Construction Environmental, Safety, and Health Plan

INSTRUCTIONS

This Construction Environmental, Safety, and Health Plan (CESHP) is required for each construction project at DOE's National Laboratory of the Rockies (NLR) site.

Each construction project (contract) requires its own CESHP; therefore, each CESHP must be tailored specifically to the project being conducted. This template is provided in electronic format to enable copy and paste functions for those subcontractors whose basic data remains unchanged yet tailor the hazard and controls information to the particular activities/materials/location of the project at hand. NLR recommends using a graded approach in the development of CESHP's. This approach determines the level of rigor for implementing the work planning and control attributes based on the importance/significance of the activity in relation to the associated hazards and consequences. The level of detail within each CESHP and corresponding AHA(s) should be commensurate with the size, complexity and risk level of the construction project.

For larger projects, the prime subcontractor may *either* flow down this requirement to each of its subcontractors; or serve as a control and coordination point, requiring all subcontractors' activities to be conducted under the prime subcontractor's solitary CESHP.

NLR's *Construction Environmental Safety and Health Manual (CESH Manual)* is the governing document that accompanies the CESHP and must be utilized when completing this CESHP to ensure that NLR specific requirements are met and incorporated into the project planning process.

Your completed CESHP is to be submitted to the NLR Contracts and Business Services office for review by the ESHQ POC prior to performing work. This CESHP is intended to be a living document; updated as necessary throughout a project as information changes or as the project progresses (e.g. – as additional Activity Hazard Analyses are developed, subcontractors/workers are added, etc.).

There are three parts to this CESHP template. All the sections in Part 1 are required to be completed for each construction project, regardless of the size or complexity. All of the sections in Part 2 are required to be completed but checked and filled in as applicable for the particular project's scope of work. Enter information in all of the fill in blocks that are applicable. For those that are not applicable, enter "N/A" or other suitable explanation.

An Activity Hazard Analysis (AHA), Part 3, is required for all projects, regardless of the size, scope or complexity of work. Every project will have at least one definable construction activity, and therefore at least one AHA. Depending upon the complexity of the project, one or several AHAs may need to be completed. In some cases, AHAs may need to be staged, in coordination with the initiation of the various phases of a project.

PART 1 – PROJECT GOVERNANCE / EMERGENCY INFORMATION

Section 1 – Project Description and Emergency Contacts

Fill in the names and telephone numbers of the contact personnel for this particular project. In accordance with 10 CFR 851, the Subcontractor's designated on-site safety representative must be knowledgeable of the project's hazards and have the authority to correct unsafe conditions or behavior. Attach the qualifications of your safety representative for this project (see section 10). If you have subcontractors performing work on this project, list their contact information. Update as necessary throughout the project.

Note: Some projects of long duration or complexity may be required to develop an emergency response plan and conduct a drill at least once during the project, or more often as necessary.

NLR will provide a site map showing assembly points which will be attached to CESHP. Subcontractors are required to provide and post maps and locations of medical facilities.

Refer to Chapter 2 of the *CESH Manual* for additional information.

Section 2 – Subcontractor Policy Statement

Enter your Company's health and safety policy statement. At minimum, your policy must include:

- Specific statement of intent to comply with the code of federal regulations, Title 29, Part 1910, General Industry Safety and Health Standards and Part 1926, Safety and Health Standards for the Construction Industry, 10 CFR 851, Worker Safety and Health and other applicable codes and standards.
- A statement that all requirements of the plan apply to all lower tier subcontractors and must be flowed down to all subcontractors at all levels.
- Statement of employee's rights and responsibilities regarding a safe and healthy work environment in accordance with the work site OSH poster (i.e. OSHA/DOE poster or equivalent).
- Statement of Stop Work Authority for all workers.

Refer to Chapter 2 of the *CESH Manual* for additional information regarding program policies.

Section 3 – 10 CFR 851 Acknowledgement

Because NLR is a Department of Energy site, your company must meet the requirements of Title 10, *Code of Federal Regulations*, "Energy", Part 851, "Worker Safety and Health Program" It is your responsibility to ensure you have read and understand the regulatory requirements.
https://www.energy.gov/gc/10-cfr-851-worker-safety-and-health-program

Refer to Chapter 2 of the *CESH Manual* for additional information regarding program policies.

Section 4 – Construction Environmental, Safety & Health Manual Acknowledgement

NLR has developed a construction ESH manual to serve as a primary reference document to identify our required ESH work processes and work practices to help ensure project success. It is your responsibility to ensure you have read and fully understand the contents of this manual. The NLR ESHQ POC must be contacted, if you have any questions.

Section 5 – Safety Briefings and Inspections

The Subcontractor must conduct frequent safety briefings and inspections, based upon the duration and complexity of the project. Describe the frequency and initiation of safety briefings and inspections on your project at NLR.

Refer to Chapter 5.0 of the *CESH Manual* for additional information regarding minimally required inspections and briefings.

PART 2 – PROJECT CHARACTERIZATION

Section 6 – Project Characterization

Under 10 CFR 851, all Subcontractors must identify existing and potential workplace hazards and assess the risk of associated workers injury and illness. This section will help to serve as first step in characterizing your project and the associated hazards and will aid in the development of the AHA(s).

List the project's Definable Work Activities: A definable work activity is a task which is separate and distinct from other tasks, has separate control requirements, and may be identified by different trades or disciplines, or it may be work by the same trade in a different environment. Add additional lines as necessary to identify all the definable construction activities of your project. Refer to Chapter 4.0 of the *CESH Manual* for additional information regarding Definable Work Activities.

Check all of the Hazards/Activities that apply to your project: The checklist in this section includes those activities which are subject to NLR specific controls beyond what is required by OSHA standards or have the potential to affect natural resources including storm water, wetlands, streams, air quality, vegetation and wildlife. In the left-hand column, check all activities that will be performed as part of this project. Identify your Competent Person(s) or Qualified Person(s) where applicable. Refer to the corresponding Chapters of the *CESH Manual* for additional information on each topic area.

