LIGHTNING POLICY

Adopted or Amended	By Whom	Date
Adopted	Board of Directors	Monday 20th May 2013

1. INTRODUCTION

In statistical terms, lightning poses a greater threat to individuals than almost any other natural hazard in Australia, accounting for five to ten lives and well over 100 injuries annually. Of the many llightning strike injuries each year, about 80% are due to people using normal telephones during thunderstorms when the phone system may suddenly become part of a highly charged electrical circuit. Related injuries may include hearing damage, burns and electrocution.

The most recent AS1768-2007 Lightning Protection Standard was published on 10 January 2007. Section 1.2 states that:
"Compliance with the recommendations contained in this Standard will not necessarily prevent damage or personal injury due to lightning, but will reduce the probability of such damage or injury occurring."

3.3.1 Under Precautions and Personal Safety notes:
"In the absence of specific information from weather radar, a lightning location system or a specialized warning device" the "the 30/30 safety guideline should be used."

2. WHAT IS LIGHTNING?

Lighting is the discharge produced when differences between ground and atmospheric electrical charge are large enough (several hundred million volts) to overcome the insulating effects of air. Lightning strikes can occur within the cloud, between clouds or between clouds and the ground. An average thunderstorm can release several hundred megawatts of electrical power. Thunder is the sound produced by the explosive action of air heated by the lightning strike to temperatures as high as 20,000 degrees Celsius.

3. PROCEDURES

When lightning is considered to be a possible or actual threat to a swim meet or outdoor pool training session the following procedures are applicable.

(a) Access to the Bureau of Meteorology

(i) Lead up Prior to Meet

The proactive plan should commence in the days before the activity, where weather forecasts provide important warnings of possible thunderstorm activity.

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- The Swimming Northern Territory Meet Director will continue to monitor the BOM site in the lead up to the meet.
- On the day prior to the meet if any threat of lightning is predicted the Meet Director will contact Duty Forecaster of the BOM (NT) and request a verbal update. BOM contacts will be provided to the Meet Director prior to the start of the swim season.

(ii) Meet Day/Training

Increased awareness of lightning risk should continue on the day of the meet until the activity has finished.

- If the threat continues into the day of the Meet the Meet Director shall consult with the Chief Referee to assess the situation.
- The Meet Director and Chief Referee should check the BOM website then contact the Duty Forecaster at the NT BOM to determine the situation.
- The Club Contacts of the competing clubs should be contacted to explain the situation to them.
- Regular updates must be sought from the BOM in the period leading up to the scheduled Meet warm-up time. Involving the Meet Director, Chief Referee and Club Team Managers.
- Teams and officials should proceed to the venue unless otherwise directed.
- If lightning is predicted within no less than 10 kilometres of the Meet venue at the scheduled warm-up starting time the Meet commencement time may be delayed by up to 60 minutes.
- The decision on whether to delay or suspend the Meet as well as resume the Meet will be based on information obtained from the BOM. The Meet Director and Chief Referee will determine if the Meet is to be delayed and when it may resume.

(b) No access to the Bureau of Meteorology (30/30 Rule)

The most basic level of warning involves observation of the weather in the local area.

(i) Training and Competition

The "30/30" rule is recommended for lightning safety and serves as a guide for the suspension and subsequent resumption of activities. The overall principle is to seek shelter when the lightning activity is too close.

The observation of approaching storm clouds, the first flash of lightning or clap of thunder, no matter how far away should heighten lightning awareness. The level of risk depends on one's location (direction and distance) relative to the storm cell and the direction in which the storm system is traveling.

A simple method of determining the distance to the storm cell is to measure the time elapsed from when the lightning flash is observed and when the associated clap of thunder is heard.

Light travels faster than sound. Assuming that the light from the flash reaches the observer instantaneously, and knowing that sound takes approximately three (3) seconds to travel one (1) kilometre, the distance can be determined by using the following rule:
Distance (in Km) = Time from observing the flash to hearing thunder (in seconds)

It is important to remember that lightning may be obscured by clouds so it must be assumed that when thunder is heard, lightning is in the vicinity. In such cases, careful judgment must be used to determine whether a threat exists.

