**Section 370.430 Submersible Pump Stations - Special Considerations**

Submersible pump stations shall meet the applicable requirements under Section 370.132, except as modified in this Section.

a) Construction

Submersible pumps and motors shall be designed specifically for raw sewage use, including totally submerged operation during a portion of each pumping cycle, and shall meet the requirements of the National Electrical Code (1996). An effective method to detect shaft seal failure or potential seal failure shall be provided.

b) Pump Removal

Submersible pumps shall be readily removable and replaceable without dewatering the wet well or disconnecting any piping in the wet well.

c) Electrical

1) Power Supply and Control

Electrical supply, control and alarm circuits shall be designed to provide strain relief and to allow disconnection from outside the wet well. Terminals and connectors shall be protected from corrosion by location outside the wet well or through use of watertight seals. If located outside, weatherproof equipment shall be used.

2) Controls

The motor control center shall be located outside the wet well, readily accessible, and be protected by conduit seal or other appropriate measures meeting the requirements of the National Electrical Code, to prevent the atmosphere of the wet well from gaining access to the control center. The seal shall be so located that the motor may be removed and electrically disconnected without disturbing the seal.

3) Power Cord

Pump motor power cords shall be designed for flexibility and serviceability under conditions of extra hard usage and shall meet the requirements of the National Electric Code (1996) for flexible cords in sewage pump stations. Ground fault interruption protection shall be used to de-energize the circuit in the event of any failure in the electrical integrity of the cable. Power cord terminal fittings shall be corrosion-resistant and constructed in a manner to prevent the entry of moisture into the cable, shall be provided with strain relief appurtenances, and shall be designed to facilitate field connecting.

d) Valves

Valves required under Section 370.132(e) shall be located in a separate valve pit. Provision shall be made to remove accumulated water from the valve pit. Accumulated water in valve pits deeper than 4 feet shall be pumped to the wet well or gravity drained to the ground surface. Valve pits 4 feet deep or less may be gravity drained to the wet well through a trapped and vented drain that meets the applicable requirements found in 77 Ill. Adm. Code 890, "Illinois Plumbing Code". Such pits shall have entrances that fully expose the pit to the atmosphere. Check valves that are integral to the pump need not be located in a separate valve pit provided that the valve can be removed from the wet well in accordance with subsection (b) above. Provision shall be made for the use of portable ventiliation equipment during periods of maintenance.

(Source: Amended at 21 Ill. Reg. 12444, effective August 28, 1997)