This checklist is presented in part for project planning and scheduling purposes, as some activities require NLR specific permits to be acquired prior to being allowed to perform them. If your project involves an activity that has a check in the right-hand column, then your CESHP must include a copy of your company program that addresses the controls and requirements for performing that activity at NLR. If your company does not have an established program for a particular activity, then you may attach a project specific program/plan for performing that activity at NLR or address it in sufficient detail in a thorough AHA (however, this is not an option for OSHA required programs). Use Section 10 of this template to list and identify attachments of your company programs, policies, procedures and/or plans. Be specific as to the chapter and/or section being reference.

Project applicable activities that have potential environmental impacts will require NLR ESHQ coordination and concurrence, as identified in Chapter 20 of the *CESH Manual*. The Subcontractor and all lower tier subcontractors are responsible for implementation and compliance with all federal, state and local laws as well as NLR procedures.

Details of NLR specific requirements are presented in the NLR "Construction Environment, Safety & Health Manual." **The subcontractor is responsible for knowing and abiding by the requirements of the *CESH Manual*.**

Section 7 – Project Support Features, Site Control and Logistics

For large or complex projects, attach a diagram showing: construction areas, laydown areas, staging areas, alternative exit routes, material storage areas, pedestrian routes, temporary traffic controls,

material receiving areas, etc. Use Section 10 of this template to identify which appendix the Logistics Plan appears in your CESHP.

Section 8 – Required Training/Qualification Submittals

Check all boxes applicable to this Project's work scope. The subcontractor is responsible for assuring that all workers have met the training requirements identified by OSHA 29 CFR 1926, 29 CFR 1910 and DOE 10 CFR 851, as applicable to the work activities associated with the project scope. In addition, the subcontractor must maintain those documents for each worker on site throughout the duration of the project. Identify where you will maintain those records on the NLR Site. Refer to Chapter 2.0 of the *CESH Manual* for additional training requirements information. It is recommended that a spreadsheet be maintained to facilitate the recordkeeping of required training for each worker.

However, the subcontractor must submit training/qualification documentation for each worker performing work associated with the specific topics and list in Section 10. This submittal must be reviewed and accepted by NLR, prior to each worker starting work.

Section 9 – Hazard Communication

Hazardous chemicals (as defined in 29 CFR 1910.1200) to be brought or used on site are to be identified and managed appropriately. The subcontractor is responsible for maintaining an up-to-date chemical inventory (only of those chemicals brought on site), and copies of Safety Data Sheets (SDS) must be maintained at the task or project support facilities and made available for review by site workers, the DOE or NLR employees.

Identify the methods you will use to inform the other employer(s) of any precautionary measures that need to be taken to protect NLR and/or other subcontractor employees during normal operating conditions and in foreseeable emergencies. Identify the methods you will use to inform other affected workers of your labeling system if the labeling system is not readily understandable.

If your existing Hazard Communication Program addresses these requirements, you may attach a copy of it and your project specific chemical listing instead of filling out the block in Section 9.

Refer to Chapter 17.0 of the *CESH Manual* for additional information regarding NLR's Hazard Communication requirements.

Section 10 – Plan Attachments

A description of the qualification (or resume) of the individual serving as the Primary Subcontractor's Designated Safety Representative(s) on this project must be included in the Plan, per 10 CFR 851.

Additionally, if your project involves a hazard/activity that has a check in the right-hand column of Section 6, then your CESHP must include a copy of your company's program addressing that topic. Alternatively, your company may submit a project specific plan/AHA that details your approach to addressing that topic. You are responsible for ensuring that your project specific controls are in alignment with the NLR site requirements presented in the *CESH Manual*, either via your company program or through specific controls identified in the project AHAs.

Use this Section of this template to also list any other plans(s)/procedures, training documentation, you are attaching to this CESHP. An electronic file or hyperlink to these documents must be referenced here.

- PART 3 – ACTIVITY HAZARD ANALYSES

10 CFR 851, Appendix A to Part 851 – Worker Safety and Health Functional Areas, Construction Safety requires that an Activity Hazard Analysis (AHA – sometimes referred to as a Job Safety Analysis, JSA, or Job Hazard Analysis, JHA) be prepared for each separately definable construction activity (e.g. welding, excavations, concrete work, structural steel, electrical, scaffold, roofing etc.) prior to the commencement of work. For larger projects, the primary subcontractor may either flow down this requirement to each of its lower tier subcontractors or serve as a single control and coordination point for all project AHA's.

Prior to the start of each phase of work, it will be the responsibility of the subcontractor to develop a thorough AHA that details the hazards and controls for the steps associated with that phase of work and submit it to NLR ESHQ for review.

If the project's complexity and/or schedule necessitate several AHAs to be developed for different phases of the Project, the subcontractor may use the tracking table as a tool to coordinate which AHAs are in effect and which AHAs are yet to be developed.

The CESHP template is provided in electronic format to enable copy and paste functions for those subcontractors whose basic data remains unchanged, yet allow for the work steps, hazards and controls information to be tailored to the particular activities/materials/location of the project at hand. The AHA template rows can be expanded to include additional tasks, or reduced in number to accommodate changes, and to vary the final product to match the relative complexity of the project.

Refer to Chapter 4.0 of the *CESH Manual* for additional information regarding NLR's Activity Hazard Analyses requirements.

