Food Safety and Inspection Service (FSIS) Requirements for Advanced Meat Recovery (AMR) – Beef

Advanced Meat Recovery (AMR) is an industry technology that removes muscle and other edible tissue from the bone of beef carcasses under high pressure without incorporating bone. The machinery separates meat by scraping, shaving or pressing the muscle and edible tissue away from the bones. Bones must emerge essentially intact and in their natural shape. Under Food Safety and Inspection Service (FSIS) regulations, AMR product can be labeled as "meat."

Because BSE was confirmed in a cow in the United States on December 25, 2003, FSIS developed an emergency interim final rule to ensure that AMR systems are not a means of introducing Central Nervous System (CNS) type tissues into the food supply.

Previous Requirements Before January 12, 2004	Current Requirements Beginning January 12, 2004
Prohibited from use in AMR: Spinal cord (FSIS Directive 7160.3 Revision 1, 8/25/03)	**Prohibited from use in AMR:** From all cattle: • Brain, • Spinal cord, • Dorsal root ganglia (DRG), Trigeminal ganglia, and • Significant amounts of bone solids or marrow. From cattle 30 months of age or older, • Skull and • Vertebral column bones. (Interim final rule and request for comments was published January 12, 2004.)
If a plant's AMR system repeatedly fails: Plants whose AMR system repeatedly failed to produce product free of spinal cord were no longer allowed to produce AMR meat from beef vertebrae. (FSIS Directive 7160.3 Revision 1, 8/25/03)	**If a plant's AMR system repeatedly fails:** Plants whose AMR system repeatedly fails to produce product free of these parts will not be allowed to produce AMR meat from beef vertebrae.
Plant Responsibilities: Meet all regulatory requirements, including: • Development and implementation of Hazard Analysis and Critical Control Points (HACCP) Plan and Sanitation Standard Operating Procedures (SOPs). • Kept records only on the calcium criteria. (FSIS Directive 7160.3 Revision 1, 8/25/03)	**Plant Responsibilities:** Meet all regulatory requirements, including: • Development and implementation of Hazard Analysis and Critical Control Points (HACCP) Plan and Sanitation Standard Operating Procedures (SOPs). • Reassess hazard analysis to determine if there is a hazard reasonably likely to

	occur. AMR regulatory changes are likely to affect hazard analysis. • Ensure that their AMR production process is in control. • Have control procedures and recordkeeping in HACCP plan, Sanitation SOP, or other prerequisite program. • Observe bones entering AMR system. • Test product exiting AMR system. • Maintain records on entire AMR process control system, on a daily basis. • Make those records available to FSIS personnel upon request. • Determine how and when the plant will test product for calcium, iron, spinal cord, and DRG. • May use testing methods which are not as sensitive as the method FSIS uses, but less expensive. (Interim final rule and request for comments was published January 12, 2004.)
FSIS Responsibilities: **In addition to normal inspection procedures, Inspection Personnel**: • Took samples from plants to ensure that spinal cord tissue was not in AMR product. • Randomly collected a single composite sample (two pounds) produced from cattle which were 30 months of age or older. • Notified plant management and allowed them to hold the AMR products from sampled production until the results became available. **If the sample tested positive, FSIS:** • Issued the plant a Noncompliance Record (NR), • Took control of any product produced by the system tested on the day of the sampling. • Took control of AMR system equipment. • Verified that the plant properly disposed of the product.	**FSIS Responsibilities:** **In addition to normal inspection procedures, Inspection Personnel:** • Take samples from plants which produce AMR products, to ensure that prohibited tissues are not in the product. • Verify plant testing, using validated histological procedures. • Specific inspection procedures, including those for sampling and testing, are being developed. This includes disposition of product which is found positive for specific materials. (Interim was final rule and request for comments published January 12, 2004.)

• Requested a recall of any AMR product, or product containing AMR, produced on the day of sampling and shipped. **Follow-up to a Positive:** • Inspection personnel verified plant's corrective and preventive actions and collected 10 follow-up composite samples. • From the results, FSIS determined whether or not the plant's AMR system was in control. (FSIS Directive 7160.3 Revision 1, 8/25/03)	