Hazard & Operability (HAZOP) Study For Isopropyl Alcohol (IPA) Tank Farm and Production Area

Executive Summary

The Catalyst Group's Singapore office was retained by a large, medical device client to conduct an extensive HAZOP study for their Isopropyl Alcohol (IPA) tank farm, distribution system and production equipment at their plant in the southeast Asia region. The purpose of the study was to systematically review processes associated with the operation, maintenance and repair of the IPA system to determine whether deviations from the design or operational intent may lead to undesirable consequences. Over the span of several weeks we reviewed the client's existing procedures, drawings and other documentation, prepared review materials and conducted the workshop. As a result, the client had a good understanding of the risks associated

with the system and the actions needed to mitigate them.

Challenges

Our client had installed the IPA system more than 20 years ago and a thorough Hazard and Risk Analysis had never been completed. Engineering drawings and maintenance procedures were not complete for all portions of the process system, so additional time, effort and research was needed to ensure we had a comprehensive understanding of the risks.

How We Helped

The Catalyst Group's Singapore office has experienced and qualified HAZOP facilitators and scribes to conduct these types of workshop studies. Our experience helped us identify gaps in the existing documentation prior to the start of the workshop. We were able to work closely with the client to work through existing documentation to identify suppliers and contractors responsible for installation of the original system. With this information, we were able to research and gather information on design criteria, components and installation procedures to supplement the client's existing information.

After gathering as much information as possible, we were able to begin the study by fully defining the system to be analyzed. Once the scope was defined, then the system was broken down into a logical set of major components for examination (nodes). Using the information provided by the client, as well as the supplemental information gathered from 3rd parties, our experienced HAZOP analysts and facilitators were able to evaluate the drawings, specifications, schematics, component lists, etc., to complete the analysis.

Our facilitator worked with the client to assemble a team of interdisciplinary experts at the plant to complete a competent examination of each node. The team was comprised of representatives from process engineering, operations, service and maintenance and the safety organizations at the facility. We conducted an in-depth HAZOP training for the site team and then spent several days thoroughly reviewing each node. A final report was issued which outlined the findings and identified actions needed to minimize the residual risks.

Results

At the completion of this project, the Client had a more complete documentation set for their existing process and a greater understanding of the risks with the system. We left them with a comprehensive report outlining the findings of the HAZOP study and a comprehensive corrective and preventive action plan. As a result of our work and the relationship we have established, we now conduct a number of HAZOP studies and broader safety and health-related work for this client.

About Us

A premier global consultancy, The Catalyst HSE Group is trusted by clients to manage their most challenging environmental, health and safety issues.

Our reputation has been built on a foundation of solid technical and scientific excellence, innovation and client service. Our independent science-first approach ensures that our strategic

advice is objective and defensible. We apply integrated multi-disciplinary services and tailor each solution to our client's specific needs and challenges. This approach transforms us from a company that just delivers a service to one that is a true partner in risk minimization.

Contact Us

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