NLR CONSTRUCTION PROJECT-SPECIFIC SAFETY PLAN - PART 1

(Project Name)

Construction Environmental, Safety & Health Plan

SECTION 1 - PROJECT DESCRIPTION & EMERGENCY CONTACTS		
Project Start / End Dates	Start:	Complete:
Project Location	Enter the work location(s) at NLR	
Detailed Scope of Work	Enter breakdown and description of work activities	

FOR ALL EMERGENCIES CALL:

South Table Mountain Call Security at x1234 or (303) 384-6811 from a cell phone
Flatirons Campus Call 911 - Ask for Boulder County and then Call STM Security at x1234 or (303) 384-6811 from a cell phone

For all incidents, injuries, property damage, near-misses etc.… the following personnel MUST be immediately contacted upon scene stabilization

Project Personnel	Name	Phone Number(s)	Email
NLR Project Manager	Enter the name of NLR Project Manager	Enter number: xxx-xxx-xxxx	Enter: user@domain
NLR Project ESHQ Point of Contact	Enter the name of NLR ESHQ Point of Contact	Enter number: xxx-xxx-xxxx	Enter: user@domain
OTHER CONTACT INFORMATION			
Subcontractor Project Manager	Enter the name of subcontractor Project Manager	Enter number: xxx-xxx-xxxx	Enter: user@domain
Subcontractor Site Superintendent	Enter the name of subcontractor's Site Superintendent	Enter number: xxx-xxx-xxxx	Enter: user@domain
Subcontractor Health & Safety Representative	Enter the name of subcontractor health & safety representative	Enter number: xxx-xxx-xxxx	Enter: user@domain

Subcontractors	Phone Number	Email
Enter Subtier company name	Enter number: xxx-xxx-xxxx	Enter: user@domain
Enter Subtier company name	Enter number: xxx-xxx-xxxx	Enter: user@domain
Enter Subtier company name	Enter number: xxx-xxx-xxxx	Enter: user@domain

CESHP REVIEWS		
Reviewed & Approved by: (Subcontracted Company Officer)	**Subcontractor CESHP Reviewed & Concurred by: (NLR Project Manager)**	**Subcontractor CESHP Reviewed & Concurred by: (NLR ESHQ POC)**
Signature	Signature	Signature
Signatures and dates		

SECTION 2 - SUBCONTRACTOR POLICY STATEMENT

(MUST INCLUDE THE FOLLOWING)

- Specific statement of intent to comply with the code of federal regulations, Title 29, Part 1910, General Industry Safety and Health Standards and Part 1926, Safety and Health Standards for the Construction Industry, 10 CFR 851, Worker Safety and Health and other applicable codes and standards.
- A statement that all requirements of the plan apply to all lower tier subcontractors and must be flowed down to all subcontractors at all levels.
- Statement of employee's rights and responsibilities regarding a safe and healthy work environment in accordance with the work site OSH poster (i.e. OSHA/DOE poster or equivalent).
- Statement of Stop Work Authority for all workers

NLR CONSTRUCTION PROJECT-SPECIFIC SAFETY PLAN - PART 1

SECTION 3 - ACKNOWLEDGMENT of 10 CFR 851				
As a subcontractor to NLR, while your workers are physically located at NLR you must meet the requirements of Title 10, *Code of Federal Regulations*, "Energy", Part 851, "Worker Safety and Health Program" (10 CFR 851). As such, you must be aware of, and comply with, the requirements of this regulation. https://www.energy.gov/gc/10-cfr-851-worker-safety-and-health-program				
Acknowledgment	I, (the author of this CESHP), certify that that I have read the requirements of 10 CFR 851 and attest that my firm and its sub-tier contractors will comply with the requirements of 10 CFR 851.			
Signature Required:				
MEDICAL SURVEILLANCE AND QUALIFICATION				
Occupational Medicine	Will you have any employees that will work on-site at NLR for 30 days in a 12-month period, or are enrolled for any length of time in a medical or exposure monitoring program required by federal, state, or local regulations (including hearing conservation, respiratory protection, silica exposure)? ***Refer to the CESH Manual, Section 3.0 for additional information.***	Yes ☐	No ☐	
	If yes, you will need to: 1. Comply with the occupational medicine requirements of 10 CFR 851, Appendix A 2. Provide your occupational medicine provider's contact information			
Clinic / Physician	Enter the name and address of your company's medical provider for this project	Enter telephone number: xxx-xxx-xxxx	Enter e-mail address: user@domain	

Required Medical Surveillance		Task-specific medical testing
☐ DOT/Commercial Vehicle	☐ Blood Lead	List specific task(s) requiring medical surveillance
☐ Hearing Conservation	☐ Respirator User	
☐ Fit For Duty	☐ Silica	
☐ Substance Abuse Testing	☐ Other(s): List other(s)	

SECTION 4 - ACKNOWLEDGEMENT of CONSTRUCTION ENVIRONMENTAL, HEALTH and SAFETY MANUAL	
Acknowledgment	I (the Project Manager or Superindent of this project), certify that that I have read and understand the requirements of the NLR Construction Environmental, Health & Safety Manual v8. 01/30/2020.
Signature Required:	

SECTION 5 - SAFETY BRIEFINGS AND INSPECTIONS
Safety Briefings: Discuss the conduct of safety briefings on your project at NLR
Safety Inspections: Discuss your conduct of safety inspections during this project at NLR
Refer to the CESH Manual, Section 5.0 for additional information.

NLR CONSTRUCTION PROJECT-SPECIFIC SAFETY PLAN - PART 2

SECTION 6 – PROJECT CHARACTERIZATION

Identify the project's Definable Work Activities.

(e.g., welding, excavations, concrete, structural steel erection, architectural finishes, electrical install, roofing, landscaping, testing and startup)

Enter Activity	Anticipated Start Date
Enter Activity	Anticipated Start Date
Enter Activity	Anticipated Start Date
Enter Activity	Anticipated Start Date
Enter Activity	Anticipated Start Date
Enter Activity	Anticipated Start Date
Enter Activity	Anticipated Start Date

Check all hazards/activities below that apply to this Project. Refer to the *CESH Manual* for NLR-specified controls.

