

**STANDARD OPERATING PROCEDURES**  
**DIVISION OF COMPARATIVE MEDICINE**  
**UNIVERSITY OF SOUTH FLORIDA**

SOP#: 1162.2

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<b>TITLE:</b>	<b>Bioquell Z-2 Hydrogen Peroxide Vapor Generator System</b>
<b>SCOPE:</b>	Animal Care Personnel
<b>RESPONSIBILITY:</b>	Facility Manager and Technical Staff
<b>PURPOSE:</b>	To Outline the Proper Procedures for Use and Maintenance of a Hydrogen Peroxide Vapor (VHP) Generator System

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**I. PURPOSE**

1. This procedure outlines the use and maintenance of the Bioquell Z-2 Hydrogen Peroxide Vapor Generator System.

Unit is appropriately cleaned, maintained

All staff using this equipment are trained in the use of the Bioquell Z-2 system.

Read the manual for this equipment to read, understand

Read the manual for this equipment to read, understand the Bioquell Z-2 Hydrogen Peroxide Vapor Generator System Unit User Manuals.

For more information see **SOP #1016** entitled **Hydrogen Peroxide Vapor Generator**

Complete bio-decontamination cycle and documentation process.

Components of the VHP generator, which include the unit, and a Bioquell R-30

4. Place the Z-2 generator in the center of the room, or other position, for even VHP distribution to any alcoves or side rooms connected to the main room. Positioning the front of unit facing the door allows the HP level in the reservoir to be viewed from outside the room. Apply the brakes on the two front wheels by pushing the down on the foot pedal. Always push the Bioquell Z-2 from the back side (i.e., lectern side).
5. **Separate the lectern from the main unit of the Z-2** by lifting the handle and pulling away from the main unit. **Place the lectern outside of room.** The lectern contains:
  - a. Distance meter for measuring room area
  - b. HP concentration monitor
  - c. Cable for powering the main unit
  - d. Cable for connecting lectern to main unit
  - e. Eye protection disposable gloves
  - f. Sealing tape and spare printer paper
6. **Remove the control cable reel** from the main unit and attach the socket to the main unit and secure with cable retention clips.
7. **Unwind the cable from the reel and connect to the lectern** by plugging the lectern cable (located in the lectern) into the cable winder and secure with cable retention clips.
8. **Plug power cable into the main unit** and secure with cable retention clip. Plug the main unit into power source and turn on green switch to illuminate. It is recommended to use a power outlet that is not shared with other large equipment to ensure adequate amperage to the unit.
9. **When the R-30 is used for aeration only**, place the unit in the room so that air can flow, unimpeded, into all six filters. **When using the R-30 to aid in the distribution of VHP**, position the front of the unit so the VHP distribution fans are directed toward the alcoves or side rooms. Engage the brakes located on the rear wheels
10. **Connect the power cable to the R-30 and to the power supply** (use the retaining clip to secure the cable to the unit). **Ensure that the power source is on a different circuit than the Z-2.**
11. **Connect the communication cable to the R-30** input control signal connector (← arrow pointing to the connector) and to the **Z-2 VHP Generator**.
12. **Turn the R-30 on** at the green ON/OFF power switch. The self-decontamination fan within the unit will operate automatically during the aeration cycle.
13. **If required for distribution of VHP** (e.g., when room is large or has side rooms/alcoves), depress the VHP distribution fan ON/Off switch to operate VHP distribution fans. When depressed a green light 9eD ' Æ Â B t

15. Return to the lectern and **press the Bioquell logo**. If the relative humidity (RH) or temperature of the room is out of range to run a cycle an alarm will appear.
16. The next screen is the **main menu**. A password (i.e., "super") is required to proceed further. Menu choices include: "**aeration test**", "**stored cycles**", "**new cycle**", "**admin menu**", or "**aeration only**".
17. If the R-30 aeration unit is connected, **press the "TEST" button**. This will start the aeration unit. Press "**OK**" to turn unit off once it is confirmed. M M f 7.



2. Choose either the **“Room Dimensions”** or **“Room Volume”** button and enter the appropriate values using the keypad which appears. Room dimensions/volumes can be determined using the electronic distance meter found in the lectern.
3. Set the remote **Start/Stop to OFF** (default is off). Remote Start/Stop is only used when an external source (e.g., building management system) is used to control the unit.
4. Set **Injection in dwell to ON** (default is on). When “on” is selected the injection rate can be set between 10g/min to 4g/min. 10g/min is used for all rooms > 50m<sup>3</sup>. Lower gassing rates are advisable when rooms are < 50m<sup>3</sup>.
5. Set Load to **“Normal”** or **“Loaded”**
  - a. **Normal** - is for rooms that are a simple shape, and is empty, or near empty of equipment.
  - b. **Loaded**

6. Any additional maintenance/service should be performed by authorized personnel.

## V. SAFETY

1. Hydrogen peroxide (HP) is a strong oxidizer and is irritating to the eyes, skin, and mucous membranes. It is imperative that all personnel using HP wear the appropriate personal protection equipment.
  - a. Protective eyewear (e.g., goggles or face shield) must be worn when performing procedures that could result in HP coming in contact with the eyes.
  - b. Protective eyewear, impervious sleeves and gloves (e.g., neoprene or vinyl) are required when handling concentrated HP solutions (i.e., changing or filling bottles).
  - c. Wash hands after handling HP.
  - d. Flush skin/eyes with water if come in contact with HP.
  - e. HP spills should be cleaned-up with water.
  - f. If you must enter an area briefly during or immediately after fogging with HP, Tyvek coverall with hood and boots (or long sleeves, long pants, hair cover and shoe covers), gloves, snug-fitting goggles, and half-face respirator with organic vapor filters and a particulate filter (e.g., 3M 6000 half face-piece respirator assembly with 3M 6001 Organic Vapor cartridges and a 5n11 or 5P71 particulate filter) are required.

## VI. REFERENCES

1. *Bioquell Z-2 Hydrogen Peroxide Vapor Generator System User Manual.*
2. *Bioquell R-30 Aeration Unit User Manual.*
3. *Bioquell Hydrogen Peroxide SDS.*
4. For additional information contact Bioquell Technical Support at (215) 682-0225