Appendix G

Segment 23, Astoria-Rainey Cable

Safe Work Plan

E-J Electric Installation Co.

SAFE WORK PLAN – INSTALLATION OF CONDUIT & 345 KV FEEDERS FROM ASTORIA ANNEX TO RAINEY SUBSTAION

DOCUMENT # 230120-S-5001
Contract Safety Section

May 11, 2023

CHPE LLC - Contract No.: 2023-02-03

Prepared by:	Reviewed & Approved by:	Reviewed & Approved by:
William Grullon, Field Safety Director	TBD, General Foreperson	Matt Fichot, Project Manager
William Grullon		

Revision History

Revision Number	Date submitted	Description
0	May 11, 2023	Initial Submission
1		
2		
3		

Worksite Review Date & Attendance Record:

Print ***Signature*** ***Date***

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SAFE WORK PLAN: INSTALLATION OF CONDUIT & 345 KV FEEDERS FROM ASTORIA ANNEX TO RAINEY SUBSTAION ASTORIA NY, 11106

Primary Activity:

- Installation of conduit & 345 KV feeders from ASTORIAN annex to the Rainey Substation Astoria

Sub Activities:

- Safeguard the public and property throughout the installation.
- Continually critique of installation procedures for possible enhancements.
- Maintain safe and uninterrupted pedestrian walkways throughout installations.

Work Description:

E-J Electric Installation Co. shall furnish and install (6) 8" Conduits and 345 KV feeders through manholes from Astoria Annex to the Rainey substation. This work shall be strictly performed by IBEW Local Union #3 trained "A" Journeymen Electricians and under the direction of the project assigned and experienced General Foreperson/Competent Persons. Work activity is generally planned between the hours of 7:00 AM and 2:30 PM, Monday through Friday, with additional shifts, and/or weekend work to be coordinated with CHPE LLC in advance and scheduled accordingly.

Note: This JHA addresses anticipated general construction and electrical installation safety practices. If unusual and/or high-risk installation activities arise that are not addressed in this plan, additional activity and location specific JHA will be prepared and submitted for approval before the activity begins.

ACTIVITY, HAZARD DESCRIPTION AND CONTROL METHODS:

STEP/TASK	RISK	PREVENTION/MITIGATION	COMMENT
Site Access And Site Security	Un-Authorized Personal in work/delivery areas.	All contractor personnel will be issued E-J Electric logo safety vests and hard hats and will be required to show photo ID's upon request. Prior to each working shift, the competent person will review and verify credentials including OSHA 10/30 and/or applicable NYC, DOB, SST Training. E-J Electric personnel will maintain secure area protection provided and E-J material and equipment security. Overall site access and security is the responsibility of PANY and E-J personnel will comply with all site security requirements.	See additional training information in the "Manpower and Employee Training" section of this program.
Drug, Alcohol and Smoking Policy	Impaired & Unsafe Worker Behavior.	E-J Electric maintains and enforces a "Zero Tolerance" Drug & Alcohol Policy. Violations will result in immediate removal from the worksite/project. All employees have access to a substance abuse program implemented by Local Union #3 consistent with the Collective Bargaining Agreement.	
Site Safety Coverage	Insufficient Site Safety Management Coverage.	All E-J Electric forepersons are qualified Competent Person and will maintain a continuous site presence. Daily safety reports (Daily JHA's) shall be prepared and maintained on site and shall address any/all safety exceptions including corrective actions taken and unusual occurrences.	
Communication	Unclear Communications	All contractor personnel will be supervised and directed by the on-scene Foreperson. If more than one Foreperson is on-scene, one will be designated as the lead Foreperson and will assume command of the work site. All E-J Electric personnel have "Stop The Job Authority" and if at any time any worker believes there is a danger or unsafe condition, they will immediately instruct the stoppage of all work activities, until such time that a satisfactory agreement is reached by all parties.	

