PART THREE

1. APPLICATION OF HACCP* PRINCIPLES

*(HAZARD ANALYSIS AND CRITICAL CONTROL POINT)

Section **Page**

1.1 WHY ARE THE HACCP PRINCIPLES IMPORTANT?

All Food Business Operators are responsible for making sure that, as far as possible, the food produced by their business is safe to eat[1]. To do this the operator has to put in place food safety management procedures and working practices and show that this has been done.

To produce safe food for consumers, all the important safety hazards that are associated with the production of food need to be prevented, eliminated or reduced to an acceptable level. These food safety hazards may be biological, physical or chemical (see PART ONE Chapter 6).

The seven HACCP (Hazard Analysis and Critical Control Point) principles provide a systematic way of identifying food safety hazards, making sure that they are being managed responsibly and showing that this is being done day-in, day-out.

In short this involves the following steps:

PLAN… ***what needs to be done to maintain food safety and write it down.***

DO… ***what you planned to do to maintain food safety.***

CHECK… ***that you are doing what you planned to do to maintain food safety and write down what was checked and when.***

ACT… ***to correct any food safety problems and write down what has been done about the problem and when***

[1] Regulation (EC) No 178/2002 Article 14.2 states that "food shall be deemed to be unsafe if it is considered to be: (a) injurious to health; (b) unfit for human consumption. Article 14 3. states that "In determining whether any food is unsafe, regard shall be had: (a) to the normal conditions of use of the food by the consumer and at each stage of production, processing and distribution, and …

1.2 GENERAL INFORMATION

- EU food hygiene legislation requires Food Business Operators to establish, implement and maintain a food safety management system based on the seven HACCP Principles[2] **- this chapter explains the requirements.**
- Using the structured HACCP approach can improve productivity and customer confidence - **see 'Business benefits of applying HACCP principles' below.**
- It is vital that Food Business Operators have reliable hygiene procedures in place before starting to apply HACCP principles - **see 'Good Hygiene Practices' below.**
- This guide incorporates EC guidance on applying HACCP principles and flexibility for certain businesses - **see 'Flexibility in implementing HACCP principles' below.**
- Documentation is an important part of a HACCP-based system and may be kept in the '**Food Safety Management Diary for Meat Producers'** available from the Food Standards Agency website at www.food.gov.uk/foodindustry/meat/haccpmeatplants/

- **HACCP Principles**

The 7 HACCP principles are:

1. **Identify any hazards that must be prevented, eliminated, or reduced to acceptable levels;**
2. **Identify the critical control points at the step or steps at which control is essential to prevent or eliminate a hazard or to reduce it to acceptable levels;**
3. **Establish critical limits at critical control points which separate acceptability from unacceptability for the prevention, elimination or reduction of identified hazards;**
4. **Establish and implement effective monitoring procedures at critical control points;**
5. **Establish corrective actions when monitoring indicates that a critical control point is not under control;**
6. **Establish procedures, which shall be carried out regularly, to verify that the above measures are working effectively;**
7. **Establish documents and records commensurate with the nature and size of the food business to demonstrate the effective application of the above measures.**

[2] Set out in the Codex Alimentarius document CAC/RCP 1-1969, rev. 4-2003 (www.codexalimentarius.net)

- **Business Benefits of Applying HACCP Principles**
  - The step by step approach helps ensure that all food safety issues are identified, considered and dealt with, not ignored or forgotten until an incident occurs.
  - The focus on planning means that problems are anticipated so that they can be avoided and, if they occur, they can be handled quickly and the costs minimised. Any food that may have become unsafe can be dealt with properly and quickly.
  - Attention is focussed on the most important steps in the production process to help achieve food safety efficiently and economically with best use of staff.
  - Effective implementation of HACCP-based procedures demonstrates operator and employee responsibility and company commitment to food safety i.e. 'due diligence'.
  - Accurate and timely records provide evidence of effective food safety management.
  - A HACCP-based system can accommodate change or technological developments, such as advances in equipment design, new processing procedures.
  - Food handlers can be motivated when the importance of their efforts to maintain food safety are recognized.
  - As an internationally accepted tool for food safety management, customers regard the implementation of HACCP-based procedures as a basic requirement for trade.

- **Good Hygiene Practices (GHP)**

  Management of food safety is achieved by a combination of good hygiene practices (also called prerequisite procedures) **and** operational procedures based on HACCP principles.

  Good hygiene practices are set out in Regulation 852/2004 and are covered in PART TWO of this Guide:

  - **Water (Chapter 2)**
  - **Maintenance (Chapter 3)**
  - **Cleaning (Chapter 4)**
  - **Pest Control (Chapter 5)**
  - **Personal hygiene (Chapter 6)**
  - **Training (Chapter 7)**
  - **Raw materials (Chapter 8)**
  - **Temperature Controls (Chapter 9)** Note 1
  - **Traceability (Chapter 11)** Note 2
  - **Wrapping and packaging (Chapter 12)**
  - **Waste Management (Chapter 13)**
  - **Transport hygiene (Chapter 14)**

  Note 1 ***Temperature controls can also be CCPs*** *[EC Guidance Annex II point 10]*
  Note 2 ***Traceability can be considered to be a prerequisite*** *[EC Guidance Annex II point 5]*

  HACCP-based procedures for controlling hazards throughout the food production process **will not be effective** unless good hygiene practices are also being followed.

- **Flexibility in implementing HACCP principles (EC guidance 16/11/05[3])**
  - In food businesses involving no preparation, manufacturing or processing of food (e.g. grocery shops or the storage and transport of pre-packed food at ambient temperature), hazards may be controlled through good hygiene practices alone *[Annex II point 6.1]*.
  - **Where food is prepared, manufactured or processed**, operators can develop their own food safety management procedures by following a traditional HACCP process, or by following Guides to Good Practice, including generic HACCP guides *[Annex II points 7.3, 14].* See below
  - **Documentation** is an important part of the HACCP process, providing evidence of the operator's thinking and decisions that can be audited. However, flexibility includes the possibility of 'exception reporting' of visual monitoring checks *[Annex II point 8.4]*. That means making a record only when there is such a problem or something unusual happens and recording the corrective action taken as a result - see Section C7 for more information.

- **Generic HACCP Guides**

  The meat production process is similar enough across the industry to justify a 'generic' approach for implementing HACCP principles. This approach helps to provide uniformity in training, implementation, and enforcement but cannot reflect the individual features of each plant and how it operates. So, if they want to follow generic guidance, operators need to adapt it to reflect their own circumstances.
  - A partial generic HACCP plan is included at Annex 3.
  - Model HACCP template documents are at Annex 2.
  - 'Food Safety Management Diary for Meat Producers' is available from the FSA (020 7276 8384).

[3] http://europa.eu.int/comm/food/food/biosafety/hygienelegislation/guidance_doc_haccp_en.pdf

1.3.1 WHAT ARE THE LEGAL REQUIREMENTS FOR HACCP?

The following sections set out the requirements of the hygiene regulations for applying HACCP principles to the slaughter and further processing of meat.

- **Overview of HACCP Requirements**

<table>
<tr><td rowspan="6">PLAN</td><td rowspan="6">Plan what needs to be done to maintain food safety and write it down.
It is particularly important to:
▪ minimise the likelihood of food poisoning bacteria contaminating meat and associated products.
▪ avoid physical and chemical contamination of meat.
▪ reduce the potential for growth of food poisoning bacteria on meat and associated products.
▪ minimise the potential for cross contamination of ready-to-eat foods by food poisoning bacteria on meat during further processing or in the kitchen.</td><td>Hazards</td><td>Biological, Chemical, Physical</td></tr>
<tr><td rowspan="5">Controls</td><td>Good Hygiene Practices</td></tr>
<tr><td>Maintenance, cleaning, pest control, training, personal hygiene, traceability, waste management, wrapping & packaging, transport</td></tr>
<tr><td>Operational hygiene controls</td></tr>
<tr><td>Raw materials, animal welfare & transport, slaughter, dressing, storage, cutting, processing</td></tr>
<tr><td>Documentation</td><td>HACCP plans,
Staff instructions,
Monitoring procedures,
Corrective action procedures,
Daily records</td></tr>
</table>

DO	***Do what you planned to do to maintain food safety.***	***Documentation*** *(see above)*

CHECK	***Check that you are doing what you planned to do to maintain food safety and write down what was checked and when.***	***Supervision*** ***Monitoring*** ***Verification*** *incl. Micro testing* ***Review***	***Documentation*** *(see above)*

ACT	***Act to correct any food safety problems and write down what has been done about the problem and when.***	***Corrective actions***	***Documentation*** *(see above)*

Food business operators responsible for the slaughter of animals and dressing of carcases need to make sure that:

- biological, physical and chemical hazards are identified and minimised by following good practice;
- where carcases are subject to a critical process (e.g. steam pasteurisation) to eliminate or reduce biological hazards to an acceptable level, this process is carried out in a way that ensures the desired effect;

- control points required by the regulations are applied effectively, notably :
    - animals admitted are clean and healthy, with dressing procedures adapted as necessary;
    - dressing, particularly hide/ fleece /skin /feather removal and evisceration, is carried out hygienically and carcases are free from visible contamination;
    - SRM controls are carried out as required by the relevant legislation;
    - temperature requirements for meat are complied with;
- adequate records are kept to show that permanent food safety management procedures:
    - animals admitted are clean and healthy, with dressing procedures adapted as necessary;
    - have been established and implemented;
    - are being maintained and monitored on a daily basis;
    - are subject to corrective action when necessary
    - are confirmed to be operating effectively by the operator;

Food business operators responsible for transporting meat need to make sure that:

- physical, chemical and biological hazards are identified and minimised by following good practice;
- control points required by the regulations are applied effectively, notably
    - temperature requirements for meat are complied with;
- adequate records are kept to show that permanent food safety management procedures:
    - have been established and implemented;
    - are being maintained and monitored on a daily basis;
    - are subject to corrective action when necessary; and
    - are confirmed to be operating effectively by the operator.

Food business operators responsible for cutting or processing raw meat need to make sure that:

- physical, chemical and biological contamination are identified and minimised through good hygiene practices; including metal detection where appropriate.
- where meat is subject to critical heat or other treatments to eliminate or reduce biological hazards to an acceptable level, these processes are carried out in a way that ensures the desired effect;
- control points required by the regulations are applied effectively, notably
    - SRM controls are carried out as required by the relevant legislation;
    - temperature requirements for meat are complied with;
- adequate records are kept to show that permanent food safety management procedures:
    - have been established and implemented;
    - are being maintained and monitored on a daily basis;
    - are subject to corrective action when necessary; and
    - are confirmed to be operating effectively by the operator.

KEY TO DOCUMENTATION

Keeping food safety management documentation is a legal requirement (see Sections C8, C9 below). The following symbols indicate in the text where there is a need for:

🕮 **Documentation to show that the HACCP principles have been applied.**

Written hygiene policies, procedures and instructions for staff to follow.

Records to show what checks and actions have been carried out and when.

A. HACCP TRAINING

A1. That those responsible for the development and maintenance of the procedure referred to in Article 5 (1) of this Regulation or for the operation of relevant guides have received adequate training in the application of the HACCP principles;

852/2004 Annex II ***Training:*** *Chapter XII point 2*

OPERATOR'S OBLIGATION	
Training	*As a minimum, one person in the business must have adequate training in the application of HACCP principles or in the use of generic guides if these are used by the business (see 'Flexibility' below). Ideally, all staff working on the HACCP plans should have such training. See PART TWO Chapter 6 (Training).* **Record training and any qualifications obtained by individuals**.
Flexibility (training)	***Training does not necessarily involve attendance at formal courses. Training can also be achieved through trade or professional organisations or from the competent authorities, guides to good practice etc.***
TRAINING – ADVICE	
Training providers	*Training is available from local colleges, food safety training companies and consultants, or may be provided in-house. Training is more effective if it is related to meat production. The FSA Meat Plant HACCP Manual includes a syllabus for a 2 day training course.*
Qualification	*The Intermediate Certificate in HACCP Practice (Meat Plant) is a QCA Level 2 qualification awarded on successful completion of a 2 day course and a short written project. Contact the Meat Training Council (Telephone: 01908 231062; E-mail: info@meattraining.org.uk) or the Food & Drink Training Council (Northern Ireland) (Telephone: 028 9032 9296; E-mail: geofflamb@fdtc.co.uk).*

Awareness training	*Supervisors and staff responsible for day to day checking and/or taking corrective action should have some training to better understand the importance of their work in maintaining HACCP-based hygiene procedures and the hazards that these procedures are aiming to control.*
Common problems	▪ *HACCP training is general and not related to meat plant operations.* ▪ *Potentially unsafe decisions on how to manage food safety are made because no-one has enough knowledge or understanding to apply HACCP procedures correctly.*

B. HACCP-BASED PROCEDURES

B1. Food businesses operators shall put in place, implement and maintain a permanent procedure or procedures based on the HACCP principles. *852/2004 Article 5 point 1*	
OPERATOR'S OBLIGATION	
HACCP-based procedures	*Put in place a permanent programme of good hygiene practices and operational procedures to minimise food safety hazards and produce food safely. For more detailed information see Sections C and D below.* 🕮 **Document the application of the seven HACCP principles (e.g. by completing a HACCP Plan see Annex 2), including:** - *the hazard analysis that identifies all significant food hazards associated with each production process;* - *the good hygiene practices and operational hygiene procedures that are the control measures that prevent, eliminate or reduce the hazards;* - *the planned monitoring and corrective action procedures, records and responsibilities.* - *the way in which the plan is to be validated, verified and reviewed to confirm that procedures will work and are working to produce food safely.*
Flexibility (guides)	*Operators may choose to implement HACCP principles by following industry guides adapted to reflect company conditions. A partial Generic Plan and suggested HACCP template documents are available at Annex 2 and 3 of this Chapter.*

HACCP documentation	🕮 **From the start, keep a HACCP file or folder including:** *- A list of HACCP team members and their area(s) of expertise;* *- The documents noted in each section below; and* *- Key decisions made, by whom, on which date.* *This information will demonstrate that all necessary steps have been followed and the thinking behind decisions and the arrangements that are in place.*
Preliminary steps	***Before*** *any HACCP-based procedures can be established make sure* ***good hygiene practices*** *are in place (see 1.2 above), then:* ▪ ***SET UP A HACCP TEAM*** ▪ ***DECIDE THE SCOPE OF THE HACCP PLAN*** ▪ ***PRODUCE A PROCESS FLOW DIAGRAM*** ▪ ***COLLECT TECHNICAL DATA*** *For more information see the advice sections under these headings below.*
ADVICE	
Management commitment	*Successful implementation of HACCP-based procedures depends on the commitment of company management. It is useful to have a 'HACCP Champion' at senior level with the authority and the determination to make sure the food safety management system is seen as fundamental to the success of the business and is properly implemented and maintained.*
How many plans?	*A plant slaughtering a single species, then cutting it and producing a single end product may cover all these operations in a single process flow diagram (see topic below) and a single plan, or may choose to have three. Where operations are more complex and the resulting process flow diagram becomes unduly complicated, separate plans are advisable.*
HACCP certification	*There is no requirement for HACCP procedures to be certified (e.g. under quality assurance schemes). Any such initiative is a business decision.*
SET UP A HACCP TEAM – ADVICE	
HACCP team members	*A HACCP team is a group of people who between them have knowledge of all aspects of the product, the production process, hygiene procedures and food safety management. Try to have a mix of management and operational staff.* *The HACCP team leader needs knowledge of HACCP principles, the determination and authority to complete the HACCP process, and preferably team leadership and project management skills.*

