

Maintenance in a Food Manufacturing Facility — Keeping a Sanitary Process Environment During Repairs:

Food Processing for Entrepreneurs Series

Durward A. Smith, Extension Food Processing Specialist
Laurie J. Keeler, Pilot Plants Manager

Maintenance in a food manufacturing facility must be cost effective, have minimum impact upon production, and must not negatively impact the cleanliness or quality of the foods being manufactured. This publication briefly describes items that should be considered when doing repairs or contracting repairs in a food manufacturing facility.

All employees or visitors to a food factory must adhere to health and sanitation regulations. Maintenance personnel by the nature of their work run a high risk of contaminating the product, and must show a high level of diligence in the workplace. Maintenance practices should be consistent with Good Manufacturing Practices. Many entrepreneurs have the mechanical aptitude to accomplish routine maintenance and repairs to maintain their own facilities. If a person is hired to make repairs, that person should be made aware of safety and hygiene requirements for visitors. Common-sense measures will help to ensure the production area and products are kept free from contamination by undesirable microorganisms, filth, debris, or machine parts.

Health

Some large companies require maintenance contractors to fill out a health questionnaire before allowing that contractor to enter a food production area. The entrepreneur may not have the luxury of such screening, but should delay or restrict access of any person with obvious health problems such as the flu, colds, uncovered sores or wounds, or any other condition that may enhance risk to the product.

Washing

It is difficult to keep hands clean when working on machinery. Avoid placing dirty, greasy, oily hands on any surface with which the product comes into contact. Hands should be

washed thoroughly, including in between fingers, before entering a food processing area and after eating, drinking, smoking or using the restroom. Equipment should be thoroughly cleaned after repairs are completed.

Clothing

In a food processing environment, protective clothing is not only to safeguard your clothes while you work but also to protect the product from you. In order to avoid contamination of work surfaces, maintenance personnel should wear clean coveralls, footwear, and cover their hair. Hats, caps or nets should be provided as should a snood to cover facial hair where necessary. Remove all jewelry, including watches.

Footwear

Close attention should be paid to the cleanliness of footwear. If it is necessary to stand on or over machinery, cover equipment to prevent dirt and debris from contaminating the surface. Overshoes or shoe covers may be provided to cover footwear.

Loose Objects, Dust, Debris, Water

Take care not to lose nuts, bolts, etc. when removing them from machinery; be aware that small parts and tools easily can be misplaced. Tools should be checked when the work is complete to ensure nothing is left where it may enter the product or damage equipment. Some work such as drilling or welding will inevitably produce debris and dust. The area should be examined to assess the potential risk of contamination, and risk areas should be covered. It is best to (when possible) remove food processing equipment from the processing room before repairs are made. Coverings such as tarps or plastic sheeting can be draped over equipment to reduce contamination as long as these items are clean and free from dirt or water.

Clean and Sanitize Prior to Resuming Activity

The equipment and area should be cleaned with hot soapy water, then rinsed and sanitized prior to resuming production any time maintenance of any type is performed in a food processing facility. This insures that any contamination will be removed as well as provide additional opportunity to check for misplaced tools or parts.

If emergency repairs are required during production, any product that may have been left setting for long periods of time or become contaminated during repairs should be disposed of or scheduled for re-processing to prevent any potential for poor quality or contaminated finished product.

Welding

Welding should be avoided where possible but if it is necessary, use a running weld that is then finished or polished. Spot welds leave open spaces that may accumulate dirt and could provide a habitat for insects and microorganisms. Spot welds and unfinished welds are difficult to clean. This is particularly important where the product is in contact with the welded area.

Lubricants

Food machinery should always be lubricated with *food grade* grease or oils. Excessive oil should be removed to avoid it coming into contact with the product or food contact areas.

Glass

Reasonable care should be taken to ensure that glass does not enter food products. Production lines should be designed or arranged so that any pieces of broken glass containers will not contaminate the food. The only glass (other than food containers) permitted in food factories should be windows and fluorescent light tubes. Light tubes should be covered with an acrylic sheath which, in the event of a tube breaking, will prevent glass from showering the production line. Changing light tubes is a vulnerable situation and every care should be taken to prevent breakage. In other areas where glass would normally be used, shatter-proof plastic should be substituted.

Good Housekeeping

Machinery should be checked regularly. Worn parts should be replaced as soon as practical. This not only ensures that production is maintained but also prevents debris from worn or broken parts entering the product or contaminating the production line.

Paint should not be used on any food contact surface. Paint flakes and peels, and can easily find its way into food products.

Nothing should be left in a food production facility that is not part of the production process. Remove any packaging and unused machinery as soon as it has served its purpose.

Documentation and Training

Both routine and emergency maintenance work should be documented even if that documentation consists of single log sheets that give the date, time, name of maintenance technician, as well as work completed. It is also appropriate to expect internal maintenance technicians to read and sign off on Good Manufacturing Practices.

Often local community colleges offer simple, short training courses on food safety for maintenance workers. Contracted maintenance and pesticide application technicians often have this training and will provide documentation if requested. These types of records are helpful preparation if the processing facility is audited for outside contracts or for any regulatory reasons.

Design

Future problems can be avoided when you design and lay out your food facility. Use good quality and appropriate food grade materials such as stainless steel (grades 304 to 316). Because of their ease of welding and cleaning these are the most commonly used steels for food machinery and fabrication. Minimize difficult to clean piping and the use of valves, joints and fittings that restricted flow and may allow product build up, which provides an environment for filth and microbial growth. Slope lines should be used where possible to facilitate self-draining. The bore of any piping should be smooth to allow unrestricted flow. Where joints are unavoidable they should be joined with a running weld or a sanitary union. Machinery and guards should be easily cleanable, not only for health and hygiene reasons but also to reduce costly down time. The underside of machinery should have sufficient clearance to allow cleaning. Drip trays that are easy to remove and clean should be fitted where necessary. Protect food processing areas from:

Debris and detritus

Infestation and microbial buildup

Residue and rubbish

Think out the best plan for design, operation and maintenance.

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