Workshops Abstracts

Introduction to "Bead Filter Technologies" for mechanical and biological filtration - Douglas G. Drennan II (Aquaculture Systems Technologies, LLC)
Tips and strategies for optimizing filter operation. Filter maintenance including a hands-on demonstration of how to change the seals, shaft bushing and thrust bearing on a bead filter.

10 Hour OSHA General Industry Course - Steve Rippe (Techtron Engineering Inc.)
Designed by OSHA to provide an awareness training on topics such as: Introduction to OSHA, Walking and Working Surfaces, Electrical, Hazard Communication, Personal Protective Equipment. Exit Routes, Emergency Action Plans, Fire Prevention, Material Handling, Hazardous Material (Flammables and Combustibles), and Permit Required Confined Space Entry. Persons completing both days of training will be mailed an OSHA 10 General Industry Card distributed by the Department of Labor.

Harmonics – Clean Power at the End of the Line - Larry Stanley (ABB Inc.)
ABB can provide a VFD demo stand to demonstrate, real time, the harmonic content produced by four of the most typically consumed industrial drive products including typical 6 pulse drive with and without input reactors, 18 pulse phase shifting transformer and Ultra Low Harmonic IGBT based products.
The class size would be considered unlimited, however there would be some limitation of participation during the actual pump stand demonstration due only to the persons being able to see and hear the presenter / products.

(2 hr) ASME B31.3 Solvent Cementing Training for PVC & CPVC - Newell Rollins (Harrington Industrial Plastics)
This training will be in two parts, first will be the classroom theory, where the attendees will be presented the ASTM D 2855 step by step procedure for solvent cementing a PVC or CPVC joint. This includes how to choose the proper tools to use as well as the proper grade and type of cement and primer based on the diameter and type of pipe being bonded.
The next step in the training will be hands on, where each of the attendees will build their own component assembly that will be shipped to a lab to be tested to the ASME B 31.3 required parameters. If the assembly passes the test a training certification card will be issued in that individuals name and will be sent to them. If the assembly fails the test, than that individual will be notified that they did not pass the testing and will need to go through the training again.

Butterfly and Ball Valves workshop - Dave Hurley (Asahi/America Inc.)
Hands on Dis-assembly and Troubleshooting of both Lever and Gear-operated wafer and Lug style butterfly valves. Parts identification, Standard Features, Recommended Spare parts, installation and setting of Gear-Operators, and complete tear down and rebuilding valves. How to properly diagnose failure conditions, symptoms of failures. Flow direction requirements if applicable. Some light actuation issues and troubleshooting. Hands on Disassembly and

Troubleshooting of Ball Valves. Parts Identification, service options such as Vented Ball option, application data. Complete tear down and rebuilding of Ball valves. Flow directional requirements if applicable. Common issues, and symptoms of failures. Some light actuation issues and troubleshooting. Participants will have the option to physically assemble and dis-assemble valves if they choose, but it is not mandatory.

Plate Heat Exchanger Preventative Maintenance - Rick Murray (Delta Hydronics)
Hands on discussion of plate heat exchanger components, basic design and general maintenance practices. Workshop will cover the principals of equipment sizing and aquatic application considerations.

Heartbeat of the Hydraulic System - Mike Woodhurst (Hayward Flow Control)
Workshop covers topics on application theory, real world use, maintenance, and repair of centrifugal horizontal end suction pumps focused on the aquatic life support environment. Extensive use of dynamic visual and hands-on content to gain a greater understanding of pump technology and operation Study guides and workshop materials are provided. Attendees will come away with a broader comfort level and working knowledge of pumps and the role they play as the "Heartbeat of the Hydraulic System".

