CREATIVE ENGINEERING SOLUTIONS FOR CHALLENGING ANTIGEN PRODUCTION UNIT REPLACEMENT

ABOUT THE CLIENT

EAD supports a leading Fortune 500 animal pharmaceutical producer at the forefront of veterinary medicine, driving new innovations that improve the health and lives of animals. Through innovative engineering design, we help support their mission to provide high-quality products that prevent disease, ensure safe food production, and improve the sustainability of the animal health industry.

SERVICES

Multiple Engineering Disciplines
Project Management

HIGHLIGHTS

- Developed innovative design solution to enable the transport and installation of new fermenter systems
- Performed strategic pre-work to ensure safe, continuous production during installation
- Helped increase plant production unit capacity by over 60%

PROBLEM TO SOLVE

Our client knew that the most cost-effective solution to improving efficiencies within their facility antigen production unit was to replace their aging pharmaceutical fermenter vessels and supporting utility heat exchanger skids with new equipment. However, the logistics of performing this replacement proved a challenge. The newly purchased fermenter vessels were too large to be brought into the production room through any of their facility's doors, and the mechanical space intended for the utility heat exchanger skids was cramped and difficult to access. Our client forbid production downtime during the installation of the new systems, further complicating the fermenter installation process. EAD was tasked with developing a creative engineering solution to take the fermenter replacement project from the feasibility phase through detailed design and solve all the design challenges.

APPROACH & SOLUTION

EAD designed a custom roof access opening to facilitate the transport of the new fermenter vessels directly into the facility production space and constructed hygienic containment enclosure walls to maintain facility hygiene requirements during the system installation. The roof access design involved the relocation of process piping, temporary re-routing of the HVAC system, and structural reframing.

EAD's solution also minimized the risk of disruption to ongoing production, enabling the existing fermentation production units to continue operating normally during the installation of the new fermentation systems. We accomplished this feat through extensive pre-installation preparation work, including modifying piping, improving the network infrastructure design, and managing the relocation of maintenance equipment during planned shutdown windows. The utility skids were also designed to easily disassemble to fit in our client's desired location, a mezzanine with a very narrow entry path.

RESULT & BENEFIT

Through novel engineering design and strategic project management, EAD overcame our client's many challenging project constraints, ensuring the successful replacement of the fermentation systems. The newly implemented systems increased the production capacity at the facility by 60%.

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