	Include relevant specialists with a knowledge of: *- The company's products from raw materials to consumption,* *- The potential biological, chemical and physical hazards connected with the particular food product (e.g. microbiology/food technology/quality assurance/engineering)* *- The production process including manufacture, storage, and distribution* *- The operation of the plant and equipment (e.g. production staff),* *- The application of HACCP principles.*
Flexibility (HACCP team)	*One person may cover more than one of these 'specialist' roles, provided all relevant information is available to the team. A business with few staff may have an in-house team of only two people. Where in-house expertise is not available, obtain advice from guides or other sources.*
External advisers	*If bringing in external advisers, do not allow them to write and 'own' the company's HACCP plan, but use them as part of the HACCP team. This brings knowledge into the company and means you don't have to keep asking the advisers back when questions are asked or changes are needed. To be useful, advisers need to be knowledgeable about the meat industry, have suitable HACCP qualifications and practical experience of HACCP systems, and an awareness of the food hygiene regulations and this guidance.*
Planning for implementation	*While the plan is being produced consider:* *- What the implementation timetable will be;* *- What day-to-day hygiene practices, operating procedures and instructions are in place, whether they need to be amended or written down;* *- What procedures and records for monitoring and corrective actions might be needed;* *- Whether extra staff training is needed;* *- Who will validate the plan before implementation and verify it after implementation, and how (see Principle 6).*
Common problems	▪ *HACCP plans are worthless because good hygiene practices are not in place.* ▪ *Generic plans are used without taking account of each plant's unique circumstances and so are inaccurate and do not control hazards effectively.* ▪ *HACCP plans are not completed because the operator does not see it as part of his food safety management responsibility, or inadequate support from company management to provide enough staff time or access to expert*

	advice to prepare, produce, check or implement the HACCP plan. ▪ *The team suffers from a lack of leadership, support or cooperation or does not include production line staff who are expert on the production process.* ▪ *The company's HACCP-based procedures are ineffective and difficult for staff to follow because an external adviser was used without the involvement of company staff. This can also mean that company staff will not understand the food safety hazards associated with their production process and will be unable to explain the plan to managers, staff or auditors or to review or amend it as needed.* ▪ *When only one person develops and maintains the HACCP-based procedures there may be no one to make sure that the procedures are being followed on a day-to-day basis when that person is not present.*
DEFINE THE SCOPE OF THE HACCP PLAN - ADVICE	
Scope or 'terms of reference' of the plan	🕮 **Document the 'scope' - a written summary describing what each plan is to cover, i.e.:** *- the start and end points of the process being covered;* *- the type of food safety hazards to be addressed;* *- the product;* *- the intended use of the product;* *- the customers and end users of the product;* *- how the product is to be packaged, stored and distributed;* *- processing and safety information.* *The scope provides the 'terms of reference' for the HACCP team. The team should take time to discuss, agree, and record the scope of the plan(s).*
Start and end points	*Describe the start and end points of the plan (e.g. from receiving of animals or raw materials to dispatch, and possibly transport, of the end product).*
Type of hazards	*Describe the type of hazards to be addressed in the plan, i.e. biological and/or chemical and/or physical hazards. See also C1 'A' below.*
Product description	*Describe the product, its nature (e.g. moisture content, pH), composition (e.g. raw materials, ingredients, additives) and required shelf life.*
Intended use of the product	*Describe the expected use(s) of the product by the customer and the target consumer group (e.g. raw meat intended to be cooked before consumption).*
Consumers including 'at	*Describe the suitability of the product for particular groups of consumers, such as institutional caterers, air travellers, etc. and for vulnerable groups of the population*

risk' groups	*that may have to be considered. People particularly at risk from food poisoning or food-related health problems include the elderly, people with low immunity levels or allergies, pregnant women, very young children, etc.*
Packaging, storage and distribution	*Describe the packaging (e.g. hermetic, vacuum, modified atmosphere) and conditions of storage and distribution of the product (e.g. frozen, chilled below x°C or at ambient temperature).*
Processing and safety information	*Describe relevant food safety information, such as:* *- processing (e.g. any heating, freezing, drying, salting, smoking, etc., and to what extent)* *- required shelf life (e.g. 'use by' and 'best before' dates)* *- instructions for use / customer information (e.g. label instructions on handling to avoid contamination of ready-to-eat-food, cooking time/temperatures, cooling times, allergens)* *– any microbiological or chemical criteria applicable.* *Review and amend this information if changes occur to the composition of the product, the process, potential consumers, customer complaints, changes to legislation, or because of new information about hazards.*
Common problems	▪ *Technical information is not properly recorded or is incomplete or inaccurate. The scope may contain too much or too little detail to be useful. This may indicate that extra training or advice is needed.* ▪ *Inadequate food safety information or advice is given on or with the product for customers and consumers to handle and consume the food safely.*
PRODUCE A PROCESS FLOW DIAGRAM - ADVICE	
A process step	*A process step is each individual operation in the production of a product. Examples include stunning; sticking & bleeding (red meat slaughterhouses), immersion chilling (poultry plant), receiving and dispatch of meat (cutting plants).*
Process flow	*The process flow is a step-by-step 'life story' of the production of a product as described by the scope (see above). It is important to include:* *- all inputs into the process, e.g. packaging, labels, water.* *- intended delays during or between steps,* *- procedures that are operated differently by different work shifts,* *- the return of product to the process for re-work (even if only occasionally), &* *- all outputs from the process, e.g. by-products.*

Official controls	*For completeness, official ante and post-mortem inspections should be included on a slaughterhouse process flow diagram. However, as 'official controls', these process steps need not be considered further in the operator's HACCP plan.*
Process flow diagram	🕮 **Complete a flow diagram (the description of production process) by listing each process step in the order that it is undertaken.** *The list of process steps must be correct for the next stage of the HACCP process, so check that the list is complete and in the right order. It is very easy to make assumptions and miss out process steps. Keep an accurate and dated process flow diagram on the HACCP file.* *Note: If the production process changes and the process flow diagram needs to be redrawn, the HACCP plan will need to be reviewed (see Section D below).*
Confirmation of the process flow	*Physically follow ('walk-through') the route that the product takes during production to confirm that each process step is properly shown on the process flow diagram. Check whether procedures vary during different shifts or other situations. Correct any mistakes on the diagram.*
Common problems	▪ *The flow diagram does not reflect the actual production process, it leaves out some inputs and/or outputs, or it is out of date. This may mean potential hazards have not been taken into account and company hygiene procedures need review.* ▪ *The flow diagram is confused - make the chart as easy to follow as possible.*
COLLECT TECHNICAL DATA – ADVICE	
Technical production data	🕮 **Collect information to inform the work of the HACCP team, such as:** *- a floor plan of production and ancillary work areas within the curtilage of the premises, identifying 'clean' and 'dirty' areas (or high/low risk areas)* *- equipment layout and characteristics* *- staff and vehicle flows, potential areas for cross-contamination, reworking of product, any variations between different shifts, etc.* *- processing criteria, such as time and temperature requirements* *- timing and management of cleaning and disinfection procedures* *- personal hygiene practices* *- other hygiene practices* *- product storage and distribution conditions.* *Keep this technical information about the product on the HACCP file.*

Common problems	▪ *Technical information is out of date, incomplete, has too much or too little detail to be useful.*

C. APPLICATION OF HACCP PRINCIPLES

HACCP PRINCIPLE 1: IDENTIFYING HAZARDS

C1. The HACCP principles referred to in paragraph 1 consist of the following;
a. Identifying any hazards that must be prevented, eliminated, or reduced to acceptable levels;

852/2004 Article 5 point 2

OPERATOR'S OBLIGATION	
HACCP Principle 1	***Hazard analysis has two elements: A - identify hazards and assess their importance; and B – identify control measures.*** *All sizes of business need to carry out a hazard analysis, as hazards vary with the type of process not with size. The analysis will help the operator understand the hazards associated with their production process and the best points in the process where control can be applied. However, although all control measures must meet the legal requirements, they will be applied differently in each food business.*
Flexibility – guidance	***Generic HACCP Plans may be used as long as they are adapted to reflect each businesses' operations and procedures – see the partial generic plan at Annex 3.***
Hazard Analysis (PART A)	🕮 **List all potential biological, chemical or physical hazards that may be reasonably expected to occur at each step of the production process.** *- Identify the food safety hazards that are present at each process step (using the process flow diagram as a guide) and must therefore be prevented, eliminated or reduced to acceptable levels.* *- Assess the significance of the hazards, in terms of likelihood and severity.* *- Record all the conclusions reached, and the reasoning behind them.* *- See advice at A then go on to PART B below.*
HAZARD ANALYSIS (A) – ADVICE	
Hazards	*A hazard is 'a biological, chemical or physical agent in, or condition of, food with the potential to cause an adverse health effect'. The main hazards in fresh meat production are biological, (mainly food poisoning bacteria), but the possible presence of prions, chemical (e.g. oil), physical hazards (e.g. metal, plastic) and allergens should also be considered in the analysis. See PART ONE Chapter 6 (Hazards).*
Factors to be	*The HACCP team needs to 'brainstorm' the issues at each process step to*

considered	*consider the possibility of:* *- the contamination or recontamination of raw materials, intermediate products, or final products by biological, chemical or physical hazards;* *- the multiplication or survival of food poisoning bacteria;* *- the source or cause of the hazard;* *- the production or persistence in foods of (i) toxins, (ii) other undesirable products of microbial metabolism, (iii) chemicals, (iv) physical agents or (v) allergens;* *- the significance of these hazards (see below).* *Company/industry experience, including audit reports/customer complaints, may also be taken into account. The microbiological criteria set in Regulation (EC) 2073/2005 may inform the setting of acceptable levels for the reduction of microbiological hazards.* *Working through this hazard analysis will identify and focus attention on the important food safety hazards that need to be controlled.*
Significance of hazards	*A significant hazard is one that would cause a serious adverse health effect and is reasonably likely to occur. Significance may be assessed by considering:* *(i) the likelihood that the hazard will actually occur (the 'risk')* *(ii) the level of potential harm that the hazard would do to consumers if they were to be exposed to it (the 'severity').*
Common problems	▪ *Not all process steps, or inputs, are considered (perhaps because the process flow diagram is incomplete or inaccurate).* ▪ *Generic guidance is followed without considering the individual nature of the company's suppliers, raw materials, ingredients, customers, hygiene procedures or production process.* ▪ *Not all potential biological, chemical or physical hazards or conditions of food that are likely to occur at each process step are considered.* ▪ *Unrealistic hazards are selected for control (i.e. those very unlikely to occur or which have negligible impact on consumers) or significant ones are neglected.* ▪ *Conclusions and reasons are not recorded so the justification for decisions is unknown.*
OPERATOR'S OBLIGATION	
Hazard Analysis	🕮 **Consider which control measures (good hygiene practices and**

(PART B)	**operational hygiene procedures) will control each identified hazard. Document all decisions.**
HAZARD ANALYSIS (B) – ADVICE	
A control measure	*A control measure is an action or activity that can prevent a hazard, eliminate a hazard, or reduce the impact or the occurrence of the hazard to acceptable levels. They are measures that will control specific hazards effectively.* *More than one control measure may be needed to control an identified hazard. Alternatively, one control measure may control more than one hazard. For example, pasteurisation may provide sufficient assurance of reduction of the level of both Salmonella and Listeria.* *Most control measures are good hygiene practices (GHP) and many are required by the hygiene regulations. See section 1.2 above.*
Example 1	***Process step:*** *Evisceration of red meat carcases* ***Hazard:*** *Contamination of carcases by food poisoning bacteria (e.g. Salmonella) due to ruptured stomach/intestine contents.* ***Control measures:*** *Effective sealing of the rectum and oesophagus (weasand) to minimise gut spillage during evisceration. Follow work instructions for evisceration to minimise the possibility of gut spillage.* ***Note:*** *The regulation requires that red meat carcases do not contain visible faecal contamination and that, if present, it is trimmed without delay.*
Example 2	***Process steps:*** *Receipt, storage, cutting and transport of poultry meat.* ***Hazard****: The growth of food poisoning bacteria (e.g. Salmonella) due to inadequate temperature control.* ***Control measure****: Chill and maintain poultry meat at 4°C or below. Follow work instructions for maintenance of the cold chain.* ***Note:*** *The regulations set specific temperature requirements for meat and general requirements for maintaining and monitoring food storage temperatures.*
Control measures specifications	*Make sure that the control measures are documented, for example in:* *policy documents, performance standards / specifications and staff instructions, such as cleaning schedules, carcase dressing procedures or heat treatment specifications, and that the equipment used is working properly. It may be necessary to confirm that specifications achieve the necessary control by reference to scientific literature or by practical trial and error.* 🕮 **Note that details of control measure specifications, standards or staff instructions do not have to be repeated in the HACCP plan. Instead simply refer to these documents, e.g. by a unique number**

	or description.
Common problems	▪ *Control measures do not control the hazard.* ▪ *Control measures are confused with corrective actions. Control measures are preventative and are implemented to maintain control, while corrective actions are taken if there are indications that control is being lost.* ▪ *Control measures in the plan do not reflect the real workplace situation.* ▪ *References to company documents about control measures are inaccurate or out of date. The documents may no longer exist.* ▪ *Unnecessary detail about the control measure is included in the HACCP plan instead of referring to other company documentation.*

HACCP PRINCIPLE 2: IDENTIFYING CRITICAL CONTROL POINTS **C2. The HACCP principles referred to in paragraph 1 consist of the following;** **b. identifying the critical control points at the *step or steps* at which control is essential to prevent or eliminate a hazard or to reduce it to acceptable levels;** *852/2004 Article 5 point 2*	
OPERATOR'S OBLIGATION	
CCPs	🕮 **Select control points that are critical to food safety (CCPs). Document all conclusions so that the information is available for validation, verification, audit and review.** *Take each process step in order, using the process flow diagram as a guide and applying the knowledge of the product and operations gathered at the start of the HACCP process. Decide if control of each significant hazard identified is essential to prevent or eliminate a hazard or reduce it to an acceptable level, and/or to meet legal requirements. Each CCP will need at least one critical limit that will show that the hazard is being controlled; plus monitoring and corrective action procedures that ensure that potentially unsafe food is not placed on the market.* 🕮 **IMPORTANT NOTE: Even if a process step has not been identified as a CCP it may be a control point. Some control points (CPs) are process steps at which control is required by regulations - see 'Flexibility' below. Each of these CPs will need at least one 'legal' limit, plus monitoring and corrective action procedures and records. Include this information in the HACCP plan.**
Flexibility	***CCPs are steps at which the prevention, elimination or reduction of hazards***

