

CBESS Inclement Weather Management Procedure

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Authority

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1 Purpose

This Procedure specifies the requirements of inclement weather management for the Collie Battery Energy Storage System (CBESS) undertaken by SCEE Electrical.

2 Scope

This procedure applies to all Site workers, subcontractors, visitors or members of the public working on or visiting site under the control of SCEE Electrical.

3 Definitions

Term	Definition
HSE	Health, Safety and Environment.
JHA	Job Hazard Analysis.
Shall	Shall is to be understood as mandatory.
Should	Should is to be understood as recommended but not mandatory
Visitor	Person who is visiting site and has been approved for entry as a visitor
Worker	A person is a worker if the person carries out work in any capacity including work as — a) an worker; or b) a contractor or subcontractor; or c) an worker of a contractor or subcontractor; or d) an worker of a labour hire company who has been assigned to work in the person's business or undertaking; or e) an outworker; or f) an apprentice or trainee; or g) a student gaining work experience; or h) a volunteer; or i) a person of a prescribed class.

4 Responsibilities

Role	Responsibility
Project Manager	The Project Manager shall be responsible for ensuring resources are available to enable the implementation of this procedure and for the accountability of person's responsibilities as defined.
Site Manager	Ensure full compliance with the requirements of this procedure Ensure the effective implementation of this procedure.
Site Worker	Workers shall comply at all times with the procedure
HSE Advisor	Monitor app for lightning events, and communicate alert level on radio as appropriate
Supervisor	Ensure the application of this procedure. Conduct workplace Inspections in accordance with this procedure within their areas of responsibility.

5 Flowchart

N/A

6 Inclement Weather

Inclement weather is defined as any condition where climatic conditions are likely to affect safe work. Such conditions may include wind, rain, lightning, fog, or dust storms. Conditions may be present from the commencement of work or may develop over the course of the day.

The possibility of inclement weather conditions affecting work without warning is remote. In most cases by monitoring developing conditions and making themselves aware of potential hazards the exposure of personnel can be avoided or reduced.

In any situation where weather conditions do or are likely to affect safe work, affected workers and the supervisors shall consult on and seek the best method for completing work safely, or shall seek alternate safe work if available.

The intent of the Inclement Weather Procedure herein is that when or where applicable, individuals, groups, sections or areas of the workforce on the site or if possible, all workers, will work in protected safe areas. If this is not possible for all workers to work, it is accepted that some workers may continue working whilst others are not able to do so.

It is not the intent or a requirement for workers to work in inclement weather. However, in emergencies work may continue, or as agreed in circumstances such as when provided with systems or procedures to unload trailers or complete concrete pours (as examples), during periods of inclement weather where it is agreed that to not move or protect equipment or goods, substantial loss may occur, or substantial risk is present.

6.1 High Winds

In circumstances of high winds, the affected personnel will be moved to protected areas of site for alternate work. Operating cranes and MEWP's in inclement weather is subject to the manufacturer's recommendation for the maximum allowable wind speeds.

It is the supervisor and operators/spotters responsibility to monitor the wind speed and to cease operating of the plant prior to the manufacturers recommended wind speed being reached. Operators of cranes also need to take into account the wind effect on loads that are being lifted. Conditions often change throughout the shift/day, continual monitoring is required to avoid becoming exposed to high winds while in the elevated position, particularly when working around structures or plant.

6.2 Lightning

Where electrical storms occur near the site, personnel should:

- If outdoors immediately seek shelter of a substantial building or an enclosed vehicle,
- Return to ground level if working at heights,
- Never shelter under trees, the electrolyte in your body is a better conductor of electricity than the tree,
- Do not handle metal objects; stay clear of metal poles, guy wires, metal fences and structures.
- Avoid contact with electricity / gas / water services and appliances.
- Avoid washing, bathing, showering, and contact with metallic sinks, basins and plumbing.
- Any disconnection of television aerials and valued electronic equipment should be at the wall-socket and well in advance of the storm's arrival.

