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**D.1. Introduction**

The Establishment is responsible for consistently producing products in compliance with the Finished Product Standards (FPS) program and operating the said program. The FPS program is designed using the cumulative sum (CUSUM) concept. CUSUM is a statistical method of measuring the output of a process or a procedure within a process. It is designed to measure the process against a known standard. CUSUM provides a recent history of the process, not just a status report on current production. It is the cumulative sum of statistical samples of the process measured against a known standard. When applied properly, using appropriate rules and numbers, CUSUM will provide a rapid summary of the recent history of the output of the process.

CUSUM can be applied to any group of rules and product acceptance levels. The rules of the program and numbers established for CUSUM determine the program's complexity and the ability of the process to produce at given acceptance levels.

The examples in section I are intended to introduce you to the CUSUM concept. The examples are not intended to introduce the on-line finished product standards program. The instructions and standards for the prechill and postchill finished product program will come later in this instruction.

CUSUM provides rapid feedback on the process. This allows the Establishment adequate reaction time to correct a process before it is judged to be out of control, which requires off-line reconditioning of the affected product. It shows process trends and helps identify problems or causes of problems within the process that need correction in order to ensure a wholesome product for consumers. The result of a single 10-bird sample (a subgroup) may not give an exact picture of the actual process, but the sum of a group of results will be a significant indicator.

There are several elements in the CUSUM design. One of these elements is the assignment of demerit points to items of nonconformance found on each of the ten units in the subgroup.

Subgroup averages were then established. The subgroup average is referred to as the subgroup tolerance number. The tolerance number is the subgroup value that a Establishment could expect if it was producing at the national product quality level for the slaughter and evisceration processes. All Establishments consistently producing products at or below this tolerance number will have absolutely no problem meeting the Finished Product Standards.

CUSUM is the accumulated number of demerit points that exceed the tolerance number in a series of consecutive subgroups. The level or value of the CUSUM is an indication of the recent history of the process and level of process control.

This is how CUSUM is calculated:

**Example 1**

Subgroup 1

Subgroup demerit points	15
Starting CUSUM	+ $\frac{10}{25}$
Tolerance	-15
Current CUSUM	10

The tolerance number is always subtracted from the subgroup demerit point total and the starting CUSUM. This establishes the current CUSUM.

For the remainder of this document, the subgroup demerit point total will be referred to as the subgroup total.

**Example 2**

Sub-group	Sub-group total	Starting CUSUM	Tolerance	Current CUSUM
1	15	+ 0 = 15	- 15	= 0
2	18	+ 0 = 18	- 15	= 3
3	19	+ 3 = 22	- 15	= 7
4	17	+ 7 = 24	- 15	= 9
5	13	+ 9 = 22	- 15	= 7

In this example, after subgroup 5, **CUSUM** has a value of 7.

Another element in the CUSUM design is the **action number**. Obviously, when subgroup totals are consistently in excess of tolerance, CUSUM will rise. An increasing CUSUM means that process adjustments are needed to prevent loss of process control. If such adjustments are not made, CUSUM will eventually reach a level where the process is out of control and some type of product action is required. This level is called the action number, and when it is reached, action must take place based on program rules. Where good process control exists, adjustments are made long before CUSUM reaches the action number.

Yet another element in the CUSUM design is the **subgroup absolute limit**. Occasionally a single subgroup total will exceed tolerance by a substantial amount even though CUSUM does not reach the action number. When this occurs, it must be determined if this subgroup result represents an early sign of a process going out of control or a statistical aberration. To determine action, additional information must be obtained through review of previous CUSUM data and process action or retesting. If the subgroup total exceeds the subgroup absolute limit and if the current CUSUM for this subgroup also reaches the action number, then process action must be initiated.

CUSUM can never exceed the action number or drop below zero. If the calculated CUSUM exceeds the action number, CUSUM is reset at the action number. For example, if the action number is 22 and the calculated CUSUM equals 24, CUSUM becomes the action number of 22.

A similar rule applies to any sum that results in a CUSUM value below zero. For example, if the calculated CUSUM results in a negative sum, then CUSUM will be reset at zero. CUSUM can never be below zero.

One last element in the CUSUM design applies to poultry slaughter standards control systems. It is the **start number**. This number is at or near the halfway point between zero and the action number. If CUSUM at the end of a shift is at or below the start number, this ending CUSUM will be the starting CUSUM for that shift on the following work day. If CUSUM at the end of a shift is above the start number, the starting CUSUM for the first subgroup of that shift on the following workday will be reset at the start number.

### Example 3

Action Number 22  
Start number 11  
Yesterday's shift ends with CUSUM 15  
Today's shift starts with CUSUM 11

The start number can be used in another way. If CUSUM reaches the action number, the process is not considered under control again until there are two consecutive subgroup TOTALS at or below tolerance. If these two consecutive subgroup TOTALS do not cause CUSUM to fall to the start number or below it, CUSUM will be reset at the start number.

### Example 4

Action number = 22

Sub-group	Sub-group total		Starting CUSUM			Tolerance		Current CUSUM
4	27	+	20	=	47	- 25		= 22**
5	25*	+	22	=	47	- 25		= 22
6	23*	+	22	=	45	- 25		= 20
								(reset at 11)
7	24	+	11	=	35	- 25		= 10

(\*\* - CUSUM reaches action number)

(\* - 2 consecutive subgroup totals are at or below tolerance (=25).

When the finished product program is initiated in a Establishment, the starting CUSUM is zero. From then on, zero will be used only if earned by the Establishment process.

**D.2. Finished Product Procedure**

The finished product standards are applied in two separate parts. The first is designed to ensure that processing and trimming procedures are under control and that products are produced in conformance with inspection program standards. This conformance is measured by determining CUSUM on consecutive 10-bird subgroup samples collected before the product enters the chilling system (PRECHILL).

**D.2. A. Prechill Finished Product Procedure**

The prechill finished product standard for poultry system carcasses has been divided into two separate categories. One, processing conformance, is designed to monitor the output of the dressing and evisceration procedures. The other, trimming conformance, monitors the Establishment's ability to remove unwholesome lesions and conditions from inspected carcasses. Each category is monitored independently of the other category but the testing is done on the same sample.

