



Product 1100 Series Magnetic Level Indicator
Application Condenser Hotwell Level
Industry Power Generation

Challenge In thermal power plants the condenser takes the steam exhausted from the turbines and condenses it back to the liquid phase for reuse in either steam generation or as boiler feed water; as the steam reverts back to water, it is collected in the condenser's reservoir, commonly referred to as a hotwell.

A power plant in Michigan wanted to upgrade the instrumentation used to measure the level of water collected in their condenser's hotwell. In the past this was accomplished using a displacer-type level controller, but the customer wanted to modernize their system to use a Guided Wave Radar Level Transmitter (GWR) and Magnetic Level Indicator (MLI); however, the customer did not want to make any modifications to their piping arrangement. This left SOR® with the challenge of determining a solution that both incorporated the desired instrumentation while still accommodating the piping's pre-existing top-bottom process connections.

Solution Modifying the piping could result in significant costs to the customer since the plant would be shutdown for the piping rework. To circumvent this, SOR designed a unique 3-chambered bridge:

- The primary chamber was built with flanges on the top and bottom for the purpose of connecting to the customer's system with no piping modifications.
- Branching off the primary chamber are two additional chambers that allow the process to flow between the vessels so that each chamber is filled to the same overall liquid level.
- One of the secondary chambers is the MLI, while the other secondary chamber provides mounting for the GWR.
- The bridge was oriented in an "L" shape which also prevented interference with the pre-existing piping.

This solution allowed the customer to upgrade their instrumentation while still utilizing a design that required no piping modifications for installation.

In addition to the 3-chamber bridge, SOR also provided the customer with a 2-chamber bridge which was installed at the opposite end of the hotwell. It consisted of only a primary chamber for connecting to the process and a single secondary chamber for mounting the GWR.