AQIS Notice Number *MEAT 2002 / 18*		**Compliance with Retained Water Rules for carcases, meat and offals exported to the USA**
NSFS Ref 17		
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Date of Effect 9 January 2003	Date of Expiry Until Further Notice	

Distribution Category	Last Notice this Category	Distribution Category	Last Notice this Category
☑ Central & Regional Office	2001/21	☑ Managers, Export Meat Establishments	2001/21
☑ OIC Inspection Staff Meat Establishments	2001/21	☐ Licensed Meat Exporters	
☑ Meat Inspection Staff	2001/21	Managers, Export Slaughtering Establishments	

IMPLEMENTATION SCHEDULE (to be completed by the On Plant Supervisor on the AQIS file copy)

Date received _____ Date discussed with management _____

Initial Implementation Date _____ Date Completed _____

Initials _____

Purpose

To advise US listed export establishments of the requirement for labelling carcases and raw, single ingredient meat products, including offals, with the amount of water retained from necessary food safety interventions during processing. Such interventions may include post-evisceration washing, spray chilling or immersion treatments which are used to satisfy time-temperature requirements, etc.

Scope

This notice applies to all US listed export establishments with listing for the USA, including ratite establishments sending product to the USA. The implementation date of this new requirement is 9 January 2003. Those establishments that do not meet the requirements of this new ruling by COB 8 January 2003 will lose their US listing until such time that they can demonstrate compliance with the requirements.

FSIS have allowed scope for food safety intervention procedures to be justified using a national (generic) protocol.

Background

The Food Safety Inspection Service (FSIS) of the US Department of Agriculture (USDA) have enacted a final rule which seeks to **minimise** the amount of water retained in raw meat and poultry products, including ratite products, to that minimum which is retained due to necessary interventions to meet food safety requirements. This rule applies to all meat and poultry products, including ratite products, exported to the USA. All products that retain water must be labelled with a statement of the possible maximum percentage of retained water in the product. Products that do not retain water have the option of being either unlabelled or positively labelled with a statement that no water is retained (9CFR§441.10(b)).

FSIS acknowledge that for carcases any water gained through pre-evisceration washing will usually be offset against moisture loss on the slaughter floor. FSIS also conclude that the meat industry "is already achieving zero-percent retained water", but note that, the most likely meat products to be affected by this rule will be edible organs.

CSIRO has developed a relatively robust formula which calculates the time taken for water to be dissipated from carcases after washing. This formula is:

$$\textbf{Retained water} = \frac{(0.52 - 0.028 \times t) \times wt}{100} kg$$

Where
t = time taken, in minutes, between washing and reweighing; and
wt = weight before washing in kg.

From this relationship, the amount of retained water in a 130 kg side is:

Time between wash and reweigh (mins)	Retained water on side (%)
5	0.4
10	0.23
15	0.1
20	0

Thus, this relationship infers that carcases chilled for 20 minutes or more do not retain water.

This formula does not apply to offals and cuts of meat. Further work will need to be conducted to ascertain a formula or formulae applicable to the various types of offals (i.e. livers, kidneys, cheeks, tongues, tails, etc).

In order that establishments may continue to service the US market it will be necessary for establishments to be able to demonstrate to AQIS that they comply with the requirements of the rule.

AQIS have clarified with the FSIS a number of issues in relation to this final rule which are applicable to Australian meat exports sent to the US:

- See relevant sections below for those processes (as determined by FSIS) that will be subject to the new rule and those processes that will not be subject to the retained water ruling.

- The retained water ruling only applies to product destined for the USA. Establishments must demonstrate that the other products they produce (i.e. with no retained water labelling) which are not destined for the USA are controlled to prevent co-mingling with products destined for the USA.

- FSIS will accept a generic (national) protocol for specific processing situations. This approach, if used, will apply to Establishments using similar food safety interventions for processing similar types of offal or products. Thus, those Establishments using food safety intervention procedures for which a national protocol has been developed may rely upon and **follow the outcomes of the national protocol**, rather than developing an individual Establishment protocol. An example of an FSIS protocol for evaluating retained water in a single red meat product is provided at Appendix B.