STEP/TASK	RISK	PREVENTION/MITIGATION	COMMENT
Worksite Lighting	Insufficient Work Site Lighting.	Adequate lighting is required and will be assessed at the scene by the Foreperson. Although work activities are anticipated during daylight hours, if work periods extend into or are scheduled for night/dark periods, temporary lighting will be provided as needed and as directed by E-J's Competent Person. Construction worksite illumination will be maintained for work activities at a minimum of 5 candle power consistent with OSHA lighting standards for construction work sites.	
Manpower and Employee Training	Insufficient Staffing for Activity & Insufficient Required Training.	Adequate staffing will be available to support the scheduled work activities. Workforce is not expected to exceed 80 workers at project peek. Personnel will wear necessary and standard Personal Protective Equipment including but not limited to a hardhat, safety vest, safety glasses, approved safety toe safety shoes, E-J issue level 3 cut & puncture resistant gloves, appropriate clothing including long pants and sleeved shirts (min 4" sleeve), and fire and arc rated PPE as applicable, etc. All on-scene personnel will have completed NYC, DOB required Construction Safety SST Training including OSHA 30 Hour Construction Safety Training. The General and all Forepersons will have required training and project knowledge and shall be considered Competent Persons.	
Public/Pedestrian Safety	Public/Pedestrian Injury.	All areas of possible danger to the public will be clearly identified, visible and CAUTIONED off. When necessary, barriers will be set up to isolate the work area and ensure that no, unauthorized personnel, or improperly outfitted authorized personnel enter work zones.	
Hand Protection	Hands Cut Protection	All workers will be provided hand protection for full time use. Given the nature of electrical construction actives and need for increased dexterity for sensitive touch terminations and testing activities, E-J Electric provides level 3 cut and puncture resistant gloves to all workers. If a situation/activity arises requiring greater cut and puncture resistant gloves for the specific activity, they will be supplied.	

STEP/TASK	RISK	PREVENTION/MITIGATION	COMMENT
Respiratory Protection	Respiratory Hazards	Given the nature and scope of our contract work, no written respiratory program is required. Limited drilling of concrete surfaces will be accomplished with wet core drills machines and handheld vacuum hammer drills will be used for drilling for anchors. Dust Mitigation Forms will be completed, notarized and submitted if required. E-J maintains strict compliance with osha Silica Exposure requirements and has in place a respiratory protection HASP. (Reference, Respiratory Protection & Respirable Crystalline Silica HASP available on request and always employee available on E-J University)	
Pre-Work Site Stretch & Flex Program and Daily Safety Briefing.	Soft tissue injuries.	E-J Electric has instituted a comprehensive Daily Stretch & Flex program company wide. Daily Stretch & Flex shall be conducted at the start of each work shift for all E-J employees and shall move into the Daily JHA briefings (Daily JHA Documented) and discussion about the E-J Daily Safety Message, to ensure all workers begin each shift thinking, discussing, and practicing sound safety principles.	
Pre Work Site Survey and Tool Box Safety Meeting.	Personnel unaware of planned/intended work activity & emergency procedure/response awareness.	The job site Foreperson/Competent Person shall conduct pre work site surveys/walk-throughs with all workers discussing the work shift activities and possible safety concerns/hazards and necessary corrective actions. Also discussed shall be emergency evacuation routes and procedures, emergency muster locations, as-well-as ensuring all workers have the proper and activity specific PPE. Evacuation routes and muster locations shall be posted at each worksite whenever possible, and clearly understood by all E-J worksite personnel. E-J Electric's required Daily Job Hazard Analysis form shall be completed and maintained for inspection.	

STEP/TASK	RISK	PREVENTION/MITIGATION	COMMENT
Cable Pulling/Installations	Sprains & Strains	Supervisors will brief worker on positioning and the importance of remain on the outside of the cable pulling radius. Workers shall wear E-J Issued cut resistant gloves and safety toe boots and use teamwork when hand pulling or pulling equipment when necessary. Strict adherence with manufactures and QA/QC tension specifications is required.	Cable Pulling/Installations
SDS	Hazardous Material/Substance Exposure & Improper First Aid Treatment.	The onsite Competent Person will maintain copies of all site compound related SDS's. Workers will be trained during their orientation program where to find the SDS binder and how to use the provided information. No new SDS will be arbitrarily added to the SDS log unless first reviewed with all workers. Additionally, E-J Electric has implemented a SDS on Demand program recognized and approved by OSHA. This program is run by 3E Company which provides Safety Data Sheets 24 hours a day, 7 days a week and 365 days a year through phone, fax and e-mail.	All Local Union #3 Electricians have been provided mandatory GHS training at by the Local Union