Yes	No	Hazard/Activity with specific NLR-based control measures.	NLR Construction ESH Manual Chapter(s)	NLR issued Permit	Subcontractor Program or Project Plan required
☐	☐	Asbestos use, alteration, removal or storage	14		✓
		(Identify your Supervisor for Asbestos Work here)			
☐	☐	Blocking exits or exit pathways	9		
☐	☐	Building surface penetration	19	✓	
☐	☐	Confined spaces	18		✓
☐	☐	Crane Use	10		✓
		(Identify your Lift Supervisor here)			
☐	☐	Discharges to sanitary/septic system will occur	20		
☐	☐	Electrical work (LOTO and >50 v or > 50 mA)	6, 7		✓
☐	☐	Excavation/Trenching	7, 8	✓	
		(Identify your Competent Person for Excavation/Trenching here)			
☐	☐	Earth disturbance of greater than one acre	20		
☐	☐	Falls from elevation (work at heights of 6 feet or more above the lower level)	11		✓
		(Identify your Fall Protection Equipment Competent Person here)			
☐	☐	Fire protection system outage or modification	9	✓	
☐	☐	Flushing of waterlines, storm/sanitary lines, fire suppression systems or fire hydrants	18		
☐	☐	Hazardous Waste Storage or generation on construction site	9, 20		✓

NLR CONSTRUCTION PROJECT-SPECIFIC SAFETY PLAN - PART 2

Yes	No	Hazard/Activity with specific NLR-based control measures	NLR Construction ESH Manual Chapter(s)	NLR issued Permit	Subcontractor Program or Project Plan required
☐	☐	Hoisting/Rigging	10		✓
		(Identify your Hoisting/Rigging Qualified Person here)			
☐	☐	Hot work	9	✓	
☐	☐	Lockout/Tagout (Control of Hazardous Energy)	6		✓
☐	☐	Night work	13		
☐	☐	Outdoor work to be performed between mid-March and mid-September	13		
☐	☐	Radioactive materials or Ionizing radiation-generating devices	13		✓
		(Identify your Radiation Safety Officer here) and provide a copy of the Radioactive Materials License and/or Device Registration			
☐	☐	Scaffolding	5, 10, 11		✓
		(Identify your Scaffolding Competent Person here)			
☐	☐	Building structural modifications	10, 11		
☐	☐	Traffic Control	21		✓
		(Identify your Competent Person here)			
☐	☐	Excavation near underground Utilities	7, 8	✓	
☐	☐	Wetlands, drainage channels, streams, groundwater seeps occurring within construction site	20		✓

SECTION 7 - PROJECT SUPPORT FEATURES, SITE CONTROL & LOGISTICS

Check all of the following facilities and equipment that are required for safe completion of work.

Facility/Equipment	Description
☐ Project Office	Describe office to be used (room/trailer, location, etc.)
☐ Materials Receiving Location	Describe (location, size, delivery times, etc.)
☐ Portable Restrooms/wash stations	Describe (number, location, etc.)
☐ Supplementary Illumination	Describe Supplementary Illumination (Type(s), indoor/outdoor, distribution, etc.)
☐ Emergency Eyewash/Shower	Describe (type, location, distribution, etc.)
☐ First Aid Supplies	Describe (type,size, location,etc.)
☐ Fire Extinguishers	Describe (type,size, location,etc.)
☐ Hazardous Material Storage	Describe (materials, amounts, location, etc.)
☐ Spill Containment/Clean-up	Describe (materials, location, etc.)
☐ Other: Enter Other Type	Describe item, location, number, etc.
☐ Other: Enter Other Type	Describe item, location, number, etc.

NLR CONSTRUCTION PROJECT-SPECIFIC SAFETY PLAN - PART 2

Site Control / Logistics	
Task / Location	**Specify your task-specific site control/access control measures below.**
Enter work task and location	Enter specific site/area control procedure
Enter work task and location	Enter specific site/area control procedure
Enter work task and location	Enter specific site/area control procedure
☐ Check here if you are ALSO attaching a Logistics Plan for your activities. Logistics Plan is attached in Appendix #___	

SECTION 8 – REQUIRED TRAINING/QUALIFICATIONS SUBMITTALS

Training Records Location:

Identify where you will maintain training/certification records related to your Project at NLR:

Identify (from the list below) the activities/personnel involved with your project and separately submit appropriate documentation for each worker engaged in that respective activity. The documentation submitted shall confirm that each worker has the required license, certification, training or medical clearance appropriate to the scope of work, before they begin work at NLR.

Yes	No	
☐	☐	Asbestos activities (licensed abatement contractor, workers minimum CDPHE and OSHA required credentials)
☐	☐	Aerial Lift, Powered Platforms Man lifts and Vehicle Mounted Platform Operation
☐	☐	Confined Space Entry – (Entrant, Attendant and Entry Supervisor)
☐	☐	Control of Hazardous Energy (lockout/tagout)
☐	☐	Crane Operation (NCCCO license)
☐	☐	Fall Protection – Authorized Worker (work performed 6-feet or more above the lower level)
☐	☐	Fall Protection – Competent Person
☐	☐	Fall Protection – Qualified Person
☐	☐	Forklift/Telehandler/Powered Industrial Truck Operation
☐	☐	Hoisting & Rigging Personnel
☐	☐	Qualified Electrical Worker – (provide copy of business license and active Apprentice, Journeyman or Master Electrician License and documentation of NFPA 70E training)
☐	☐	Respiratory Protection – (provide medical evaluation, fit test and training documents)
☐	☐	Scaffolding – Competent Person
☐	☐	Silica – Competent person and authorized workers
☐	☐	Steel Erection (29 CFR 1926.761) Connector
☐	☐	Trenching and Excavation – Competent Person
☐	☐	Welding/Orbital of Stainless steel and/or Vessels – (provide appropriate American Welding Society (AWS) welding certification).
☐	☐	Other: (List…)

NLR CONSTRUCTION PROJECT-SPECIFIC SAFETY PLAN - PART 2

SECTION 9 - HAZARD COMMUNICATION (HAZCOM)

SDS Location:

Identify where you will maintain your Project Chemical list and Safety Data Sheets (SDS) at NLR

Method of notifying affected NLR employees:

Describe the method used for notifying affected NLR employees and subcontractor workers of any chemicals planned to be used on the project any how they will be made aware of the hazards, precautions, personal protective equipment required, safe use and storage. Describe your method of instructing others about your labelling system, if it is nonstandard.

