Replacement of Talen Feedwater Heater Level Transmitters

Overview
Replacement of the level transmitters that are used to monitor level in the Susquehanna Nuclear plant’s feedwater heaters is necessary due to obsolescence. Survey available level transmitter technologies and evaluate each based on relative cost, difficulty of implementation and use, maintenance and calibration requirements, history of reliability, and ability to function within expected environmental and system conditions.

Objectives
Recommend courses of action to Talen Energy based on the above survey and an evaluation of existing industry solutions.

Approach
- With the help of the sponsors, gather relevant background information and use it to generate a problem definition, criteria, and constraints
- Identify as many candidate level detection technologies as possible and conduct preliminary research on each to determine if each is suitable for this application
- Conduct a review of existing industry solutions to determine if similar problems have been encountered and solved
- Identify the most promising candidate technologies based on the preliminary research and review of existing industry solutions
- Conduct focused research on each of the most promising candidate technologies to determine whether each is appropriate for this application, and if so, how best to implement it
- Rank the most promising solutions and make recommendations to Talen Energy

Outcomes
Outcomes of this project include:
- The research conducted under this project will help to ensure that engineers at Talen Energy are aware of the strengths and limitations of different level detection technologies
- The design team identified many potential issues to be considered when plant engineers continue with this project
- This research will save Talen Energy time and money when selecting replacement feedwater heater level transmitters

Above: Generic implementation of the differential pressure system. This is the design team’s highest ranking recommendation. Source: L. Loflin, 2002.