STEP/TASK	RISK	PREVENTION/MITIGATION	COMMENT
On-Scene, Non-Contractor Personnel Safety	Authorized Observer Injury & Worker Attention Distraction	All on-scene, non-contractor personnel or observers will remain clear of the work activity/operation in a safe area designated by the Foreperson. Locations designated will provide clear view of the activity while providing a safe distance from potential injury. If at any time interaction with installation personnel is required, the work activity will stop until full attention to the activity at hand can resume.	
Employee/Delivery Personnel Safety	Employee Injury	All personnel will stay clear of the load and at no time will anyone be positioned beneath any load. All personnel will remain conscious of possible pinch points. Additionally, a secondary tie/safety line will be used to steady the load as determined by the competent person.	
Delivery & Storage of Equipment & Material.	Vandalism and Tripping Hazards.	Locations suitable for storage of job toolboxes, material and equipment will be discussed in advance with client supervision and only those locations that do not interfere with public access and egress routes and provide adequate security to ensure operational safety will be considered. Combustible materials will not be stored onsite.	
Electrical Safety	Exposure To Energized Cable or Systems.	All E-J Electric field electricians have been extensively trained and qualified through Local Union #3. As part of our LOTO Program E-J has developed a De- Energization, Energization and Testing Safety Inspection and Sequencing Checklist to be completed before applicable activities. The checklist includes approach boundary and arc protections requirements for the various voltages and equipment (Reference, LOTO Program including our De- Energization, Energization and Testing Safety Inspection and Sequencing Checklist available on request and always employee available on E-J University)	
Tool Safety & GFCI Protection & Tool Tethering	Electrical Shock	Workers will utilize both battery-operated and electric power equipment and hand tools. All power tools will be GFCI protected as per OSHA requirements. Every tool (powered and/or hand tool) will be inspected for defects prior to each use by the worker preparing to use the tool. Any defect identified will require either immediate repair or the defective item replaced. All tools used will be properly insulated. Tools being used on building perimeters and at shafts shall be tethered or other means of drop protections shall be deployed. Exclusions zones will be established beneath work activities where dropped tools or material exposures are possible.	

STEP/TASK	RISK	PREVENTION/MITIGATION	COMMENT
Overhead Protections	Struck-By Injury	Controlled Access Zones shall be the primary means of overhead protections. Netting or tool and material tethering will be established when working at leading edges including shafts, and material and equipment will not be placed or stored within 15 feet of an exposed edge.	
Fall Protection	Fall Related Injuries.	Fall protection will be provided and utilized as set forth in Subpart "M" of the OSHA Construction Safety Standard. Fall protection is required for all worker walking or working surfaces with an unprotected side or edge, 6 feet or more above a lower level and must be protected by a guard rail system, safety net, or personal fall arrest systems. A fall arrest system consists of an anchorage, connectors or a body harness and may include a lanyard with a deceleration device, lifeline, or a suitable combination. The use of body belts and non-locking snap-hooks are prohibited. Fall protection in the form of guard rail systems will be deployed when scissor lifts are used consistent with OSHA scaffolding regulations. The guard rail systems will be designed/engineered by the manufacture of the scissor lifts and daily inspections conducted to ensure design specifications. When aerial platforms/lifts are used, personal fall arrest systems will be provided and utilized. Personal fall arrest system connection points will be as per equipment design and manufacturer provided. Only full body harnesses with self-retracting lanyards (SRL) shall be utilized.	E-J Electric makes no distinctions between aerial and scissor lifts and PFAS shall be used on all lifts (aerial and scissor). Exceptions to E-J's SRL requirement shall be specifically directed by the Corporate Safety Director or General Superintendent.
Scaffold Erection & Use	Employee Injury	E-J Electric will not normally erect scaffolding structures. Occasionally limited or temporary use of low-level baker scaffolds may be required and therefore, training requirements are identified, and qualified company personnel are maintained. If worksite scaffold construction is required, professional designed and engineered scaffolds will be subcontracted to a NYC, DOB approved scaffold construction company, and include engineering, design, construction, and certification. Daily competent person (32-hour scaffold erector/dismantler) inspections shall be performed if E-J Electric scaffolds are constructed, and 4-hour user certified worker training will be required before any E-J Electric is permitted to begin work on any scaffold.	

STEP/TASK	RISK	PREVENTION/MITIGATION	COMMENT
Confined Spaces	Multiple Air Quality And Personal Employee Physical Safety Hazards	Spaces will be classifies as being confined if they include all of items 1 thru 3 below and at least one of items 4 thru 7 below. 1. The space must be large enough to allow an employee to enter and perform work. 2. The space must have limited, or restricted, means of entry or exit (difficult to enter and leave due to narrow passageways and hatches or areas where the configuration of the facility increases employee risk by hindering evacuation and rescue efforts). 3. The space must not have been designed for continuous employee occupancy (spaces were created to contain such things as power cables, degreasers, sawdust and sewage). 4. The space contains, or has the potential to contain air that is unsafe to breathe (e.g. poor ventilation which could permit the build-up of harmful gases). 5. The space contains a type of material (e.g., grain or fine sand) which can create quicksand effect and potentially entrap the employee. 6. The space has an internal configuration such that the employee could be trapped or asphyxiated by inwardly converging walls or a floor which slopes downward and tapers to a smaller cross section. 7. The space contains any other serious safety or health hazards. Manholes are generally considered Confined Spaces unless they have two means of access or egress and do not have adverse atmospheric conditions (Unsafe Air To Breath). Those manholes that are determined to be Confined Spaces will require the following protection activity in addition to standard safety requirements.	