6.2.1 Lightning Detection mobile / Desktop Application

The CBESS project utilises a mobile application to track inclement weather such as rain and lightning. When lightning is detected within the parameters in Appendix A, a member of the Site Security Team will broadcast the relevant alert level on the radio, across all site working channels. Supervisors shall communicate with work crews and take the required action as outlined in Appendix A

As the event continues, progress will be monitored and action plans changed and communicated as appropriate.

All lightning alerts shall be communicated via the radio system using UHF channels 10, 36, 37, 38 and 39 every 30min or sooner.

6.2.2 Lightning Alert Status

Blue Alert (30-15km)	Yellow Alert (15-8km)	Red Alert (Less than 8km)
A Blue Alert will be issued when lightning is detected within 30 – 15km of CBESS	A Yellow Alert will be issued when lightning is detected within 15km – 8km of CBESS	A Red Alert will be issued when lightning is detected within 8km of CBESS
MONITOR All outdoor activities	PREPARE Specific work teams to prepare for lightning	ACT No personnel outside not in shelter. Vehicle operations can continue.

Refer to Appendix A for further detail

6.2.3 30/30 Rule

The Australian Standard AS 1768 recommends that personnel employ the 30:30 rule in the absence of approved lightning detectors. The 30:30 rule for lightning is defined as the first “30” meaning that you need to take cover if you hear thunder within 30 seconds of the lightning flash (known as the flash to bang ratio). Then wait at least 30 minutes after the last lightning flash or thunder before resuming normal activity (the second “30”).

Where project personnel are not at CBESS or Port operations and are out of radio range, it is recommended the 30/30 rule is followed

6.2.4 Movement of Personnel During Red Alert

Personnel are permitted to move between shelters with the permission of their supervisor. This also applies when end of shift occurs during a red alert. When walking between shelters personnel should ensure that:

- The route walked is the quickest path; and
- Where the shelter is a vehicle, it is parked as close as reasonably possible.

When assessing the current conditions supervisors should consider:

- Speed of storm travel;
- Intensity of storm cell (number of lightning strikes and type).
- Direction of storm travel; and
- Time since last strike.

6.2.5 Operating Mobile Plant & Equipment in Lightning

Mobile plant and equipment should not be operated during a lightning red alert. If it is essential for work to continue during a red alert, the following conditions must be strictly met:

(Note: Operation of open-cabin machines is strictly prohibited during a lightning red alert.)

- A documented risk assessment must be developed and approved by the contractor's manager or their delegate.
- A documented rescue plan must be in place in the event the machine is struck by lightning.
- Personnel may enter or exit vehicles only when the vehicle is in a designated safe transit zone, or if a risk assessment has been completed confirming it is safe to do so.

6.2.6 Plant and Equipment Struck by Lightning

If non-rubber tyre plant and equipment is struck by lightning, raise an emergency call. Remain in the machine unless you are at further risk from a fire started by the lightning strike. If the machine is disabled from the strike, remain in the machine until the danger from the lightning has passed. If rubber tyre equipment has been struck by lightning, the risks are similar to striking live power lines. Electric current passing through the tyres can cause heat build-up and start a tyre fire or damage the steel in the beads and belts of the tyre to the point where the tyre is severely weakened and may fail at any time.

Note: The machine may be holding stored electrical charge therefore seek assistance before alighting from the machine.

To exit from a machine that has been struck by lightning, ensure that two feet land on the ground simultaneously and that there is no contact with any other object at the time of exit (i.e. Do not hold the door of the equipment and do not leap to or touch anything else). Leave the area by the most direct route.

Raise an emergency in accordance with CBESS EMP (201074-SE-PLN-0002)

6.3 Rain

In the event that rain occurs on the site personnel are to seek shelter in their immediate work vicinity. They are to remain under protective shelter until the rain passes or until such time as a supervisor has organised alternate work in a protected area. If possible, portable electrical equipment should be stored out of the rain prior to leaving the area.

Where supervisors are unable to relocate workers and it has been agreed that the rain will not pass in a timely manner, the supervisor will direct workers to shelter.

As stated above it is not the intent or a requirement for workers to work in inclement weather. By continually monitoring conditions where rain is likely the chances of being trapped in inclement weather where shelter is difficult to obtain is reduced.

