



## **Issue: Use of Submersible Well Pumps in Bodies of Water**

### **Background:**

Recently, the Division of Building Safety (DBS) became aware of the fact that the submersible well pumps being installed in bodies of water are not listed by the pump manufacturers for that application. For many years, these pumps have been routinely utilized to provide both domestic water and irrigation for properties bordering lakes and rivers, primarily in north Idaho.

### **Baseline requirements for utilization of electrical equipment in Idaho:**

1. Title 54 chapter 10 §54-1001, Idaho Code states:

“From and after the taking effect of this act, all installations in the state of Idaho of wires and equipment to convey electric current and installations of apparatus to be operated by such current, except as hereinafter provided, shall be made substantially in accord with the National Electrical Code”. Idaho has currently adopted the 2014 edition of the National Electrical Code.

2. Article 110.3 of the 2014 National Electrical Code relating to the examination, identification, installation, and use of equipment stipulates:

“(A) **Examination.** In judging equipment, considerations such as the following shall be evaluated:

- (1) Suitability for installation and use in conformity with the provisions of this *Code*

*Informational Note: Suitability of equipment use may be identified by a description marked on or provided with a product to identify the suitability of the product for a specific purpose, environment, or application. Special conditions of use or other limitations and other pertinent information may be marked on the equipment, included in the product instructions, or included in the appropriate listing and labeling information. Suitability of equipment may be evidenced by listing or labeling.*

(B) **Installation and Use.** Listed or labeled equipment shall be installed and used in accordance with any instructions included in the listing or labeling.”

## **Certification and approval of electrical products and materials:**

All electrical materials, devices, etc. are required to be approved for the use intended. IDAPA 07.01.10 § 011 states the following:

### **011. CERTIFICATION AND APPROVAL OF ELECTRICAL PRODUCTS AND MATERIALS.**

In the state of Idaho, all materials, devices, fittings, equipment, apparatus, luminaires, and appliances installed or to be used in installations that are supplied with electric energy shall be approved as provided in one (1) of the following methods:

**01. Testing Laboratory.** Be tested, examined, and certified (Listed) by a Nationally Recognized Testing Laboratory (NRTL). (3-20-14)

**02. Field Evaluation.** Non-listed electrical equipment may be approved for use through a field evaluation process performed in accordance with recognized practices and procedures such as those contained in the 2012 edition of NFPA 791 - Recommended Practice and Procedures for Unlabeled Electrical Equipment Evaluation published by the National Fire Protection Association (NFPA).

### **Conclusion:**

Submersible Well pumps are listed (approved) for specific purposes. Per Underwriters Laboratories, submersible well pumps approved under UL 778 have not been evaluated for use in bodies of water where swimming, boating, and other recreational activities take place. Therefore, the listing of submersible well pumps under UL778 does not suffice to allow the Idaho Division of Building Safety to approve these types of pumps for applications other than those addressed in the listing of the equipment in question. Further, UL approvals are contingent on any listed equipment being utilized in conformance with the manufacturer's instructions for installation and use.

The Division of Building Safety has been searching for another accepted standard that would apply to submersible well pumps being utilized in a body of water, but has been unable to identify such a standard. The Division encourages interested parties to bring forward any information relative to an applicable standard and pumps that have been tested and listed for utilization in the circumstances discussed in this paper.

Employing an approved field evaluation testing agency to conduct a field evaluation of the pump for utilization in the proposed application is not a viable option unless/until a proper standard can be identified to facilitate the review process.

Other pumping equipment can be utilized in conformance within the listing parameters of alternative pumps to safely provide domestic and irrigation water to lakeside properties.

## **Policy:**

As a result of this investigation process the Division of Building Safety is adopting the following policy.

1. Submersible Well pumps are not listed for use in swimming or marine areas, and such an application of the submersible pump typically conflicts with the manufacturer's installation and usage instructions. Therefore, The Division of Building Safety cannot approve the installation of submersible well pumps and associated wiring in bodies of water where swimming, boating, and other activities take place that could place the public in danger.
2. When existing submersible well pumps located in bodies of water where swimming, boating, and other activities take place that could place the public in danger are replaced, any replacement pumps must be approved for the application and be installed in conformance with the manufacturer's installation instructions.
3. Installations of approved equipment, installed in accordance with labeling, listing and manufacturer's instructions, used to withdraw water from bodies of water will be approved in accordance with Idaho Division of Building Safety's standard permitting and inspection procedures, in accord with adopted rules, statutes and the National Electrical Code as adopted by the State of Idaho.

If you have any questions or concerns, please let me know.

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