**D.2.A.1. Process under control**

If CUSUM is less than the action number and the subgroup absolute limit is not exceeded, the process is considered to be under control. This is deemed to be normal process control and the following responsibilities of the program must be met:

**D.2.A-1.(a)** *Establishment monitoring personnel shall:*

At the start of each shift, randomly select and record hourly sampling times for each production hour, before the product reaches the prechill reinspection station on the production line. These times must be recorded in the "Remarks" section of the Prechill Processing and Trimming FPS forms (copies attached to the end of this appendix) and be available for monitoring by inspection personnel at that time.

Conduct a 10-carcass subgroup test at the preselected time on each poultry production line for processing and trimming nonconformances.

Collect subgroup samples from the line at the preselected time. All ten carcasses of a subgroup should be selected at random. Try to collect ten consecutive carcasses. Do not select individual carcasses. The total subgroup shall be selected as near to the same point and time as possible.

Closely and thoroughly observe each carcass at the reinspection station under lighting that meets the minimum 2000 lux and 85 colour-rendering index requirements.

The reinspection stations for FPS must have safe access to prechill and postchill lines and be protected from traffic and obstructions. An easily cleanable rack and table combination shall be provided that is large enough to hold the 10 bird sample, prevent cross contamination and include a clip board holder.

Compare each of the defects observed on each sample in both processing and trimming categories to the conformance criteria. Record all defects found with the appropriate demerit points.

Total the subgroup demerit points and calculate CUSUM by subtracting the tolerance from the sum of the subgroup total and the starting CUSUM.

Immediately record the current CUSUM number on the applicable FPS form (copy attached to the end of this appendix) and keep production managers informed of any process trend that may need to be addressed.

D.2.A.1.(b) *Establishment production personnel shall:*

Consistently produce products in compliance with the prechill finished product standards.

Respond to unfavourable trends revealed by Establishment monitoring and inspection tests, by reviewing the records, assigning a probable cause, and correcting the process as needed to consistently produce acceptable products for the consumer.

D.2.A.1.(c) *Inspection personnel shall:*

Spot-check Establishment actions to ensure that they meet program requirements.

Select random times for conducting subgroup tests for each half-shift on the production line. These times should be selected before the first birds on the shift arrive at the testing point. In Establishments that have multiple lines on a production shift, all lines will need to be monitored at the preselected time. A coin flip may be used to determine which line is monitored first at the preselected time.

Collect monitoring subgroup samples at preselected times using the same sampling methods described under Establishment responsibilities.

Conduct 10-bird subgroup tests using the same testing methods described under Establishment responsibilities.

Compare the results to the Establishment's results for agreement. If the results are not in agreement, notify the Establishment monitoring supervisor.

Inform the Establishment monitoring supervisor that corrective actions must be initiated when the subgroup total exceeds the subgroup absolute limit (see D.2.A.2.)

Record all prechill monitoring observations, results, and actions on the applicable Processing and Trimming FPS forms (copies attached to the end of this appendix) used by inspection services. These records shall include all findings from inspection observations in order to reflect process control and the Establishment's willingness to follow its program. Any process correction required outside the program design should be documented, distributed, and filed in a separate folder.

**D.2.A.2. Subgroup absolute limit exceeded**

If the individual subgroup total established by inspection personnel or the Establishment exceeds the subgroup absolute limit.

*D.2. A-2. (a) Establishment monitoring personnel shall:*

Determine if any of the last 5 Establishment prechill subgroups for that category (processing or trimming) resulted in a CUSUM above the start number (use previous day's production results if necessary)

If no: Immediately conduct a subgroup retest on that prechill category to determine sample validity. If the retest subgroup total is at or below the tolerance, resume the random sampling. If the retest subgroup total exceeds the tolerance, Establishment monitoring personnel will begin process actions in accordance with D.2.A.4.(a). In either case, results will be used to calculate CUSUM.

If yes: Establishment monitoring personnel will begin process actions in accordance with D.2.A.4.(a).

**D.2.A.3. Trimmable lesions/conditions found**

If, during a prechill subgroup test, Establishment monitoring or inspection personnel detect trimmable lesions or conditions, as specified on line 7 or 8 of the Prechill Trimming FPS form (copy attached to the end of this appendix), and the subgroup absolute limit has not been exceeded.

Establishment monitoring personnel shall:

Immediately conduct an additional subgroup test for trimmable lesions/conditions, as described on lines 7 **and** 8. Note: Do not include these results in CUSUM.

If **no additional defect** is found on retest, resume random sampling.

If an **additional defect** is found on retest, initiate corrective action, as indicated in D.2.A.4.(a). for this category only.

**D.2.A.4. CUSUM reaches action number and/or presence of visible fecal material**

Once CUSUM reaches the action number, the process is judged to be out of control. When this happens, specific actions are required of Establishment monitoring, production and inspection personnel.

*D.2.A.4.(a) Establishment monitoring personnel shall:*

Immediately notify the VIC and the production supervisor responsible for the affected evisceration line that the process has reached the action number and/or visible fecal material was found.

Suspend prechill subgroup sampling of the affected category (processing or trimming).

Examine finished product records with the responsible production supervisor to help determine the probable cause of the problem.



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Postchill testing using prechill criteria will begin immediately after notification of production personnel.\* Conduct subgroup tests on all poultry after the chilling process is completed, using the prechill standard. A test will be conducted at a minimum of every fifteen minutes until compliant product arrives at the postchill station. Monitoring efforts should be concentrated on accurately detecting nonconforming carcasses.