Laser Alignment of Pump and Motor Coupling – William Parry (Fybroc)
This presentation and alignment simulation will provide a brief tutorial of shaft alignment identifying the various types of misalignment, differences between shaft and coupling alignment and descriptions of the various methods of alignment including straight edge, dial indicator and laser. Utilizing a pump/motor coupling simulator the various methods of shaft alignment will be demonstrated highlighting the issues not identified by straight edge and/or dial indicator measurements. Finally a laser alignment tool will also be used to check for any soft foot condition.

Mechanical Seal School with Interactive Installation – Matt Jensen, Alex Slauson, Matt Hoard
The purpose of this workshop is to conduct a short 'Seal School', explaining the engineering principles behind mechanical seals and the features and benefits of several different designs as they apply to the aquatic industry. We aim to outline the best installation procedures through a practical interactive presentation that will promote professional development, and give operators knowledge applicable to their daily duties. During this workshop a few operators will be given the opportunity to demonstrate the installation of a mechanical cartridge seal on an actual pump for the rest of the group.

Control Valve Accuracy as a Means to critical chemical dosing and reducing regulatory risk - Ed Cellucci (Plast-O-Matic Valves, Inc)
Control valve options are quite varied today and cost can sometimes dictate accuracy. With budgetary constraints in mind flexible solutions are almost always the best choice. Selection criteria and review of critical parameters will be reviewed as well as options inclusive of I/P and field bus with some hands on adjustments.

Value Engineering Workshop - Drew Tubb, Sr. (Integrated Aqua Systems, Inc.)
In the construction industry, the value engineering (VE) phase of project development typically occurs as projects move from their initial design to the construction documentation phase. Within the world of aquatic systems, we have found that many interpret value engineering exclusively as an exercise in which aspects of a project are cut to lower the bottom line cost. In reality, the true purpose of value engineering is to fundamentally improve the overall value of

the project. We will discuss areas to consider which increase system function without increasing dollars spent, or decrease dollars spent without sacrificing overall system functionality.

Level 1 Test Preparation - Remy Corner and Arnel Bautista
This workshop aims to prepare operators for the level one operator proficiency examination. It will cover such topics as basic area and volume calculations, as well as an introduction to static head, unit conversions, and pool turnover rates. A variety of water chemistry and operations topics will be covered as well which include basic properties of water, common testing criteria and parameters, the nitrogen cycle, and more.

Level 2 Test Preparation - Remy Corner
This workshop is an expansion upon the level 1 workshop and aims to prepare operators for the level two operator proficiency examination. It will include such topics as advanced pool volume and turnover calculations, total static and dynamic head, heating and cooling, and hydraulic loading rates as well as an expansion upon water chemistry and operations.

Proper Calibration & Maintenance of DO, pH & Conductivity Sensors - Darrin Honious (YSI)
This workshop will go over the proper way to calibrate the parameter DO, pH, ORP and Conductivity. It will include hands on calibration with the proper worksheet and information needed for calibration records. This will also go over when it is recommended to calibrate and what standards to use for your application.

Troubleshooting and Servicing Oxygen-Fed Ozone Systems in the Field - David Harmon (DEL Ozone)
This presentation will cover the basics and fundamentals of the entire ozone system which includes the ozone generator, as well as the ozone management system. Some items that will be highlighted include: oxygen feed gas system, ozone generator (including controls and safety features), ozone injection system, ORP controller, ozone reaction tank, ozone degas, ozone destruct and ambient ozone monitor. The service and maintenance concerns will also be reviewed.

Air Dryer and Oxygen Concentrator Service - John Gaudaur (International Ozone)
Discuss basic operation and sizing criteria for compressed air dryers and self contained oxygen concentration systems related to aquarium life support systems. Discuss preventive maintenance and trouble shooting of air dryers and oxygen concentrators. Hands on portion to include disassembly, inspection and reassembly of at least one air dryer, and disassembly, inspection and rebuilding of oxygen concentrator valves and compressor.

