Fermentaion

Profession

Dilution is achieved by controlling the flow of process water from the dilution tank TUB 1201 into the mixer GAL. 1230. Process water flow rate is controlled to achieve the desired density of the mixed solution. The now diluted C-molasses solution flows into the vapor condensate EAI 1204, where it is preheated by the condensing hot water vapor from the flash tank TUB 1203. The solution is preheated to about 75 to ICC. The preheated solution flows into the hydrothermal GAL. 1231 where the temperature s increased to between 85 to ICC, using the 7 - lobar saturated steam as a heating medium.

The then heated solution enters the cyclone IF 210. The cyclone is responsible for removing solid purities that may be present in the concentrated C- molasses. The discharge valve on the cyclone will open periodically to dislodge the cyclone. The diluted, heated and now 'cleaned' C-molasses then flows into the intermediate/ Buffer Tank TUB 1202. The tank is equipped with a level indicator control that controls the flow out of this tank maintaining a desired level set point. The stream is then pumped out into the second hydro heater GLOBAL where the temperature is increased to between 121 to ICC, using the 7 - lobar saturated steam.

The hydro heater GAL. 1232 is equipped with highly delicate temperature indicator controller; this temperature control is a Critical Control Point. When the temperature drops below ICC, the sterilizer will go into recirculation and will stop feeding forward to the sterile tanks. This is designed to prevent Coli and C. Botulism to enter the sterile tanks. These are harmful micro-organisms that are not suitable to fermentation and human consumption. The heated solution then flows through the retention coils and into flash tank

TUB 1203. The flow through the retention coils is controlled at a backslappers of kappa.

The coils are interchangeable since there are two coils, one online and the other on standby. The flash tank is kept under vacuum - 35 to -kappa by using the vacuum system. The flash tank TUB 1203 is protected from over-pressuring by pressure relief valve installed into the vacuum system. The vapor leaving the flash tank is condensed by incoming diluted C-molasses in EAI 1240 and forming condensate that flows to the inch separator vessel. This separator easel separates liquid from vapor and also forms a barometric seal into the seal pot. L.

DEVELOPDIAGNOSTICTOOL FOR THE EFFICIENT OPERATION OF THE PLANT/ SECTION OF PLANT UNDER CONSIDERATION. The diagnostic tool for the efficient operation is a system developed for better and safe way of operating a system. These processes include daily maintenance to ensure that a system is performing at its best. There a programs that is designed for each operation of the plant to maintain stability and safety operation through monitoring. There are alarms installed in the plant to alarm operators of deviation from normal operation of the plant.

Deviations can be of process out of specification and danger alarms of hazards in the plant. At Anchor Yeast Durban the company has a dedicated and well developed system of monitoring deviation throughout the plant operation for the efficient operation. There are DOCS and software such as Aurora. Aurora is used for daily operation maintenance and keeping records of the plant operation. Without these systems the plant will be a danger to

employees and the surroundingenvironment. These tools assist in managing and implementing efficient ways of operation of the plant.

With the tools it is possible to determine and strategies the optimal peak operation for the plant in the next hour of operation and for the 24 hour of operation. They provide demand response strategy for emergency situations, such as extreme unwanted condition of the plant operation. With these the company always adheres to maintains high standard of delivery to its customers, through meeting schedule timing for the production and safety and cost efficient way of saving energy. Fault Tree Analysis is a broadly used deductive method for the efficient operation of the plant in designs and daily operations to minimize cost

F. HAZARD AND OPERABILITY STUDY (HAZARD) OF THE PROCESS OR PART OF THE PROCESS UNDER CONSIDERATION. Hazard and Operability study is the method in which a multi - discipline team performs a systematic study of a process to identify hazard and problems which prevents efficient operation. The technique is applied to new plant development and existing Operations for better and safe Operation. The method is also applied to continuous and batch process. The study provides opportunities to engineers to let their imaginations go free and think of all possible ways in which a hazard or operating problems might arise.

Engineers have to ask themselves the following questions when performing HAZED study: What can go wrong? This is the first and most important stage in any hazard study, is to identify the most important things that can go wrong and produce accidents or operating problems. What will be the

consequences? Engineers need to know the consequences to employees, members of the public (community), plant and profits, now and in the long term. How can it be prevented? - Safeguard Engineers need to administer controls that will prevent accidents from occurring, or make them less probable and protect people from the consequences.