- For official monitoring of compliance with the retained water rule, the FSIS will use the oven drying laboratory method as its method of choice. If an imported product sample is found to be non-compliant, the laboratory results will be entered into FSIS's automated import inspection system (AIIS) for subsequent sampling of the product. AQIS will be officially notified of the compliance breach and requested to investigate the non-compliance. The resultant report of the investigation findings and corrective actions taken will be submitted to FSIS International Policy staff.

- FSIS will accept the results of any scientifically valid method for determining the total and retained moisture in products that are subject to the retained water rule.

- AQIS is responsible for performing the regulatory functions equivalent to those undertaken by the FSIS to certify that products for export to the USA meet FSIS import requirements. FSIS will verify equivalence of AQIS water retention regulatory programs during annual on-site audits.

- Rounding rules apply to the labelling of retained water. That is, the percentage of retained water is rounded to the nearest whole number. Labelling of fractional percentages of retained water is not required. For example, 0.5 % retained water is rounded up to 1 %, whereas 1.3 % is rounded down to 1 %.

- FSIS will allow a 20 % variation to the retained water claim on the label. This 20 % variation does not apply to products claiming no retained water. Therefore, product claiming to have no retained water could only contain up to 0.49 % retained water under the rounding rule. Product containing 0.5 % retained water needs to be rounded up to 1 % on the label.

- Retained water is not an ingredient; therefore it should not be included in a ingredient label panel.

- Explanatory statements accompanying retained water labelling, such "*for food safety purposes contains up to X% retained water*" are to be reviewed by the US Labelling and Consumer Protection Staff on a case-by-case basis since they are viewed as special claims.

- Shipping container labels are not required to bear the retained water statement.

- There is no font (letter) size requirement for the prominent retained water statement. Prominence is determined by several factors including font (lettering) size of the retained water statement compared to the font (lettering) size of other lettering on label, the location of the retained water statement, and the colour contrast between the lettering and the background.

Food Science Australia has provided advice on the retained water ruling. To summarise:

- retained water does not appear to be an issue in relation to chill boned carcases, hot boned carcases, spray chilled carcases assuming that boning does not occur within a short timeframe after the food safety intervention using the application of water (e.g. washing, spraying);
- offals may retain water from washing or cooling in water;
- moisture content of a sample also depends on other factors, such as pH and fat content. This will have an impact on analytical methodology; and
- normal drip and weep issues that are not the result of retained water must be managed so as to not be confused the retained water issue.

Summary of the Rule
The final rule obliges establishments to demonstrate and document that carcases and parts do not retain any water from post-evisceration processing unless the establishment can substantiate that the water retained by the carcase or parts is due to an unavoidable consequence of a process used to meet applicable food safety requirements. If water is retained then the product must be labelled with the possible maximum percentage of retained water in the raw product.

The rule, while not being prescriptive as to the actual content of the sampling protocol, does however detail nine expected elements to be included in the protocol (9CFR§441.10(d)). These elements are reproduced at Appendix C along with some other information from the FSIS website in relation to this rule.

Chilled Carcases
For chilled carcase meat, establishments will need to verify via hot and then cold carcase weights that post evisceration washes and other interventions (eg decontamination treatments) do not result in retained water. Where it is established that water has been retained in the raw product, then it will need to be demonstrated that the usage of the water is unavoidable, and necessary for compliance with food safety requirements. If water is retained then the end panel of the carton/carcase bag will need the retained water labelling applied.

Offals
Establishments packing offal will need to undertake a similar exercise, particularly where the offal contacts water (e.g. water used for transport assistance, chilling, etc). Establishments will need to ascertain whether there is any water retained by the offal when packed. It will need to be demonstrated that the usage of the water is unavoidable, and necessary for compliance with food safety requirements. If water is retained then the end panel of the carton will need the retained water labelling applied.

Hot Boning
Where hot boned carcases are not washed after post-evisceration then it will not be necessary to undertake retained water measurements. However where hot boning establishments wash carcases post-evisceration then the management at these establishments will need to undertake the same measurements as specified for chilled carcases to determine whether any water is retained before boning commences. If evidence suggests water is retained then their meat will need to be labelled and it will need to be demonstrated that the water has been retained for food safety reasons.