Refer to the CESH Manual, Section 15 for additional information.

SECTION 10 - PLAN ATTACHMENTS

For each activity or hazard checked in Sections 6, and 8, list and attach your additional corporate, site- or project-specific programs/plans, training documentation, resumes, etc.

Attachment	Reference Procedure or Program
1	Project safety representative, Statement of Qualifications for: (insert name)
2	Training documentation for: (insert name)
#	List Reference Procedure or program
#	List Reference Procedure or program

PART 3 – ACTIVITY HAZARD ANALYSES

Complete an Activity Hazard Analysis for each of your project's Definable Construction Activities

Refer to the CESH Manual, Section 4.0 for additional information.

Note: A completed, signed AHA must be submitted to NLR ESH for review prior to the start of each phase of work, in order to proceed with that phase.

AHA Tracking Table
(use is non-mandatory unless required by ESH contact)

1	Enter Activity Anticipated Start Date	Responsible subcontractor	AHA Submittal Date	Date AHA accepted by NLR
2	Enter Activity Anticipated Start Date	Responsible subcontractor	AHA Submittal Date	Date AHA accepted by NLR
3	Enter Activity Anticipated Start Date	Responsible subcontractor	AHA Submittal Date	Date AHA accepted by NLR
4	Enter Activity Anticipated Start Date	Responsible subcontractor	AHA Submittal Date	Date AHA accepted by NLR
5	Enter Activity Anticipated Start Date	Responsible subcontractor	AHA Submittal Date	Date AHA accepted by NLR
6	Enter Activity Anticipated Start Date	Responsible subcontractor	AHA Submittal Date	Date AHA accepted by NLR
.	(Add others as necessary)			

Condition / Exposure	Description of Hazards	Control Methods
General Construction Activities	• Eye/head/foot injuries from work activities • Hand injuries • Slips, trips, or falls on walking and working surfaces	• **In all construction areas, the following minimum PPE must be worn:** • Safety glasses with rigid side shields meeting ANSI Z-87 standards. • Hard hats of ANSI Z 89.1 Class 1, Type E or better. • Safety boots/shoes (ANSI Z-41 composite or steel-toed) • Maintain clean work areas by following good housekeeping procedures. • Store materials and tools in proper storage areas. • Watch where you are walking - be alert for debris, projections, uneven terrain, and slopes. • Inspect all equipment, tools, and electric cords prior

Condition / Exposure	Description of Hazards	Control Methods
		to each day's use. • Defective or damaged tools/equipment must not be used – it must be removed from service and tagged for repair or removed from the job site. • Obtain and use the proper tool for the job. • Use tools only for their intended purpose.
Walking and Working Surface	• Workers tripping over objects already in the work area • Tripping over equipment and materials brought into the job • Lack of focus / Multitasking	• Inspect the work area to identify existing trip and fall hazards. Remove or flag to increase hazard visibility • Stage materials in an organized and safe manner • Walk around objects as opposed to climbing over
Aerial Lift/Scissors Lift Operation	• Operator error • Tip over • Basket overload • Falls from height • Dropped equipment and tools • Wind loading • Equipment malfunction	• People operating an aerial lift shall be qualified and properly trained. (Proof of Training must be provided). • Operate the lift in accordance with the manufacturer's instructions. • Conduct daily inspection and document prior to use. • The work area shall be inspected to verify safe surface and terrain conditions. • Do not override safety systems. • Employees shall always stand firmly on the floor of the basket and shall not sit or climb on the toe boards, mid rails, or top rails of the work platform or ladders to gain additional elevation. If gaining additional elevation is necessary, contact ESH POC. • In articulating and straight boom aerial lifts occupants must wear fall restraint system attached to the platform's anchorage points. • Fall protection is not required on vertical or scissor lifts, unless required by employer or manufacturer. • ALWAYS read and heed the manufacturer's operating manual prior to operating. • When workers transition out of the basket, they must be 100% protected from falls. • Discontinue aerial lift operation when winds of > 25 mph or the manufacturers requirements. • Operator shall verify that the area beneath the lift is clear before moving it. As necessary, cordon off the work area to prevent access.
Working from Ladders	• Falls from height • Dropped equipment and tools • Wind loading • Equipment malfunction Fall • Strain carrying or setting up ladder • Electrocution • Injuries to head	• Commercial grade ladders (Type I or better) are required. Household and light duty ladders are prohibited. • Painted ladders are not allowed. • Self-supporting ladders must be properly sized and used in accordance with the manufacturer's requirements. • Do not lean self-supporting ladders against the wall. Self-supporting ladders must be fully opened. • Workers shall not stand or work from the top two steps. • Ladders are inspected daily prior to use for any visual defects. • Extension ladders must be secured. • Do not work outside the boundary of the ladder (that means do not reach out where your center of gravity is outside the footprint on the ladder). Utilize 3 points of contact whenever ascending or descending a ladder.