What should be done? - Solution At this stage engineers weigh their options to resolving the accidents, by comparing the risk (that is, the probability times the consequences) with generally accepted codes and standards or with other risk around them. Is it worth the cost? Engineers should compare the cost of prevention with the cost of the accident to see if the remedy (solution) is reasonably practical or they should look for a cheaper but efficient solution. Prevention At this point engineers have come up with a solution but before commencing to put the solution in motion they should assess their solution, I. Perhaps their method of prevention has disadvantages and better methods of prevention should be suggested. Figure 1: Hazed Procedure [Figure 2. 1, Peg. 9: Hazed and Hazard Identifying and Assessing Process Industry Hazards, Tremor Klutz 3rd Edition] P. PROBLEM SOLUTIONTO A CUSTOMER REQUEST (TECHNICAL REPORT) Unhappy customers are bad news for the company and the business. It takes one unhappy customer to steer away prospective customers away from the company. Unhappy customers have their reasons. Some customers have unrealistic expectations and some they Just don't feel well with the business.

We must be hones some customers complaint are legitimate and realistic and we as the suppliers we must attend to their complainants with honesty and integrity to build on good customer relationship. Whatever the cause,

unhappy customers are our hope for future business and we want them happy again for the business. Customer may not always be right but he or she will always be the customer we want and need. So we need to take care of our customer and take control of their complaints and them to our own advantage. There are seven (7) steps in resolving customer complaint which eave proven to work well. . Listen Intently: Listen to customer and do not interrupt while telling you a complaint. They need to tell their story and feel that they have been heard. 2. Thank Them: Thank the customer for bring the problem to your attention. You cannot resolve a problem that you do not have full details about or solve it on assumptions. 3. Apologies: Sincerely convey to your customer and apology. This is not the time to make Justification and making excuses. You apologies, that's it. 4. Seek the Best Solution: Determine what the customer is seeking as a solution, Ask the customer. Reach Agreement: Seek to agree to the solution that will resolve the problem to their satisfaction. 6. Take Quick Action: Act on the problem with a sense of urgency. Customer will respond positively to your focus on helping them immediately. 7. Follow Up: Follow up to make sure that the customer is completely satisfied. TYPICAL CUSTOMER REQUEST AND SOLUTION At anchor yeast we have customers all over the country and across the border. Customerhappinessis very valuable to the company and any complaint is attended with urgency and caution.

As one of largest yeast making company in South African, e are always under pressure to deliver on time and meet our customer wants and needs, and still performing to our utmost in producing high quality yeast. There are trucks coming in the plant to collect cream yeast and deliver to customers.

One of the company that we always work with very closely is Anchor Yeast Johannesburg were most of the cream yeast produced at Anchor Yeast Durban is transported to, for further applications. There are Unitarians coming on daily basis to collect the product.

Delays are very stressing the relationship between the two companies. The Unitarians ruckus come from Johannesburg Debug) with molasses to Durban Anchor Yeast. The molasses is a raw material that is used to make yeast. When the trucks come on site they first have to go to the company's weighbridge before being offloaded. After being weighed the truck is offloaded either Tank offloading point or at the HTML offloading point. Offloading of the truck takes three (3) hours maximum then truck goes back to be weighed. After the truck has been weighed, it goes to the CHIP (Clean In Place) point to be Caped.

Coping is a process where the truck is being clean using chlorinated water and Caustic. This process takes one hour (1 her). After the CHIP the truck is ready to be loaded with cream yeast. The loading process takes one hour (1 her). Then after that the truck is ready to go back to Judder with the product. Customer Complaint: Unitarians tankers are taking to long at Anchor Yeast Durban to turn around back to Anchor Judder. Possible causes of delays: At Anchor Yeast Durban there are three companies that come on site to deliver molasses.

The Subs Hertz Borders Trucks (GHB) and Gridiron Terminal Trucks and local delivery trucks that that transports cream yeast to Durban based customers ND other customers across the country. When the Unitarians trucks from

Judder comes onsite to deliver molasses there are always trucks waiting, loading or offloading molasses. There are only two offloading points at the company. Unitarians have to wait for other trucks which came before to finish offloading and loading. The trucks can sometimes wait for over three hours depending on the number of trucks offloading. Sometimes production of cream yeast is very slow.

That means every time the trucks arrives onsite to collect cream yeast, they wait because not enough cream yeast has been produced. The company having to aware of the complaint from the Anchor Yeast Johannesburg, the company came with solutions to the complaint. There was a spreadsheet that was made to record the times the Unitarians come onsite and time finished to offload the truck. The spreadsheet included also the time it took to load a truck. With regard to running low on cream yeast there was a production time table set for everyday that how much needs to be produced and how much will be transported to Judder on daily basis.

The number of other truck companies bring molasses was reduced to avoid Unitarians trucks to wait for other trucks to finish. It was also suggested that Unitarians trucks given first priority when comes to offloading. This meant when Unitarians is onsite and there is a truck waiting to be offloaded, the Unitarians truck will offload before the truck to avoid delays. The plant efficiency was increased and more of product was produced and made available for the Unitarians to transport. The implement solution has been running fro couple months now and been evaluated. The solution has been found to be working well and keeping the customer happy.

Thought at the beginning the other companies were not happy with Unitarians having o bypass their trucks, but after some negotiations the other companies have come to accept the terms.