



# Application Case Study

## Measuring Through Foam in Sump Pits

### The Application

Sump pits are used throughout industry to collect unwanted liquids. The most common use of sump pits is for rainwater runoff and wastewater from various processes. Power plants are no exception - they use sump pits to manage all water that needs to be removed from the processes or plant grounds.

One such power plant had a troublesome sump pit. This sump collected water from several sources - rainwater, excess cooling tower water, and condensate from certain parts of the plant. This pit is a problem because reactions from contaminants in the various sources frequently causes foaming - a lot of foaming. In this 10-foot deep sump pit, it is not uncommon to have up to 10 feet of foam!



Another popular brand of ultrasonic transmitter was being used to monitor the sump pit. When foam developed, it lost signal and the plant personnel would have to manually control the level. Merely an annoying inconvenience, they were in the process of looking for an alternative when disaster struck. The ultrasonic on the pit failed during the night, allowing this sump pit to overflow. That backed up all the drains in the plant and flooded the control room and administration offices!

### The Solution

Fortunately, the local SOR® rep had quoted an echOsonix U73/RBP for this application. He had already described how echOsonix utilize high-power and low-frequency sound to penetrate foam in applications like this. The adaptive gain provides a second line of

defense, adjusting the sensitivity of the unit if the foam gets too deep. This allows echOsonix to continue reading during the most extreme conditions.

With wet feet, the plant technician decided it was definitely time for a change - and management agreed completely. The technician already liked what the rep had explained about this product. We provided them with an application warranty, and that was all the reassurance needed. They placed a rush order and we shipped a unit to them the same day!

### The Results

The U73/RBP was installed as shown above. The customer set it to read liquids, set their high and low levels, and turned the unit on. There was no foam in the pit at the time and the unit was reading correctly, so they decided to monitor it for awhile. After a few days, it was never wrong, so they put it into the control loop to drive the two pumps in the pit.

Since that time, the pit has not overflowed and the pumps have not cavitated. With the old ultrasonic control, these conditions happened at least three times a week! This problem application is now completely automated with a level control that plant personnel can rely on to do the job - all of the time. No more manual verification, no more worries, most importantly - no more wet feet!

### Ordering Information

Electronics Model **U73-FL7J-ZZ-10**  
Remote 110VAC/24VDC Line-powered transmitter  
4 x SPDT Relays adjustable over entire range  
NEMA 4X Agency-listed remote electronics housing

Sensor Model **RBP-3A-ZZ-100**  
10 kHz Transducer for remote unit  
10" 150# Flanged connection  
Group A-G, Division 2, Agency-listed transducer  
100-foot transducer cable