Processes not subject to new rule
Pre-evisceration and evisceration processes not subject to the retained water regulation include:

1. Flushing with water of stomachs, small intestines, large intestines, rectum, braided marrow gut, and chitterlings to remove digestive tract contents.
2. Scalding of pork stomachs, pork tongues, and beef lips, intestines, and stomach.
3. Flushing the gizzard with water washing to remove digestive tract contents.
4. Washing with water to remove excess blood, e.g. hearts, livers, brains, and tendons. (This rule should apply to all offals.)
5. Washing beef heads with water.

Note, although the FSIS has determined five processes not subject to the retained water ruling, the FSIS will, on a case-by-case basis, evaluate other post evisceration processes involving the use of water to determine whether the resulting products are subject to 9 CFR 441.10.

Processes that will be subject to the new rule
Post-evisceration processes subject to the retained water requirements include:

Post-evisceration washing of livestock and ratite carcases with hot water, cold water, or an antimicrobial, including on-line reprocessing systems.
Livestock carcase spray chilling.
3. Post chill spraying of meat and ratite carcases or parts.
4. Water or ice chilling used to remove heat from parts: hearts, kidneys, livers, tongues, cheeks, salivary glands, spleens, pancreases, ears, tails, or head meat trimmings, including head meat, cheek meat, or tongue meat.
5. Any AQIS-approved post slaughter-floor spraying or immersion treatment of meat or by-products.
Thawing in water of meat, poultry products, or meat or poultry by-products including giblets.

Implementation
This requirement is to be implemented from 9 January 2003.

Management Responsibilities
A suggested decision tree and timeline for initial implementation is listed at appendix A.

Where product does not retain water, Management should maintain records that demonstrate, through statistical process control or other methodology, that the zero weight gain in finished products is being consistently achieved.

Where it is not established that a product does not contain retained water, Management must follow the developed protocol, whether it is the national developed protocol or an individual establishment developed protocol, for establishing the minimum amount of retained water presence in that product that is necessary due to food safety interventions.

Where necessary, Management needs to develop a program to prevent co-mingling of product eligible for the USA with product not eligible for the USA.

Management must notify OPVO of any changes or revisions to an existing protocol/food safety intervention method requiring the use of water.

AQIS Responsibilities

The AQIS OIC must confirm that Management of US listed establishments, including US listed ratite establishments, have a system in place to verify that either:
there is no retained water in US destined products, or
specify the percentage of retained water in these products and the justification on food safety grounds for the levels of water retained; and
that this information is documented in the Establishment's MSQA manual.
This check will be conducted under the National Plant Management System; the frequency of which to be advised by Central Office.

The AQIS OIC needs to verify that the establishment is following its protocol, whether it is an individual establishment protocol or a national protocol, and that the protocol reflects the actual processing system in use. This will be verified under the National Plant Management System. The verification frequency will be advised by Central Office.

The AQIS OIC needs to verify that the retained water labelling accurately declares any water retained by carcases or parts of carcases resulting from post-evisceration processes which use water. This will be verified under the National Plant Management System. Central Office will advise on the frequency and method of verification.

Where applicable, the AQIS OIC must ensure that there is an effective program in place to prevent co-mingling of product destined for the USA with product not eligible for the USA.