Condition / Exposure	Description of Hazards	Control Methods
		• No aluminum ladders allowed around electrical equipment. • Wear hard hats meeting ANSI Z89.1 requirements.
Working from Height	• Fall protection equipment failure or improper use • Anchor point failure • Improperly donned equipment • Walk off unprotected edge • Trips and falls	• Verify all Personal Fall Arrest System (PFAS) equipment must be of current design and in good condition. • Inspect all fall protection equipment prior to each use. Suspect or damaged equipment must be removed from service. • Use of appropriate fall-protection equipment (PFAS) during elevated work where there is fall potential of 6-ft or more. • All personnel using PFAS must be properly trained, and Proof of Training is required prior to use. • All non-certified anchorages, used for fall protection, must be reviewed by contractor FP Competent Person and concurred with by NLR ESHQ in advance • 100% Fall Protection is required. At no time shall a worker be unprotected. • Fall Hazard Analysis may be required.
Scaffold Erection and Use	• Scaffold tips over due to base instability or uneven loading • Walk off unprotected edge • Trips and falls • Improperly assembled scaffold collapse	• Competent person to erect and inspect all scaffolding in accordance with OSHA (CFR 1926 Subpart L) requirements. • Competent person to inspect daily / every shift or after a weather occurrence. • Scaffolds must be erected on stable footing. • Load scaffolds evenly. Avoid cantilevered loads. • Assemble and erect the scaffold in accordance with the manufacturer's instructions. • Employ a tag system to verify daily inspection and approval for use. • Immediately remove from service any scaffold that fails inspection. • Install ladder of adequate length for mounting and dismounting the scaffold. Secure it against displacement or have a second worker brace the ladder when used. • Do not overload scaffold systems. • Keep operating equipment and vehicles away from scaffold systems to prevent damage.
Manual Material Handling – Lifting	• Musculoskeletal injury due to improper lifting • Dropped loads due to lack of handholds and slippery surfaces. • Objects in path Workers caught between moving or shifting loads and stationary objects • Unsteady or unsecured load moves unexpectedly	• Use mechanized lifting aids where possible • Employ proper manual lifting techniques and body mechanics. • Avoid single person lifts of heavy objects. • Evaluate all lifts in advance to identify good handholds. • Plan your route, eliminate objects in your path of travel. • Proper footwear • Avoid working positions where unexpected load movement can pin or injure a worker.
Use of Hand Tools	• Abrasions or cuts to hands	• Utilize the correct tool for the job. • Inspect all hand tools prior to use. • Wear protective gloves where applicable. • Remove and/or tag any defective or altered tools
Use of Power Tools	• Items and or clothing being caught in power tools	• Secure long hair, jewelry, loose clothing from contact with power tools.

Condition / Exposure	Description of Hazards	Control Methods
	• Eye or facial injuries • Abrasions or cuts to hands due to improper tool use • Electrical Shock/Arc and/or electrocution • Strains due to poor body positioning and use of excessive force	• Wear proper gloves, goggles, or face shield. • Commercial grade power cords rated for heavy duty service are required minimum 14 AWG. • Cords must be inspected daily and shall be removed from service if damaged or suspect conditions are identified. • All power tools must be UL listed and be in good condition. • Power tools must incorporate point of operation and power transmission machine guarding. • Contractor shall comply with requirements set forth in OSHA 29 CFR 1926 Subpart I – Tools Hand and Power. • Ground fault circuit interrupters (GFCIs) shall be used on circuits at the source. • Ensure proper tools are selected for the work activity being conducted (don't use a file or a screwdriver as a pry bar); inspect tools for damaged parts • Stop working if irregular torque pattern, shaking, or rocking occurs when using tools.
Use of Pneumatic Equipment and Tools	• Facial and body injuries • Being struck by a tool in an over pressurization situation • Hearing loss	• All pneumatic hoses connections shall be secured with pins and whip-checks to prevent disconnecting of couplings and whipping lines. • Pneumatic hand tools using 1/2'" or greater ID hoses must have a check valve at the source to automatically shut air pressure off. • Worker shall wear hearing protection if monitoring determines exposures > 85dBA.
Sharp, Hot or Abrasive Surfaces	• Abrasions, cuts, or burns to hands due to sharp edge exposure • Hearing loss	• Inspect equipment and materials prior to handling to identify sharp edges. Remove or protect edges to prevent contact. • Use cutting implements (e.g. box cutters) safely. Always cut away from your body. Do not rest objects you are cutting against your body. • Wear task specific work gloves.
Lockout/Tag Out (LOTO)	• Injury due to exposure to any energy sources (steam, water, electrical, chemicals, etc.)	• LOTO is required during work activities where the unexpected energization or start-up of equipment or release of stored energy could cause injury. All LOTOs shall be coordinated with the NLR FM or designee. • All individuals working under a LOTO shall have completed LOTO Training (proof of training required) • All individuals working under a LOTO shall install their personal locks on the system. A zero-energy check is required prior to working on the system which has been placed under LOTO. • All LOTO shall be evaluated as to "Simple" or "Complex". • If Complex, an MOP is required. • MOP must be reviewed and accepted by NLR AHJ or designee. • Adhere to the Two-Worker Rule: This requires a second qualified electrical worker to be present when work is performed within the shock restricted approach boundary or the arc flash boundary of an exposed energized electrical conductor or circuit part. An example of the work would be zero energy verification and voltage measurement. The second

