SEPCOIII YNABU-PHASEIII POWER PROJECT	JOB SAFETY ANALYSIS (J S A)	DATE: JSA No .01 Rev:00

PROJECT: Yan Bu III	CONTRACTOR NAME: SEPCOIII
LOCATION: YANBU-PHASEIII POWER PROJECT	ADDRESS: SEPCOIII YANBU-PHASEIII POWER&DESALINATION PLANT
	CONTRACT NO: SEP-01-ZAA-NVY-20314

JOB DESCRIPTION: ELECTRICAL EQUIPMENT MAINTANANCE AND REMAINING WORK

EMERGENCY ACTION PLAN:
One team member with first aid qualifications and emergency evacuation
Mobile communication in area at all times HSE OFFICER-
Access into area for emergency vehicle to be kept clear.

PLANNED HIGH RISK CONSTRUCTION ACTIVITY

☐ scaffold erection	☐ MANUAL EXCAVATION	☐ Confined Space Entry	☐ Hazardous Substance use	☐ Work in/over water
☐ HOT WORK	☐ Tilt up/precast use	☐ Structural alterations	☐ Mobile plant movement	☐ Critical/heavy lift
☐ Demolition work	☐ Work at heights	☐ Asbestos removal	☒ Electrical Equipment Maintenance Work	

REVIEWED BY: SEPCO-III DISCIPLINE MANAGER:

Name	Position	Signature	Date
Liang Zhiqi	Elec. Manager	梁志奇	09/04/2024

REVIEWED BY: SEPCO-III HSE MANAGER:

Name	Position	Signature	Date
Changwei	Changwei		09/04/2024

APPROVED BY: SEPCO-III Construction MANAGER

Name	Position	Signature	Date
Liu wei	Manager		09/04/2024

P.P.E REQUIREMENTS "Check ☒"				PLANT, EQUIPMENT & TOOLS FOR JOB "Check ☒"				TAGGING & SIGNS "Check ☒"		PERMITS/INSTRUCTION "Check ☒"	
Safety Harness	☐	Air Purifying Respirator	☐	Ladder	☐	Excavator	☐	Persons Working Above	☐	MSDS's	☐

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Static Line	☐	Confined Space Harness	☐	Hand Tools	☐	Winch	☐	Barrier Mesh	☐	Instruction Manual	☐
Black Safety Glasses	☐	HV Gloves	☐	Shovel	☐	Extension Leads	☐	Flagging	☐	HV Access	☐
Clear Safety Glasses	☐	Gloves – Hyflex (Nitrile)	☐	Welding Machine	☐	Backhoe	☐	Personal Locks	☐	Floor/Roof Opening	☐
Goggles	☐	Leather gloves	☐	Compactor	☐	Power Source	☒	Personal Danger Tags	☐	Hot Work	☐
Face Shield	☐		☐	Drill	☐	Crane	☐	Out of Service Tags	☐	Lockout/ Tag out	☐
Sun Screen	☐		☐	Grinder	☐	EWP	☐	Information Tags	☐	Excavation	☐
Hearing Protection	☐		☐	Scaffold	☐	Fans	☐	Barricades & signs	☒	Confined Space	☐
SCBA	☐		☐	Fire Extinguisher	☐	Scissor Lift	☐		☐	High Pressure / Abrasive Blasting	☐
Airline	☐		☐	Fire Blanket	☐		☐		☐	Suspended Personnel Platform	☐

Skills/Competencies/Authorisations
"Check ☒"

EWP boom > 11m	☐		☐	Excavator	☐	Rigger I	☐	Asbestos removalist	☐
Scissor Lift	☐		☐	Front End Loader	☐	Rigger II	☐	Light Vehicle	☐
Concrete Placing Boom	☐		☐	Backhoe	☐	Dogger	☐	Heavy Rigid	☐
Personnel Hoist	☐	Forklift Type and Capacity:	☐	Grader	☐	Scaffolder I	☐	Articulated	☐
Material Hoist	☐		☐	Loader	☐	Scaffolder II	☐	Modular Transporter	☐
Skid Steer	☐		☐	Scraper	☐	Scaffolder III	☐	Boat	☐

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LIKELIHOOD CLASSIFICATIONS	
LEVEL	
Unlikely	Consequence unheard of:/not known to have occurred; very unlikely to occur under normal conditions.
Rare	Consequence know to have occurred in construction industry; unlikely to occur in normal conditions.
Possible	Consequence has occurred within the company; may occur under normal operating conditions.
Likely	Consequence occur several times per year within the company; very likely to occur at sometime under normal operating conditions.
Very likely	Consequence occurs several times per year at similar projects/locations; can be reasonably expected to occur under normal operating conditions.