(control points required by regulations)	***to an acceptable level can be achieved, pasteurisation of milk being the classic example. While businesses may determine CCPs for their own operations, there are process steps in meat production at which legal requirements are laid down to control hazards, notably:*** ▪ ***Animals admitted are clean and healthy, with dressing procedures adapted as necessary*** *(see PART TWO Chapter 9 Acceptance & Slaughter of Animals);* ▪ ***Dressing, particularly hide/ fleece/ pelt / skin/ feather removal and evisceration, is carried out hygienically and carcases are free from visible contamination*** *(see PART TWO Chapter 10 Dressing of Carcases);* ▪ ***SRM controls are carried out as required by the relevant legislation*** *(see PART THREE Chapter 3 SRM removal);* ▪ ***Temperature requirements for meat are complied with*** *(see PART TWO Chapter 8 Temperature Controls).* ***At each of these control points 'legal' limits, monitoring procedures, corrective actions and records must be established.***
CCPs – ADVICE	
Decision tree / CCP questionnaire	*The determination of CCPs can be helped by use of a 'decision tree' (e.g.* ***Annex 1****) or by answering the questions below. Training may be needed to ensure that the chosen method is used correctly and that the selection of CCPs and control points is soundly based, avoiding, for example, unnecessary critical points.* ***<u>QUESTION 1</u> – Does this process step prevent, eliminate or reduce contamination to an acceptable level?*** *If* ***YES*** *this step is a CCP, if NO move on to Q2* ***<u>QUESTION 2</u> – Could contamination of the product occur in excess of acceptable levels or increase to unacceptable levels if control is lost?*** *If NO this step is not a CCP, if* ***YES*** *move on to Q3* ***<u>QUESTION 3</u> – Will a subsequent process step prevent, eliminate or reduce contamination to an acceptable level?*** *If* ***YES*** *this step is NOT a CCP, if* ***NO*** *this step is a CCP*
Uncontrolled hazards	*Valid control measures need to be identified for each CCP and control points required by the regulations. If a significant hazard is identified at a step where control is necessary to reduce that hazard to an acceptable level, but no control measure exists at that step or at a subsequent step, then the product or process must be modified to remove or control the hazard.*
Quality Control Points (QCPs)	*Distinguish 'Quality Control Points' (QCPs) from control points that are in place for food safety or legal reasons (e.g. through use of colour coding in company*

	documentation). Customers may promote the use of QCPs in their suppliers' HACCP plans but they are not a legal requirement.
Common problems	▪ *Failure to identify that a particular step <u>is</u> a CCP because a hazard <u>is not</u> dealt with at a subsequent step in the process under the operator's control.* ▪ *Failure to identify that a particular step <u>is not</u> a CCP because a hazard <u>is</u> dealt with at a subsequent step in the process under the operator's control.* ▪ *Failure to identify control points required by the regulations.* ▪ *Inappropriate CCPs are identified through lack of training or knowledge about the hazards, or incorrect use of decision trees or questionnaires.* ▪ *Inadequate distinction between Quality Control Points and control points that are in place for food safety reasons in the documentation, in the workplace and in the minds of staff.*

HACCP PRINCIPLE 3: ESTABLISHING CRITICAL LIMITS **C3. The HACCP principles referred to in paragraph 1 consist of the following;** ***c.* establishing critical limits at critical control points which separate acceptability from unacceptability for the prevention, elimination or reduction of identified hazards;** *852/2004 Article 5 points 1, 2 and 3*	
OPERATOR'S OBLIGATION	
Critical limits	🕮 **Decide on at least one critical limit for each control measure at each Critical Control Point. Document this information in the HACCP plan.** *A critical limit is the highest or lowest value that is acceptable for product safety; beyond which control is lost (e.g. temperature or time). Critical limits separate acceptability from unacceptability or safe from unsafe food. Critical limits must be at least as strict as any legal limits that apply at that process step - see 'Nature of limits' below.* 🕮 **Important Note: Where a control point is required by the regulations decide on at least one 'legal' limit at each point. Include this information in the HACCP plan.**
Flexibility (limits)	***It is not always necessary to fix a numerical value that requires measurement, i.e. where monitoring procedures are based on visual observation (e.g. the faecal contamination of carcases in a slaughter-house, the boiling temperature of liquid food, the change of physical properties of***

	food during processing such as cooking in a restaurant).
CRITICAL LIMITS – ADVICE	
Nature of Limits	*Use limits based on legislation or on evidence that they will result in safe food production (i.e. the values are valid) using, for example, guides to good manufacturing practice, reference books, research or academic studies.* *Limits must be capable of being monitored i.e. measured or observed and so be clear to staff whether the process is under control or is moving out of control. Examples include time/temperature combinations, pH, moisture content, additive, preservative or salt level, and sensory parameters such as visual appearance (e.g. freedom from visible faecal contamination).* ***Legal limits** – values set out in legislation e.g. 7°C is the temperature below which red meat is to be chilled.* ***Microbiological criteria** – where regulations set food safety criteria, HACCP procedures should ensure that these are met. See PART THREE Chapter 2 (Microbiological Criteria).*
Example	***CCP**: Pasteurisation of beef carcases* ***Hazard:** Survival of food poisoning bacteria (e.g. Salmonella) due to inadequate pasteurisation temperature* ***Control measure**: Treat each side with steam/hot water for a pre-set time* ***Critical limit**: Each side exposed to > 82^{O}C for at least 10 seconds* ***Monitor**: steam/hot water temperature, exposure time* ***Corrective action:** (depending on circumstances) pass carcases through pasteuriser again, repair defective equipment* ***Verification:** microbiological test results*
Target Levels	*In some cases (e.g. chilling) a stricter 'target level' may be set as an 'early warning' so that action is taken before a critical and/or 'legal' limit is reached.*
Common problems	• *Critical limits are inappropriate (e.g. do not relate to the hazard to be controlled and do not separate safe from unsafe food.* • *Limits are difficult to measure or observe*

HACCP PRINCIPLE 4: MONITORING PROCEDURES

C4. The HACCP principles referred to in paragraph 1 consist of the following;

(d) establishing and implementing effective monitoring procedures at critical control points; *852/2004 Article 5 points 1, 2 and 3*	
OPERATOR'S OBLIGATION	
Monitoring procedures	🕮 **Set out a monitoring procedure for each CCP. Include this information in the HACCP plan.** 🕮 **IMPORTANT NOTE: Where a control point is required by the regulations decide on the monitoring procedure at each point to ensure compliance. Include this information in the HACCP plan.** *Monitoring is a pre-arranged programme of checks (observations or measurements) of critical and/or 'legal' limits that can show whether control measures are in danger of failing and trigger corrective action if needed. If used, target levels must be monitored too.* ***Decide*** *(a)* ***how*** *the monitoring of critical and/or 'legal' limits will be done;* *(b)* ***when and how often*** *the checks will be done;* *(c)* ***who*** *will monitor (staff should not normally check their own work);* *(d)* ***what and where*** *information is to be recorded; and* *(e)* ***who*** *will check that monitoring is being carried out properly and* ***where*** *and* ***how*** *this check is to be recorded.* ✎ **Make sure staff responsible for monitoring and for recording results have clear instructions and understand what they must do if there is a problem.** ✍ **Record the measurements or observations in a diary/other record at the time a check is made, <u>but see</u> 'Exception reporting' below**. *It may become obvious from looking at a series of results (e.g. temperature records, microbiological test results) that action will soon be needed to avoid a critical and/or 'legal' limit being breached.*
Flexibility (monitoring)	*Monitoring may be a simple procedure, e.g. a regular visual check of the temperature of cooling/freezing facilities using a calibrated thermometer.*
MONITORING – ADVICE	
Automated monitoring	*If possible, monitoring should be carried out automatically and continuously (e.g. temperature monitoring). Carry out regular checks on control equipment (e.g. calibration of thermometers) to have confidence in its accuracy.*
Frequency of non-automated	*Where monitoring is not continuous, decide on a realistic frequency at which checks are carried out (e.g. 3 x a day; hourly; each carcase). It is better to plan*

checks	*and do one check an hour than to plan four checks an hour and only do one.* *Note: the interval between a check that was satisfactory and the next check where a critical and/or 'legal' limit is found to have been breached, will dictate the amount of product (which may be an entire batch) that may have to be checked, reworked, disposed of or recalled.*
Common problems	▪ *Monitoring checks are not carried out as often as planned. This may be because the monitoring frequency is unrealistic or because staff have not been given the correct or clear instructions.* ▪ *Monitoring records are incomplete or inaccurate. This may be because staff are relying on memory rather than recording results at the time of the check.* ▪ *Monitoring checks are confused with control measures.*

HACCP PRINCIPLE 5: CORRECTIVE ACTION PROCEDURES

C5. The HACCP principles referred to in paragraph 1 consist of the following;
(e) Establishing corrective actions when monitoring indicates that a critical control point is not under control;

852/2004 Article 5 point 2

OPERATOR'S OBLIGATION	
Corrective actions	🕮 **For each critical control point, anticipate any problems that could possibly occur and decide on corrective actions in each case. Include this information in the HACCP plan.** 🕮 **IMPORTANT NOTE: Where a control point is required by the regulations decide on the corrective actions needed at each point to ensure compliance. Include this information in the HACCP plan.** *Corrective actions are planned measures, triggered by evidence from monitoring checks that critical/'legal' limits have been breached, to be taken to restore control, prevent potentially unsafe food from reaching customers or consumers, and prevent re-occurrence. Prompt corrective action is evidence of operator responsibility.* ***Decide** (a) **what** corrective actions are to be taken to (i) restore control, (ii) deal with affected product produced while the process was out of control and (iii) investigate the cause to avoid a repetition of the problem. Then decide* *(b) **who** is responsible for carrying out all the corrective actions;* *(c) **what** information is to be recorded, **where** and **by whom**; and*

	(d) ***who*** *will check that corrective action is being carried out properly and* ***where*** *and* ***how*** *this check is to be recorded.* **Make sure staff responsible for corrective actions have clear instructions and understand what they must do if there is a problem so that corrective action can be taken without delay.** **The manager/supervisor/designated member of staff should record in a diary/other records the corrective action that has been taken and sign that it has been carried out correctly.** *It is good practice to give line staff the responsibility for correcting, as well as spotting and reporting problems, but a supervisor should be in overall charge. These records will be useful for deciding (verifying) whether the HACCP system is working well or if some changes or review will be required.*
CORRECTIVE ACTION - ADVICE	
Example	***CCP or control point required by the regulations:*** *Chilling of carcases* ***Critical or 'Legal' limit****: Carcase temperature at or below 7°C (red meat) 3°C(offal) or 4°C (white meat) (Add timetable for temperatures to be reached).* ***Monitoring****: Air and carcase temperatures* ***Corrective action****: where monitoring shows the limit has been breached, e.g.* • *Reduce chiller temperature further; move product to another chiller.* • *Hold the product while waiting for the results of a critical evaluation of batch involved, which may include microbiological sampling.* • *Investigate, identify and rectify the cause of the failure to prevent it happening again.*
Repeated corrective actions	*If corrective actions have to be taken repeatedly there is clearly something seriously wrong with the company's food safety management system. This requires urgent investigation of possible causes, for example, unclear staff instructions, failing or difficult to use equipment, insufficient training.*
Common problems	▪ *Corrective actions focus on technical matters, e.g. repairing the refrigeration units and not on the disposition of the potentially unsafe food.* ▪ *Corrective action is not taken or is deliberately postponed. When control is lost and corrective action is not taken, food safety is endangered and potentially unsafe product may reach the customer/consumer.* ***Inactivity is unacceptable****.* ▪ *Corrective action is delayed. This may be due to confusion between line staff, supervisors and management as to who is responsible for which element of*

	the necessary corrective action or what that action should be. A review of instructions and/or training may be needed. ▪ *Corrective action records are not kept or are incomplete or inaccurate. This may give management a false impression that there are no problems. It is in the interests of all parties that the operator should understand the pressures on food safety and how these may be better managed.* ▪ *Corrective action is initiated but not completed.* ▪ *Corrective actions occur repeatedly, suggesting that food safety management procedures and/or the HACCP plan are seriously flawed.*

HACCP PRINCIPLE 6: VERIFICATION PROCEDURES
C6. The HACCP principles referred to in paragraph 1 consist of the following; **f. establishing procedures, which shall be carried out regularly, *to* <u>verify</u> that the measures outlined in subparagraphs (a) to (e) are working effectively;** *852/2004 Article 5 points 1, 2 and **3*** **C7. Food … business operators at all stages of production, processing, and distribution within the businesses under their control shall ensure that foods [ ] satisfy the requirements of food law which are relevant to their activities and shall <u>verify</u> that such requirements are met.** *178/2002 Article 17*

OPERATOR'S OBLIGATION	
Verification principle	🕮 **Validate and verify the HACCP plan.** *Verification means checking or confirming that the HACCP-based procedures are achieving the intended effect i.e. controlling food safety hazards. Carry out these checks either:* *1st – before the plan is implemented – called 'Validation', see '**A**' below', or* *2nd – after implementation – called 'Verification', see '**B**' below.* ***Decide** (a) **what** validation and verification checks are to be performed and when;* *(b) **who** is responsible for carrying them out;* *(c) **what** information is to be recorded, **where** and by **whom**; and* *(d) **who** will check that validation and verification has been carried out properly and **where** and **how** this check is to be recorded.* ✍ **Record the validation and verification checks carried out in a diary or other records. The manager/supervisor should sign that the**

	checks have been carried out correctly. *Annex 2 includes validation and verification checklists.*
VERIFICATION - ADVICE	
A: Validation	*Validation of the HACCP plan is the confirmation before implementation that all the elements of the HACCP plan are 'fit for purpose', i.e. that the plan, once implemented, should control food safety satisfactorily. Validation should be repeated before each change to a HACCP plan is implemented.*
Coverage of validation checks	*To validate the accuracy and completeness of the plan, check the scope, technical data, flow diagram, hazard analysis, and the effectiveness of control measures (i.e. hygiene practices such as cleaning, training) in eliminating food safety hazards or controlling them to an acceptable level, and that control point identification, critical/'legal' limits, monitoring and corrective action plans are appropriate and effective.*
Scientific validation	*Production may involve complex technical issues, such as the chilling of large quantities of meat or heat treatment, where time/temperature or other parameters must be established and applied accurately to achieve a safe result. To confirm that the process is safe it may be enough to apply relevant legal limits or refer to industry guides to manufacturing or to scientific publications. Where the procedure or product is unusual, it may be necessary to get specialist scientific advice.*
Who validates?	*It is recommended that, after the team has carried out its own validation checks an independent expert is involved to provide an objective view.*
B: Verification	*Verification of the HACCP plan is the confirmation after implementation that the plan is being followed and that food safety hazards are under control.*
Frequency	*Verification checks should be carried out often enough to maintain confidence in the HACCP-based procedures. The frequency of verification will depend on factors such as the nature of the food safety hazards, throughput, monitoring frequency, end-use, the competence of staff, and the number of times critical/ 'legal' limits have been breached. Microbiological test results or customer complaints may also trigger verification checks.*
Flexibility (verification)	***As a minimum, if there have been no serious problems, the whole of the HACCP-based system should be verified once a year, but note that all aspects do not have to be checked at the same time.***

