

U.S. Department of Agriculture  
Food Safety and Inspection Service  
Room 102, Cotton Annex  
300 12<sup>th</sup> Street, SW  
Washington, D.C. 20250-3700

12

RECEIVED  
FSIS  
January 18, 2000  
00 JAN 13 AM 3:20

98-027R-12  
98-027R

RE: Docket No. 98-027R -- Comments: Proposed Rule on Advanced Meat Recovery Systems

On behalf of the Coalition for Advanced Meat Recovery (see Attachment I for Coalition members), we want to first express our appreciation for the decision by the Food Safety and Inspection Service (FSIS) to reopen the comment period relative to its April 13, 1998 proposed rule dealing with meat produced by Advanced Meat Recovery (AMR) equipment. Our Coalition, which consists of large and small meat packers, livestock producer groups and the United Food and Commercial Workers Union, respectfully requests the continued use of the AMR equipment and therefore appreciates the opportunity to provide FSIS with additional information to support our position.

The Coalition is deeply concerned about the impacts of the April 1998 proposed rule published by FSIS as it arbitrarily changes the definition of meat for one type of meat, but not for meat derived from other advanced recovery technologies.

We believe that FSIS's proposed rule is unwarranted and unnecessary given the cost to livestock producers and meat packers, and the harm to workers that would occur as a result of the proposed rule. Moreover, since it is clear from the Department's own comments that this is not a food safety or public health issue, we fail to see any offsetting consumer benefits that would justify the proposal's deleterious effects on workers, livestock producers and meat processors.

In 1995 meat processors first began to use Advanced Meat Recovery (AMR) systems as a means to help increase yields and improve profitability and address worker safety issues. These

systems were developed to more effectively remove the skeletal muscle tissue from bones during processing. They proved to be more efficient and cost-effective than the hand-held, high-speed vibratory air knives, and also increased the meat yield through better retrieval from the bone surface. By reducing the use of hand-held, high-speed vibratory air knives, AMR systems made a positive contribution to improving worker safety since this occupation is one associated with a high incident rate of cumulative trauma disorders.

The advent of the new system was facilitated by USDA's issuance in 1994 of a rule determining that the bones emerging from the AMR machinery are comparable in composition and content to bones from hand deboning. Rapid adoption of AMR systems followed the ruling and today approximately 70 AMR systems are in use throughout the meat packing industry. In 1997 the industry adopted and widely implemented Good Manufacturing Practices (GMPs), under the leadership of American Meat Institute Foundation, to govern the use of AMR systems.

In April of 1998, FSIS proposed to change the existing rules to reduce the maximum allowable calcium levels for the meat produced by AMR systems and introduced an unwarranted and provocative iron and calcium standard. Processors have made large capital investments in these systems since 1994 and face significant economic losses if their use is denied as a result of this unwarranted regulation. In addition the industry continues to be in a labor short market and a new requirement to hire more workers would be virtually impossible to meet. Furthermore, the amount of meat produced for the food supply would be reduced thus having a negative impact on prices received by beef and hog producers. The impact of the proposed rule has been negative. AMR meat prices have decreased since the 1998 proposed rule was published. This decreased

price is reflected in the Coalition economic analysis.

The net result of the new iron standard contained in the proposed rule will be to force meat packers to remove AMR equipment and return to hand-held, high-speed vibratory knives, significantly increasing the incidence of cumulative trauma disorders (CTDs) for thousands of workers in the meat packing industry. Ironically, these adverse economic and worker safety impacts would occur pursuant to this highly questionable policy change that FSIS has clearly stated is not a food safety issue.

It is to prevent these unnecessary consequences that the Coalition for Advanced Meat Recovery was formed. The Coalition has developed a series of papers and impact analyses which discuss the effects of the proposed AMR rule in greater detail. We have organized the Coalition's comments on the proposed AMR rule in the following manner:

Section I: Worker Safety

Section II: Economic Impacts

Section III: Good Manufacturing Practices

Section IV: Spinal Cord Directive

Section V: Food Safety

Section VI: Scientifically Based Standards

Section VII: Definition of Meat

#### **I. Worker Safety**

Worker safety issues are of primary concern to both employees and employers of the meat packing industry. The slaughtering, processing and packaging of meat has long been associated with a high incidence of accidents, injuries and illnesses. A significant number of

those injuries are due to the widespread use of knives, including hand-held, high-speed vibratory air knives, hooks, and circular saws. Equipment of this type is especially linked to cumulative trauma disorders (CTDs) and has likely played a significant role in the number of CTDs reported among employees in the meat packing industry.

