PURPOSE: The purpose of this procedure is to ensure an effective management system is in place for the organisation and control of cleaning of all production equipment and structural surfaces.

RESPONSIBILITY: The Department Manager is responsible for ensuring this procedure is communicated and adhered to by all staff.

INSTRUCTIONS:
EQUIPMENT DESIGN

1. All CIP systems must incorporate:
    - Temperature measuring device on the detergent return line
    - High and low level temperature alarms
    - Conductivity cells on CIP return and in detergent holding tank
    - Access for conductivity cell cleaning and maintenance
    - High and low level detergent concentration and tank level alarms
    - Devices to ensure adequate flow is maintained
    - Return flow measurement device on return line to ensure circuit is made
    - Suitable access to all CP tanks

    Automatic systems will STOP or go into HOLD condition if the correct parameters are not met. If manual system is used, all cleaning parameters must be monitored and recorded on each clean.
2. CIP systems must have automatic recording devices to visually display time, temperature, flow rate and sequence of cleaning cycle to monitor correct plant operation. The route must be recorded.
3. The advice of approved engineering company with appropriate CIP expertise or approved cleaning chemical company must be sought when processing equipment is not specifically designed for CIP
4. The diameter of the pipework must be the same throughout the cleaning circuit. The flow rate must be determined at the largest pipe diameter.
5. A stainless steel strainer and a pressure gauge is in place in the detergent delivery line just after the delivery pump. It must be regularly checked and cleaned.

6. All spray devices are designed to ensure total coverage of all surfaces and fittings. They are readily removable for inspection and cleaning.
7. Detergent tanks must be calibrated and of sufficient volume to contain enough detergent to clean the largest circuits.
8. Access to cleaning cycle software is limited to key responsible personnel.
9. All staff operating CIP systems must be fully trained against documented operating procedures.

CLEANING MATERIALS/MONITORING OF CLEANING EFFICIENCY

1. It must be ensured that detergents and disinfectants used are fit for their purpose and are approved. The choice of chemicals will consider the nature of the food product, the cleaning temperature, the water hardness, plant sensitivity to corrosion, safety hazards and storage problems. The nominated manager will be responsible for approving chemicals.
2. Microbiological efficiency of cleaning will be regularly assessed by analysis of the first product through the system after cleaning.
3. Swabs of equipment and analysis of final rinse waters will be analysed. The only approved laboratory must be contracted.
4. Rinse water will be checked for the absence of residual detergents or presence of disinfectant where applicable periodically.
5. Is not allowed that an item of plant to be reused until it has been properly cleaned. The idle plant that has not been cleaned within a predetermined period must not be used. Please refer to cleaning schedule.

ROUTINE OPERATIONAL CHECKS

1. Routine operational checks will include the following
    a) Tank level sensing devices to be set and operating correctly for the control of high and low levels.
    b) Thermometers to be calibrated at least six monthly.
    c) Detergent and disinfectant strengths must be checked on a daily basis to measure accuracy of system and conductivity meters. The results of the daily detergent tests will determine the frequency of calibration of conductivity devices.
    d) Target levels for detergent and disinfectant strengths will be established; corrective action must be implemented and recorded when targets are not met.

e) Water will be tested regularly to cover key physico-chemical and microbiological parameters. Please refer to HACCP assessment of the risks of contamination to the water for methods and frequency.
f) The systems ability to stop or go into hold condition must be checked (six monthly) and recorded where critical parameters e.g. temperature, concentration and flow rate are not met.
g) Air filters (where air is used for purging product) must be routinely replaced.
h) Check strainers in detergent delivery line for presence of solids.
i) The dumping frequency of the detergent will be established in consultation with the cleaning chemical company and by regular visual examination of the detergent tank. Please refer to cleaning schedule.
j) Detergent tanks and water tanks must be regularly cleaned. Please refer to cleaning schedule.
k) Every clean - check route has been correctly established and all unions are fully tightened. Check that any flow controllers are removed or diverted.
l) Visually check pipework and pumps for leaks and replace gaskets and seals as necessary before the CIP program.

PLANNED MAINTENANCE

1. A planned maintenance schedule will be requested from the Engineering Company at the time of installation. A planned maintenance schedule for each system will be established. The schedule will target areas on a risk assessment basis taking into account the operational characteristics of the equipment.
2. Periodic checks will be carried out for:
    - evidence of scale
    - blocked spray devices
    - cleaning solution residues
    - physical damage to plant that will effect CIP efficiency

RECORDS

Records of the following must be kept readily available.

1. All commissioning tests and cleaning cycles established on commissioning and any subsequent changes.
2. Detailed and up to date drawings/diagrams of the entire system.

3. Fully documented CIP including temperatures, times and the types and concentrations of chemicals used.
4. Daily detergent strength tests.
5. Written confirmation that each clean has taken place.
6. Where systems are manually dosed with detergents; time, temperature and concentration parameters on each clean should be recorded.
7. Chart recordings of cleans, dated and signed off.
8. Written detailed cleaning schedules for manually cleaned individual components e.g. balance tanks, depositor heads.
9. Personnel authorized to access cleaning cycle software.
10. All maintenance work carried out.
11. Results of microbiological monitoring.
12. Staff training records

MONITORING:
Regular audits / inspections of manufacturing areas and controls must be in place to ensure that procedures are effective and working.

VERIFICATION AND RECORD KEEPING:
Regular audits / inspections of manufacturing areas and controls must be in place to ensure that procedures are effective and working.
Internal audits records must be completed, which will include:

- non-conformances
- corrective action
- responsibility
- date of completion

RECORDS APPLIED TO THIS PROCEDURE:

- Internal Audit records
- Cleaning records
- Cleaning schedule

DOCUMENTATION RETENTION:
The records applied to this procedure are to be kept on file for a minimum of 3 years.