Sprays Wash Fish to Safety From Traveling Screens

A test of a fish-protection system on one of eight traveling water screens at a major southern utility's power plant proved the system was effective in saving fish from the impact of its water intake structure. Based on the test, the utility has initiated a program to add similar fish protection systems to its remaining seven cooling water intake screens.

This particular power plant is using a series of eight Model 45A traveling water screens manufactured by FMC Corporation's Material Handling Systems Division. In this system, raw water flows through ascending and descending runs of the screen from front to back. Refuse in the water is held on the ascending screen trays and carried up into the head enclosure where jets of water from spray nozzles flush refuse from the trays into the disposal trough.

The fish protection system, which is adaptable to existing traveling water screens, consists of a separate debris trough with an accompanying debris spray system, plus a separate fish trough with its own spray system. This dual spray and trough system is usually installed in an intake structure where low approach velocities are necessary.

The fish trough is located on the ascending run of the existing water screen trays and below the debris trough. A water-tight fish pan is bolted to the bottom angle of each tray and when the fish spray is activated, the spray water gently washes the fish from the pan into the fish trough.

Located on the upstream side of the ascending run of screen trays, the system operates intermittently in order to spray only the fish pans. The fish are gently flushed from the pans with low pressure and returned to the main body of water via the trough as soon as possible. Fish mortality is kept to a minimum. Spray pressure is kept at approximately 10 psi while washing the fish from the pan into the trough.

The intermittent operation of the fish spray system is interlocked with the screen operating speed so that if multiple speed screen travel is required, fish spray operation will not be affected.

A rubber tip mounted on the back vertical side of the fish pans minimizes injury to the fish. The fish pans are made of material compatible with the location of the water intake structure, whether it's in fresh, salt or brackish water.

Acting upon the results of the extensive testing, the utility is presently adapting the fish protection systems to the remaining seven traveling water screens. Measured against standards established by the Environmental Protection Agency, the fish protection system meets the criteria of best available technology for reducing the impact of the power plant's cooling water intake structure on the aquatic environment.

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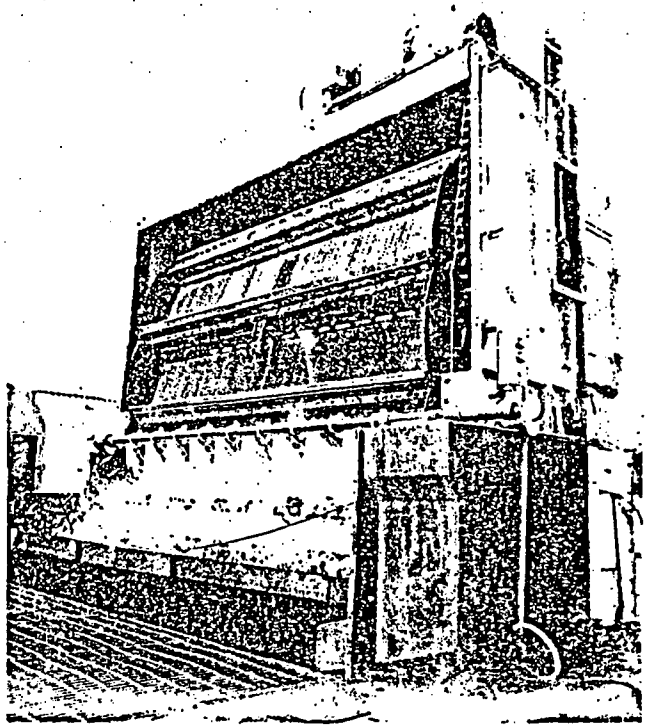

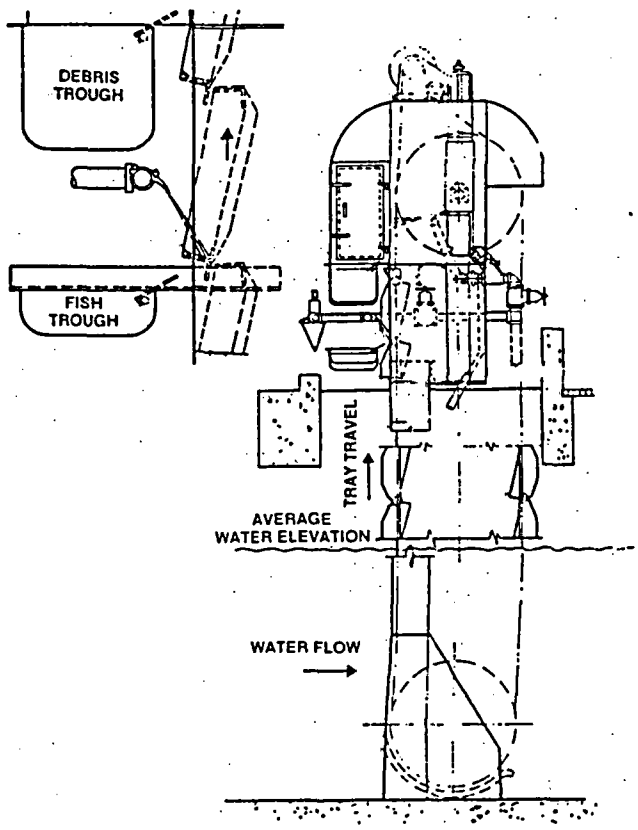

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