

Kiewit Improves Efficiency in Pump Trip Evaluation at a Natural Gas Power Plant

PLATINUM PIPE AWARD HONORABLE MENTION: SOFTWARE FEATURES & MODEL CREATIVITY

Woodbridge Energy Center is a combined cycle, natural gas power plant estimated to produce 725MW for the city of Woodbridge, New Jersey. The entire circulating water system was modeled in Datacor Fathom. Dalton Sivils, mechanical engineer at Kiewit Power Engineers, moved the Datacor Fathom model to Datacor Impulse for the transient analysis. His purpose was to evaluate different pump trip scenarios to (1) ensure a large transient event would not occur, and (2) that major equipment, pipes, and valves were designed and positioned to withstand normal, small transient events. His model was well laid out with color coded pipes and contained 46 scenarios.

“Being able to roll over the model [into Datacor Impulse] from Fathom and edit as necessary is a great time saver. Then setting up all of the different scenarios and being able to take the results and produce graphs of the transient system, all within one program saves time and effort.”

“Impulse is a great program for analyzing transient events,” Sivils said. “Being able to roll over the model from Fathom and edit as necessary is a great time saver.”



- **Industry:** Power Generation
- **Region:** North America
- **Focus:** Pump trip evaluation and transient analysis of a circulating water system

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He noted that the best part of Datacor Impulse is the ability to create a graph along a flow path, showing the location of each piece of equipment and where the largest pressure spikes are located. This gave him a high degree of confidence that the equipment design was sufficient for a given transient event.