6.4 Dust

The presence of dust is a common problem in some work areas when high winds are evident, particularly during warm weather. In the event that dust storms are visible approaching the work area, personnel are to seek shelter in a protected position until the hazard passes. Personnel in elevated work platforms or in certain work areas may be unable to take refuge from dust storms quickly enough to avoid exposure. In such cases spotters should monitor the conditions in the area, and if appropriate dust masks should be carried to protect personnel until refuge can be taken. Blasting associated with mining activities also has the potential to affect nearby workers depending on wind direction; noting of advertised blast times and direction of prevailing winds can reduce the chances of this occurring.

6.5 Return to Work

The SCEE Site HSE Manager and SCEE Site Manager shall be responsible for ensuring assessment of pending inclement weather, communication/liaison with other supervisors/HSE; and shall determine any stand-down and resumption of work. This is controlled through the chain of command, where supervisors are not making decisions in isolation; but responding to advice and direction of the most senior person(s) on site at the time. Risk assessments of each area of work are to be conducted, through Take 5, JHA, or alternative method, to ensure the work area is safe prior to the commencement of work. Particular attention is to be given to welding activities, working at heights, working in trenches, confined space work, and possible water ingress into electrical equipment that may have been exposed. Where significant rainfall has occurred, a walkdown of areas of the site likely to be impacted shall be conducted by management, the HSE team, and Health and Safety Representatives where elected.

7 References

Documents, both internal and external, that are referenced within the content of this procedure, including Australian and International Standards and legislation.

Document ID	Document Title
AS 1768	Lightning Protection

8 Related Documents

Related documents are those that have a relationship with this document, for example if this was the Operational Risk Management procedure related documents would include the work instruction to complete a JHA, the JHA template, Take 5 work instruction and booklet, etc.

Document ID	Document Title
SCEE-BS-HS-PRO-0001	Job Hazard Analysis Procedure

9 Appendix A

Work Area	Blue Alert	Yellow Alert	Red Alert	All Clear
Lightning Distance	30-15km	15-8km	Less Than 8km	
General Work Areas	<ul style="list-style-type: none"> Prepare for inclement weather and continue to monitor the risk of lightning 	Identify high lightning risk activities that are occurring outside. High lightning risk tasks include: <ul style="list-style-type: none"> Roof work Confined space Working at heights and metallic scaffolding in open areas Work on/near overhead lines, metal piping Working in manholes Working near and around water (e.g. dam) 	High lightning risk activities outside ceased <ul style="list-style-type: none"> All personnel in lightning appropriate shelter (no personnel outside) 	Return to normal operations when all clear received from Supervisor <ul style="list-style-type: none"> Inspect work area and equipment prior to recommencing task
Cranes & EWP's	<ul style="list-style-type: none"> Monitor and prepare for inclement weather 	<ul style="list-style-type: none"> Crane lifts are not to be commenced Booms of cranes should be retracted and positioned in cradle All loads should be placed on the ground The crane work area and drop zone should be demarcated to prevent access by unauthorised personnel No loading tasks should be commenced All EWP's and scissor lifts used outside shall be lowered to the ground. 	<ul style="list-style-type: none"> No contact should be made with crane or transport loads, truck decks, tag lines or load restraints Personnel to remain in shelter (building or vehicle/crane cab) 	
Heavy Mobile Equipment (HME) and Vehicles	<ul style="list-style-type: none"> Prepare for inclement weather and continue to monitor the risk of lightning 	<ul style="list-style-type: none"> All drilling to cease operations and pack-up. HME and vehicle operations may only continue to operator. Operators must remain inside the enclosed cab with all windows closed. 	<ul style="list-style-type: none"> All personnel in lightning appropriate shelter. Work may continue within approved workshop or building. HME and vehicle operation can continue only if section 9.2.5 is met. All open cabin mobile equipment shall cease works. 	<ul style="list-style-type: none"> Inspect work area and equipment prior to recommencing task. Return to normal operations when all clear received from Supervisor.