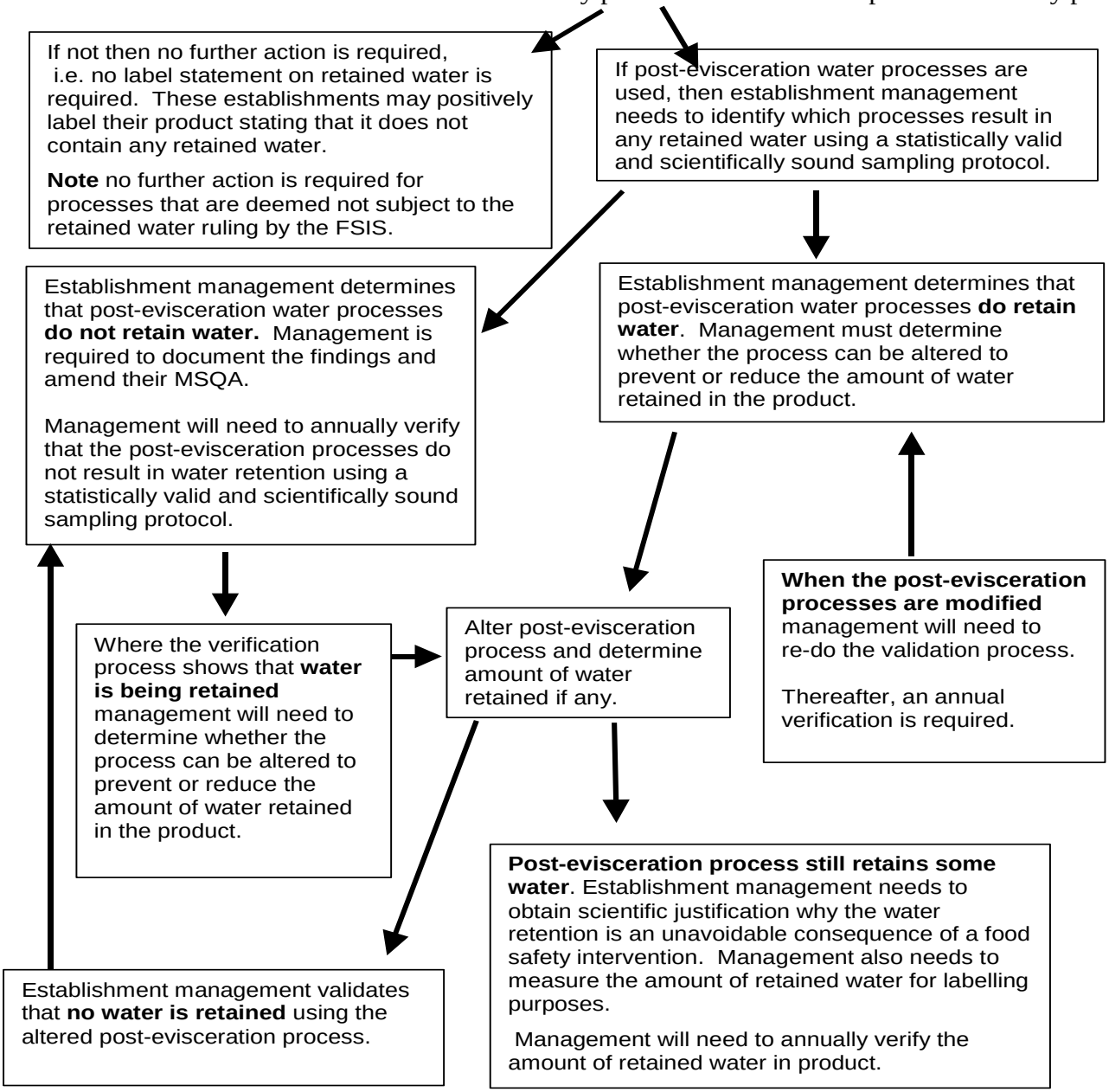
References

US Department of Agriculture, Food Safety and Inspection Service Chapter 9 Code of Federal Regulations part 441.

John Dorian
National Manager
Meat Program

APPENDIX A **Recommended timeframe for implementation**

September 2002 Establishment management at US listed premises need to identify whether their establishment uses any post-evisceration water processes for any product.



October 2002 Develop industry-wide justification by an expert consultant.

November 2002 Develop individual establishment plan, which includes timeframe for revalidation work, for ATM assessment.

December 2002 Submit amended plan to ATM for approval.

APPENDIX B **Excerpt of an example protocol from FSIS website**

Protocol for Evaluating Retained Water in the Following Single Ingredient Red Meat Product: Steer / Heifer Carcasses

Note: The following is an example protocol and should not to be used verbatim. Because each establishment is unique, each establishment should design their protocol to reflect the individual characteristics of their operations.

1.0 Purpose Statement
1.1 The purpose of this protocol is to determine the amount of water absorption and retention in Steer/Heifer carcasses that is unavoidable while achieving the regulatory pathogen reduction performance standard for *Salmonella* (as set forth in the PR/HACCP regulations – 9 CFR 310.25(b).

