Pesky zebra mussels shed from cooling water system

Zebra mussels were recently removed from the intake pipe at Casey's pond.

An overgrown zebra mussel population received a rude awaking earlier this month when FESS operations engineers treated Fermilab's water cooling system to remove the nearly 4,000 pounds of mussels plaguing the Casey's pond intake piping.

Foreign to the Midwest and without any natural predators in this region, zebra mussels can become problematic when they coat the inside of the water cooling system pipes. One zebra mussel can produce more than a million offspring each year, said FESS head Randy Ortgiesen. "If left untreated, they will eventually clog up the pipes, creating a huge problem," he said.

To remove the zebra mussels, engineers injected a chemical called EVAC into the intake pipe at Casey's pond and opened hydrants along the system to draw the chemical through the pipes. EVAC works by coating the gills of the mussels, effectively eradicating them. Although the pipes feed into the pond, EVAC is not toxic when used in such low quantities and does not harm fish and birds.

FESS engineers first treated the mussels in May of 2006 when they removed and flushed more than 15,000 pounds of them from the system. The process took about two and a half weeks.

This spring's treatment, which took a little more than 24 hours, was a follow-up measure to eliminate any zebra mussel offspring, called veligers, which made it into the system from the ponds. These treatments do not disrupt the system's operations, said FESS engineer Anne Lucietto.

FESS has been treating the water with EVAC twice a year. Starting in the spring of next year, FESS plans to inject bromine into the system daily to control the zebra mussels, as well as bacteria and fungi growth. They will treat with EVAC each fall.

Lucietto said that informing the Fermilab community has been a priority for FESS, which has given periodic presentations on the topic. She said the treatment program has been successful so far. "It's something we're going to have to keep up with," she said. "It's been a challenge, but I think we've won this round."

-- Amelia Williamson