CONSIQUENCE CLASSIFICATION				
SEVERITY LEVEL	SAFETY AND HEALTH	ENVIRONEMENT	REPUTATION	PORPERTY FINANCIAL
Minor	First aid or minor injury/illness no medical treatment	Insignificant impact, fully contained on site (Env. Level 3)	Company/client / local community concern, no media attention	Minor loss ($10 K)
Medium-	Medical treatment/restricted work day case, temporary health effect.	Negligible short-term impact confined on site. No regulatory exceedance (Env. Level 3)	Community concern with local media attention	Medium loss ($10<$100K)
Serious	Lost time injury/illness or moderate (<30% of body) permanent disability to one or more people	Moderate to significant impact confined on site, regulatory exceedance or any off site impact Env. Level 2	State or provincial concern with regional media/community attention	Serious loss ($100<$1M)
Major	Single fatality or severe (>30% of body)permanent disability to one or more people	Serious impact on or off site or potential enforcement action Env. Level 2	National media/community attention	Major loss($1M<$10M)
Catastrophic	Multiple fatalities or permanent disability/ significant irreversible health impact of 3 or more people	Very serious impact, long term liability, or irreversible damage, enforcement action. Env. Level 1	International media attention	Catastrophic loss (>$10M)

		LIKELIHOOD				
CONSIQUENCE		Unlikely	Rare	Possible	Likely	Very Likely
		1	2	3	4	5
Catastrophic	5	5	10	15	20	25
Major	4	4	8	12	16	20
Serious	3	3	6	9	12	15
Medium	2	2	4	6	8	10
Minor	1	1	2	3	4	5

Risk Acceptance Thresholds
Low Risk: (1-6)Risk is considered broadly acceptable. No further risk reduction is required. Risk is managed as part of the ESH general project procedures and periodically confirmed that the risk continues to remain low. Further risk reduction is at management discretion
Medium Risk: (7-14) Risk is acceptable if reasonable safeguards and controls are in place to reduce the hazard to ALARP. Responsibility is to be assigned for proactive management with active monitoring defined as part of the ESH general project procedures.
High Risk: (15-25) Intolerable risk that must be eliminated or reduced by controls to ALARP immediately. Where the risk remains at this level following the identification of all practical controls a formal plan is to be developed that assigns responsibility for the implementation of controls and a means of proactive monitoring

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STEP NO.	JOB STEP DESCRIPTION **List the steps required to perform the task in the sequence they are carried out**	**POTENTIAL HAZARD** List the potential hazards that could cause injury/damage when the task step is performed	**HAZARD CONTROL METHOD** List the control measures required to eliminate or minimise the risk of injury	Likelihood (L)	Severity (S)	Risk (SxP)=R	RESPONSIBLE PERSON
01	Set up the area	Trip, slip and fall	❖ The supervisor must discuss with the crew members regarding Daily TBT &JSA 'prior to start the work, and specific task to be performed along with any potential hazard and also prevent any accident. ❖ Make sure proper housekeeping prior to start the work.	2	2	4	**Supervisor/work group**
02	CABLE LAYING, & TERMINATION TIGHTEN	Electrical hazard	❖ Proper tools and equipment to be used, ❖ Rubber insulated tools shall be used. ❖ proper hand rubber coated gloves to be used ❖ All tools and cables with connection to be inspected by competent person and colour coded as per the project procedure and it Should be maintained ❖ During tighten cable termination, well insulated tools should be used and alone work is not allowed	3	2	6	**Supervisor**
		Hand and arm strike against sharp objects	❖ Use specific hand gloves. ❖ Sharp edge objects should be covered properly.	2	2	4	**Supervisor/work group**
		Pinch point	❖ Competent technician to be assigned to the particular job. ❖ Use proper hand gloves, safety shoes, and full sleeve coverall for preventing pin	2	2	4	**Supervisor/work group**
03	HIGH PLACE WORKING	Personnel Fall from heights	❖ Ensure approved full-body safety harness used for employee fall protection where primary fall protection systems are inadequate and fall exposures exist, ❖ Ensure personnel travelling or working elevated areas more than six feet	3	2	6	**Supervisor/work group**