2.0 Type of washing and chilling system
2.1 The facility slaughter/dressing line utilizes a final carcass washer at the end of the dressing procedures. This followed by a carcass rinses that includes the antimicrobial intervention (*insert example) prior to entry into the carcass cooler. The carcass cooler is maintained around 34 °F.

3.0 Configuration and modification of the chiller system components
3.1 The establishment uses a carcass water spray system in the carcass cooler to chill carcasses rapidly. The carcass water spray system consists of intermittent sprays of water during the carcass cooling process.

4.0 Special features in the chilling process:
4.1 Chlorine is added to the carcass water spray as an antimicrobial intervention at 20-50 PPM. The carcasses freely drain before exiting the carcass cooler and prior to further processing in the establishment or prior to shipping.

5.0 Variable factors that affect water absorption and retention
5.1 The final carcass wash cabinet consists of a number of spray nozzles at a selected pressure at selected spray directions by the establishment. The final carcass wash water is the ambient water temperature from the municipality or of the well water. The number and size of spray nozzles, direction of nozzles, water pressure, and the length of time in the final wash cabinet may be changed depending upon the size of the carcasses, season of the year, and changes in the dressing procedures. The carcasses are in the chiller system (cooler) usually from 18 to 24 hours. The carcass cooler temperature is usually maintained around 34 °F. The temperature of the water in the carcass water spray is the normal ambient water temperature from the municipality or of the well water. The frequency and length of intermittent sprays of water per bay during the carcass cooling, the carcass cooler temperature and the drain time from the last spray prior to exiting the cooler may be varied.

6.0 Standards to be met by the chilling system:
6.1 The current FSIS *Salmonella* pathogen reduction performance standards, as set forth in the PR/HACCP final rule, will be met.

7.0 Testing methodology
7.1 Water absorption and retention
7.1.1 Samples will be collected immediately prior to the final carcass wash on the slaughter/dressing line to determine the "green" weight of the carcasses.
7.1.1.1 *(insert number) random carcasses will be tagged and weighed in *(insert number) groups of *(insert number) carcasses. The *(insert number) groups will be distributed evenly throughout the production period (beginning, middle, and end) with the production period being defined as sanitation to sanitation.
7.1.2 Samples will be collected from carcasses at point exiting the cooler.
7.1.2.1 The tagged carcasses from 7.1.1.1 will be weighed immediately prior to further processing or shipping.
7.1.2.2 These post-cooler weights will be compared to the pre-final carcass wash weights to determine the retained water gained using a mathematical difference calculation (cooler exit weight minus "green" weight [pre-final carcass wash weight]) as a percentage.

7.2 Pathogen reduction measurement
7.2.1 *(insert number) groups of *(insert number) carcasses will be randomly selected post-cooler from the same lots as those tested in Section 7.1. The *(insert number) groups will be distributed evenly throughout the production period (beginning, middle, and end) with the production period being defined as sanitation to sanitation.
7.2.1.1 The percent *Salmonella* positive rate will be determined using the post-cooler carcass swabs *Salmonella* performance standard methodology.

7.3 Evaluation of cooler factors
7.3.1 The frequency and length of intermittent carcass sprays per cooler bay
7.3.1.1 Three frequency and length of sprays will be evaluated.
7.3.1.1.1 Fifteen minute interval: Spray for 1 minute, spray off for 14 minutes.
7.3.1.1.2 Thirty minute interval: spray for 3 minutes, spray off for 27 minutes.
7.3.1.1.3 Sixty minute interval: spray for 3 minutes, spray off for 57 minutes.
7.3.2 The carcass cooler temperature will remain around 34° F.
7.3.3 The drain time from the last carcass spray until exit
7.3.3.1 Two drain times will be evaluated.
7.3.3.1.1 4 hours after last spray
7.3.3.1.2 6 hours after last spray
7.3.4 Study design
7.3.4.1 A three-by-two factorial table will be used to evaluate the effect of these cooler factor settings on the percent moisture retention (Section 7.1) and on the pathogen reduction measurements (Section 7.2).
7.3.4.2 Each of the six cooler setting combinations will be evaluated for three processing periods (defined as sanitation to sanitation). Each processing period will be considered a replicate.