Although the industry has made progress in reducing CTDs or musculoskeletal disorders, the issue remains one that receives a great deal of attention, and has been a major concern of the Department of Labor.

In a 1999 United Food and Commercial Workers press release, the group noted "musculoskeletal disorders, or cumulative trauma disorders, have reached epidemic proportions in the meat packing and poultry industries. One in ten meat packing workers and one in twenty poultry workers reported a MSD injury in 1997..." The Administration responded to this concern by proposing, through the Occupational Safety and Health Administration (OSHA), new regulations to address musculoskeletal disorders affecting a number of industries, including the meat industry.

It is difficult to understand how the Administration could, on the one hand, propose a rule designed to significantly decrease the number of CTD's, and on the other hand, propose a rule dealing with AMR systems that would in fact increase the number of cumulative trauma disorders in the meat packing industry. At the same time, USDA acknowledges that there is no food safety or public health concern with AMR meat.

Attached (see Attachment II) is an analysis of cumulative trauma disorders in the meat packing industry and the estimated impact of the proposed rule on the number of worker injuries and associated costs. Among the important developments that have come out of the long-term

programs to address CTDs has been the introduction and use of the Advanced Meat Recovery systems that provide efficient separation of meat from bone without the widespread use of the hand-held, high-speed vibrating air knives. Although the hand-held, high-speed vibrating air knife technology has somewhat improved, it is well documented that they are a major contributor to the higher incidence of CTDs in the meat packing industry. As noted above, the meat packing industry continues to have a high incidence of repetitive motion disorders and this number will only increase if the industry, even in part, reverts to using hand-held, vibrating air knives to remove bone from meat. In our review, one additional case of CTD is too many.

USDA agrees that a change in the current AMR rule is not necessary to address a food safety or public health problem. But if companies have to return to vibrating hand-held knives, employees of the meat processing industry will indeed be at greater risk for cumulative trauma disorders.

## **II. Economic Impacts**

The Coalition contracted with Sparks Commodities, Inc. to conduct an economic impact analysis of the proposed AMR rule. The report entitled, Advanced Meat Recovery Systems-An Economic Analysis of the proposed USDA regulations (July 1999) appears in full in the Appendix (see Attachment III).

In summary, the Sparks' analysis reviews the development of the AMR technology and the economic and worker safety benefits that have been derived since the equipment first began to be used in 1994. Today approximately 70 AMR systems are in use by the U.S. meat packing industry.

The proposed AMR rule changes the existing regulations to arbitrarily reduce the

maximum calcium levels for the meat produced by AMR systems and introduces an unwarranted and provocative iron standard. While available AMR systems may meet the newly proposed calcium standards, they cannot meet the proposed iron levels. The practical effect of the proposed regulation would be to render AMR systems useless. Moreover, in that event, there are few or no viable alternatives other than to return to the previously used system of hand-held, high-speed, vibratory air knives. Many processors have made large capital investments in these AMR systems since 1994 and face significant economic losses if their use is no longer allowed as a result of the FSIS proposed regulation.

A return to the auto-knife system will require significant new investment to restructure the physical facility in the plant and to hire and/or train new workers as auto-knife operators, positions with a high frequency of ergonomic-related injuries. In addition the industry is already in a labor short market. A new requirement to hire more workers will be virtually impossible. Further, the amount of meat obtained for the food supply would be greatly reduced which would adversely impact prices received by livestock producers of whom 98% are small businesses.

The Sparks' analysis shows that the various adjustments required by implementation of the proposed rule across much of the industry would be substantial. The economic impacts would be most directly felt by meat processors, but could be more widespread, even significantly affecting livestock producers. The information developed in this analysis provides a snapshot of the economic effects in 1998 from the proposed regulation with the following estimates:

- **Loss of the equipment value** of the AMR systems meat processors have purchased. The loss of this one-time investment totals \$40 million.
- **Retro-fitting and plant reconfiguration costs** likely will be substantial for both

large and small meat processors. For the entire industry, the introduction of the AMR system and removal of the auto-knives involved considerable reconfiguration of equipment already in place and reallocation of the plant floor space. Removal of the AMR systems likewise will require significant capital costs for removal and retrofitting for mechanized knives, as well as for purchase - totaling \$32.5 million.