The first part of the "30/30" rule is a guide to the postponement or suspension of activities. Most experts agree that the accepted "safe" distance from lightning is greater than 10km. This means that as the time interval between observing the flash and hearing the thunder approaches 30 seconds, all those in exposed areas should be seeking or already inside safe shelters. A storm cell with lightning activity within 10km constitutes a threat.

The second part of the 30/30 rule provides the criteria for the resumption of activity which is applicable to decisions made with BOM access as well. Here, it is recommended that people wait a minimum of 30 minutes after the last sighting of lightning or sound of thunder. This figure is based on the observation that the typical storm moves at about 40km/h. Thus, waiting 30 minutes allows the thunderstorm to be about 20km away, minimizing the likelihood of a nearby lightning strike. Note: 60 minutes is the maximum delay time.

It is important to emphasize that blue skies and lack of rainfall are not adequate reasons to breach the 30 minute minimum return-to-activity rule.

PROTECTION AGAINST LIGHTNING STRIKES

Outdoor Protection: The 30/30 Rule

The 30/30 Rule is recommended for lighting safety in the Australian Standard on Lightning Protection. The rule is designed to provide guidance on the suspension and resumption of activities in an outdoor environment. It sets out the following principles:

Close Pool: Where the flash to bang count is 30 seconds, indicating that the lightning is 10km away. This is associated with significant risk that the strike could be in pool area.

Open Pool: Where 30 minutes has passed since the last sighting of Lightning. A typical storm travels at about 40km/h. Waiting 30 minutes allows the thunderstorm to be approximately 20km away.

(i) With an approaching thunderstorm, and where the 30/30 rule applies, all persons should be advised to leave the water and seek shelter immediately. The Meet Director should clear the pool and retire to the sheltered (reception) area and maintain a surveillance lookout from there.

(ii) Seek shelter in a "hard top" vehicle or building (avoid small structures), marquees, fabric tents or small groups of trees.

(iii) If in the open, away from shelter, crouch down (singly), preferably in a hollow, with feet together and remove metal objects from the head and body. Do not lie down but avoid being the highest object in the vicinity.

(iv) If swimming, leave the water immediately and seek shelter.

(v) During the conduct of a swim meet all effort should be made to ensure the safety of all personnel. All effort should be made by the Meet Director and/or organizers to delay the meet until the danger has passed or the decision is made to postpone or cancel the meet completely.

(vi) Avoid the use of portable radios and mobile telephones during a thunderstorm. If emergency calls are required, keep them brief.

Indoor Protection

(i) Avoid the use of telephones, radios, fax machines, computers and other electrical equipment. If emergency calls are required, keep them brief.

(ii) Before the storm arrives disconnect external aerials and power leads to radios and other appliances.

FIRT AID

The normal emergency care procedures apply to any patients affected by lightning strikes. Ensure that the rescuer is in no danger of being struck by lightning. If the patient is not breathing commence resuscitation immediately.

DEFINITIONS

Lightning: The discharge produced when differences between ground and atmospheric electrical charge are large enough (several hundred million volts) to overcome the insulating effects of air.

Thunder: The sound produced by the explosive action of air heated by the lightning strike to temperatures as high as 20,000 degrees Celsius.

POLICY PROMOTION

This policy will be made available to all members via the Swimming Northern Territory website at www.nt.swimming.org.au and though the annual handbook, or its equivalent publication. This policy will be communicated to all staff members, board members, committee members and regional committees annually.

REVIEW

This policy will be reviewed by the Board of Swimming Northern Territory in July every even year (i.e. 2014, 2016, 2018).

ADDITIONS OR AMENDMENTS

In addition to the scheduled review of this policy recommended changes to the policy may be submitted to the Board of Swimming Northern Territory for consideration, at any time. In the event that the changes are accepted, the policy will be updated, dated and circulated to all relevant stakeholders.

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