8.0 Evaluation and Reporting of Data
8.1 The results achieved from the three replicates per cooler setting combination will be averaged and reported as the final result for each cooler setting combination.
8.1.1 Carcass weight differences will be determined using a mathematical difference calculation (cooler exit weight minus "green" weight) for each carcass group resulting in recorded weight difference results. The weight difference obtained per carcass group will be divided by the "green" weight per carcass group to determine the % moisture retention cooler exit per group. The results will be averaged to obtain the estimated average % moisture retention at point of cooler exit.
8.1.2 The *Salmonella* data will be reported as the number of positive samples/number of samples tested x 100 (% positive).

9.0 Explanation of how the conclusions will be determined.
9.1 Conclusions will be determined by comparing the baseline pathogen reduction levels achieved pre-protocol implementation with the post-protocol implementation pathogen reduction results. This comparison will be evaluated according to the specifications detailed in section 6.1.
9.2 The amount of moisture retention that is unavoidable to achieve the above food safety criteria will be reported.
(*) Each establishment should insert statistically significant and verifiable information that reflects their unique operations.

Compliance Guidelines for Retained Water

The Retained Water In Raw Meat And Poultry Products (January 9, 2001) final rule requires that establishments produce those products with either no retained water or only the amount of water that is an unavoidable consequence of the process to meet food safety standards, such as the *Salmonella* performance standards. The amount of water retained must be specified on the product label. As noted in the preamble to the final rule, the Agency is not prescribing a method to determine added or retained water. The Agency is, however, requiring the establishment to prepare and have on file a written data collection protocol and the data for determining unavoidable moisture retention. If the establishment has data on file regarding retained water, such as antimicrobial spray testing for meat or air chilling for poultry, additional data collection may not be necessary.

In addition to the final rule, FSIS is issuing these compliance guidelines with attached model data collection protocols. These compliance guidelines are designed to assist establishments in developing their data collection protocols, maintaining operational control of their process, and properly labelling the finished product.

Protocol Development

Protocols for data collection must be placed on file and made available to FSIS. The Agency will review the protocols. The nine expected elements of a protocol are listed below. Examples of expected content are noted for each element. In the examples, the term chilling refers to poultry and cooling refers to meat.

1. **Purpose Statement**

   State the primary purpose of the protocol. The primary purpose should be to determine the amount or percentage of retained water that is unavoidable while achieving the regulatory performance standard for *Salmonella* and the time/temperature requirements for chilling. Additional purposes could be to evaluate product quality and to determine chilling system efficiency.

   Example 1: The primary purpose of this protocol is to determine the amount of water absorption and retention by young chicken carcasses that is unavoidable while meeting the regulatory pathogen reduction standard for *Salmonella* set forth in the PR/HACCP regulations [9 CFR 381.94] and the time/temperature requirements set forth in 9 CFR 381.66.

   Example 2: The primary purpose of this protocol is to determine the amount of water absorption and retention by beef carcasses that is unavoidable while meeting the regulatory pathogen reduction standard for *Salmonella* set forth in the PR/HACCP regulations [9 CFR310.25(b)]. The protocol also will be used to evaluate product quality.

2. **Type of washing and chilling/cooling system used by the establishment.**

   Describe any post-evisceration washing or chilling/cooling processes that affect the water retention levels by, and microbial loads, on raw products. For poultry establishments, describe the main chiller types, e.g., the drag-through, the screw type, and the rocker-arm type, identified by the mechanism used to transport the birds through the chiller or to agitate the water in the chiller. For meat establishments, describe the type of coolers, e.g., blast freezers, refrigeration systems, or hot boxes.

3. **Configuration and any modifications of the chiller/cooling system components.**

Describe the chiller/cooling-system configurations and modifications, including the number and type of chillers/coolers in a series and arrangements of chilling/cooling system components, and the number of evisceration/kill lines feeding into a chiller/cooling system. Accurately describe the purpose and type of equipment used if there is a pre-chilling/cooling step in the process. Describe any mechanical or design changes to the chilling/cooling equipment.

4. **Special features in the chilling/cooling process.**

Describe any special features in the chilling/cooling process, including antimicrobial treatments, length and velocity of the dripping line, and total time allowed for dripping. Explain any special apparatus, such as a mechanism for removing excessive water from cooled meat or chilled birds.