*\* Note: Postchill tests using prechill standards are not included in CUSUM. If any of these additional tests after chilling results in a subgroup total exceeding tolerance and/or visible fecal material is found, subsequent products at the postchill inspection station will be identified by Establishment monitoring personnel for rework. Products will continue to be accumulated for rework until a subsequent subgroup test results in a subgroup total equal to or less than tolerance, or if process action initiated due to presence of fecal material, until no more fecal material is observed.*

Conduct subgroup tests at prechill to determine the adequacy of corrective and preventive action(s) taken by production personnel. If the prechill test results in a subgroup total exceeding the tolerance and/or if visible fecal material is found, production personnel are again notified and the number of additional postchill tests using the prechill standard is increased to include the additional products represented by the test.

After two consecutive prechill subgroup tests result in a subgroup total equal to or less than tolerance, or if process action initiated due to presence of fecal material, after two consecutive prechill subgroup tests result in no observed fecal material, then three things can happen:

- (i) Establishment monitoring personnel resume random time prechill subgroup testing.
- (ii) Establishment monitoring personnel will identify products entering the chill system to mark the end of retest actions when the products arrive at the postchill sampling station. The method of product identification will be agreed to by the VIC. It may consist of a known time that the product is in the chill system or a series of birds marked and placed in the chiller to mark the end of retest actions. Products exiting the chiller before the first marked bird would be subject to the additional testing criteria.
- (iii) CUSUM is reset.
- (iv) If the two consecutive prechill subgroup tests demonstrating regained process control with subgroup totals at or below tolerance do not cause CUSUM to fall to the start number or below, CUSUM is reset at the start number.

*D.2.A.4.(b). Production personnel shall:*

Review the prechill standards form with Establishment monitoring personnel to determine and correct the cause of the problem.

Immediately assign employees to the prechill location to ensure that poultry is corrected to meet the prechill FPS.

Make and maintain process corrections in order to ensure that products meet the prechill FPS. Note and initial corrective actions taken on the appropriate prechill FPS form.

*D.2.A.4.(c). Inspection personnel shall:*

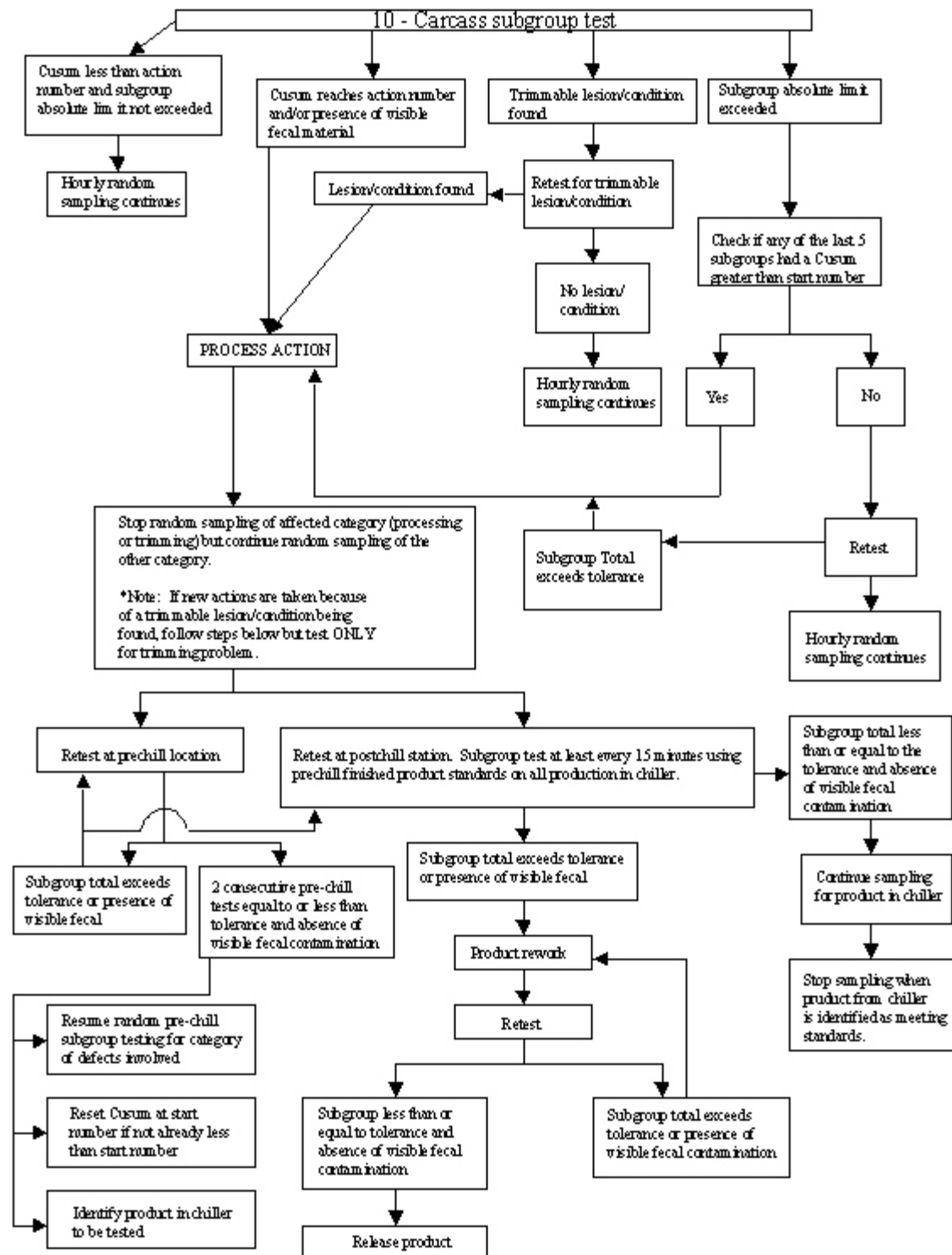
Monitor product and process actions by making spot-check observations to ensure that all the program requirements are met.

Discuss nonconformance criteria with the monitoring supervisor as needed. The Establishment is responsible for training its employees.

Record all monitoring results on the appropriate finished product standard (FPS) form used by inspection personnel. Any process correction required outside the FPS program design should be documented, distributed, and filed in a separate folder.

Suspend random-time monitoring of the affected nonconformance category (processing or trimming) when monitoring personnel are conducting product actions in that category. If only one category is involved, the other category will continue to be monitored at the random time.

