



POLYSTYRENE PRODUCT PACKAGING AND FIRE MITIGATION

Project involved installation and automation of new product packaging systems to significantly reduce fire risk during the packaging operations due to static discharge potential of expanded polystyrene beads laden with pentane vapors. Three new highly automated bulk bag packaging systems were installed as well as modifications to existing ancillary equipment (bins, feeder, magnets, metal detectors, mixers, etc.) to enable nitrogen inerting of the upstream equipment as well as the packaging systems.

CSD had complete project management on behalf of the client including but not limited to project scope definition and cost estimating, alternative analysis, coordination of management of change, cost control and spending forecasting, procurement strategy, scheduling and presentation to senior management for fund implementation. CSD also conducted all of the safety activities including site safety and hazard reviews.

Mechanical and piping design responsibilities for the project included development of general arrangements; sizing and specifying major and minor mechanical equipment (bulk bag system, screener, automated sampling system, bead and additive feeders, conveyors, nitrogen supply system, etc.); nitrogen inerting design, piping and instrumentation; and pressure relief safety systems design. CSD was also in charge of mechanical modifications to existing equipment.

CSD provided all electrical, instrumentation and control system detailed design engineering required for installation. The electrical & instrumentation group developed a functional specification which included P&I diagrams, an I/O database, and a description of the required logic and regulatory control including interlock descriptions. CSD also performed all system and related programming, developed a control system specification for a PLC based system, defined and implemented an interface between this PLC system and an existing area DCS. Also, CSD interfaced between the PLC system and vendor controllers, provided specifications for two new motor control centers, variable frequency drives and all new instrumentation, provided field technical support of demolition, equipment installation, wiring termination, check out, commissioning and start-up. As-built drawings were provided at the project completion.