Microbiological criteria	*Microbiological criteria can be used in the validation and verification of HACCP-based procedures, including control measures based on good hygiene practices. See PART THREE Chapter 2 (Microbiological Criteria).*
Coverage of checks	*To verify all aspects of a HACCP-based system:* • ***Check the adequacy of:*** *- the documentation, scope, process flow, hazard analysis, control measures, determination of control points, monitoring procedures, corrective action procedures, validation and verification procedures)* *- hygiene procedures and records (e.g. cleaning, maintenance, staff training)* *- monitoring and corrective action records* *- validation and verification records* *- calibration records of instruments used for monitoring,* *to determine whether the HACCP plan appears likely to be effective and to provide a basis for checking the procedures that are actually being operated.* • ***Analyse:*** *- microbiological results and trends* *- customer complaints* *- 3rd party audit reports* *- occasions when critical/ 'legal' limits were breached and corrective actions taken* *to see where problems with the hygiene procedures may have arisen and any management action taken.* • ***Physically inspect (walk-through) the production process:*** *- check if the hygiene procedures and management checks referred to in the plan are being carried out, especially at control points* *- check whether the process flow diagram is correct* *- carry out random or targeted checks on a sample of product before, during and after production, which may include visual inspection, temperature measurements, microbiological tests, and traceability and label checks on products on sale* *- check that monitoring instruments have been calibrated.* • ***Assess:*** *- the appropriateness of staff instructions relating to the hygiene procedures, control measures, monitoring and corrective actions set out in HACCP-based*

	procedures *- the competency of the staff responsible for monitoring and corrective actions (by observation and questioning of staff).*
Who verifies?	*Unless there is no option, people responsible for carrying out monitoring and corrective actions should not also verify the plan. HACCP trained and/or experienced people should be used. External advisers can be used if sufficient in-house expertise is not available.*
3rd party audits	*HACCP verification is also carried out by auditors by or on behalf of customers, the competent authority or other 3rd parties, such as assurance bodies.*
Common problems	▪ *Validation and/or verification checks are not carried out or are not carried out properly. This may be because staff do not know what to do or how to do it. Training or expert advice may be needed. As a result, the operator may think that food safety hazards are being controlled when they are not.*

HACCP PRINCIPLE 7: DOCUMENTATION

C8. The HACCP principles referred to in paragraph 1 consist of the following;
g. establishing *documents and records* commensurate with the nature and size of the food business to demonstrate the effective application of the measures outlined in sub-paragraphs (a) to (f).

852/2004 Article 5 points 1, 2 and 3

C9. FBOs shall

a. provide the competent authority with evidence of their compliance with paragraph 1 in the manner that the competent authority requires, taking account of the nature and size of the food business;
b. ensure that any documents describing the procedures developed in accordance with this Article are up-to date at all times;
c. retain any other documents and records for an appropriate period.

852/2004 Article 5 points 4 and 5

OPERATOR'S OBLIGATION	
Documentation	*The company's HACCP-based system, hygiene procedures, checks and actions need to be documented. They provide written evidence for the operator, customers, and officials. All documents should be signed off by a responsible company official. Records should identify the persons who complete them.* *The paperwork should be easy to complete and keep up-to-date.*

	*Smaller businesses should use the **'Food Safety Management Diary for Meat Producers'** if they do not have alternative arrangements in place. Large and/or complicated businesses need more sophisticated systems.* *To be sure that the plan, policy documents and record forms being used are up to date, control documents by dating each amended version and preferably by giving each one a unique version number.*
🕮 ***HACCP Documents***	*Includes the HACCP plan(s), the HACCP team notes and conclusions concerning the scope, process flow diagram, hazard analysis, control point and critical/'legal' limit decisions, arrangements for monitoring, corrective actions, validation, verification review and any changes.*
🖉 ***Policy Documents***	*Includes the company's good hygiene policies, procedures and staff instructions. These should include instructions for staff to complete monitoring and corrective action records.*
🖉 ***Records***	*Includes monitoring results (e.g. temperature readings), corrective actions; validation, verification checks and the review. Includes calibration results, microbiological test results, customer complaints, audit reports.*
Flexibility (exception reporting)	***In the case of visual monitoring procedures it can be acceptable to record results only when there is a problem or something out of the ordinary happens with the corrective action that has been taken - see 'exception reporting' below. A diary can be a suitable method of record keeping.***
Access to records	*Documents and records can be created, recorded and kept on computer, but will need to be available for reference either on screen or in printed form. Policy documents and HACCP-based system documents can be kept on ring binders. Records of checks and actions can be kept in a diary.*
Retention of documents and records	*Documents and records must be kept for a sufficient time to allow the operator to verify the HACCP-based system and the competent authority to audit it.* 🕮 **HACCP-based plans and documents and records relating to previous policies, systems and procedures and records supporting them (e.g. validation, verification and review records).** *Keep them at least until the next official audit and for as long as the food that was produced under those arrangements is still for sale or potentially in storage.* 🖉 **Day-to-day records of monitoring and corrective actions.** *Keep them at least until the next official audit and so the information is available in case of a food safety alert that can be traced back to the food in question e.g. two*

	months after the date of consumption. This period should be extended for food that consumers may freeze. If these records are kept in a diary, keep the completed diary for at least two years after the last entry.
DOCUMENTATION – ADVICE	
Exception reporting	*When checks are carried out once or a few times a day (e.g. manual checks on chiller temperature) record the result of each specific check (i.e. temperature readings).* *When daily checks are more frequent (e.g. observation of carcase contamination) the results only need to be written down when there is a problem or something out of the ordinary happens, with a record of the corrective action taken. This is called 'exception reporting'.*
Model documents	*Model documents and records may be used as long as they are properly adapted to reflect the circumstances of each individual business.*
Document control	*Give responsibility for HACCP-based documents, issuing authorised versions and keeping a full set of up-to-date HACCP-based documents on file to a named person or persons.*
Common problems	▪ *HACCP-based paperwork is too complicated for staff to complete or for auditors to verify.* ▪ *Documents are not properly managed, dated or numbered, so it is not clear which are the up-to-date versions that should be used or checked.* ▪ *Records are ignored, forgotten or not completed properly or too late after the check or action taken. This may be due to lack of training, poor instruction, misunderstandings, mistakes, or deliberate actions. At worst it provides misleading information that may be relied on by management and may lead to incorrect action or no action being taken to the detriment of food safety and/or non-compliance with legal requirements. Records should be reviewed and signed by a supervisor or manager.*

D. REVIEW OF HACCP-BASED PROCEDURES

D1. The HACCP principles referred to in paragraph 1 consist of the following; **When any modification is made in the product, process, or any step, food business operators shall review the procedure and make the necessary changes to it.** *852/2004 Article 5 point 2*	
OPERATOR'S OBLIGATION	
Review	🕮 **Review the HACCP-based system at least once a year or when there are changes. Keep the procedure and records with the HACCP plan.** *If there are changes it is necessary to review the HACCP-based system to make sure that it is, or will be, still valid and food safety procedures remain effective. The review may indicate that aspects of the HACCP plan need to be changed, such as, the scope, the process flow diagram, the technical data, and hazard analysis, control measures, decisions on control points, critical/'legal' limits, monitoring checks, corrective actions and records.* *The Food Safety Management Diary has a review checklist.*
REVIEW – ADVICE	
Review triggers	*Changes that would lead to a review of the HACCP-based system include:* *- changes in raw material or in product,* *- changes in processing conditions (factory layout and environment, process equipment, cleaning and disinfection programme),* *- changes in packaging, storage or distribution conditions,* *- changes in consumer use,* *- new information on an existing hazard or information on a new hazard,* *- changes in relevant legislation.*
Staff awareness	*The HACCP team must be made aware of changes that would trigger a review so they can consider the potential impact on food safety and the HACCP plan. All staff need to be made aware of any changes that affect them, of revised staff instructions and, if necessary, be retrained to operate revised procedures.*
Common problems	▪ *Reviews do not take place, are delayed or are limited in scope. The food safety procedures that are in place may not be effective if there have been significant changes to the product, production arrangements etc. and these have not been reflected in the HACCP-based procedures.* ▪ *New procedures are not communicated to everyone who needs to know or*

	who needs to be re-trained.

1.3.2 WHAT ARE THE OFFICIAL CONTROL REQUIREMENTS?

Audits of HACCP-based procedures shall verify that food business operators apply such procedures continuously and properly, having particular regard to ensuring that the procedures provide the guarantees specified in Section II of Annex II to Regulation 853/2004.

They shall, in particular, determine whether the procedures guarantee, to the extent possible, that products of animal origin;

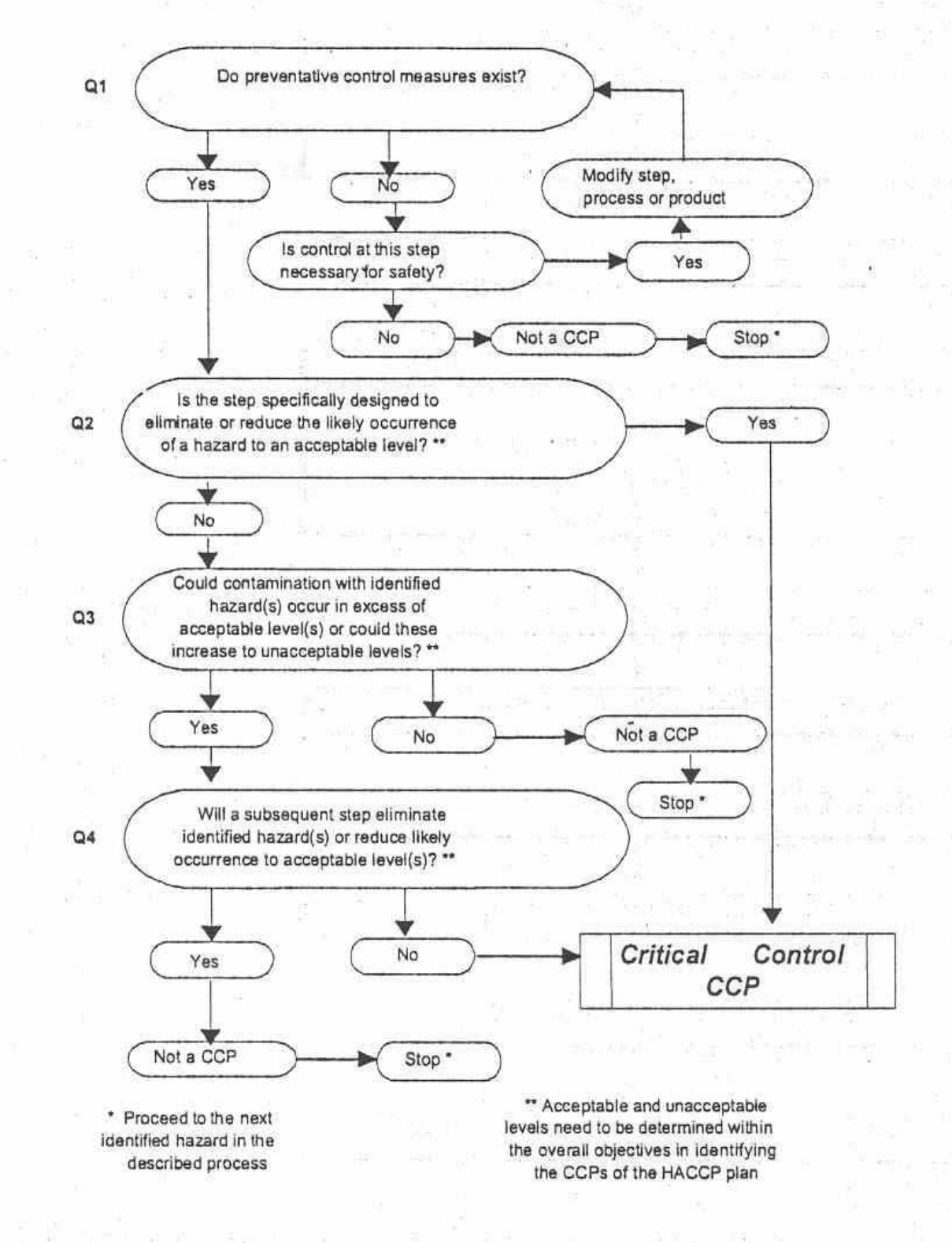
- **(a) comply with microbiological criteria laid down under community legislation;**
- **(b) comply with Community legislation on residues, contaminants and prohibited substances; and**
- **(c) do not contain physical hazards, such as foreign bodies.**

When, in accordance with Article 5 of Regulation 852/2004, a food business operator uses procedures set out in guides to the application of HACCP principles rather than establishing its own specific procedures, the audit shall cover the correct use of these guides.

854/2004 Article 4

EXAMPLE OF A DECISION TREE TO IDENTIFY CRITICAL CONTROL POINTS (CCPs)

The questions must be answered in sequence



HACCP Plan Template

Company Name:

Address:

HACCP Plan for:*

Start Date: ..... / ..... / .....

Completion Date: ..... / ..... / .....

Plan agreed by:

Name: **Signed:**

Position: **Date:** / /

HACCP TEAM

Team Leader:

Team Member 1:

Team Member 2:

Team Member 3:

* State process (e.g. beef slaughter, cutting of poultry meat)

HACCP Plan Template

SCOPE

HACCP PLAN FOR:

Hazards:

- **Biological Safety:** to prevent, eliminate or reduce the microbiological contamination of meat and to reduce the potential for growth.
- **Physical and Chemical Safety:** to avoid the physical and chemical contamination of meat.