D.2.A.5 Flow Chart : Prechill FPS Processing & Trimming Procedures



**D.2. B. Postchill Finished Product Procedure**

Responsibilities of Establishment monitoring, production, and inspection personnel change depending on the value of CUSUM. Postchill subgroups will be collected after the product leaves the chiller but before the product is divided into separate processes (cut-up, ice pack, and grade). All ten carcasses of the subgroup should be selected at the random time, with all samples as close to the same production time and location as possible. Try to collect ten consecutive carcasses representing the total production. Do not select individual carcasses.

Each carcass will be closely and thoroughly observed and its conformance measured against the postchill criteria. After close observation of each carcass in the sample, total the subgroup demerit points and calculate CUSUM by subtracting the tolerance from the subgroup total and the starting CUSUM. Use postchill criteria and numbers.

**D.2.B.1 Process under control**

CUSUM reflects recent process control. If CUSUM is less than the action number and the subgroup absolute limit is not exceeded, the process is considered to be under control. This is deemed to be normal process control and the following responsibilities of the program must be met.

*D.2.B.1.(a). Establishment monitoring personnel shall:*

Conduct a 10-bird subgroup test for each chilling system at a randomly selected time for each two hours of production.

Immediately record the current CUSUM number and keep production personnel informed of any process trends.

*D.2.B.1.(b). Production personnel shall:*

Consistently produce product in compliance with postchill finished product standards.

Respond to trends revealed by Establishment monitoring and inspection tests, by reviewing the finished product record, determining a probable cause, correcting the problem, and maintaining this action as needed to produce acceptable products for the consumer.

*D.2.B.1.(c). Inspection personnel shall:*

Spot-check Establishment actions to ensure that they meet program requirements.

Select random times for postchill monitoring. Each chill system is monitored once per half shift. These times should be selected before the first birds on the shift arrive at the sampling point. These monitoring times should not be known to Establishment personnel.

Conduct subgroup tests at preselected random times and compare results to the Establishment monitoring record. Discuss with the monitoring supervisor if results are not in agreement or if agreement is questionable.

Record all observations, results, and actions on the postchill FPS form (copy attached to the end of this appendix) used by inspection personnel. This record should contain all postchill findings to reflect the program's performance and the Establishment's willingness to follow its program.

**D.2.B.2. Subgroup absolute limit exceeded**

If the individual subgroup total established by inspection or Establishment monitoring personnel exceeds the subgroup absolute limit:

*D.2.B.2.(a). Establishment monitoring personnel shall:*

Determine if any of the last 5 postchill monitoring subgroups resulted in a CUSUM above the start number.

If yes: Establishment monitoring personnel will begin process actions in D.2.B.3.(a).

If no: Immediately conduct a postchill subgroup retest to determine sample validity. If the subgroup total equals tolerance or less, random time testing resumes. If this retest subgroup total exceeds tolerance, the process is considered to be out of control and the following requirements must be met by Establishment monitoring personnel:

Notify the VIC and the production supervisor responsible for products in the chilling system that the process is out of control.

Suspend random-time postchill subgroup sampling.

Review the postchill standards forms with the responsible production supervisor to determine the cause of the problem.

Subsequent products must be identified by Establishment monitoring personnel for rework. Products will continue accumulating for rework until 2 consecutive subgroup tests result in subgroup totals equal to or less than tolerance. In order to prevent excessive accumulation of products for rework, the second subgroup test should be immediately conducted. During process testing any retest exceeding tolerance will result in the accumulation of products for rework. After two consecutive postchill subgroup tests result in subgroup totals equal to or less than tolerance, three things happen:

(i) Establishment monitoring personnel resume random-time postchill subgroup testing.

(ii) CUSUM is reset. If the two consecutive subgroup totals at or below tolerance do not cause CUSUM to fall to the start number or below, CUSUM is reset at the start number.

(iii) If applicable, stop identifying product for rework.

D.2.B.2.(b) Production personnel should take the corrective actions as per section D.2.B.3.(b).

D.2.B.2.(c) *Inspection personnel* should take the corrective actions as per section D.2.B.3.(c).

**2.B.3. CUSUM reaches action number**

Once CUSUM reaches the action number, the process is judged to be out of control. When this happens, the following responsibilities must be met.

D.2.B.3.(a) *Establishment monitoring personnel shall:*

Notify the VIC and the production supervisor responsible for products in the chilling system that the process has reached the action number.

Suspend random-time postchill subgroup testing.

Review the postchill standards forms with the responsible production supervisor to help determine the cause of the problem.

Immediately conduct an additional postchill subgroup test. If the retest subgroup total exceeds tolerance, subsequent products will be identified by Establishment monitoring personnel for rework. Products will continue accumulating for rework until 2 consecutive subgroup tests result in subgroup totals equal to or less than tolerance. In order to prevent excessive accumulation of products for rework, the second subgroup test should be immediately conducted. During process testing, any retest exceeding tolerance will result in the accumulation of products for rework.

After two consecutive postchill subgroup tests result in subgroup totals equal to or less than tolerance, three things happen:

(i) Establishment monitoring personnel resume random-time postchill subgroup testing.

(ii) CUSUM is reset. If the two consecutive subgroup totals at or below tolerance do not cause CUSUM to fall to the start number or below, CUSUM is reset at the start number.

(iii) If applicable, stop identifying product for rework.

D.2.B.3.(b) Production personnel shall:

Review postchill records with Establishment monitoring personnel and determine the probable cause of the problem.

Immediately assign employees to the postchill monitoring station to ensure that product leaving the chilling system meet postchill finished product standards.

Examine processing procedures in order to correct them as required and ensure that production consistently meets postchill finished product standards.