- **Additional labor required** to operate the replacement auto-knives. In an already labor-short industry, this would require the addition of 1,970 workers in an occupation highly susceptible to the effects of cumulative trauma disorders. The net additional labor costs could reach nearly \$53 million.
- **Product revenue losses** from the additional yield that is gained with the AMR system over the auto-knives. An estimated additional 43.5 million pounds of beef (both fed cattle and cows) and 141.4 million pounds of additional pork were produced in 1998 using the AMR system. These quantities would be lost yield with a return to the auto-knife system, ultimately causing the industry a product revenue loss of \$74.1 million.
- **Medical expenses** processors must pay associated with worker injuries (particularly cumulative trauma disorders) from auto-knife operation could total \$10.4 million.
- **Lower prices for livestock producers** likely will result as meat processors,

searching for offsets in a effort to maintain margins, would be unable to pass much of the cost on to the consumers.

The Sparks' analysis indicates that even using conservative assumptions about impacts, the total economic loss in the first year could well exceed \$209 million. In subsequent years, the recurring loss would amount to more than \$137 million annually, and would affect not only meat processors, but also company workers, livestock producers and consumers. Over a period of five years, given the recurring losses (additional labor, product revenue losses and medical expenses) and the one-time fixed cost of the equipment and plant restructuring , the accumulated economic impact could reach nearly \$759 million. Over a period of ten years, that amount could exceed \$1.4 billion.

The Sparks' analysis does not factor in wage and other labor cost increases that likely would occur in following years adding to the total economic losses. While the incidence would be most direct on meat processors, some shifting could occur with impacts then extended directly to livestock producers. Given the higher economic costs that are likely in subsequent years, livestock producers could face even greater losses in the future.

### **III. Good Manufacturing Practices**

In 1997, the meat industry, under the leadership of the American Meat Institute Foundation, initiated and published Advanced Meat Recovery Good Manufacturing Practices for pork products and beef products (see Attachment IV). The GMPs were created among industry users and equipment manufacturers for the purposes of producing and marketing consistent quality AMR meat that meets industry standards for inclusion in processed meat product. The objective of the GMPs is for the ergonomically safe removal of meat from untrimmed bones, to



minimize the potential for inclusion of bone marrow and to produce consistently high quality raw material. In addition to the calcium limit, the GMPs set the maximum equipment pressure limit to 220 bar during pressing and limit the sustained pressing to < 200 bar for 3.0 seconds. The industry has widely adopted the GMPs for AMR equipment and typically will operate the system at a pressure level of 180 bar.

The GMPs were established to minimize the potential inclusion of bone marrow while at the same time allowing adequate yield so that it is economically feasible to continue operating the equipment. The members represented by this Coalition would like to see the GMPs implemented by the entire industry as soon as possible.

#### **IV. Spinal Cord Directive**

The concern about spinal cord being present in AMR meat relates to fears about bovine spongiform encephalopathy (BSE). This is based on experimental work that has shown the most infectious tissues in BSE cases are brain, eyes and spinal cord. According to USDA, BSE does not exist in the United States. The USDA established a comprehensive BSE surveillance program involving more than 60 diagnostic laboratories in 1986. As of 1997, the USDA's Animal and Plant Health Inspection Service (APHIS) had tested almost 3000 cattle that exhibited traits even remotely similar to traits associated with BSE. None of those animals tested positive for BSE.

USDA addressed the spinal cord issue in the 1997 directive 7160.2. According to the directive, central nervous system tissue/spinal cord is not allowed in the AMR meat. The FSIS directive declared that product that contains spinal cord does not come within the definition of "meat." The spinal cord must be removed from neck and/or back bones before the bones enter

the system. The meat industry is in full agreement with the directive. If USDA inspectors find that the spinal cord has not been removed, immediate action should be taken against any company violating directive 7160.2. The industry strongly supports adherence to and enforcement of the directive and we wholeheartedly support USDA codifying the directive.

## V. **Food Safety**

Although USDA notes that there is no food safety or public health concerns associated with the current rule, consumer groups continue to insinuate that there is some sort of health concern. In fact, in late April of 1997 (after the Hasiak and Marks study was released) Thomas Billy, Administrator of FSIS wrote, "It is our belief, based on all of the currently available scientific information, that meat product derived from AMRS is safe and wholesome."

Another point that has been raised by some proponents of the proposed rule is the presence of bone marrow. It is difficult to understand why they believe this is considered a food safety concern. According to a recent review by the American Meat Science Association, the Food and Nutrition Board (1989) reported that iron deficiency exists in many American diets. The FNB recommends an intake of 10 mg of iron per day for the necessary retention of 1 mg of iron per day in adult males and postmenopausal females. The recommended intake for women of childbearing age is set at 15 mg of iron per day.