5. **Description of variable factors in the chilling/cooling system.**

Describe variable factors that affect water absorption and retention.

In poultry processing, such factors include:

- scalding temperature
- pressure and amount of buffeting applied to the birds by feather removal machinery and its effect on loosening the skin
- method used to open the bird for evisceration
- temperature of the pre-chiller
- water temperature of chiller
- agitation including air agitation if used
- time in the chiller water

In meat processing, such factors include:

- scalding temperature (hog carcasses)
- amount and intervals of antimicrobial chill sprays
- time in cooler rooms

6. **Standards to be met by the chilling system.**

The *Salmonella* pathogen reduction standards, as set forth in the PR/HACCP final rule, have been suggested as the standard for pathogen minimization. Although there is not yet an applicable *Salmonella* standard for turkeys, intended standards are listed in Attachment 4 of FSIS Notice 22-01, "Procedures for FSIS personnel during pre-implementation period for 'Retained water in raw meat and poultry products; poultry chilling requirements.'" (A permanent FSIS Directive will replace this Notice.) As stated in the Notice, establishments producing turkey products are free to adopt other microbiological targets or surrogate micro-organisms, such as *E. coli*, *Campylobacter*, or reductions in numbers of other micro-organisms. However, the acceptability of the surrogate micro-organism in raw poultry or meat depends on an expert determination that there is a correlation between the surrogate and *Salmonella*.

The chilling system for ready-to-cook poultry may be designed simply to achieve a reduction in the temperature to less than 40°F within the time limit specified by the

regulations On the other hand, the time for temperature reduction in meat may be based on that amount of time, or less, necessary to meet the performance standard for *Salmonella* and minimize the retention of water in the final product.

7. **Testing methods to be employed.**

Describe testing methods used both for measuring water absorption and retention and for sampling and testing product for pathogen reductions at various chilling equipment settings and chilling time-and-temperature combinations. The method for calculating water absorption and retention should be reproducible and statistically verifiable. For pathogen reduction testing, FSIS recommends the methods used for *E. coli* and *Salmonella* testing under the PR/HACCP regulations. The pathogen reduction standards are based on a percentage of positive samples rather than the microbial load per carcass or carcass part. The number of samples, type of samples, sampling time period, type of testing or measurement, and the test results should be included.

The trials should represent processing procedures that can be maintained in the establishment. It is understood that very small plants or those establishments producing a very small volume of the product may experience a greater variation in measurements than plants producing a large volume of the products.

Initially, the establishment would perform several trials to determine the amount of unavoidable retained water, if any, in achieving the food safety standard. The establishment would have to determine the variables in the process that would affect the amount of retained water. For example, time in the chiller/cooler may be a variable to consider. In each trial the water retention data and *Salmonella* levels would be plotted. When the water retention data showed an increase in *Salmonella*, the time in the chiller/cooler before the increase could be the maximum amount of time allowable. However, if an antimicrobial rinse was used, the amount of time in the chiller/cooler may be further reduced.

The primary purpose of the protocol is to determine the amount or percentage of retained water that is unavoidable while achieving the regulatory performance standard for *Salmonella*. However, the percentage of samples positive for *Salmonella* should not increase. It would not be regarded as acceptable to reduce the amount of retained water with a resultant increase in *Salmonella*, or surrogate micro-organism, even if the increase in *Salmonella* met the performance standard.

8. **Reporting of data and evaluation of results.**

Explain how data obtained are to be reported and summarized. Examples of reported information include, but are not limited to, the number of sample replicates, reporting of *Salmonella*, and the calculation or formula used to determine the level of water retention. In addition, the criteria for evaluating the results and the basis for conclusions to be drawn should be explained.

9. **Conclusions**

Explain what the data demonstrate, the conclusions reached, and how the conclusions were reached.

Process Control

Once a meat or poultry establishment has determined the amount of water that is unavoidable in meeting applicable food safety requirements, the establishment must keep the water retention level in its products from exceeding that amount. The establishment must be able to ensure, on a continuing basis, that the amount of retained water in its raw products is unavoidable (9 CFR 441.10(a)), and that the product labels state the amount of retained water (9 CFR 441.10(b)). To be able to do this consistently, the establishment should have good process control.