Product:

Intended use:

Process:

Packaging, Storage, Distribution:

Customers:

Shelf life, Conditions of use:

PROCESS STEPS

1
2
3
4
5
6
7
8
9
10
11
12

HACCP Plan Template

CONTROL POINT IDENTIFICATION – IMPORTANT: COMPLETE A COPY OF THIS PAGE FOR EACH PROCESS STEP

Process Step:		Notes
Food Safety Hazards and Causes	**Control Measures**	A Critical Control Point (CCP) is a process step at which control is essential to prevent, eliminate or reduce a hazard to an acceptable level. The decision tree annexed to PART THREE Chapter 1 of the Meat Industry Guide may be used to help determine CCPs. If this process step is a CCP establish at least one critical limit, monitoring procedures and corrective actions for this step. If this process step is one of these: ☐ Acceptance of animals (visual contamination) ☐ Acceptance of raw meat (visual contamination/temperature) ☐ Dressing Procedures (visual contamination) ☐ SRM Removal ☐ Chilling/storage/dispatch (temperature) it is a control point required by the regulations. If not identified as a CCP, establish a 'legal' limit, monitoring procedures and corrective actions for this step.

CCP/ CP No	CRITICAL/'LEGAL' LIMIT(S)	MONITORING PLAN				CORRECTIVE ACTION PLAN		
		Procedures	**Frequency**	**Responsibility**	**Records**	**Procedures**	**Responsibility**	**Records**

Version:	Date:	Completed By:	Checked:

HACCP Plan Template

HACCP VALIDATION CHECK

A validation check should be carried out before the plan is first implemented to make sure it is thorough and accurate. If the Plan is in any way incomplete or inaccurate it must be amended. Validation checks should also be carried out whenever the Plan is reviewed.
***The HACCP Team or an external expert may carry out validations.**

	Yes	No
Is the scope an accurate description of the process?	☐	☐
Does the flow chart correctly identify each step in the process?	☐	☐
Are all significant hazards correctly identified and addressed?	☐	☐
Are adequate control measures in place?	☐	☐
Have the CCPs/CPs been correctly identified justified?	☐	☐
Are the critical/legal limits acceptable?	☐	☐
Are there procedures in place for monitoring?	☐	☐
Are corrective actions in place and understood by relevant staff?	☐	☐
Are there adequate records in place?	☐	☐
Will the plan control all the significant hazards if followed correctly?	☐	☐

NOTES

VALIDATION RECORD

Validation carried out by: Position:

Signed: Date of Validation: / /

HACCP Plan Template

VERIFICATION OF THE HACCP PLAN

Look back at how your good hygiene practices and operational procedures have been working since the last time you reviewed your HACCP Plan(s) to make sure they are still effective in managing food safety

Answer these questions to help complete the HACCP Plan Review checklist on the next page.

Evidence	YES	NO	If YES what have you done about this? Refer to other documents if necessary
			How have you changed your HACCP plan(s)?
Has information been received about new hazards, legislation or best practices that need to be reflected in your HACCP plan(s)?			
			Are these changes reflected in your HACCP plan(s)?
Do your daily diary records show that, where action was needed, changes have been made to hygiene procedures, checks carried out, staff instruction etc?			
			Are these changes reflected in your HACCP plan(s)?
Do your records of 4-weekly checks indicate that, where action was needed, changes have been made to hygiene procedures, checks carried out, staff instruction, etc?			
			How have you changed your HACCP plan(s)?
Do OV audit reports indicate that your HACCP plan(s) need to be changed?			
			How have you changed your HACCP plan(s)?
Do other audit reports indicate that your HACCP plan(s) need to be changed?			
			How have you changed your HACCP plan(s)?
Do OV audit reports indicate that your HACCP plan(s) have not been put into practice properly?			
			How have you changed your HACCP plan(s)?
Do other audit reports indicate that your HACCP plan(s) have not been put into practice properly?			

HACCP Plan Template

VERIFICATION OF THE HACCP PLAN continued

Evidence	YES	NO	If YES what have you done about this? Refer to other documents if necessary
			What do your investigations suggest caused the complaint?
Have you received customer complaints?			
			What does this mean for your procedures or HACCP plan(s)?
			What changes are you making as a result?
Have you received microbiological test results that indicate your hygiene procedures need to be improved?			
			What changes are you making as a result?
Has a walk-through of the production process shown that the scope, process flow diagram, product/process details are incorrect?			
			What changes are you making as a result?
Having followed a sample of product from before, during and after processing, does it show that company procedures are not being followed correctly, including inspections, traceability records, and labels?			

NOTES

HACCP Plan Template

HACCP PLAN REVIEW CHECKLIST

You need to make sure your HACCP plan(s) are still accurate. It may be necessary to change the plan, when there are changes to your product, procedures, legislation or perhaps as a result of customer complaints or an audit report.

Use the answers to the questions on the previous page (Verification of the HACCP plan) to help complete this HACCP Plan Review checklist

	Yes	No
Does the scope accurately describe the process? If No – amend Plan	☐	☐
Do the process steps correspond to the flow diagram? If No – amend Plan	☐	☐
Are controls valid for each hazard (Biological, Chemical and Physical)? If No – amend Plan	☐	☐
Do the CCPs/CPs remain the same? If No – amend Plan	☐	☐
Are critical/legal limits adequate? If No – amend Plan	☐	☐
Are monitoring procedures still effective? If No – amend Plan	☐	☐
Are appropriate corrective actions identified? If No – amend Plan	☐	☐

AMENDMENT REQUIRED:	Details of Amendment(s)
Yes ☐ **or No?** ☐ (If Yes, amend Plan then carry out validation)	

REVIEW CARRIED OUT BY:

Name: Position:

Signed: Date: / /

Date of Next Review: / /

THE FOLLOWING PAGES SHOW EXAMPLE ENTRIES FOR THE HIGHLIGHTED COLUMNS ON THE HACCP PLAN TEMPLATE, EXCLUDING DETAILS OF WHO IS RESPONSIBLE FOR ACTIONS OR WHAT RECORDS ARE KEPT

IMPORTANT: COMPLETE A COPY OF THIS PAGE FOR EACH PROCESS STEP - AMEND LOWER COLUMN HEADINGS# AS APPROPRIATE

PROCESS STEP: 1			**NOTES**
FOOD SAFETY HAZARDS AND CAUSES	**CONTROL MEASURES**		A Critical Control Point (CCP) is a process step at which control is essential to prevent, eliminate or reduce a hazard to an acceptable level. The decision tree annexed to PART THREE Chapter 1 of the Meat Industry Guide may be used to help determine CCPs. If this process step is a CCP establish at least one critical limit, monitoring procedures and corrective actions for this step. If this process step is one of these: ☐ Acceptance of animals (visual contamination) ☐ Acceptance of raw meat (visual contamination / temperature) ☐ Dressing Procedures (visual contamination) ☐ SRM Removal ☐ Chilling/storage/dispatch (temperature) it is a control point required by the regulations. If not identified as a CCP, establish a 'legal' limit, monitoring procedures and corrective actions for this step.

# CP / CCP No	**# CRITICAL / LEGAL LIMIT(S)**	**MONITORING PLAN**				**CORRECTIVE ACTION PLAN**		
		Procedure	**Frequency**	**Responsibility**	**Records**	**Procedures**	**Responsibility**	**Records**
				Named person or job description	**Complete as appropriate**		**Named person or job description**	**Complete as appropriate**

PROCESS STEP: 1 Acceptance of animals for slaughter/ dressing.		**CRITICAL / LEGAL LIMIT(S)**	**MONITORING PLAN**		**CORRECTIVE ACTION PLAN**
HAZARDS AND CAUSES	CONTROL MEASURES		Procedure	Frequency	Procedures
Contamination of carcases due to contact with [salmonella infected] animals. (poultry/pigs)	*Animals bought from assured farm suppliers. Reputable haulier used. [Salmonella test results checked before purchase]. Food chain information (birds) checked.*	*[Levels of salmonella]*	*[Check test results]*	*[Each delivery]*	*[]*
Contamination of carcases from faecal material on hides/ skins/ feathers, feet of animals	*Animals checked for excessive faecal contamination. Company policy for clean livestock carried out (e.g. dirty/ wet animals separated, washed / dried, held back for slaughter at end of day at low line speed [ ].*	*Company clean livestock standards*	*Pre-slaughter check that standards are being met*	*[Each delivery]*	*Inform OV. Re-clean animal/s. Retrain/instruct staff. Report to/change supplier/ haulier. [Reject delivery.]*
Contamination of carcases due to animals being contaminated with faecal material from vehicle and/or bedding and/or other animals.	*Vehicle cleaned before use. New bedding used. Clean crates used (birds). Correct loading density [ ] to prevent overcrowding*	*/*	*[Refer to operating instructions including livestock transport hygiene [ ] and usual supervisory activities/ records]*		

PROCESS STEP: 1A Acceptance of meat/ carcases		**CRITICAL / LEGAL LIMIT(S)**	**MONITORING PLAN**		**CORRECTIVE ACTION PLAN**
HAZARDS AND CAUSES	CONTROL MEASURES		Procedure	Frequency	Procedures
Growth of pathogenic bacteria on meat due to too high transport/ delivery temperature.	*Meat bought from assured suppliers. Correct/adequate information supplied. Reputable haulier used. Meat delivered chilled to at least [x]ºC.*	*Product temperature [7ºC/4ºC]*	*Check on meat temperature using calibrated disinfected temperature probe.*	*[Sample from each load.]*	*[Hold and carry out microbiological testing] Reject product /delivery. Inform supplier. Change supplier. Retrain/instruct staff*
Contamination of meat by pathogenic bacteria, physical, chemical contaminants (including metal) from delivery vehicle	*Visual check of delivery for damage/contamination.* *Visual check against agreed specification. Health mark/ identification mark checked.* *Metal detection at process step 12.*	*No visible contamination*	*Visual check that standard is being met.*	*[Sample from every delivery]*	*As above*

PROCESS STEP 2. Scalding of pigs/poultry		**CRITICAL / LEGAL LIMIT(S)**	**MONITORING PLAN**		**CORRECTIVE ACTION PLAN**
HAZARDS AND CAUSES	CONTROL MEASURES		Procedure	Frequency	Procedures
Contamination of carcase by pathogenic bacteria due to incorrect scalding procedure (dirty water/incorrect water temperature)	*Trained staff instructed to ensure pigs are fully bled before immersion into scald water to avoid involuntary inhalation.* *Potable water used (see water quality procedures [ ]) temperature maintained between [x] and [y] ℃.* *Scald water replenished /changed as necessary to avoid excessive build up of debris.*	*Pigs fully bled out before entering scald tank* *Water temperature at least [x]° C.*	*Visual check that standard is being met.* *Check on water temperature with probe thermometer*	*[At start of kill, and halfway through kill]*	*Do not proceed with kill until correct water temperature is reached. Investigate the cause, amend procedures as necessary. Adjust/repair water heater. Retrain/instruct staff.*
PROCESS STEP: 3. Head removal (Cattle/sheep)		**CRITICAL / LEGAL LIMIT(S)**	**MONITORING PLAN**		**CORRECTIVE ACTION PLAN**
HAZARDS AND CAUSES	CONTROL MEASURES		Procedure	Frequency	Procedures
Contamination of carcases by pathogenic bacteria from spilled gut contents	*Trained staff instructed to tie off/clip oesophagus*	*/*	*[Refer to operating instructions [ ] and usual supervisory activities/ records]*		
Contamination of carcases by pathogenic bacteria from dirty knives	*Knives/blades rinsed and disinfected between each carcase. Sanitiser water temperature [at least 82ºC]. Two-knife system used.*	*/*	*[Refer to operating instructions including cleaning and disinfection procedures [ ] and usual supervisory activities/ records]*		
Entry into the food chain of potentially positive TSE infected material	*Trained staff instructed in the removal of heads in accordance with SRM Regulations.*	*No visible SRM*	*Visual check that standard is being met.*	*[Each carcase]*	*Remove SRM. Investigate the cause, amend procedures as necessary. Retrain /instruct / discipline staff*
PROCESS STEP: 4A. Hide / Fleece/ Pelt Removal		**CRITICAL / LEGAL LIMIT(S)**	**MONITORING PLAN**		**CORRECTIVE ACTION PLAN**
HAZARDS AND CAUSES	CONTROL MEASURES		Procedure	Frequency	Procedures
Contamination of carcases by faecal material / pathogenic	*Trained staff instructed in correct hide removal technique including prevention*	*No visible faecal*	*Visual check that standard is*	*[Each carcase]*	*Trim affected carcases. Investigate the cause, amend*

bacteria on the hide / fleece / pelt	*of in-rolling using clips. Two-knife system used. Knife rinsed and disinfected between each carcase following cleaning disinfection procedures. Sanitiser water temperature [at least 82ºC]. Any visible contamination removed.*	*contamination of the carcase.* *Water temperature 82°C.*	*being met.* *Check on water temperature with probe thermometer.*	*[At start up]*	*procedures as necessary* *Adjust/repair water heater. Retrain/instruct staff*
Contamination of carcases by physical contaminants (e.g. hair) from equipment / surfaces	*Plant and equipment cleaning and maintenance schedule followed.*	*/*	*[Refer to operating instructions including cleaning procedures [] and usual supervisory activities/ records]*		
Contamination of carcases by bacteria on hands, arms, aprons of dressing staff.	*Trained staff instructed to wash/rinse hands, arms and aprons to be washed/rinsed between handling each carcase.*	*/*	*[Refer to operating instructions including personal hygiene procedures [ ] and usual supervisory activities/ records]*		
PROCESS STEP: 4B. De-hair (mechanical) (pigs)		**CRITICAL / LEGAL LIMIT(S)**	**MONITORING PLAN**		**CORRECTIVE ACTION PLAN**
HAZARDS AND CAUSES	CONTROL MEASURES		Procedure	Frequency	Procedures
Contamination of carcases by pathogenic bacteria from de-hairer equipment.	*Trained staff instructed to clean and maintain de-hairing equipment.*	*No visual contamination from bristles/hair*	*Visual check that standard is being met.*	*[Each carcase]*	*Remove visible contamination. Re-set/ repair de-hairer. Review and correct cause of problem. Retrain/instruct staff.*
Contamination of carcases by pathogenic bacteria on hands, arms, aprons of dressing staff.	*Trained staff instructed to wash/rinse hands, arms and aprons between handling each carcase.*	*/*	*[Refer to operating instructions including personal hygiene procedures [ ] and usual supervisory activities/ records]*		
PROCESS STEP: 4C. Pluck (incl. head/feet removal) (birds)		**CRITICAL / LEGAL LIMIT(S)**	**MONITORING PLAN**		**CORRECTIVE ACTION PLAN**
HAZARDS AND CAUSES	CONTROL MEASURES		Procedure	Frequency	Procedures
Contamination of carcases by pathogenic bacteria from plucking machine.	*Company cleaning schedule followed. Visual inspection before start-up.*	*/*	*[Refer to operating instructions including cleaning procedures [] and usual supervisory activities]*		
Contamination of carcase by pathogenic bacteria from badly	*Trained staff instructed to adjust plucking machine to prevent physical*	*/*	*[Refer to operating instructions [ ] and usual supervisory activities]*		

