Worthwhile Operational Guidelines & Suggestions

BROILER PROCESSING TIMELY INFORMATION – MARCH 2002

WHAT'S WELDING GOT TO DO WITH FOOD SAFETY ?

Contamination of final product with pathogenic bacteria arising from the processing environment is a significant food safety issue. A key initial event in the establishment of environmental contamination is the attachment of bacteria to food contact and non-contact surfaces in the processing plant. After initial attachment, bacteria can persist to the point that a bacterial "reservoir" is established, which in turn leads to persistent contamination of product.

Welded austenitic stainless steels (designated by numbers in the 300 series) are very widely used in your plant. While these stainless steels are the material of choice, primary due to ease of sanitation, sanitizer efficacy can be compromised because of welding problems, especially "sensitization" also known as "weld decay". Such problems are common in austenitic stainless steels used for food processing. For example, weld decay leads to the formation of microscopic corrosion cracks that will provide harborage sites for bacteria and which may not be readily penetrated by sanitizers. Furthermore, the use of aggressive sanitizers (*i.e.*, those recommended in current industry guidelines) may increase the rate of weld decay. Overall, it is to be stressed that weld decay is insidious. This problem accrues over time and is not visible to the naked eye until quite severe. Indeed, factory welds that have been ground may not be apparent to you but have the potential to lead to increased bacterial loads. Indeed, not all austenitic stainless steels are the same. The properties, and hence performance, of these materials can change very significantly upon welding. Also, the exact fashion in which a given material is welded and manipulated can have a profound impact on its performance in your plant.

Care should be taken when making welds on your equipment. While no clear guidelines exist, welding processing equipment, particularly that which contacts product, should be done professionally, utilize a high quality steel, and be ground to a finish representative of the original equipment. Lastly, existing welds should be taken into consideration when evaluating your overall sanitation program.

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