

## APPENDIX 4 - REQUIREMENTS FOR OZONE WATER TREATMENT SYSTEMS

### 1. GENERAL REQUIREMENTS

Ozone generating equipment shall only be used in conjunction with a free halogen residual, which shall be maintained in the water at all times.

The ozone concentration in the aquatic facility water body shall not exceed 0.1 milligrams per litre.

The operation and maintenance of the ozone generating equipment shall be detailed in the premise's operations manual.

All employees involved in the operation of ozone generating equipment shall be trained in the operation and maintenance of the equipment. Refresher training of ozone equipment operation and maintenance procedures shall be conducted a minimum of once every six months.

### 2. DESIGN REQUIREMENTS

Ozone generating equipment shall incorporate an approved ozone removal system such as granular activated carbon or thermal decomposition - to reduce the concentration of ozone in the water below 0.1 milligrams per litre, prior to it re-entering the water body.

The water shall be monitored with an ORP meter - which has the capacity to shut-off the ozonator if the ORP reading exceeds 900 millivolts.

The ORP system shall have an operational range of 650 millivolts to 900 millivolts.

The ozone generation system shall be provided with an airflow meter and a device to control the airflow.

The ozone injection system shall operate on a vacuum principle, so that a loss of water flow will interrupt the injection of ozone into the water.

A check valve shall be installed between the ozone generator and the injection point.

The ozone injection point shall be located in the return line after the filtration and heating equipment, prior to the disinfectant injection point. The injection point shall be a minimum of 3 metres from the nearest return inlet.

Ozone mixes, diffusers, or contact chambers shall provide efficient mixing of ozone with the recirculation water.

### 3. REQUIREMENTS FOR OZONE PLANT ROOMS

The plant room exit doors shall open outwards.

A ventilation system shall be provided, capable of achieving a minimum of three air changes per hour and have a separate automatic emergency ventilation system, with the capacity to provide a minimum of 30 air changes per hour.

Clearly labelled on/off switches shall be located directly outside the plant room, which indicate and control the following:

- Emergency ventilation systems,
- Lighting,
- Ozone generator.

An audible and visible ozone detection and alarm system shall be located in the room containing the ozone generation equipment that complies with the following requirements:

- The alarm system shall consist of an audible alarm, that is capable of producing at least 85 decibels, and visible alarm consisting of a flashing light, mounted in plain view of the entrance to the ozone equipment room.
- The ozone sensor shall be located at a height of 1.5 metres above floor level and be capable of measuring ozone in the range of 0.0125 parts per million.
- The system shall activate when the ozone concentration reaches 0.1ppm in the plant room.
- Activation of the alarm system shall shut off the ozone generating equipment and turn on the emergency ventilation system.

A sign shall be posted on the exterior of the entry door, stating “DANGER - GASEOUS OXIDISER - OZONE” in lettering not less than 100mm high.

The ozone equipment room shall not be used for storage of chemicals, solvents or any combustible materials, other than those required for the operation of the re-circulation and ozone generating equipment.