A process would be considered under control if there is a reasonable confidence (i.e., 95% statistical confidence) that a given package in a lot retains no more water than is unavoidable. That is, considering measurement and processing variables, there should be 95% confidence that the continuing measurements are within 20% of the moisture level determined at that establishment.

If the establishment fails to meet the performance standards for *E. coli* and *Salmonella*, it might consider revaluating its process with regard to retained water in addition to reassessing its HACCP plan.

Labelling Retained Water Products

Establishments will be required to include a retained water statement on labelling of raw, single-ingredient, whole, ground or cut-up meat or poultry products that retain water that is used in meeting food safety requirements during post-evisceration chilling. Retained water is not regarded as intentionally added or as a product ingredient. However, the labelling of products with retained water must bear a prominent statement on the principal display panel disclosing the maximum amount of water, and how it got incorporated, e.g., "contains up to X% retained water," or "with X% absorbed water." The retained water statement must be prominently located on the principal display panel of the label and could be contiguous to the name of the product. Prominence of the retained water statement is determined by several factors, including size of lettering in the statement compared with other lettering on the label, location of the statement, and colour contrast between the lettering and the background. There is no specific letter size requirement for the percent-retained water statement.

Establishments having data or information to demonstrate that their products do not contain retained water will not be required to label the products with such a statement and could include a "no retained water" claim on the label. Processors can modify existing labels by use of pressure sensitive stickers bearing the percent-retained water statement or a "no retained water" claim. This type of label change is possible under the generic label approval regulations. The generic labelling regulations 9 CFR 317.5 and 381.133 and the nutrition labelling regulations 9 CFR Part 317 Subpart B and Part 381 Subpart N apply to retained water products as they do to other single-ingredient products.

Labelling Issues

1. **Retained water product shipped for further processing.**

All raw, single-ingredient product with water retained as a result of post-evisceration processing used to meet a food safety standard must be labelled to reflect that fact.

2. **Products with different retained water levels bearing the same retained water statement.**

The retained water statement would reflect the maximum percentage retained water of any of the products. For example, two products, each with different retained water levels, prepared by two different establishments owned by the same company, may be labelled, "less than X% retained water" or "contains up to X% retained water." Also, a package of mixed parts each with

different water retention levels may bear such a statement, or separate retained water statements for each part within the package.

3. **Retained water statements relating to safety.**

Retained water statements with reference to safety, e.g., "for safety purposes contains up to X% retained water" are regarded as special claims that must be reviewed by Labelling and Consumer Protection Staff. The statements will be evaluated on a case-by-case basis to determine if they misrepresent products or imply that these products are safer than other chilled products.

4. **Retained water products used as an ingredient.**

Retained water has no effect on water restrictions identified in standards of identity or composition since the water is not regarded as an ingredient. Additionally, retained water is not an ingredient and would not be declared on the labelling of multi-ingredient products.

5. **Carcass wash solutions that contain anti-microbial substances.**

Carcass washes and solutions containing antimicrobial agents are secondary direct additives, according to Food and Drug Administration (FDA) regulations (21 CFR 173). Secondary direct additives used during a pre-chill wash or in the chilling medium are processing aids (e.g., trisodium phosphate) and require no declaration on labelling since they either are not present in the finished product or are present at such low levels that they no longer function.

6. **Added solution statement used in place of a retained water statement.**

Rather than employing the additional resources that would be necessary to perform retained water minimization tests, some processors may find it more convenient to label their retained water products as "added solution products." Added solution products are multi-ingredient products in which added water is considered an ingredient rather than an unavoidable by-product of a process intended to achieve a food safety objective. Applicable regulations and policies require the labels of such products to bear added solution statements. Added solution statements usually signify that solutions are added to impart flavouring and other sensory characteristics to meat or poultry products. Water is an ingredient of these products that does not impart flavour, but provides added moisture. Added solution statements include terms indicating the presence and amount of absorbed water, e.g., "beef sirloin, contains up to 5% water," and "fresh turkey contains up to 6% water." An added solution statement must be in a precise location on the label and the lettering must meet specific size requirements. Refer to Policy Memos 042, 044 and 066C within FSIS Directive 7220.1. Also, added solution products must bear nutrition labelling unless a nutrition labelling exemption applies to them.