Contrary to the suggestions of some that there is a truth-in-labeling issue at stake here, consumers clearly associate dietary iron intake with the consumption of meat. It is in no way confusing to consumers to think that iron is in their meat products-in fact they expect it. Moreover, the iron in meat is well absorbed by the human body as it is heme iron. To the small extent that iron is increased in product that contains AMR meat, it is likely beneficial and is not

at all inconsistent with consumers' views of what meat is. It is also important to note, as is discussed in more detail later in our remarks (see Section VI) that not all of the additional iron in AMR meat is due to bone marrow (Windham, 1999).

Furthermore, the Coalition for Advanced Meat Recovery rejects the idea that AMR meat is mislabeled. As noted in Section VII, AMR meat meets the definition of meat as certified in 9 CFR 301.2 (rr); so it is clearly not mislabeled. Additionally, it is difficult to understand how proponents of this proposed rule can argue that AMR meat is mislabeled and hand-deboned meat is not. Proponents of the proposed rule argue that AMR meat has different components than individual cuts of meat and is therefore mislabeled. That same argument would mean that hand-deboned meat is mislabeled as well. Hand-deboned meat has higher levels of cartilage and connective tissue than individual cuts of meat. It is completely inconsistent for the Department to say that one product that is clearly safe, wholesome and meets the definition of meat can be labeled as "meat" and another product that is also safe, wholesome and meets the definition of meat should not be labeled as meat.

A more detailed analysis of the food safety issue is in Attachment V. In the final analysis, as noted by the FSIS Administrator, there are no microbiological or other food safety concerns associated with AMRS. The nutritional profile, as defined in the 1994 regulation, is only favorable and certainly presents no risk to consumers.

#### **VI. Scientifically Based Standards**

USDA has been consistent in its messages that policy decisions must be based on the science that is available. In a recent speech by the Administrator of FSIS, Thomas Billy, he said "we must see that science wins out over rhetoric – that science guides our food safety decisions."

Similar views have been expressed by Secretary Glickman and Undersecretary Woteki. In this regard, our Coalition commends USDA for reopening the AMR comment period to take into consideration additional scientific information from the Agricultural Research Service (ARS) and other sources.

We view it as critically important that decisions are based on science and not on the concern of the week. As noted above, AMRS meat is safe and wholesome, so there is no food safety or public health concern. As USDA works to clarify the 1994 AMR regulation "to ensure that the regulations provide clear standards \*\*\* that include adequate markers for bone-related components at greater than unavoidable defect levels (levels consistent with defects anticipated when meat is separated from bone by hand),"<sup>1</sup> its decisions must be based on sound science. The proposal under consideration, however, is not based on sound science.

Data from USDA's Agricultural Research Service demonstrates that depending on how one analyzes iron levels, very different results can occur. Additionally, the research pointed out that not all additional iron in the AMR product is due to bone marrow. According to USDA's own research, higher iron content is partially due to other factors including: 1) the removal of most of the sinew, cartilage and bone chips, most of which are high in protein and low in iron, from the final product; and 2) pressing by the belt in the desinewing step or by the piston in the bone cannon removes free water-soluble pigments that are high in iron and this iron becomes part of the recovered meat. In other words, by removing the high protein, low iron products (such as connective tissue or cartilage) the iron to protein ratio is increased. For this reason,

---

<sup>1</sup>Federal Register: December 16, 1999 (Volume 64, Number 241)  
"Meat Produced by Advanced Meat/Bone Separation Machinery and Recovery Systems"

incidence of CTD within the meat packing industry for both employees and employers. This result runs directly counter to the joint efforts by OSHA, meat packers and the United Food and Commercial Workers Union to significantly reduce the incidence of repetitive motions injuries among plant employees within the meat packing industry.

The Coalition strongly supports the continued use of AMR systems. The rapid adoption of AMR systems by the U.S. meat packing industry since their introduction in 1994 has occurred because of increased yield, improved safety and significant reductions in CTD injuries. The Coalition strongly supports the continued safe and effective use of AMR systems. It is for this reason that the Coalition supports codification of the 1997 Good Manufacturing Practices (GMPs) for AMR systems for both beef and pork products. The GMPs represent widely adopted industry standards for the safe and effective use of AMR systems.

The Coalition also supports codifying the removal of the spinal cord. We strongly believe spinal cords should not be allowed in any AMR meat. Codification would provide FSIS with an effective means to ensure the removal of spinal cord in AMR meat. In the absence of a food safety issue and the probability of worker safety consequences, the Coalition strongly recommends that USDA maintain the 1994 final rule on Advanced Meat Recovery.