adjusted plucking machine.	*damage to carcase and subsequent bacterial contamination of carcase tissue.*				
PROCESS STEP: 5. Pre-Wash (birds)		**CRITICAL / LEGAL LIMIT(S)**	**MONITORING PLAN**		**CORRECTIVE ACTION PLAN**
HAZARDS AND CAUSES	CONTROL MEASURES		Procedure	Frequency	Procedures
Contamination of carcases by faecal/ bacterial material from plucking process.	*Pre evisceration wash/ spray with potable water. Water quality tested [monthly]*	*/*	*[Refer to operating instructions including water quality procedures [ ] and usual supervisory activities/ records]*		
PROCESS STEP: 6. Evisceration (incl. bunging/bagging of red meat species)		**CRITICAL / LEGAL LIMIT(S)**	**MONITORING PLAN**		**CORRECTIVE ACTION PLAN**
HAZARDS AND CAUSES	CONTROL MEASURES		Procedure	Frequency	Procedures
Contamination of carcases by pathogenic bacteria /faecal material from ruptured stomach/ gut/ crop contents.	*Trained staff instructed in evisceration techniques / procedures.* *Red meat carcases rodded and oesophagus clipped or tied to prevent leakage from stomach contents.* *Red meat carcases bunged and sealed to prevent leakage of gut contents.* *Automatic poultry evisceration machinery correctly calibrated and adjusted to prevent damage to viscera /carcase.*	*No visual contamination i.e. faeces/ blood/ viscera.*	*Visual check of carcases to see standard is being met.* *Visual check of evisceration technique.*	*[Each carcase / sample of poultry carcases]* *[Hourly]*	*Carcase correctly trimmed. Check and, if necessary, trim carcases produced since the last time monitoring showed this process was under control. Investigate the cause of the failures, amend procedures as necessary. Adjust/ repair equipment. Retrain/ instruct staff.*
Contamination of carcase from damage / injury	*Damaged carcases removed from process line for reworking.*	*No visual damage*	*[Refer to operating instructions [ ] and usual supervisory activities/ records]*		
Contamination of carcases by pathogenic bacteria/ faecal material from dirty knives/ evisceration equipment.	*Knives/blades rinsed and disinfected [between each carcase (red meat)]. Sanitiser water temperature [at least 82ºC]. Two-knife system used.* *Automatic spray wash of probes on crop and lung equipment between carcases (birds).*	*Water temperature 82°C.*	*Check on water temperature with probe thermometer*	*[Twice a day.]*	*Adjust/repair. Remove knives to a correctly operating sanitizer. Retrain/instruct staff*

Contamination of carcases by pathogenic bacteria on hands, arms, aprons of dressing staff.	*Trained staff instructed to wash/rinse hands, arms and aprons regularly.*	/	*[Refer to operating instructions including personal hygiene procedures [ ] and usual supervisory activities/ records]*		
PROCESS STEP: 7. Carcase split/SRM removal (cattle/sheep)		**CRITICAL / LEGAL LIMIT(S)**	**MONITORING PLAN**		**CORRECTIVE ACTION PLAN**
HAZARDS AND CAUSES	CONTROL MEASURES		Procedure	Frequency	Procedures
Contamination of carcases by pathogenic bacteria from dirty saw.	*Saw rinsed and disinfected in steriliser with a water temperature at least 82ºC.*	/	*[Refer to operating instructions including cleaning and disinfection procedures [ ] and usual supervisory activities/ records]*		
Contamination of carcases by metal from badly maintained saw blade.	*Company procedures for maintenance of saw and blade followed. Visual check before and after use*	/	*[Refer to operating instructions including maintenance procedures [ ] and usual supervisory activities/ records]*		
Contamination of carcases by pathogenic bacteria on hands, arms, aprons of dressing staff.	*Trained staff instructed to wash/rinse hands, arms and aprons regularly.*	/	*[Refer to operating instructions including personal hygiene procedures [ ] and usual supervisory activities/ records]*		
Contamination of carcases by potentially positive TSE infected material.	*Trained staff instructed in the removal of SRM in accordance with SRM Regulations.*	*No visible SRM*	*Visual check that standard is being met.*	*[Each carcase]*	*Remove SRM from carcase and check/correct carcases produced since the last time monitoring showed this process was under control. Investigate the cause, amend procedures as necessary. Retrain / instruct / discipline staff.*
PROCESS STEP: 8. Vertebral column wash (red meat)		**CRITICAL / LEGAL LIMIT(S)**	**MONITORING PLAN**		**CORRECTIVE ACTION PLAN**
HAZARDS AND CAUSES	CONTROL MEASURES		Procedure	Frequency	Procedures
Contamination of carcases with pathogenic bacteria from cross spray or contaminated water used for carcase washing.	*Trained staff instructed in carcase washing procedure to avoid cross spraying. Potable water used. Water quality tested [monthly]*	/	*[Refer to operating instructions [ ] and usual supervisory activities/ records]*		

PROCESS STEP: 9. Final wash / inspection (white meat)		**CRITICAL / LEGAL LIMIT(S)**	**MONITORING PLAN**		**CORRECTIVE ACTION PLAN**
HAZARDS AND CAUSES	CONTROL MEASURES		Procedure	Frequency	Procedures
Contamination of carcases by pathogenic bacteria /faecal material following evisceration.	*Inspected and passed carcases are washed inside and out with potable water. All carcases checked for visible contamination. Water quality tested [monthly]*	*No visual contamination from faeces/ blood/ viscera*	*Visual check that the standard is being met.*	*[Ongoing]*	*Carcase trimmed, or declared unfit. Check/correct carcases produced since the last time monitoring showed this process was under control. Investigate the cause of failures, amend procedures as necessary. Retrain/instruct staff.*
Contamination of carcases with pathogenic bacteria from contaminated water used for carcase washing.	*Trained staff instructed in carcase washing procedure to avoid cross spraying. Potable water used. Water quality tested [monthly]*	*/*	*[Refer to operating instructions [ ] and usual supervisory activities/ records]*		
PROCESS STEP: 10. Chilling and chilled storage		**CRITICAL / LEGAL LIMIT(S)**	**MONITORING PLAN**		**CORRECTIVE ACTION PLAN**
HAZARDS AND CAUSES	CONTROL MEASURES		Procedure	Frequency	Procedures
Growth of pathogenic bacteria on carcases/product due to too high chilling and storage temperature.	*Carcases chilled on chill line at an air temperature of [x to y°C] within [x] hours (birds)* *Air temperature of chill store maintained at [x]°C (red meat).* *Internal muscle temperature of chilled stored carcases kept below [z]°C (all species).* *Chiller alarms set at []°C*	*Carcase temperature reduced to []°C* *Chiller temperature below []°C*	*Check the automatic log of air temperature / speed and humidity of chill line and chill store.*	*[ ] times a day.* *Test alarm [once a week]*	*Investigate the cause, amend procedures as necessary.* *If needed, move carcases to a correctly functioning chill store. Check/correct carcases produced since the last time monitoring showed this process was under control. Retrain/ instruct staff.*
Growth of pathogenic bacteria on carcases/product due to too slow chilling process / too long in chilling hall / close spacing of	*Carcases stored in food grade polypropylene crates (birds)* *Trained staff instructed in chill and*	*Carcases do not touch during cooling.*	*Check on carcase temperature before loading*	*[ ] times a day*	*Reduce air temperature where carcases are held. Move carcases to a correctly functioning store. Check /*

carcases during cooling / poor stock rotation in chill store.	*storage procedures, including correct carcase spacing, FIFO stock rotation.*	*Carcase temperature below [x]ºC within [y] hours.* *Stock dispatched within [] days of kill date.*	*using calibrated disinfected temperature probe.* *Visual check of carcase spacing during cooling.* *Check stock rotation*	*[Once a day]* *[Once a day]*	*correct carcases produced since the last time monitoring showed this process was under control. Investigate the cause of failures, amend procedures as necessary. Move the carcases to get the desired spacing. Retrain/instruct staff Destroy old stock.*
Contamination of carcases /product by pathogenic bacteria, physical, chemical contaminants from dirty chill store/ equipment.	*Plant and equipment cleaning and maintenance schedule followed.*	*/*	*[Refer to operating instructions including cleaning and maintenance procedures [ ] and usual supervisory activities/ records]*		
Contamination of carcases /product by pathogenic bacteria from store/ handling staff.	*Trained staff instructed to follow personal hygiene procedures.*		*[Refer to operating instructions including personal hygiene procedures [ ] and usual supervisory activities/ records]*		
PROCESS STEP: 11. Inspect, butcher and trim		**CRITICAL / LEGAL LIMIT(S)**	**MONITORING PLAN**		**CORRECTIVE ACTION PLAN**
HAZARDS AND CAUSES	CONTROL MEASURES		Procedure	Frequency	Procedures
Contamination of meat by pathogenic bacteria from faecal material or by SRM.	*Trained staff instructed to check product against agreed product specification before cutting.*	*No visible contamination*	*Visual check that the standard is being met.*	*[Each carcase]*	*Product removed from line. Carcases trimmed / cleaned / reworked. Product rejected / destroyed. Check / correct carcases produced since the last time monitoring showed this process was under control. Investigate the cause of failures, amend procedures as necessary. Retrain / inform staff*

Contamination of meat by pathogenic bacteria from other meat (especially of other species.)	*Meat handled in separate batches. Trained staff instructed to handle meat of different species separately and to follow company hygiene procedures.*	*/*	*[Refer to operating instructions including cleaning procedures between batches [] and usual supervisory activities/ records]*		
Contamination of meat by pathogenic bacteria / physical / chemical contaminants from knives / cutting tables / equipment during trimming.	*Trained staff instructed to follows operating, cleaning and staff hygiene procedures. Two knife system used. Batch sterilisers used for knives/chain mail, temperature [at least 82°C], checked with probe thermometer twice a day.*	*/*	*[Refer to operating instructions including cleaning and disinfection procedures [] and usual supervisory activities/ records]*		
Contamination of meat with metal fragments from broken knife blades/ band saws and chain mail.	*Knives / chain mail checked for damage before and during use. Regular maintenance checks on cutting equipment.* *Metal detection at step [12].*	*/*	*[Refer to operating instructions including maintenance procedures [] and usual supervisory activities/ records]*		
Contamination of meat by pathogenic bacteria/ physical contaminants from cutting staff.	*Trained staff instructed to follow personal hygiene rules.*	*/*	*[Refer to operating instructions including personal hygiene procedures [ ] and usual supervisory activities/ records]*		
Growth of pathogenic bacteria on meat due to poor temperature control from being too long in cutting room.	*Cutting room maintained below 12°C. Trained staff instructed to ensure product spends less than [x] minutes in cutting room.*	*Cutting room temperature below []ºC* *Meat temperature below []ºC*	*Check air temperature* *Check meat temperature.*	*[ ] times a day.* *[ ] times a day.*	*Move product to chiller. Investigate the cause of high temperatures, amend procedures / repair temperature control equipment/monitoring equipment as necessary. Retrain/ instruct staff.*
PROCESS STEP: 12. Metal detection		**CRITICAL / LEGAL LIMIT(S)**	**MONITORING PLAN**		**CORRECTIVE ACTION PLAN**
HAZARDS AND CAUSES	CONTROL MEASURES		Procedure	Frequency	Procedures
Contamination of meat by undetected metal from equipment, fixtures , fittings,	*Trained staff instructed in correct operation of metal detector.*	*Test Pieces:* *[x]mm Fe* *[y]mm non Fe*	*Check efficacy of metal detector with test pieces.*	*[Before start up and every*	*Stop the line. Identify/ recheck last 30 minutes of production, retest. Reset*

blades.		*[z]mm S/S*		*[x] minutes throughout production]*	*metal detector. Investigate the cause of failure.*
PROCESS STEP: 13. Package and dispatch		**CRITICAL / LEGAL LIMIT(S)**	**MONITORING PLAN**		**CORRECTIVE ACTION PLAN**
HAZARDS AND CAUSES	CONTROL MEASURES		Procedure	Frequency	Procedures
Growth of pathogenic bacteria due to inadequate temperature control at dispatch.	*Carcases/product chilled before dispatch below [x]ºC.* *Vehicle container chilled below [y]ºC before loading.*	*Product temp. below [4ºC/7]ºC.* *Vehicle air temp. below [y]ºC before loading*	*Check on carcase/ product temperature before loading using calibrated disinfected temperature probe. Check vehicle temperature before loading.*	*[Sample from each load]* *[Each vehicle]*	*Stop despatch until meat reach required temperature.* *Investigate the cause, amend procedures as necessary.* *Stop loading until vehicle reaches required temperature.* *Retrain/instruct staff*
Contamination of carcases/ product by pathogenic bacteria from outer packaging during packing/ loading process	*Trained staff instructed in packing / loading procedures, including transport of poultry/product in food grade polypropylene crates palleted and over-wrapped.*	*/*	*[Refer to operating instructions including packing and loading procedures [ ] and usual supervisory activities/ records]*		
Contamination of carcases / product by pathogenicbacteria, physical, chemical contaminants from dirty vehicles.	*Cleaning and maintenance schedule for vehicles followed.*	*/*	*[Refer to operating instructions including cleaning and maintenance procedures [ ] and usual supervisory activities/ records]*		
Contamination of carcases by pathogenic bacteria from loading staff.	*Trained staff instructed to follow personal hygiene procedures.*	*/*	*[Refer to operating instructions including personal hygiene procedures [ ] and usual supervisory activities/ records]*		

PART THREE

2. MICROBIOLOGICAL CRITERIA

2.1 WHY ARE MICROBIOLOGICAL CRITERIA IMPORTANT?

The aim of HACCP-based systems is to ensure that food is produced safely. This is achieved through the identification and effective control of food-borne hazards. It is generally recognised that the most significant food-borne hazards from fresh meat are bacteria which can cause disease in humans (pathogenic bacteria), such as *Salmonella*, Campylobacter and E.coli O157. Some of these, particularly E.coli O157, require only a few bacteria to cause food poisoning in humans. See Part One Chapter 6 (Hazards) and 2.2 below.

Bacteria cannot be seen by the naked eye. They cannot be detected at post-mortem inspection. The production of visually clean meat, monitored by visual inspection, is an important starting point for meat safety, but visual inspection can detect only gross faecal and other contamination. Although this gives a useful indication of the microbiological status of fresh meat, it is only by looking at samples after incubation on a suitable medium that the number of bacteria present on the surface of carcase meat or in processed meat can be assessed objectively.