*D.2.B.3.(c). Inspection personnel shall:*

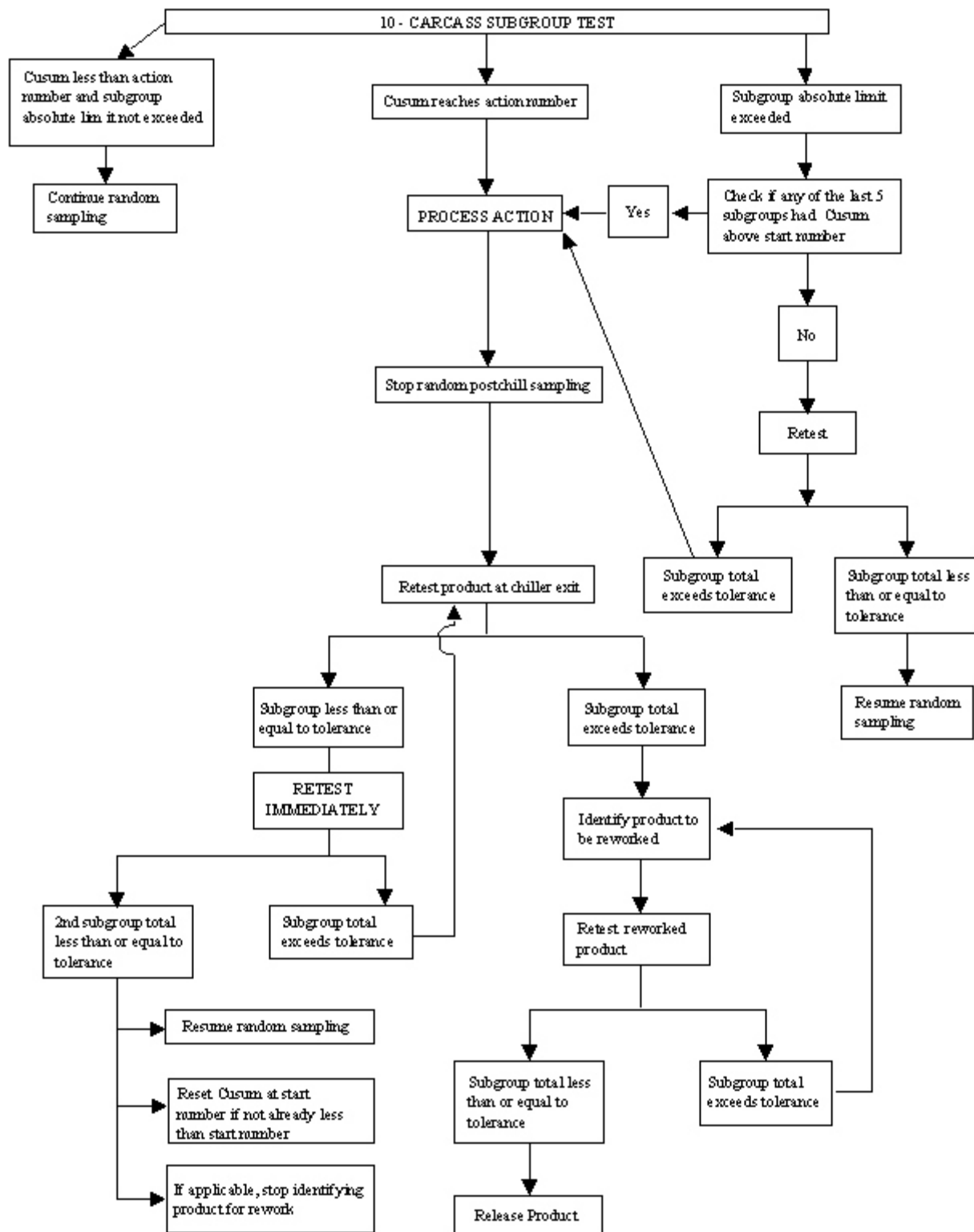
Monitor product and process actions to ensure that all program requirements are met.

Suspend random-time inspection monitoring when Establishment monitoring personnel are conducting product action.

Discuss nonconformance criteria with the Establishment monitoring supervisor as needed.

Record all corrective observations, results, and actions on the postchill FPS form (copy attached to the end of this appendix) used by inspection personnel. Any process correction required outside of the program design should be documented, distributed, and filed in a separate folder.

D.2.B.4 Flow Chart: Postchill FPS Procedures





**D.3 Product Corrective Action****D.3.1 Procedure**

The finished product standards program is designed to provide fast feedback on a process before it is judged to be out of control. It has a built-in early warning system that gives the Establishment the information needed to respond and to correct the process before off-line rework of the product is required. It also provides incentive for the Establishment to fulfil its responsibility to provide consumers with an acceptable product.

Once the prechill or postchill product has been identified as having been produced when the process was under questionable control, additional on-line subgroup testing by Establishment monitoring is required to determine its conformance to the standard. If any of the additional Establishment subgroup testing results in a subgroup total exceeding tolerance, off-line product corrective action must take place. The responsibilities during product corrective action are as follows:

**D.3.1.(a) Establishment monitoring personnel shall:**

Identify the affected product so that it may be segregated and accumulated for rework.

*Note: If rework on-line is more effective than segregation of the product off-line, this may be carried out. This decision has to be supported by the veterinarian-in-charge in consultation with appropriate production personnel and is taken on a case-by-case basis. All standards and procedures for rework contained in this section must be maintained.*

Identify the segregated lot with Establishment hold tags.

Maintain control of the identified lot throughout the rework action to ensure that the product is wholesome and that the total lot has been reworked before additional testing. Maintain control of the lot after rework for testing by Establishment monitoring personnel and release only after subgroup results indicate that the reworked products meet standards.

**D.3.1.(b) Production personnel shall:**

Segregate products identified by monitoring personnel for rework.

Rework the segregated lot using good commercial practices to protect the product's wholesomeness for the consumer.

Accumulate the reworked product for testing by Establishment monitoring personnel.

*Note: In those cases where the product is reworked directly on the line (as specified in a) and where it is possible for Establishment monitoring staff to adequately evaluate the quality of the on-line rework process, it will not be necessary to accumulate the reworked product. This decision must be approved jointly by the veterinarian-in-charge, Establishment monitoring personnel and production personnel.*

*D.3.1.(c). Facility requirements for reworking product on-line:*

- (i) lighting equivalent to an inspection station (2,000 lux, colour rendering index of 85);
- (ii) access to hand wash facilities;
- (iii) containers for inedible product; and
- (iv) if product is being trimmed, access to a sanitizer for the hand tools.

