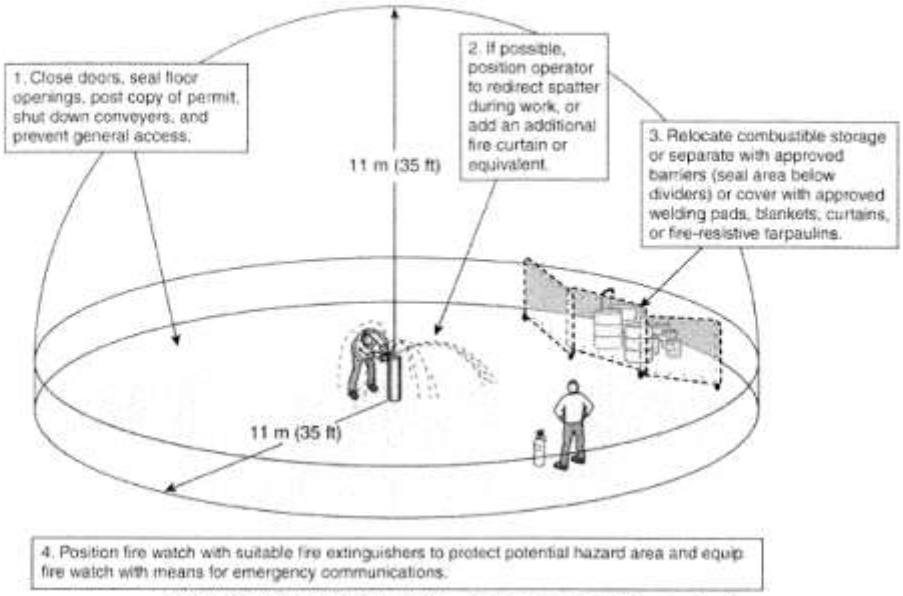
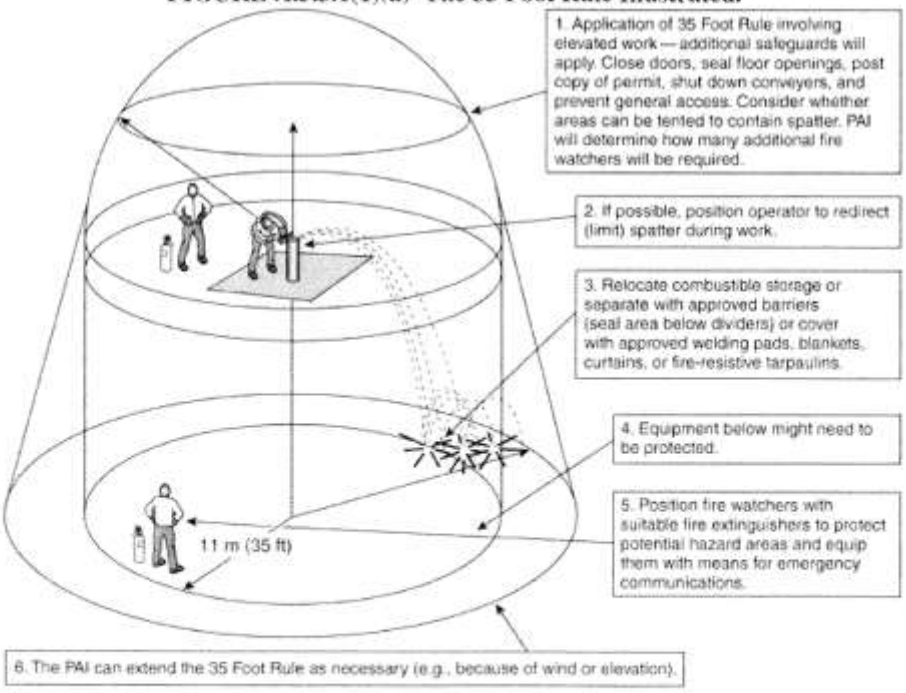


FIGURE A.5.5.1(1)(a) The 35 Foot Rule Illustrated.



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