STEP/TASK	RISK	PREVENTION/MITIGATION	COMMENT
Confined Spaces Continued		• Confined Space Qualified Personnel to enter the confined space. • Air sampling prior to ventilating and continuous monitoring while in the space. • Ventilation System. • PPE/Rescue System including a Tripod and mechanical wench and a Full body harness. • A rescue person manning each location trained in non-entry recovery and with effective means of emergency communication capability. • Continuous means of communication between confined space worker and rescue person. Verbal communication is sufficient depending on the locations from and distance between each other as well as environmental impacts on verbal communications. Insufficient verbal capability requires other means of reliable communication. It should be noted that two thirds of OSHA reportable confined space attributed deaths result from attempted rescue. Rescue procedures will include down employee recovery through the use of external recovery equipment only. New York City Fire, Police and Emergency services will be summonsed for any possible entry rescue. At no time will E-J Electric employees be prepared to or attempt entry rescue. Confined Spaces that are identified as having adverse atmospheric conditions or those that cannot be eliminated and "maintained in a condition safe to enter by continuous forced air ventilation only", (OSHA 29 CFR 1910.146 Permit Required Confined Space entry requirement) will not be entered. Such manholes will be Classified as Permit Required Confined Spaces due to their IDLH potential, studied, entry activity planned and a site specific SWP drafted and submitted for approval prior to work activity. For Permit Required Confined spaces, OSHA 29 CFR 1910.146 Permit Required Confined Space entry requirements will be strictly followed.	An air quality monitoring device, with an audible warning alarm will be used to determine that the air quality poses no threat to workers prior to entrance into confined spaces or manholes. Additionally, workers entering the manhole will maintain a monitor at all time while in the manhole to ensure continuous monitoring. Additionally, manhole ventilation fans will be used to provide continuous fresh air circulation following initial air testing and prior to personnel entering confined space manholes.

STEP/TASK	RISK	PREVENTION/MITIGATION	COMMENT
Ladders	Falls	Typically, there are four types of ladders – straight ladders, fixed ladders, extension and various types of stepladders. Before starting any job that requires the use of a ladder, the ladder will be inspected by the worker using it. The inspection will include checking for broken rungs, damaged side rails and looking for other obvious defects or hazards. Once the ladder is determined to be safe for use and set up it, must be re-inspected for stability. Step ladders will be level and square with all four legs on solid footing. Straight or extension ladders must extend three feet above the landing and tied off to prevent it from tipping over and will be set up consistent with a the "1 to 4 rule" which reminds that the ladder should be one foot away from the base of the vertical support for every four feet in height. All ladders will be made of wood or fiberglass and will be used in the fashion they were designed and per manufactures specifications. The use of aluminum ladders is prohibited. Job site manufactured ladders are discouraged and those deployed by the prime or other contractors for general site access will require an inspection and authorization by the safety manager. Ladders used to access manholes are normally used vertically passing through the manhole chimney and leading in the manhole/vault. Such ladder set-up is consistent with OSHA Tall Fixed Ladder requirements. Ladders being used to perform work while stopped/standing on the ladder require fall protection at 6 feet. Ladders used to ascend or descend only do not require fall protection under the height of 24 feet consistent with OSHA requirements. Ladders that are 24 feet or grater require fall protection from the point 24 feet and above. OSHA acceptable methods of Tall Fixed Ladder fall protection can be accomplished with either a ladder cage or well (Manhole Chimney) OR a self-retracting lifeline (Personal Fall Arrest). Such a ladder cage or well (Manhole Chimney) cannot exceed 30" between the center line of the ladder rungs to the cage or well.	