Slaughter and dressing operations provide many opportunities for contaminating carcases with bacteria. The further processing of meat can spread contamination as well as introduce it from equipment, handing or the environment and poor temperature control can lead to growth of dangerous bacteria. Testing against microbiological criteria provides a way of measuring how well the operator has controlled the slaughter, dressing and production processes to avoid and control contamination. The results of testing can be used to validate whether the operator's HACCP-based procedures are controlling food safety and verify they are being correctly applied.

2.2 GENERAL INFORMATION

- **Legal Basis for Microbiological Criteria**

  The Microbiological Criteria Regulation 2073/2005[1] establishes microbiological criteria for certain micro-organisms and provides rules to be complied with by food business operators when implementing the general and specific hygiene measures referred to in Article 4[2] of Regulation (EC) 852/2004. Articles 4(3) and (4) of Regulation 852/2004 provide the legal basis for Regulation 2073/2005. Relevant definitions are set out at Article 2 of 2073/2005 and those relevant to meat are included for reference at PART ONE Chapter 8.6 of this guide.

- **Livestock**

  All animals carry a very large number of bacteria in their stomachs and intestines, which are excreted in their faeces. Bacteria are also present on the skin, hide fleeces and feathers of animals, including those from direct contact with faeces or from indirect contact with the environment of the farm, transport vehicles or lairage.

  The bacteria in or on animals may include those which can cause food poisoning in humans and which are recognised hazards from meat. Most of these bacteria do not cause illness in meat producing animals, which will appear healthy. Although ante-mortem inspection will enable clinically ill animals to be detected, it is not possible to identify healthy carriers of pathogenic organisms. It must therefore be assumed that all animals entering the slaughterhouse have the potential to carry pathogenic organisms in or on them.

- **Carcases**

  Bacteria from the surface or digestive tract of an animal may be transferred onto the carcase or onto other carcases during slaughter and dressing. This transfer may be caused by direct contact or through cross-contamination by slaughterhouse staff, equipment, surfaces, water or aerosols. The correct application of HACCP-based principles to the process aims to ensure that such transfer is minimised. Scientific research has shown that the cleanliness of animals at slaughter is an important control to minimise the risk of transfer of pathogens from the hide, fleece, skin or feathers to the carcase.

---

[1]. Published in the Official Journal of the European Union on 22/12/05 – see www.ukmeat.org.

[2] (2) FBOs carrying of any stage of production, processing and distribution of food after [primary production] shall comply with the general hygiene requirements laid down in Annex II and any specific requirements provided for in Regulation 853/2004.
(3) Food business operators shall, as appropriate, adopt the following specific hygiene measures: (a) compliance with microbiological criteria for foodstuffs; (e) sampling and analysis.

- **Carcase Testing**

  When pathogenic bacteria are transferred to carcases they are usually present in only small numbers and on a small area of the carcase. This means that a negative result from microbiological testing for pathogenic bacteria will not guarantee the absence of such organisms. A large surface area of a high proportion of carcases needs to be tested to obtain a statistically valid result for many pathogenic bacteria. This is neither practical nor economically feasible and is why a criterion for E coli O157 is not currently included in Regulation 2073/2005. This does not mean that this organism is unimportant but that control is best achieved by setting a criterion for an indicator group of micro-organisms.

- **Indicator Organisms**

  Indicator organisms are larger groups of bacteria, including certain pathogenic bacteria, which are relatively easy to measure as a group and whose presence is likely to indicate the presence of pathogenic bacteria. Aerobic Plate Count (APC) is a general measure of the microbiological status of meat, but APC results and the number of pathogens present may not always be related. Testing for Enterobacteriaceae, a group of indicator organisms that live in the intestines of animals and the environment, will give a better indication of the likelihood of pathogenic organisms being present. Control measures that reduce the number of Enterobacteriaceae and the APC will reduce the risk of the presence of pathogenic bacteria on meat.

  Although the *Salmonella* group of organisms does contain bacteria of significance in terms of human disease, there are also many *Salmonella* that may occur in animal production that are rarely associated with human disease. For these reasons the *Salmonella* criteria set for carcases are, like Enterobacteriaceae and APC, process criteria. Failure to meet these does not in itself indicate the meat from the carcase tested or batch of carcases tested will be unfit for human consumption but it does mean that investigations to find the cause of contamination to prevent a reoccurrence should take place.

- **Processed Meat**

  The further processing of meat into minced meat, meat preparations and meat products provides an opportunity for any dangerous bacteria on the surface of the carcase meat to be spread throughout the product and also for new bacteria to be introduced from the environment, handling and processing.

  In particular, bacteria will be spread into the centre of the food, where they will be less easily destroyed on cooking. If the production process does not contain a pathogen reduction step such as cooking then any bacteria on the carcase meat will be present in the processed meat. If the product is intended as a ready to eat food such as steak tartare then special care will need to be taken to ensure absence of *Salmonella* and the safety of the food. For minced meat and

meat preparations intended to be eaten cooked, absence of *Salmonella*, although ultimately desirable, is not practical with the current prevalence of *Salmonella* in animals. Mince is often an economical product containing trim as well as other surface parts of the carcase. Labelling the product with advice on cooking and safe handling in addition to hygienic production controls the risk to human health.

Although this point was made by the Agency and accepted by other member states during the negotiations, the criteria in the regulation for *Salmonella* in raw processed meat intended to be eaten cooked are food safety criteria. Failure to meet these means the meat must be removed from the market.

- **The Micro-organisms in the Meat Criteria**

  - ***Aerobic Colony count (ACC)*** *also known as Aerobic Plate count (APC) and Total Viable Count (TVC)*

    A measure of bacteria in the sample that can survive in the conditions on the surface of carcases or in processed meat, be harvested by the sampling procedure used and grow in the presence of air on an agar plate. These bacteria include those arising both from animals and from the slaughterhouse or meat processing environment. Because the APC includes the organisms responsible for spoilage of meat, it will also give an indication of the keeping quality of the meat.

  - ***Enterobacteriacae (ENT)***

    The name given to a group of bacteria that live predominantly in the intestines of animals. The group includes most of the major food-borne pathogens of animal origin such as Salmonella, Yersinia and E.coli O157.

    The presence of these organisms on the surface of carcases is an ***indicator*** *of faecal and environmental contamination*

  - ***E. coli (EC)***

    A group of bacteria that live in the intestines and are shed in the faeces of man and food producing animals. Presence of E.coli is an ***indicator*** *of faecal contamination. The test procedure does not specifically recover E.coli 0157 but does indicate the risk of contamination with this and other dangerous faecally-derived bacteria.*

  - ***Salmonella species (Sal)***

    A group of bacteria that includes several pathogens of significance in human food poisoning disease. They mainly arise from faecal contamination but can also arise from the processing environment. Further analysis of the type of Salmonella can be useful in investigating and preventing the re occurrence of positive results as well as providing information that can be used in a risk analysis.

- **Food Safety and Process Hygiene Criteria**

  Two different classes of criteria are established in Regulation 2073/2005, namely food safety criteria and process hygiene criteria. The main difference between them is the additional action required when a food safety criterion is not met of removing the batch of food in question from the market. Failure to meet either class of criteria should always result in an investigation to find the cause of contamination and action taken to prevent contamination of future production.

  - **Food Safety Criteria**

    Food safety criteria have been set for minced meat, meat preparations, meat products and mechanically separated meat and, if exceeded, indicate that the batch tested is unsatisfactory and should be removed from the market.

    Demonstration of compliance with **food safety criteria** for meat and processed meat is required as follows:

    - Absence of ***Salmonella*** in:
      (a) minced meat and meat preparations intended to be eaten raw;
      (b) minced meat and meat preparations intended to be eaten cooked;
      (c) mechanically separated meat (MSM);
      (d) meat products intended to be eaten raw
      (e) meat products made from poultry meat intended to be eaten cooked.

  - **Process Hygiene Criteria**

    It is important to note that the purpose of testing against the process criteria that have been set for carcases and certain processed meat is **not** to assess the fitness of individual carcases or processed meat for human consumption. The results provide an indication of performance and control of the slaughter, dressing and production process at the time of sampling, and must be used accordingly. If the criteria are exceeded corrective action to improve future production must be initiated but there is no requirement to remove product from the market.

    Demonstration of compliance with **process hygiene criteria** for meat and processed meat is required as follows:

    Aerobic colony count and **Enterobacteriaceae** on cattle, sheep, goats, horses and pig carcases; (below specified limits)

    - ***Salmonella*** on cattle, sheep, goats, horses, pig, broiler and turkey carcases; (Absence from a specified number of samples per 50 samples examined)
    - **Aerobic plate count** and ***E.coli*** in minced meat and mechanically separated meat; (below specified limits)
    - ***E.coli*** in meat preparations; (below specified limits)

- **Sources of Advice and Information**

  Additional guidance may be found in:

  - General Guidance for Food Business Operators on EC Regulation No. 2073/2005 on Microbiological Criteria for Foodstuffs www.food.gov.uk/foodindustry/regulation/europeleg/eufoodhygieneleg/microbiolreg.
  - BRC/CFA Guidance on the Practical Implementation of the EC Regulation on Microbiological Criteria for Foodstuffs (www.chilledfood.org/content/guidance.asp).
  - The Public Health Laboratory Service (PHLS) (www.hpa.org.uk) - Guidelines for the Microbiological Quality of Some Ready-to-eat Food Sampled at the Point of Sale.
  - The Institute of Food Science and Technology (IFST) (www.ifst.org) - Development and Use of Microbiological Criteria for Foods ISBN 0 905367 16 2.

- **FSA Website**

  The Agency's website www.ukmeat.org provides information on the microbiological criteria regulations; guidance on taking samples (photographs are included); protocols; and information on taking corrective action when the criteria are not met, including a free typing facility for salmonella isolates from meat.

  This site is also the home of the Meat Test Results database. The database is a joint venture between the UK meat industry and the FSA. Plant operators enter their results into the database and trend information can be generated automatically. National summaries are generated for plants to compare their results with. There is a facility to help operators enter data, details of which are given on the home page and individual operator's data are password protected. The database exists only for research purposes and is not used for enforcement. UK meat plant operators are strongly encouraged to include their plants' test results to the database.

  The site also provides information on relevant meat hygiene research that has being undertaken by the FSA.

2.3.1 WHAT ARE THE LEGAL REQUIREMENTS FOR MICROBIOLOGICAL CRITERIA?

The following sections set out the microbiological criteria requirements of the regulations that apply to carcases after slaughter and further processed meat.

A. DEMONSTRATION OF COMPLIANCE

A1. Food business operators shall ensure that foodstuffs comply with the relevant microbiological criteria set out in Annex I.

The food business operator at each stage of food production, processing and distribution, including retail shall take measures, as part of their procedures based on HACCP principles together with the implementation of good hygienic practice to ensure the following:

- **that the supply, handling and processing of raw materials and foodstuffs under their control are carried out in such a way that the process hygiene criteria are met**
- **that the food safety criteria applicable throughout the shelf life of the products can be met under reasonably foreseeable conditions of distribution, storage and use.**

2073/2005 Article 3 point 1

OPERATOR'S OBLIGATION - MICROBIOLOGICAL CRITERIA FOR MEAT	
• **Demonstrate compliance with the criteria at Annex I for meat and processed meat.** ***A1***	*The Regulation establishes two types of microbiological criteria and requires that food business operators take corrective action when these criteria are not met. These two types are:* ▪ ***Food safety criteria*** *which should be used to assess the safety of a product or batch of foodstuffs; and* ▪ ***Process hygiene criteria*** *which should be used to ensure the production processes are operating properly.* ***Corrective actions*** *– the actions required when the criteria are not met differ for each type of criterion and are explained in Section D.*
	FOOD SAFETY CRITERIA
• **Annex I Chapter 1**	*The* ***food safety criteria*** *are absence of* ***Salmonella*** *in the samples as specified in the following sub-sections.* *When and how often to sample is covered at Section B.*
• **1.4 Minced meat and meat preparations intended to be eaten raw.**	*5 x 25g samples from a batch of minced meat or meat preparations intended to be eaten raw made from any species of meat e.g. steak tartare.*

• **1.5 Minced meat and meat preparations from poultry meat intended to be eaten cooked.**	***Until 31.12.2009*** *- 5 x 10g samples from a batch of minced meat or meat preparations made from poultry meat intended to be eaten cooked.* *Applies to poultry meat of all species including ducks, geese, turkeys and broilers e.g. minced chicken, turkey burgers, chicken sausages chicken and turkey escalopes.* ***From 01.01.2010*** *- the criteria will change to 5 x 25g. This is to reflect the reduction in Salmonella expected to be achieved by the National Control Plans operating under the Zoonoses Regulation 2003/99.*
• **1.6 Minced meat and meat preparations from red meat intended to be eaten cooked.**	*5 x 10g samples from a batch of minced meat or meat preparations made from other species than poultry intended to be eaten cooked.* *Applies to all species of red meat including game e.g. minced meat for bolognaise sauce or shepherds pie, sausages, burgers.*
• **1.7 Mechanically separated meat.**	*5 x 10g samples from a batch of mechanically separated meat (MSM).*
• **1.8 Meat products intended to be eaten raw.**	*5 x 25g samples from a batch of meat products intended to be eaten raw e.g. air dried smoked duck, partially fermented sausages.* *Does not apply to products where the manufacturing process or the composition of the product will eliminate the Salmonella risk such as certain types of salami. Does not apply to fully cooked ready to eat meat products such as cooked ham.*
• **1.9 Meat products from poultry meat intended to be eaten cooked.**	*5 x 10g samples from a batch of meat products made from poultry meat intended to be eaten cooked e.g. turkey bacon and chicken nuggets (Note: some nuggets may be a meat preparation).* ***From 01.01.2010*** *- the criteria will change to 5 x 25g. This is to reflect the reduction in Salmonella expected to be achieved by the National Control Plans operating under the Zoonoses Regulation 2003/99.* *Does not apply to meat products made from meat other than poultry meat intended to be eaten cooked such as bacon and gammon streaks.*
• **Action required when food**	*If a food safety criterion is not met, this usually means the food business operator will not be able to place the foodstuff on the market or will need to*

<table>
<tr><td></td><td>safety criteria are not met.</td><td>withdraw the food from the market (as required by Regulation 178/2002) and take steps to ensure future production meets the criterion. In certain circumstances, such as if the food is ready to eat, a recall of the food may also be required. Enforcement authorities will require sufficient evidence that the food business operator has taken the appropriate corrective action. See D1 for more information.</td></tr>
<tr><td></td><td></td><td>PROCESS HYGIENE CRITERIA</td></tr>
<tr><td>•</td><td>Annex I Chapter 2</td><td>The process hygiene criteria are detailed in the sub-sections below.