Condition / Exposure	Description of Hazards	Control Methods
		qualified electrical worker functions as a safety observer and does not participate in the actual work. This worker must be trained in cardiopulmonary resuscitation and be prepared to initiate other emergency response procedures.
Cutting / Stripping Wire	• Cuts • Pinched fingers within the hand cutter tool	• Cut away from the body. • Wear gloves. • Don't use body part or leg as backdrop to cut against. • Be aware of personnel or property surrounding the area so the knife does not strike and cut anything else. • Retract knife blade when not in use. Replace knife blade when worn.
Bending Conduit / Using Reamer	• Cuts • Abrasions from reaming • Trips and falls • Injury to self or others while carrying long sticks of pipe around blind corners • Sprains and strains	• Wear gloves. • Use dunnage to block and keep piles on the ground organized. • Keep end of pipe lower than head level and call out when approaching a blind corner or use a spotter. Carry shorter pieces vertically through doors. • Bend conduit with proper technique and body movement to prevent muscle strains and injury.
Wire Pulling and Using Tugger	• Trips from excess coils of wire on the ground or near ladder rungs • Pinch Hazard while pushing wire into conduits • Strains, sprains • Cuts to hands • Falls from ladder while pulling wire	• On large conduit and wire always use wire pulling equipment. • Keep wire reels neatly organized and pull pathway up out of the boxes to the ceiling level right away to keep trip hazard off the floor. • Wear gloves when pushing / pulling wire around pinch points or sharp edges. • Stop pushing or pulling a safe distance prior to reaching the conduit entrance. • Use a helper on longer pulls and coordinate the effort of pushing and pulling. • Keep wire neatly dressed, coiled, and organized at both ends. • When pulling wire, keep good communication with the team feeding the wire on the other end. • When moving spools or feeding wire into the conduit, use proper lifting techniques, do not twist or bend at the back. • Employees must be trained on the tugger. • Inspect the equipment before use. • Verify the anchor points are rated and secure. • Wear gloves and keep hands clear from all moving parts. • When moving spools or feeding wire into the conduit, use proper lifting techniques, do not twist or bend at the back.
Welding	• Burns • Injury to eyes of workers and co-located workers from the exposure Inferred light (IR) generated from welding arc • Inhalation hazards associated with welding activities • Fires and explosions	• **HOLD POINT: Obtain Hot Work Permit from NLR FM.** • Only trained workers can conduct welding. • Welding PPE will be worn to protect exposed skin, i.e. welding gloves, welding sleeves, or welding jacket. • Hardhat mounted face shield with welding shade for the type of welding being conducted must be worn along with safety glasses. • Welding screens or shields must be used to protect

Condition / Exposure	Description of Hazards	Control Methods
		co-located workers from exposure to the welding arc flash. • Verify fire watch has been trained and has appropriate fire extinguisher(s) available. • Appropriate environmental controls (e.g. ventilation) shall be established as necessary to prevent the accumulation of welding fumes. • Respiratory protection will be required if the local ventilation is proven by IH air monitoring not to sufficiently protect the worker from the welding fumes. • If combustibles or flammables cannot be removed, they must be covered with fire resistant welding blankets. • The Hot Work Permit Checklist shall be used daily to evaluate the hazard controls established in the work area.
Hot Work – Grinding	• Burns to skin due to exposure to thermally hot surfaces • Fires • Abrasions to face • Cuts to hands	• **HOLD POINT: Obtain Hot Work Permit from NLR FM.** • The Hot Work Permit Checklist shall be used daily to evaluate the hazard controls established in the work area. • Guards must be adjusted properly. Replace damaged guards. • Remove or cover combustibles and flammable materials prior to starting. • Verify fire extinguisher is located at the work area and functions. • Before use, check the manufacturer's stated running speeds, or markings on the grinder, and grinder wheel. • Ensure tool will not operate when unattended by checking the dead-man (constant pressure) switch. • Wear safety glasses, goggles, or face shield (with safety glasses or goggles) to protect against flying particles. Gloves may be required, depending on the work. • Do not use wheels that are cracked or those that excessively vibrate. • Use both hands when holding the grinder.
Pressure Testing	• Injuries to workers or others • Damage to equipment	• Verify the pressure relieving device is set at maximum allowable pressure for weakest portion of the segment to be pressure-tested. • Barricade the area and post signage. • Keep away from the pressurized segment of the system being pressure-tested. • Never increase the test pressure more than the maximum allowable pressure for the weakest portion in the segment or pressure rating of the hose & coupling. • Do not leave the pressurized hose unattended when the pressure test is going on. • Verify the gauges have been calibrated within the past year and are working properly • Isolate the equipment from all sources of energy when not in use. • Do not change (exceed / decrease) the duration of pressure test without permission from the Engineer.

Condition / Exposure	Description of Hazards	Control Methods
		• Ensure the safe depressurization of air.
Start Up / Testing of Equipment	• Electric shocks, arc flash injuries • Damage to equipment	• Construction of equipment is in accordance with design specifications. • Follow manufacturers or factory start up procedures. • Any electrical > 50 v requires workers to be NFPA 70 E trained.
Refrigerant Recovery	• Leaks • Electrical shocks	• Establish controlled access zone, and ensure only individuals associated with the recovery activities are in the area. • Only certified and trained technicians may recover refrigerants. • Do not leave any refrigerant recovery machine ON and unsupervised. • Check the hoses and the shut off valves before starting the process. • Check the power cord for any nicks.
Pressure Washing Surfaces	• Facial and eye injuries • Foot injuries • Slips and falls	• Worker must be trained to operate pressure washing equipment. • Wear face shield – contact subcontractor safety representative and NLR ESH POC for exemption if face shield creates a greater hazard. • Inspect equipment and verify safety devices are functioning properly. • Never point the pressure wand in the direction of coworkers. • Wear rubber boots (preferably safety toed) with slip resistant soles.
Installing insulation	• Irritation to skin • Particles in eyes • Cramping of muscles	• Wear long sleeve shirt or coveralls. • Wear safety glasses or goggles. • If working in confined or tight area, leave frequently to stretch.
Painting / Caulking	• Slips and falls • Skin and eye Irritation	• Good Housekeeping – Workers must quickly wipe up spills. • Wear appropriate PPE per the SDS. • If contact with eyes or skin occurs, flush immediately.
Drywall Patching and Sanding	• Silica exposure • Debris in eyes	• **Hold Point: Follow Silica Task Specific Plan.** • Wear proper PPE, goggles if working overhead and ANSI rated safety glasses with sturdy side shields
Excavating	• Hitting and damaging an existing underground utility service • Silica exposure • Falls	• **Hold Point: Obtain Excavation Permit from NLR FM.** • **Hold Point: Follow Silica Task Specific Plan** • All underground utilities shall be located and identified prior to the start of work. • If utilities within 5’ of the excavation cannot be locked out, hydro vacuuming will be required. • Fall protection required if within 6’ of excavation and it is > 6’ in depth. • All trenching and excavating shall be conducted in accordance with OSHA 1926 Subpart B “Excavations”. • Mark the construction area (e.g. barricades, signs, fence) to delineate the work boundary and prevent entry by authorized personnel. • Cover / or delineate excavated area if left open overnight.
Pouring and Finishing Concrete	• Material in eyes • Strains	• 15-minute eyewash must be readily available. • Wear ANSI rated safety glasses with sturdy side

