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**Stilwell Baker modernizes annunciator output cards
*Extends lifespan of California pump alarm system***

Vancouver, WA – Custom electronics design and manufacturing firm, Stilwell Baker Inc. announced the delivery of redesigned annunciator output cards to the California Department of Water Resources. Prior to contracting with Stilwell Baker, CDWR was experiencing a high failure rate in the alarm system used in pump stations that store and distribute water to over 25 million Californians. By modernizing the circuitry and components of the annunciator output cards and delivering a compatible finished product, Stilwell Baker has enabled CDWR to significantly prolong the useful life of the pump alarm system for years into the future.

The alarm system that monitors the California pumps was originally designed in the 1960s. The annunciator output cards were last manufactured, but not improved, over ten years ago by a now defunct company. The aging electronic components in these cards were overheating and causing a high failure rate in the installations, were no longer supported, and documentation was minimal or non-existent. “Not many companies were willing to take this project—they wouldn’t take on the challenge,” said John King, Electrical Planner for CDWR. After investigating the problem, Stilwell Baker recommended redesigning the cards with low power, up-to-date circuitry and components to eliminate the failure mechanisms in the original design.

Stilwell Baker prototypes worked well in the lab, yet the initial field trials revealed technical issues in some of the pump stations. The engineering team solved the issues with system-level modeling simulation and testing, followed by onsite testing and circuit modifications. “With limited documentation available, going onsite was critical,” said Darrel Baker, President and CEO of Stilwell Baker. “The alarm systems were built in different years with different parts, so onsite measurements were key to proving the solution,” Baker continued.

The result was a fully documented, supportable, and reliable design that eliminated the high temperature components, reduced the overall power dissipation by 24%, and reduced the hot-spot temperatures by 60C (140F). The new design also increased fault tolerance in the output drive stage and now includes short-circuit and over-current protection—so even under a direct short in the system, the alarm circuit would not be damaged.

Stilwell Baker also precisely replicated the original 1960s electrical connector system. The new cards connect directly into the existing alarm system with 100% compatibility of existing systems in the field. Stilwell Baker supports and provides replacement parts, ensuring the alarm system can remain operational for many years to come. John King concluded, “Stilwell Baker came in and solved the problem. This is the best experience I’ve had with a supplier for retrofitting. Stilwell Baker was great to work with.”

Stilwell Baker designs and manufactures custom electronics, in the USA, to regulatory standards. The company engineers, reverse-engineers, or upgrades complete electronic systems for many industries including aviation, medical, and industrial controls. Stilwell Baker specializes in complete turnkey solutions—from design through prototype and manufacturing. For more information, visit www.stilwellbaker.com, or call 971-252-4200.