MIDWEST VALVE SERVICES

CASE STUDY

No Leaks, No Delays: Expert Valve Repair Enables Safe, On-Time Startup for High-Value Refinery Unit

Refinery avoids costly downtime and safety risks with precision repair and proactive planning.

CHALLENGE

A major Midwest refinery faced a recurring issue with leaks during startup following repairs on Velan control valves in its catalytic reformer unit, a critical part of the reforming process. These leaks often led to unplanned shutdowns, extending outages by days or even weeks beyond the scheduled timeline.

The consequences were costly and complex:

- $7 million per day in lost production and extended equipment rental.
- Safety risks, including a previous fire that resulted in a burn injury.
- Operational strain, with engineers forced into reactive troubleshooting.

To avoid another costly delay, the refinery needed a trusted partner who could deliver a leak-free, on-time startup with confidence.

SOLUTION

The refinery engaged Midwest Valve Services (MVS) to lead the valve repair project, relying on their proven expertise and collaborative approach. MVS implemented a structured plan that emphasized preparation, precision, and real-time communication.

Key elements of the solution included:

- **Pre-site planning.** Engineers and project managers visited the site to assess conditions, coordinate with construction crews, and design a custom work platform tailored to the job.
- **Inspection Test Plan (ITP).** A jointly developed checklist ensured thorough documentation and quality control, including measurements of components not directly involved in the repair.
- **Purpose-built platform**. A specialized stand was created to streamline valve disassembly and reassembly, improving ergonomics and efficiency.
- **Multi-station workflow.** The team operated across six active stations, allowing for continuous rotation of valves. As one set was completed, new valves were staged, enabling efficient progress through the full scope of 22 Velan valves.
- **Real-time collaboration.** A dedicated channel enabled instant communication between technicians, engineers, and operators. This reduced decision-making time from days to hours and helped resolve issues on the spot.

This approach allowed MVS to complete the work well ahead of the quoted schedule and positioned the team to support additional needs during the remaining outage window.

RESULTS

When the refinery brought the catalytic reformer unit online, there was not a single leak, delivering the startup the refinery had been aiming to achieve. It was the first time the unit came online safely, on time, and without incident. The successful execution helped the refinery avoid costly delays, reduce risk, and restore confidence in the unit's reliability.

With time remaining in the outage window, the refinery extended MVS's involvement to conduct additional valve inspections and technical support, ensuring all related systems were verified and ready for operation.

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