## APPENDIX A: SOP Creamer Mixing Plan

# STANDARD OPERATING PROCEDURE- MIXING PLANT

**SCOPE AND OVERVIEW:** This Standard of Operation describes the general requirements to start up and/or to shut down the creamer mixing plant.

**MACHINE DESCRIPTION:**

| No. Ref | PRACTICAL STEPS | C | NYC | REFLECTIVE KNOWLEDGE: | C | NYC |
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| **1.0** | **GENERAL SAFETY PRECAUTIONS** | | | | | |
| | **The following safety guidelines must be adhered to when operating the machine** | | | | | |
| **1.1** | Switch off all equipment/machinery (i.e. pumps, stirrers etc.) when not in use. | | | ***What could happen if the machine is left on, without any supervision?.....***Equipment/machines would wear out and grid metal to metal, which would then be a fire hazard. Also this would have cost implications to repair and replace. Failure would also result in loss to production time, products being rejected and cost implications due to breakdown and machinery failure. | | |
| **1.2** | Wear and use protective clothing as instructed e.g. safety shoes and overalls. | | | ***What could happen if you do not use PPE or do not use it correctly……..***Your personal safety will be risk and could be life threatening. | | |

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| **1.3** | Do not obstruct emergency exits and fire fighting equipment. | | | ***Who is responsible for fire fighting in your workplace?.....***Supervisors, Management and one's self provided you have received fire fighting training and the fire is not life threatening. | | |
| **1.4** | Keep the emergency exits and fire fighting equipment clear and accessible at all times. | | | ***What is the purpose of emergency exit?.....*** The exit you use in case of fire or any emergency cases | | |
| **2** | **EMERGENCY ACTION** | | | | | |
| | In the event of Fire, Injury, Machine Abnormalities: **Switch off electrical power and close valves on steam and solvents lines**. **Alert** your Shift Foreman/Safety Rep or Plant Manager **immediately**. | | | ***What do you do in the event of fire, injuries and Machine abnormalities?.....***Switch off electrical power and close valves on steam and solvents lines. Alert your Shift Foreman/Safety Rep or Plant Manager immediately. | | |
| **3** | **PRACTICE** | | | | | |
| | **GENERAL START UP** | | | | | |
| **3.1** | Switches on mains supply panel in the control room. | | | | | |
| **3.2** | Check if mixer is clean and empty, clean if necessary. | | | ***What materials and equipment do you use for cleaning mixer?.....***caustic and water using CIP | | |
| **3.3** | Ensure that the main valve at the bottom of the mixer, the premix tank, and the blending tanks are closed. | | | ***What could happen if these valves are not closed?.....*** This could result in drainage of raw materials charged. | | |

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| **3.4** | Start up cooling tower pump and fan. Ensure that the water is returning to the cooling tower. Start cooling booster pump. | | | ***What do you do if water is not returning to the cooling tower?.....***If not, then top up cooling tower with municipality water ( Operation of the Cooling Tower ). | | |
| **3.5** | Check raw materials against the batch card and ensure that all indicated raw materials are available. Charge each raw material as per the batch card and/or the Manufacturing Instruction. Observe all recommended safety precautions (See **Material Data Sheets**). | | | ***What are the consequences if you do not check the raw materials?.....***This could result in raw material shortage and result in rejects. | | |
| **3.6** | Heat up water for the mixer (See Operation of Mixers). | | | | | |
| **3.7** | **GENERAL SHUTDOWN** | | | | | |
| **3.8** | Ensure that the stirrer is switched off and the mixer is empty. Ensure that all other pumps are switched off and that the tanks are empty. | | | ***Why should you switch off the stirrer before you empty it?.....***To prevent damage to the stirrer | | |
| **3.9** | Switch off Cooling Tower pump and fan (See Operation of the Cooling Tower - Mixers). | | | | | |
| **3.10** | Close valves to the cooling water. | | | | | |
| **3.11** | Ensure all pumps are switched off. | | | | | |
| **3.12** | Ensure the lift is empty and clean, clean if necessary. Leave lift at ground floor. | | | ***Why do you have to keep the lift clean?.....*** To maintain good housekeeping standards | | |

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| **3.13** | Ensure that the top of the mixing tank and floor is clean, clean if necessary. | | | ***What are the implication of not cleaning the top of the reactor during shutdown?.....*** Result in poor housekeeping, contamination | | |
| **3.14** | Close all valves for all ingredients into the premix tank. | | | ***What could happen if the lines are not closed?.....*** Result in accidental transfer of product to the holding tanks during start up. | | |
| **3.15** | Empty all dirt bins and waste bins at the allocated waste bin area, every shift. | | | Dirt causes pests and formation of moulds. | | |
| **3.16** | Switch off mains electricity supply panel in the control room. | | | ***Explain the importance of switching off the electricity supply during a shutdown in general?.....*** To prevent fire hazards | | |
| **3.17** | Clear all personnel from the plant and switch off lights. | | | | | |
| **4** | **MACHINE AND HOUSEKEEPING STANDARDS** | | | | | |
| **4.1** | Clear and clean area around the mixing tank before and after starting a batch. | | | ***Explain the consequences of not following this standard before start up?.....***Contamination and injuries. | | |
| **4.2** | Switch off and report noisy equipment/machinery to the Shift Foreman/Senior Operator or Engineering Department immediately | | | ***Explain the consequences of not following this standard before start up?.....***Machine breakdowns and failure which could result to fire and formation of rejects. | | |
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