*D.3.1.(d). Inspection personnel shall:*

Spot-check rework segregation, identification, and control by Establishment monitoring personnel to ensure that program requirements are met.

Record observations, results, and actions on the postchill FPS form (copy attached to the end of this appendix) used by inspection personnel. Record all results in order to reflect the Establishment's willingness to meet the program requirements. Any process correction required outside the program design should be documented, distributed, and filed in a separate folder.

**D.3.2 Reworked products**

Reworked products must be tested with a randomly selected subgroup test of the accumulated reworked lot. Before the product is released, the random subgroup test must result in a subgroup total equal to or less than the tolerance. If the subgroup test of a reworked lot results in a subgroup total exceeding the tolerance, the lot must be reworked again before another subgroup is selected. The responsibilities for the rework actions are as follows:

*D.3.2.(a). Establishment monitoring personnel shall:*

Select the random subgroup from throughout the lot only after the entire lot has been reworked.

Conduct the subgroup test using the same criteria (prechill or postchill) that resulted in the rework action.

Release the lot if the reworked subgroup test results in a subgroup total equal to or less than tolerance.

Identify and test the lot to be reworked again if the reworked subgroup total exceeds tolerance.

*D.3.2.(b). Production personnel shall:*

Rework the entire lot using good commercial practice for product reconditioning and handling.

Maintain the identity and condition of the reworked product until they are released by Establishment monitoring personnel.

**D.3.2.(c).** *Inspection personnel shall:*

Spot-check the rework procedure to ensure that Establishment monitoring and production personnel meet the requirements of the program.

Record observations, results, and actions on the appropriate FPS record (select appropriate form from those attached to the end of this appendix). Record all results and observations that reflect the program's performance and the Establishment's willingness to follow the program. Any process correction required outside the program design should be documented, distributed, and filed in a separate folder.

**D.4** **Subgroup Sample Return**

After the subgroup tests are completed, the prechill and postchill processing nonconformances shall be corrected before the samples are returned to the product flow. Birds with trimming nonconformances shall be returned to the trimming station for correction before they are returned to the product flow.

**D.5** **Extra Correlation Testing in Extraordinary Situations**

When deemed necessary by the veterinarian-in-charge, an extra prechill and/or postchill correlation test may be carried out. This could be necessary when a lot is severely affected with a condition such as dermatitis, the entire lot is slaughtered, or a mechanical breakdown occurs.

**D.6** **Finished Products Standards**

Further to a national survey in 1997/98, the tolerance numbers, subgroup absolute limits, and action numbers have been amended to reflect the current average quality of Canadian chickens. National surveys were conducted in 1999 to update the FPS program for turkeys and fowl. Revised FPS values shall be implemented as follows:

<b>Table 1: FPS Program Values for Chicken, Fowl and Turkey</b>			
	Prechill		Postchill
	Processing	Trim	
Tolerance	12	7	2
Subgroup Absolute Limit	18	13	3
Action Number	14	10	3
Start Number	7	5	1

A Training and Accreditation Protocol for industry QC and other personnel conducting FPS examinations is contained in Annex C of the MPIP policy.

## D.7. Classification Criteria for FPS Defects

## D.7.1. Prechill Processing Nonconformances

**D.7.1.1 Visible extraneous material  $\leq$  1.5 mm (1/16")**

(a) Include any specks, tiny smears, or stains of inedible material that measure 1.5 mm or less in their largest dimension.

*EXAMPLES: Ingesta, unattached feathers, grease, and bile contamination.*

(b) Demerit factor is 1.

(c) 1 to 5 pieces of extraneous material = 1 defect; 6 to 10 = 2 defects; 11 or more = 3 defects. A maximum of three incidents (individual occurrences of visible extraneous material counted as 1, 2 or 3 defects per carcass.

**\*\*\* Turkey** ( 3 to 7 pieces = 1 defect; 8 to 12 = 2 defects; 13 or more = 3 defects )

**D.7.1.2 Extraneous material measuring 1.51 to 25 mm (1")**

(a) The same material as in line 1, together with gall bladder or spleen, embryonic yolk etc. and measuring 1.51 mm to 25 mm in the longest dimension.

(b) Demerit factor is 1.

(c) A maximum of 3 incidents per carcass.

*NOTE: for material identifiable as faecal contamination, refer to 1.8, Visible Faecal Material*

**D.7.1.3 Extraneous material > 25 mm (1")**

(a) The same material as in items 1 and 2, but measuring greater than 25 mm.

(b) Demerit factor is 2.

(c) A maximum of 2 incidents per carcass.

**D.7.1.4 Oil gland remnant (less than two whole lobes)**

(a) Recognizable fragment(s) of one or both lobes of the oil glands equals 1 incident.

(b) Demerit factor is 1.

(c) Maximum of 1 incident per carcass.

**D.7.1.5 Oil gland (two whole lobes)**

(a) The whole oil gland with no missing fragments equals 1 incident. If the oil gland is cut, but no fragment is removed, consider it to be whole. But if even a small fragment is removed, follow 1.4.

(b) Demerit factor is 2.

(a) A maximum of 1 incident per carcass.

**D.7.1.6 Lung  $\geq$  6 mm (1/4") < whole, and in the case of carcasses, other than from young chickens whose live weight was 2.7 kg or less, kidneys and testes**

(a) Any portion less than a whole lung, testes or kidneys, and equal to or greater than 6 mm at the greatest dimension, equals 1 incident.

(b) Demerit factor is 1.