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			(1.83 meter) above ground level or adjacent surface where a fall exposure exists make use of secondary fall protection. ❖ Ensure personnel secure their safety lanyard to a structure, life line, or approved fall arresting device capable of supporting 5000 pounds (2268kg). ❖ Ensure fall protection devices such as lifeline safety harness/lanyards, etc inspected for damage and or deterioration prior to use. ❖ Ensure personnel riding in or working from mobile work platforms wear an approved safety harness securely connected to a suitable anchor				
		Tools and materials fall from heights.	❖ All tools must be providing lanyards/strings. ❖ Install toe board to prevent materials falling from heights.	2	2	4	**Supervisor/work group**
04	Preparing electrical junction boxes, plugs, lights and fixtures.	Pinch point	❖ Use job specific gloves for preventing pinch point ❖ Select the right tools for the right job. ❖ Allowed only trained and experienced person for do the job.	2	2	4	**Supervisor/work group**
		Hand and arm strike against the hand tools and material	❖ Use the right tools for the right job ❖ Use job specific hand gloves.	2	2	4	**Supervisor/work group**
		Electrical hazard while checking the electrical fittings	❖ Use rubber insulated hand gloves while working on the live electrical system. ❖ Trained and experienced person only allowed to do the job.	3	2	6	**Supervisor/work group**
05	Repairing electrical tools	Pinch point	❖ Use the right tools for the right job ❖ Use job specific hand gloves.	2	2	4	**Supervisor/work group**

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		Hand and arm strike against tools and material	❖ Use rubber insulated hand gloves while working on the live electrical system. ❖ Trained and experienced person only allowed doing the job.	2	2	4	**Supervisor/work group**
		Electrical hazard while checking the power tools after repairing	❖ Use the right tools for the right job ❖ Use job specific hand gloves.	3	2	6	**Supervisor/work group**
06	House keeping	Trip, slip, fall and misoperation of live equipment	❖ All Rubbish to be disposed of in bins provided. ❖ All personnel to be responsible for clean up and removal of all equipment and spoil. ❖ Housekeeping shall be done at all times ❖ All work areas to be thoroughly checked to ensure that all tools and equipment are accounted for before leaving site ❖ All electrical work should undergone by a competent person ❖ Do not touch any damage electrical cable due to electrical shock after using damage electrical cable ❖ During do housekeeping in electrical room, be careful do not touch any live electrical equipment.	3	2	6	**Supervisor/work group**
07	MV&LV Switchgears inside dust cleaning	Electrical hazard	❖ Only well trained electrical personnel allowed to do the job. ❖ Corresponding switchgears need to be cleaned should be drawn out and all control power should be switched off.	3	2	6	**Supervisor/work group**
08	MV&LV Switchgears loop trouble shooting	Electrical hazard	❖ Before doing any job on a live loop, the voltage must be tested first. ❖ Before dismantle any loop, the	3	2	6	**Supervisor/work group**

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			power must be switched off. ❖ Alone work is strictly forbidden.				
		Misoperation equipment	❖ Before doing any check on a live loop, it requires to be familiar with relevant drawings.	3	2	6	**Supervisor/work group**
09	Motors inspection and surface cleaning	Mechanical Hazard	❖ Keep a safe distance from the rotating part of the motor ❖ No part of the clothing worn by the staff shall be easily involved in the rotating machinery ❖ Only stopped motors surface are allowed to clean.	3	2	6	**Supervisor/work group**
10	Battery inspection	Electrical hazard	❖ Use insulated tools only ❖ Do not work on equipment with defective insulation without firstly correcting the fault. ❖ Keep a safety distance from the batteries' live part.	3	2	6	**Supervisor/work group**
		Batteries Damage	❖ Remove personal objects that contain metal such as rings, watches, bracelets and necklaces as well metal objects in general (pens, tools, etc.) that may fall out of open pockets and cause a short-circuit. ❖ Do not use alcohol and other organic solvents to clean the battery	3	2	6	**Supervisor/work group**
		Chemical Hazard	❖ Always use eye protection and rubber gloves when handling battery cells.	3	2	6	**Supervisor/work group**
		Explode	❖ Do not smoke. Do not use naked flames. Avoid creating an arc or sparks when working on the battery	3	2	6	**Supervisor/work group**

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			cells. Avoid wearing clothes that could become loaded with static electricity				
11	Routine Inspection	Untrained person	❖ Assigned only trained personnel to do tasks	2	2	4	**Supervisor/work group**
			❖ Contact with hot surface and/ damage I&C equipment	2	2		**Supervisor/work group**
			❖ Unauthorized operation of control equipment	2	2	4	**Supervisor/work group**
			❖ Damaging equipment while waking over it or use them as support while walking	2	2	4	**Supervisor/work group**
12	Lighting repairing and loop check	Electrical Hazard	❖ Use proper insulated tools ❖ Switch off light power when needed ❖ At least 2 people work together	2	2	4	**Supervisor/work group**