Ozone Safety – Mark Fisher (Ozone Water Systems)
The critical topic of ‘Ozone Safety’ is multifaceted and will be examined by Mark Fisher, who has more than two decades of experience with ozone, to provide an understanding of the function and purpose of the safety measures incorporated into life support systems; not only in regards to the equipment (instrumentation, back flow), but also how it pertains to safety for people (ambient ozone monitors) and safety for the fish/mammals (ORP, modulation, carbon, aeration, system design).

Actuated Valves: Controlling Flow and Level - Thomas Pradetto (Hayward Flow Control) & John Hale (RCK Controls, Inc.)

This workshop will feature a working flow loop (pump, actuated valves, instrumentation, storage tank etc) in which water is controlled, flow rate and water level, via (2) electrically-actuated butterfly valves. The (2) actuated valves will demonstrate the difference between pulse/jog modulation and traditional 4-20mA positioner modulation. This workshop will be beneficial to those wanting to learn more about actuation, pumps, controls, feedback, and integration.

Optimizing Mechanical Seal Life - Darrell Martin and Mike Dell (Advanced Sealing International)
From installation, startup, running, and shutdown. How you can maximize mechanical seal life in your facility. This workshop will focus on how mechanics, and operators can maximize mechanical seal runtime. We will cover common issues leading to mechanical seal failure, including installation, startup, mechanical seal piping (API plans), as well as system and equipment issues that will cause premature seal failure in your facility.

UV Transmittance – What's Really in Your Water - Stewart McDaniel (Pentair Aquatic Eco-Systems)
The effect of dissolved constituents on UV efficiency. Most operators size UV units for exhibits based on published dose and flow information provided by the UV manufacturer. Within the past few years, more and more operators and husbandry staff are starting to realize that even in very low turbidity water, common dissolved organic compounds found in aquatic exhibits can absorb a large percentage of the UV dose decreasing germicidal efficiency. This workshop will provide background chemistry on these compounds and discuss their management as well as introduce a new portable device to directly measure UV transmittance to allow the operator to size UV much more accurately for disinfection. Participants will have hands on time with the instrument performing calibrations and taking measurements of different samples spiked with some of these UV absorbing compounds.

UV Technology Overview - Tom Schaefer (Engineering Treatment Systems LLC)
There are primarily two distinct types of UV lamp technologies used by this industry and it can vary depending on the water quality, volume treated, and required level of disinfection. There are also multiple types of equipment features which can be required depending on the water being treated. This presentation will be a comprehensive look at UV technology overall, as well as difference in the two lamp technologies and how they are applied. Additionally, there is a synergistic potential when combining UV with ozone technology; this form of Advanced Oxidation Systems (AOP) will be reviewed.

Variable Frequency Drives: Basic Troubleshooting - Larry R. Stanley (ABB Drives)
As with all technology products, issues can arise with VFDs that require troubleshooting to identify root cause so as to provide a proper resolution. This presentation runs through some of the most common issues with VFDs, how to identify the issue, and how to resolve it. This presentation systematically addresses issues that can arise with VFDs and identifies steps to run through to determine cause and follows up with resolutions. It will cover safety when troubleshooting and given specific situations, provides the means to diagnose an issue to determine cause. This will include VFD Fault/Trip, Will not Start, Stop, or Follow an analog signal or pilots, Cooling issues, VFD Faults, Vibration and Water hammer.

Non-PLC Based System - Mike Price (Walchem)
Utilization of a non-PLC based system for the precise control of water quality in an intensive aquatic environment. PLCs have been used for years to control various function in aquatic

environments, but they require code writers to program and make changes to the unit. Walchem has developed a system with thorough integration of

Start up of a Regional Group – Laurie Kormos

In the San Francisco Bay Area, we have formed a group called BALSA: Bay Area Life Support Alliance. BALSA consists of Aquarium and Zoo Life Support and Water Quality professionals from Northern California. Our goal is networking, resources sharing, education and fun with a focus on enhancing professional development and communication within our Industry. This workshop is focused on helping you start up your own regional group.