(c) A maximum of 2 incidents per carcass (6 where applicable)

**\*\*\* Turkey** (Lung / Kidneys / Ovaries  $\geq$  13mm / 1/2" < whole)

- D.7.1.7 Lung (whole), and in the case of carcasses other than from young chickens whose live weight was 2.7 kg or less, kidneys and testes**
- (a) Each whole lung, testes or kidneys equals 1 incident.
  - (b) Factor is 2.
  - (c) A maximum of 2 incidents per carcass (6 where applicable).
- \*\*\* Turkey** (Lung / Kidneys / Testes / Ovaries; whole)
- D.7.1.8 Visible faecal material**
- (a) Any material determined visually to be from the lower gastrointestinal tract. The following factors must be used to identify fecal material on the inside or outside of poultry carcasses:
    - the colour of feces ranges from varying shades of yellow to green, brown and white.
    - the consistency of feces is characteristically semi-solid to a paste.
    - the composition of feces may or may not include plant material.
    - the form of feces can include solids, liquids and stains.
  - (b) Fecal material must be distinguished from ingesta using the following criteria:
    - the colour of ingesta varies with the diet: bright green from chlorophyll, yellow husks of corn, brown seed husk, green plant fibers.
    - the consistency of ingesta is characteristically solid or granular; digestive fluids sometimes are present.
    - the composition of ingesta includes identifiable plant material.Ingesta found should be recorded as per subsection 1.1 - 1.2 - 1.3 of this section. For further information on fecal material, please refer to pertinent training module.
  - (c) Whenever any visible fecal material is found by either the designated Establishment employee during the hourly pre-chill monitoring tests or by Agency's inspectors during the correlation tests, the deficiency must be recorded on the CFIA / ACIA 4653 and immediate process action initiated, i.e., corrective and prevention action(s) eg., additional Establishment employees to do carcass-per-carcass examination to remove contaminated carcasses until the operator has regained control of the process. For further information, please refer to section 2.A.4 of this appendix.
- D.7.1.9 Intestine**
- (a) Any identifiable portion of the terminal portion of the intestinal tract with a lumen (closed circle) present, or split piece of intestine large enough to be closed to form a lumen.
  - (b) Demerit factor is 5.
  - (c) A maximum of 1 incident per carcass.
- D.7.1.10 Cloaca**
- (a) Any identifiable portion of the terminal portion of the intestinal tract with mucosal lining.
  - (b) Demerit factor is 5.
  - (c) A maximum of 1 incident per carcass.
- D.7.1.11 Bursa of Fabricius**
- (a) A whole rosebud or identifiable portion with two or more mucosal folds.
  - (b) Demerit factor is 2.
  - (c) A maximum of one incident per carcass.
- D.7.1.12 Esophagus**
- (a) Any portion of the esophagus with identifiable mucosal lining.
  - (b) Demerit factor is 2.
  - (c) A maximum of 1 incident per carcass.

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- D.7.1.13 Crop (portion) with mucosa**  
(a) Any portion of the crop that includes the mucosal lining.  
(b) Demerit factor is 2.  
(c) A maximum of 1 incident per carcass.
- D.7.1.14 Crop (whole)**  
(a) Any complete crop.  
(b) Demerit factor is 5.  
(c) A maximum of 1 incident per carcass.
- D.7.1.15 Trachea  $\leq$  25 mm (1")**  
(a) Identifiable portion of trachea less than or equal to 25 mm long.  
(b) Demerit factor is 1.  
(c) A maximum of 1 incident per carcass.  
  
\*\*\* **Turkey** (Trachea  $\leq$  5 cm / 2")
- D.7.1.16 Trachea  $>$  25 mm (1")**  
(a) Identifiable portion of trachea greater than 25 mm  
(b) Demerit factor is 2.  
(c) A maximum of 1 incident per carcass.  
  
\*\*\* **Turkey** (Trachea  $>$  5 cm / 2")
- D.7.1.17 Hair  $\geq$  6 mm (¼") - 26 or more hairs**  
(a) Hair that is 6 mm long or longer, measured from the top of the follicle to the end of the hair. 26 or more hairs equal 1 incident.  
(b) Demerit factor is 1.  
(c) A maximum of 1 incident per carcass.
- D.7.1.18 Feathers and/or pinfeathers  $<$  25 mm (1")**  
(a) Attached feathers or protruding pinfeathers less than 25 mm long. Score 5 to 10 per carcass as 1 incident, 11 to 15 per carcass as 2 incidents, and 16 or more as 3 incidents.  
(b) Demerit factor is 1.  
(c) A maximum of 3 incidents per carcass.  
  
\*\*\* **Turkey** (Feathers and/or pinfeathers  $<$  4 cm / 1 ½"; 5 to 10 per carcass = 1 defect; 11 to 15 per carcass = 2 defects; 16 or more = 3 defects)
- D.7.1.19 Feathers  $>$  25 mm (1")**  
(a) Attached feathers equal to or longer than 25 mm. Score 1 to 3 per carcass as 1 incident, 4 to 6 per carcass as 2 incidents, and 7 or more as 3 incidents.  
(b) Demerit factor is one.  
(c) A maximum of 3 incidents per carcass.  
  
\*\*\* **Turkey** (Feathers  $\geq$  4 cm 1 1/2"; 1 to 3 per carcass = 1 defect; 4 to 6 per carcass = 2 defects; 7 or more = 3 defects)
- D.7.1.20 Long shank (both condyles covered)**  
(a) If the complete tibiotarsal joint is covered by a minimum of 3 mm (8 mm for fowl) it equals 1 incident.  
(b) Demerit factor is 2.  
(c) A maximum of 2 incidents per carcass.  
  