STEP/TASK	RISK	PREVENTION/MITIGATION	COMMENT
Ladders Continued		Given the physical presence of the manhole chimney which in itself is a cage, personal fall arrest systems are not required for ascending or descending manholes providing the manhole chimney is within 24 feet of the landing surface. Although often manholes are equipped with permanently mounted manhole cleats, for E-J Electrical personnel, use of such equipment is prohibited due to inconsistency with OSHA ladder requirements and the contractor's inability to ensure their stability.	
Fire Protection – Hot Work	Burns	All worksite should be familiar with the nearby fire extinguisher locations and inspect them to determine their fill capacity and inspection date. Exceptions shall require a stoppage of work and supervisor and client notification. Hot work activities require hot work permits and qualified fire watch protocols. Hot worked activities will also require a task and location specific JHA before work is conducted.	
Worksite Debris	Tripping and Vandalism Hazards	Normal construction debris will be removed at regular intervals during the work shift or as frequently as necessary to prevent tripping hazards. of each work shift, all debris will be removed from work locations.	
Bio-Hazards & Environmental Cleanliness	Worker Bio-Hazard & Contaminant Exposure	Universal precautions must be taken upon entering all site facilities including manholes to ensure possible bio-hazards, both visible and non-visible, including but not limited to; rodent remains and droppings, standing water/fluids, pesticide residues, dirt and dust, etc., are not disturbed. Precautions also include avoiding contact with equipment, materials, objects, structural components, etc., which make up or are contained within manholes and shuffling feet or footsteps which could perpetuate stirring of dirt and/or unknown substances on floors. Standard personal protective equipment (PPE) including; work shoes, hardhats, safety vests, safety glasses, goggles, face shields, gloves, Tyvek coveralls, respirators, etc., should be used to mitigate potential hazards to the greatest extent possible. Work required that will disturb possible bio-hazards previously described must be rescheduled until the environment is cleaned and certified free of hazard by the property owner.	

STEP/TASK	RISK	PREVENTION/MITIGATION	COMMENT
Completion of Daily Work - Worksite Inspection, Clean-up & Security	Trip and Fall Hazards & Unauthorized Assess	An inspection of the work site will be conducted at the completion of the day's activities. The on-scene Foreperson and/or competent person shall conduct said inspections. All material and equipment will be stored in approved and secure locations. All facility access points under E-J Electric control will be locked to prevent unauthorized access.	
Accident/Incident Notification & Documentation Procedure.	Slow Emergency Response and Insufficient documentation.	E-J Electric maintains both an internal and external accident/incident notification and documentation procedure. This procedure requires: Following Each Accident Occurrence: Verbal Initial Notification: Immediate phone or face-to-face notification will be made between E-J Electrical General Foreperson and Port Authority Police Department and CHPE LLC Construction Corp. Construction Site Superintendent, initial information will include: Date Time Location Treatment Required Brief Description of the Occurrence. Written Initial Notification: Following the initial phone or face-to-face notification, an e-mail notification will be sent with the same information listed above **And Noting: Required Documents Including The Foreperson's 24 Hour Incident Report and ADR C-2, Will Be Prepared And Forwarded ASAP And Not Exceeding The End Of The Work Shift.**	
Accident/Incident Investigation & Follow-up.	Loss of Critical Investigation Data	Following the occurrence of an accident/injury all work in the specific and associated areas shall STOP, client notifications made and E-J Electric and CHPE LLC investigations are complete. The General Forepersons shall designate a person (preferable a Shop Steward, Foreperson, Safety Representative, or other E-J Supervisor/Manager) to accompany the injured worker(s) for medical treatment. Work activities will resume only when CHPE LLC provides permission/direction.	

STEP/TASK	RISK	PREVENTION/MITIGATION	COMMENT
Return To Work	Reinjury	E-J Electric shall utilize E-J's return to work program begins with physician evaluation and return to work permissions. Every effort to eliminate or reduce lost time is evaluated. Given the physical nature of construction related duties, light duty permissions usually result in returns to E-J offsite offices, prefab, or shop facilities, and full duty medical clearance for worksite returns unless nonphysical worksite opportunities are available.	

Competent Persons Roster

Name	Title	Training	Issued	Expiration	Cell
TBD					

Emergency Facilities & Contact Numbers

Nearest NYPD Police Department Precinct: 114th Precinct

Commanding Officer: Inspector Kenneth S. Gorman
Address: 34-16 Astoria Blvd. Queens, NY, 11103-4425
Phone: (718) 626-9311

Nearest Hospital:

Mount Sinai Queens Hospital: 25-10 30th Ave., Queens, NY 11355
Phone: (718) 932-1000

Key Project Personnel

E-J Electric Personnel & Emergency #'s:			
TITLE	**NAME**	**OFFICE NUMBER**	**CELL NUMBER**
Project Executive	Brendon Bergin	718-786-9400	917-295-2292
Project Manager	Mat Fichot		917-567-7349
Asst. Project Manager	Dylan Avila		718-869-6328
Project Engineer	Chris Hawkins		516-398-5104
Transmission Developers Inc Personnel & Emergency #'s:			
Construction Manager	Roger Lemos		774-343-2475
Project Manager			
Superintended			
Safety Manager			