Condition / Exposure	Description of Hazards	Control Methods
	• Concrete burns • Skin irritation • Cuts and abrasions on legs and arms	shields, and waterproof gloves. • Use proper lifting techniques and avoid repetitive motion injuries. • Employer must implement Hazard Communication Program and provide worker training. • Long-sleeved shirt and pants. • Eyes and skin that come in contact with fresh concrete must be flushed thoroughly with clean water. • Do not clean trowel on pants.
Concrete Core Drill	• Silica Inhalation • Electrocution/ shock • Slips from slurry • Dropped core slug • Head injuries	• **Hold Point: Obtain Surface Penetration Permit from NLR FM.** • **Hold Point: Follow Silica Task Specific Plan.** • Follow manufactures requirements for operating tool. • Use a wet vac to vacuum slurry. • Use proper lifting methods to handle the concrete slug once cut and avoid a musculoskeletal injury. • Wear hard hat and barricade area below coring area.
Operating Machinery and Heavy Trucks	• Workers near operating equipment could be struck and injured • Operating equipment tips overs • Operating equipment hits vehicles • Fires to equipment • Pedestrians struck by equipment	• Equipment operators must be properly trained for the equipment they will operate. Documentation of such training shall be provided to the NLR ESH POC. • Operating equipment shall be inspected daily. Damaged equipment shall not be used. • Operating equipment must be equipped with the Roll Over Protection System (ROPS). • Operating equipment must be equipped with a functioning backup alarm. • Operators must wear seat belts while the equipment is operating. • Operating equipment shall be equipped with fire extinguishers that are fully functional and properly maintained. • Wear reflective, high-visibility traffic safety vests (minimum American National Standards Institute [ANSI] Class 2). • Organize jobsite to avoid operating equipment in proximity to parked vehicles and other equipment. Install construction fencing or barricades to delineate the construction zone. • Use flaggers as necessary to control construction area traffic. • The operator must inspect the work area prior to operating the equipment to assure stable and safe conditions. Wet and soft ground conditions will compromise stability.
Hoisting and Rigging Operations	• Operator error results in dropped load • Overload condition resulting in dropped load • Crushing and shifting suspended loads resulting in injury	• Operate the hoist apparatus in accordance with the manufacturer's recommendations and load charts. • At no time shall any worker be allowed to stand or work beneath a suspended load. • Conduct Pre-Lift Safety meeting to review the sequence of work, assignments, and responsibilities. • Inspect all rigging and hardware prior to the lift. Suspect and damaged equipment shall not be used. • De-rate slings and hardware to reflect the hitch configuration and sling angles.

Condition / Exposure	Description of Hazards	Control Methods
		• Workers providing signaling and rigging services shall be qualified and certified.
Crane Operations	• Operator error results in dropped load • Tip over resulting in operator injury or death • Overload condition resulting in dropped load • Crushing and shifting suspended loads resulting in injury • Wind loading resulting in shifting or dropped load • Electrocution from lightning • Crane tip over due to unstable ground conditions or voids under the concrete slabs	• Verify lifting plan has been reviewed and accepted by NLR ESH POC. • All two-crane lifts and single crane lifts exceeding 75% of the crane's lifting capacity will require an engineered "lift plan". Lift Plans must be reviewed and accepted by NLR. • Crane operators shall be properly trained, qualified and licensed (e.g. NCCCO). The license must reflect crane type. • Crane Operators must have proof of medical "fitness for duty". A current DOT medical card or equivalent NCCCO medical card is required. • Crane Company must provide evidence of frequent and periodic inspections. A copy of the last Annual Crane Inspection must be furnished to the NLR ESH POC. • Crane company workers must employ fall protection during rig up/down of crane booms. • Operate the crane in accordance with the manufacturer's recommendations and load charts. • Conduct inspection or work area to verify ground and terrain conditions. Ground must be stable to ensure safe operation. • Cordon off crane's swing radius to exclude entry while cranes are operating. • At no time shall any worker be allowed to stand or work beneath a suspended load. • Employ tag lines as necessary to properly control the load. • Conduct Pre-Lift Safety meeting per NLR requirements. Conduct radio check. • A designated "lift master" shall direct the lift. • Inspect all rigging and hardware prior to the lift. Suspect and damaged equipment shall not be used. • De-rate slings and hardware to reflect the hitch configuration and sling angles. • Workers providing signaling and rigging services shall be qualified and certified. • Do not override safety systems. • Discontinue crane operations if winds exceed the limits stated by the crane manufacture or at lower speeds based on the discretion of the operator. No lifts if wind speed is sustained at 25mph. • Anemometer is required to be installed on the crane. • Discontinue use of the crane in the event of threatening weather (lightning is seen, or thunder heard) or if notified of a threat based on the local weather websites lightning detection system. • Verify the crane placement location is stable and free of unseen voids.

- **Hold Point** – Coordinate all LO/TO through FM on all energy sources (i.e. electrical, hydraulic, etc.).
- **Hold Point** – NLR FM to issue Excavation Permit prior to work.

- **Hold Point** – NLR FM to issue Surface Penetration Permit prior to conducting any building surface penetration work.
- **Hold Point** – NLR FM to issue Hot Work Permit prior to any heat, flame, or spark producing work.
- **Hold Point** – NLR FM to issue Fire Protection System Outage Permit.
- **Hold Point** – ESH POC to review contractor Fall Hazard Analysis and Fall Protection Plan.

(Project Name)
Emergency Assembly Points
(NLR to Provide)