

### **Introduction**

Genesis 3, Inc. provides an international forum for continuing education and the establishment of higher standards in watershape design, engineering, and construction. In pursuit of this goal, Genesis hereby publishes this Position Statement regarding energy and resource efficiency.

This Position Statement was assembled with input from leading professionals in the pool and spa industry including individuals that are not members of Genesis. The contributors share a common goal of improving safety, reducing energy consumption, raising the current standards, and building better quality projects. The positions are not biased toward specific manufacturers or products.

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### **Format**

There are two columns. The first column clearly and concisely states our position. The second column provides commentary and justification for the corresponding position statement.

## **Position Statement**

## **Commentary**

### **2.1 Line Velocities**

2.1.1 The velocity limit in the plumbing at the outlets is 6 feet-per-second by code (ANSI/APSP-7). We recommend that the maximum *design* velocity on the suction side of the pump be limited to 4.5 feet-per-second.

See Position Statement #1 for additional commentary regarding velocity limits and configuration at suction outlets.

Energy efficiency is greatly enhanced by limiting the velocity.

2.1.2 The maximum velocity on the discharge side of any pump shall be 8 feet-per-second maximum. We recommend that the maximum *design* velocity on the discharge side of any pump be limited to 6.5 feet-per-second.

Energy efficiency is greatly enhanced by limiting the velocity.

Furthermore, noise is reduced and plumbing systems last longer when they are not stressed by high pressures and high headloss. This results in extended equipment life which conserves resources.

### **2.2 Spa Jet Systems**

2.2.1 We recommend that spa jet systems are configured with dedicated jet pumps.

A filtration system that includes venturi jets is wasteful when the jets are not utilized. Also, typically, jet systems do not require filtration. Since filtration and jets are usually two separate functions, they should each have their own dedicated pumps.

Filtration pumps are often much lower horsepower than those required to operate jets. Therefore, a filtration pump must be oversized if also used as a jet pump. Using a combined system results in wasted energy by operating a pump that is larger than required for filtration since the jet function is only utilized a minimal amount of time.

### **2.3 Energy Star**

2.3.1 Energy Star listed equipment is preferred over non-Energy Star listed equipment.

### **2.4 Control System**

2.4.1 All pumps and lighting equipment shall be connected to timeclocks or controllers that enable scheduling of the equipment and adjustment of variable

frequency drives for pumps if used.

## **2.5 Alternative Heat Sources**

2.5.1 All pool or spa filtration systems shall include provisions for the connection of alternative heat sources. This shall include 3 feet of pipe before any heater or the rough-in of supply and return lines for the future connection of solar, radiant, or geothermal heating.

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