Woodbridge Energy Center | Woodbridge, NJ, USA

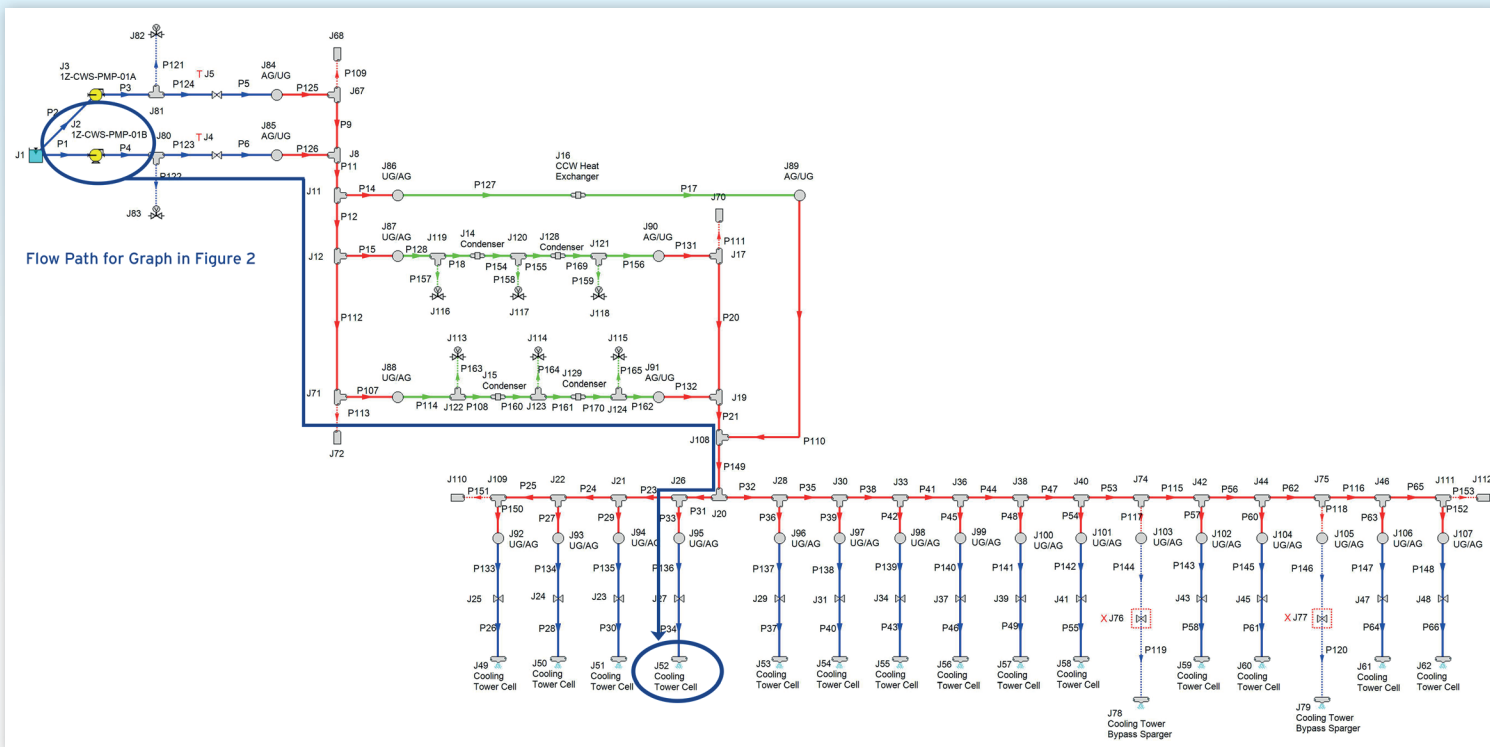


FIGURE 1: Datasor Impulse Model – Circulating water system at Woodbridge Energy Center

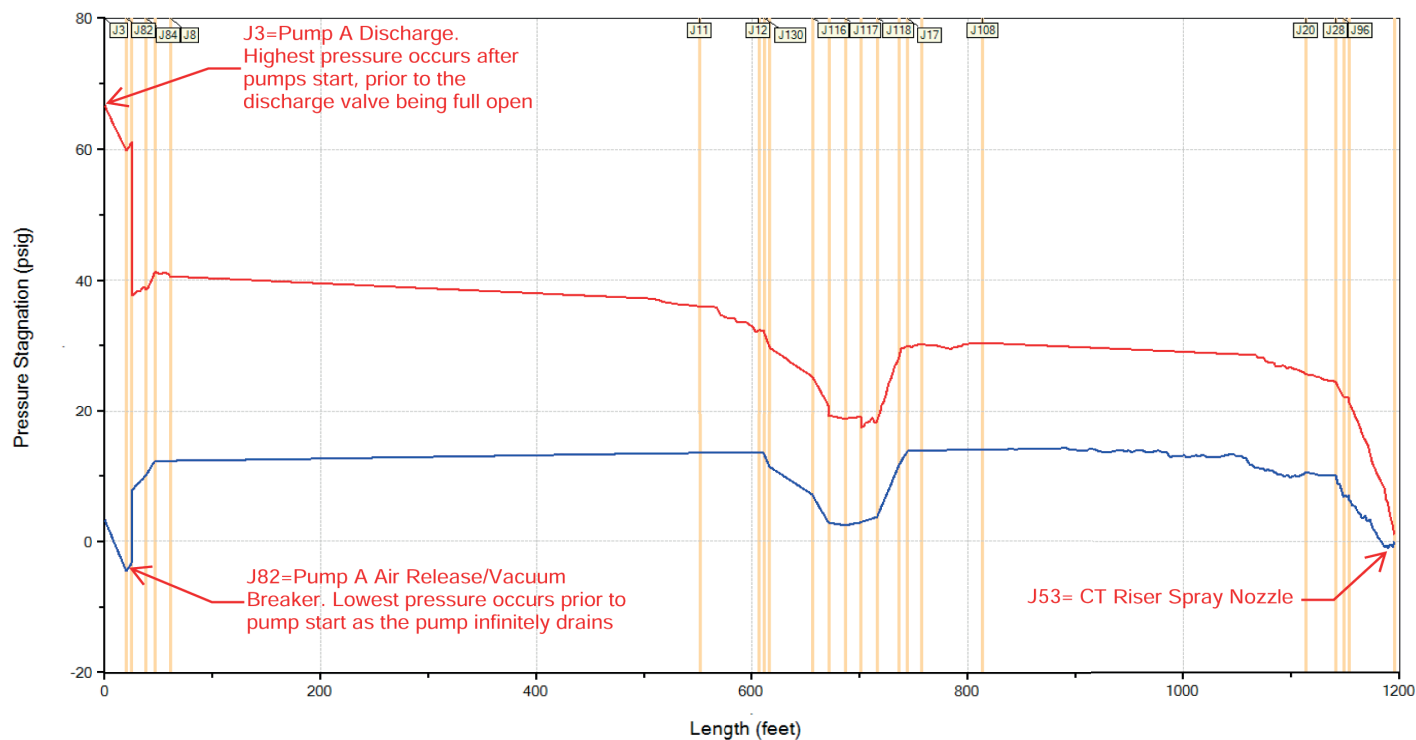


FIGURE 2: Datasor Impulse Graph – Stagnation pressure vs. length