\*\*\* **Fowl** [a minimum of 8 mm = 1 incident. However, graded fowl carcasses must comply with the applicable grading regulations]
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**D.7.2. Prechill Trimming Nonconformances**

- D.7.2.1 Breast blisters**  
(a) Inflammatory tissue, fluid, or pus between the skin and keel must be trimmed if membrane "slips" or if firm nodule is greater than 13 mm ( $\frac{1}{2}$ " in diameter (dime size).  
(b) Demerit factor is 2.  
(c) A maximum of 1 incident per carcass.
- D.7.2.2 Breast blisters (partially trimmed)**  
(a) All inflammatory tissue, including that which adheres tightly to the keel bone, must be removed.  
(b) Demerit factor is 1.  
(c) A maximum of 1 incident per carcass.
- D.7.2.3 Bruises measuring 13 - 25 mm ( $\frac{1}{2}$ " - 1")**  
(a) Blood clumps or clots in the superficial layers of tissue, skin, muscle or loose subcutaneous tissue may be slit and the blood completely washed out. When the bruise extends into the deeper layers of muscle, the affected tissue must be removed. Very small bruises less than 13 mm (dime size) and areas showing only slight reddening need not be counted as defects.  
(b) Demerit factor is 1.  
(c) A maximum of 5 incidents per carcass.
- \*\*\* **Turkey** (Bruises measuring 25 - 38 mm / 1" - 1  $\frac{1}{2}$ " )
- D.7.2.4 Bruises > 25 mm (1")**  
(a) Same criteria as in 2.3, but measuring more than 25 mm in their largest dimension.  
(b) Demerit factor is 2.  
(c) A maximum of 3 incidents per carcass.
- \*\*\* **Turkey** ( Bruises > 38 mm / 1 1/2" )
- D.7.2.5 Black/green bruises measuring 6 - 25 mm ( $\frac{1}{4}$ " - 1")**  
(a) Bruises ranging in size from 6 to 25 mm that have changed from red to a black/blue or green colour due to age.  
(b) Demerit factor is 2.  
(c) A maximum of 3 incidents per carcass.
- D.7.2.6 Black/green bruises measuring 25 mm (1")**  
(a) Same criteria as in 2.5, but measuring more than 25 mm in their largest dimension.  
(b) Demerit factor is 5.  
(c) A maximum of 2 incidents per carcass.
- D.7.2.7 Trimmable pathologies**  
(a) A trimmable tumour or identifiable portion of a tumour on any part of the carcass.  
(b) Trimmable pathology such as synovitis, cellulitis, cutaneous Marek's disease, and other visible exterior conditions that have not been removed.  
(c) Demerit factor is 5.  
(d) A maximum of 1 incident per carcass.

- D.7.2.8 Failure to complete task as indicated by an approved marking system**  
EXAMPLE: Condemned leg removal, etc.  
(a) When Establishments have an approved marking system, for specified conditions, the helper, under the inspector's direction, will apply a mark to the carcass, indicating to the trimmer(s) that specific action must be taken on that carcass. When the action or carcass removal from the line is not completed, or only partially completed, this occurrence is recorded as one defect.  
(b) Demerit factor is 5.  
(c) A maximum of 1 incident per carcass.
- D.7.2.9 Compound fractures**  
(a) Any bone fracture (e.g leg or wing) that has caused an opening through the skin. May be accompanied by a bruise, but not always. Do not count the bruises under 2.3 or 2.4 if they are associated with compound fractures.  
(b) Demerit factor is 2.  
(c) A maximum of 3 incidents per carcass.
- D.7.2.10 Wing tip compound fractures**  
(a) Same criteria as in 2.9, but only for wing tips.  
*NOTE: Bruises not associated with fractures should be recorded in the appropriate lines.*  
(b) Demerit factor is 1.  
(c) A maximum of 2 incidents per carcass.
- D.7.2.11 Untrimmed short hocks**  
(a) When no cartilage of the hock surface is present and no tendons are attached to the bone.  
(b) Demerit factor is 2.  
(c) A maximum of 2 incidents per carcass.
- D.7.2.12 Visible scabs, etc. measuring 3 - 13 mm (1/8" - 1/2")**  
(a) Any defects such as abscesses, scabs or inflamed wounds measuring 3 to 13 mm in their largest dimension.  
(b) Demerit factor is 2.  
(c) A maximum of 2 incidents per carcass.  
  
\*\*\* **Turkey** (Visible scabs, I.P., etc... measuring 13 to 25 mm / 3/8" - 3/4")
- D.7.2.13 Scabs, etc. > 13 mm (1/2")**  
(a) Same criteria as in 2.12, but largest dimension is greater than 13 mm, or a cluster of smaller lesions in close proximity > 13 mm.  
(b) Demerit factor is 5.  
(c) A maximum of 1 incident per carcass.  
  
\*\*\* **Turkey** (Scabs, I.P., etc... > 25 mm / 3/4" or a cluster of smaller lesions in close proximity > 25 mm / 3/4")
- D.7.2.14 External mutilation**  
(a) Mutilation to the skin and/or muscle caused by the slaughter, dressing, or eviscerating processes. Skinned elbows (bucked wings) do not require trim unless affected wing joint capsule is also opened.  
(b) Demerit factor is 1.  
(c) A maximum of 3 incidents per carcass.



**D.7.3. Postchill Nonconformances**

Designed to monitor those nonconformances added to products during the chilling process (e.g. sand within makeup water or rail dust from air chilling coolers)

- D.7.3.1 Visible extraneous material  $\leq$  1.5 mm (1/16")**  
(b) Specks, grease, ingesta or unidentifiable foreign material measuring 1.5 mm or less in their largest dimension.  
(c) Demerit factor is 1.  
(d) 3 to 7 = 1 defect; 8 to 12 = 2 defects; 13 or more = 3 defects. A maximum of 3 incidents per carcass.
- D.7.3.2 Extraneous material measuring 1.51 - 25 mm (1/16" - 1")**  
(a) This includes ingesta, grease, or unidentifiable foreign material measuring 1.51 - 25 mm in their largest dimension.  
(b) Demerit factor is 1.  
(c) A maximum of 3 incidents per carcass.
- D.7.3.3 Extraneous material  $>$  25 mm (1")**  
(a) The same material as 3.2, but measuring more than 25 mm.  
(b) Demerit factor is 2.  
(c) A maximum of 2 incidents per carcass.

**D.8. Forms**

The following forms may be found in Annex F of this chapter:

Prechill Processing - Chicken & Fowl  
Prechill Processing - Turkey  
Prechill Trimming - Chicken & Fowl  
Prechill Trimming - Turkey  
Postchill Form