When and how often to take samples is covered in Section B. Sampling methods are fully described at B8 to B13.

Species for which criteria are not specified e.g. game, rabbits, ducks and geese, are not required to be sampled.</td></tr>
<tr><td>•</td><td>2.1.1/2.1.3 Carcases of cattle, sheep, goats and horses.</td><td>5 carcases are required to be sampled per sampling session. 1 sample is from one carcase.
Aerobic Colony Count (ACC) and Enterobacteriaceae (ENT) - the criteria are below a specified mean log level of the 5 samples. The limits given in the regulation are for an excision method, the limits for the swab or sponge method are lower and are given in ( ) below after the figures for excision.
Salmonella (Sal) - the criterion is = to or below a specified number of positives in 10 consecutive sampling sessions (that is 50 samples) using a sponge method.

<table>
<tr><th></th><th></th><th>APC</th><th>ENT</th><th>Sal</th></tr>
<tr><td>Unacceptable:</td><td>mean log /number of positives is above</td><td>5.0 (4.3)</td><td>2.5 (1.8)</td><td>2/50</td></tr>
<tr><td>Acceptable :</td><td>mean log below</td><td>5.0 (4.3)</td><td>2.5 (1.8)</td><td></td></tr>
<tr><td>Satisfactory:</td><td>mean log / number of positives is = to or below</td><td>3.5 (2.8)</td><td>1.5 (0.8)</td><td>2/50</td></tr>
</table>
</td></tr>
<tr><td>•</td><td>2.1.2 / 2.1.4 Carcases of pigs.</td><td>5 carcases are required to be sampled per sampling session. 1 sample is from one carcase.
Aerobic Colony Count (ACC) and Enterobacteriaceae (ENT) - the criteria are below a specified mean log level of 5 samples. The figures given are for the excision method, the figures for the swab or sponge method are lower and are given in ( ) after the figures for excision.
Salmonella (Sal) - the criterion is = to or below a specified number of positives in 10 consecutive sampling sessions (that is 50 samples), using a</td></tr>
</table>

	sponge method. **APC** **ENT** **Sal** **Unacceptable:** mean log /number of positives is above 5.0 (4.3) 3.0 (2.3) 5/50 **Acceptable** : mean log below 5.0 (4.3) 3.0 (2.3) **Satisfactory:** mean log / number of positives is = to or below 4.0 (3.3) 2.0 (1.3) 5/50
• **2.1.5 Carcases of broilers and turkeys.**	*15 carcases are required to be sampled per sampling session. 1 sample is composed of 3 pooled neck skins. The 15 carcases sampled result in 5 samples for testing.* ***Salmonella (Sal)*** *the criterion is = to or below a specified number of positives in 10 consecutive sampling sessions (that is 50 samples)* **Sal** **Unacceptable**: number of positives is above 7/50 **Satisfactory:** number of positives is = to or below 7/50
• **2.1.6 / 2.1.7 Minced meat and Mechanically separated meat.**	*5 samples must be taken from one batch per sampling session.* ***Aerobic Colony Count (ACC) and E. Coli (EC)*** *: the criteria relate to a specified number per gram:* ***ACC****: All 5 samples must be less than 5 x 10^6 cfu/g and* *3 samples must be less than 5 x 10^5 cfu/g.* ***EC****: All 5 samples must be less than 500 cfu/g and* *3 samples must be less than 50 cfu/g.*
• **2.1.8 Meat preparations.**	*5 samples must be taken from one batch per sampling session.* ***E. Coli (EC)****: the criterion relates to a specified number per gram:* ***EC****: All 5 samples must be less than 5000cfu/g and* *3 samples must be less than 500cfu/g*
• **Action when process hygiene criteria are not met.**	*If a process hygiene criterion is not met, the meat can be placed or remain on the market, but the food business operator must review the production processes and improve process hygiene to ensure future production will meet the criteria. The actions should be included in the food safety management procedures, which should also include relevant actions specified in Annex I (Chapter 2) of the Regulation. Enforcement authorities will require sufficient evidence that the food business operator has taken the appropriate corrective action. See Section D for more information.*

B. MICROBIOLOGICAL TESTING AGAINST THE CRITERIA

B1. Food business operators shall perform testing as appropriate against the microbiological criteria set out in Annex I when they are validating or verifying the correct functioning of their procedures based on HACCP principles and good hygiene practice.

B2. Food business operators shall decide the appropriate sampling frequencies except where Annex I provides for specific frequencies ... the sampling frequency shall be at least that provided for in Annex I.

2073/2005 Article 4

B3. The food business operators of slaughterhouses or establishments producing minced meat, meat preparations or mechanically separated meat shall take samples for microbiological analysis at least once a week. The day of sampling shall be changed each week to ensure that each day of the week is covered.

B4. As regards the sampling of minced meat and meat preparations for *E. coli* and aerobic colony count analyses and the sampling of carcases for enterobacteriaceae and aerobic colony count analyses, the frequency may be reduced to fortnightly testing if satisfactory results are obtained for six consecutive weeks.

B5. In the case of sampling for *Salmonella* analyses of minced meat, meat preparations and carcases, the frequency can be reduced to fortnightly if satisfactory results have been obtained for 30 consecutive weeks. The salmonella sampling frequency may also be reduced if there is a national or regional salmonella control programme in place and if this programme includes testing that replaces the above-described sampling. The sampling frequency may be further reduced if the national or regional salmonella control programme demonstrates that the salmonella prevalence is low in animals purchased by the slaughterhouse.

B6. However, when justified on the basis of a risk analysis and consequently authorised by the competent authority, small slaughterhouses and establishments producing minced meat and meat preparations in small quantities may be exempted from these sampling frequencies.

2073/2005 Annex I Chapter 3.2

OPERATOR'S OBLIGATION - WHEN AND HOW OFTEN TO TAKE SAMPLES	
• **Carry out testing against the criteria.** ***B1***	***Frequency of testing*** *- testing is one of the ways to demonstrate compliance with the criteria. It should be undertaken as part of the process of validating and verifying procedures based on HACCP.*
• **Follow the specified sampling frequency for carcases, minced meat,**	*The Regulation requires weekly sampling at slaughterhouses producing meat carcases, and establishments producing minced meat, meat preparations and mechanically separated meat.* *The weekly sampling specified in the Regulation does not apply to small slaughterhouses and establishments producing minced meat and meat preparations in small quantities. The FSA has produced sampling*

meat preparations and MSM. ***B2***	*frequencies for small slaughterhouses and establishments producing minced meat and meat preparations in small quantities.* *Species for which criteria are not specified e.g. game, rabbits, ducks and geese, are not required to be sampled.*
	RED MEAT SLAUGHTERHOUSES
• **Take weekly samples at slaughterhouses producing red meat carcases.** ***B3, B4, B5, B6***	*Take 5 samples once a week for all specified species in a sampling session.* ***Specified species** are cattle, sheep, goats, pigs and horses of all ages. **See Table 1 for details**. The day of the week that sampling is carried out must be alternated. Sampling frequency can be reduced following satisfactory results as detailed in Table 1.* ***Small quantities of the specified species - the weekly frequency does not apply to small quantities** - see Table 1 for the throughput for small quantities on a per species basis and the sampling frequencies to be followed. These frequencies will be reviewed in early 2007.*
	POULTRY SLAUGHTERHOUSES
• **Take weekly samples at slaughterhouses producing poultry carcases.** ***B3, B4, B5, B6***	*Take samples once a week for all specified species in a sampling session.* ***Specified species** are broilers and turkeys. **See Table 2**. The day of the week that sampling is carried out must be alternated. Sampling frequency can be reduced following satisfactory results as detailed in Table 2.* ***Small quantities of the specified species - the weekly frequency does not apply to small quantities** - see Table 2 for the throughput for small quantities on a per species basis and the sampling frequencies to be followed. These frequencies will be reviewed in early 2007.*
	ESTABLISHMENTS PRODUCING MINCED MEAT, MEAT PREPARATIONS & MECHANICALLY SEPARATED MEAT
• **Take weekly samples at establishments producing minced meat, meat preparations**	*Take samples from one batch of minced meat or meat preparations or mechanically separated meat per producing establishment per week.* *All species of meat minced or processed into meat preparations or mechanically separated meat are included.* ***Small quantities** - the weekly frequency does not apply to small quantities - establishments producing an average of less than 2 tonnes a week **of***

and mechanically separated meat. ***B3, B4, B5, B6***	***product intended to be eaten cooked*** *are considered to be small quantities and are not required to undertake testing. This will be reviewed in early 2007.* *All establishments producing* ***products intended to be eaten raw or undercooked*** *irrespective of production volume must undertake weekly testing.* ***Batch*** *- see definition and more information below at 'ADVICE –Batches'.*
	ESTABLISHMENTS PRODUCING MEAT PRODUCTS
• **Decide an appropriate sampling frequency for meat products.** ***B2***	*The Regulation does not stipulate how often to take samples from an establishment producing meat products to demonstrate compliance with the criteria for Salmonella.* *Determine the frequency of sampling and hence testing according to the specific local risk (see advice below).*
ADVICE- MEAT PRODUCTS	
Meat Products - Key Manufacturing Process Stages	*The following information is provided to assist a food business operator when deciding the frequency for sampling meat products.* *HACCP principles must be applied when manufacturing all products. The management of the microbiological risks at each stage of manufacturing process must be considered.* ***Key stages*** *include:* ▪ *Ingredients/ raw material* ▪ *Factory - design, hygiene of equipment and people* ▪ *Manufacturing process targeting appropriate organism/s* ▪ *Packaging* ▪ *Storage temperature and shelf life* ▪ *Intended use* ▪ *Food Safety Studies related to similar products* *Microbiological testing may be appropriate at certain stages to validate/ verify that the procedures based on HACCP principles are adequate, operational and effectively in control. Monitoring raw materials and factory hygiene may also be important. Final product microbiological testing against the criteria can be used to verify that the overall process is in control.*

	As the HACCP based procedures becomes more established and more satisfactory test results are obtained the frequency of testing may be able to be reduced based on the historical data obtained. *If anything significant is changed in the production of the product such as raw material source, formulation or processing, the HACCP based procedures must be reviewed and it may be appropriate to increase test frequency.*
Manufacturing Process Key Stage - Example: Raw materials	*When deciding the frequency of microbiological tests required against the criteria the following should be considered for raw materials.* ▪ *The microbiological hazards and risks associated with the raw material.* ▪ *Knowledge and confidence in the supplier/ producer of the raw material. The more confidence you have in the raw material supplier/ producer the less testing is required. Confidence can be achieved by:* *- auditing the supplier/ producer and their HACCP including their microbiological checks, and/ or* *- increasing the frequency of checks until sufficient historical data is available.* ▪ *The risk associated with the volume of the raw material used.* ▪ *Historical data.* ▪ *The supplier/ producer of the raw material should be producing using HACCP principles, which should minimise the risks, associated with the raw materials.* *A similar approach should be taken for other key stages.*

SAMPLING PLANS AND METHODS

B7. The analytical methods and the sampling plans and methods in Annex I shall be applied as reference methods

2073/2005 Article 5

Sampling Rules for Red Meat Carcases

B8. The destructive and non-destructive sampling methods, the selection of the sampling sites and the rules for storage and transport of samples are described in standard ISO 17604.

B9. Five carcases shall be sampled at random during each sampling session. Sample sites should be selected taking into account the slaughter technology used in each plant.

B10. When sampling for analyses of enterobacteriaceae and aerobic colony counts, four sites of each carcase shall be sampled. Four tissue samples representing a total of

20 cm² shall be obtained by the destructive method. When using the non-destructive method for this purpose, the sampling area shall cover a minimum of 100 cm² (50 cm² for small ruminant carcases) per sampling site.

B11. When sampling for *Salmonella* analyses, an abrasive sponge sampling method shall be used. The sampling area shall cover a minimum of 400 cm² ~~per site selected~~[1].

B12. When samples are taken from the different sampling sites on the carcase, they shall be pooled before examination.

Sampling Rules for Poultry Carcases

B13. For the *Salmonella* analyses, a minimum of 15 carcases shall be sampled at random during each sampling session and after chilling. A piece of approximately 10g from neck skin shall be obtained from each carcase. On each occasion the neck skin samples from three carcases shall be pooled before examination in order to form 5 x 25g final samples.

2073/2005 Annex I Chapter 3 ([1]as amended by 1441/2007)

OPERATOR'S OBLIGATIONS - SAMPLING OF CARCASES	
• **Follow the sampling plans in Annex I Chapters 1 & 2 and the sampling rules in Chapter 3 for slaughterhouses** ***B7***	*Take 5 samples per sampling session from each of the specified species per slaughterhouse and send to a testing laboratory. See Tables 1 and 2 for species and when to take samples.* ***Training** - the person undertaking the sampling needs to be trained in microbiological sampling. The testing laboratory or the OV can provide training.* ***Supplies** - the testing laboratory will be able to supply the equipment and consumables necessary for sampling.*
OPERATOR'S OBLIGATIONS - SAMPLING OF RED MEAT	
• **Take samples from red meat carcases.** ***B8 – B12***	*Take 5 sponge samples per sampling session from carcases after dressing but before chilling. 1 sponge sample is from one carcase.* *The reference sampling method for Salmonella on red meat carcases is using an abrasive swab covering a minimum of 400 cm^2.* *For ENT and APC four sites of the carcase should be sampled using excision or a non-destructive method.* *The carcase sponge swab method:* ▪ *is an abrasive sponge* ▪ *is a non-destructive method,* ▪ *covers 4 sites* *covers a minimum of 400 cm^2*

	and so can be used for all three tests. *Wet and dry swabbing or excision can be used for ENT and APC (note method not described in this guidance) but not for salmonella testing.* *Operators are encouraged to use the simple sponge sampling method described below for all three tests*
ADVICE - SAMPLING OF RED MEAT	
Apparatus	*Sterile dry abrasive sponge swabs (10 x 10 cm or 5 x 10 cm, folded in half) in sterile plastic sample bags (waffle style cellulose sponge dishcloths and stomacher bags).* *Details on how to purchase and prepare sponge swabs is available at www.ukmeat.org/Sponges.htm .* *Diluent: sterile 0.9% unbuffered sodium chloride solution.*
Sampling Method	▪ *Rehydrate the sponge in the sample bag with approximately 10ml diluent. The sponges should be damp without excess diluent in the bag. Alternatively, sponges can be rehydrated, stored frozen and defrosted prior to use.* ▪ *Grasp the sponge through the bag folding the bag back over the hand.* ▪ *Avoid allowing the sponge, diluent, or the internal surface of the bag to come into contact with other surfaces.* ▪ *Randomly choose one side of a randomly chosen carcase after inspection and before chilling.* ▪ *Wipe the sponge with a firm pressure and a slight side to side movement down one side of the carcase starting at the back leg and moving across the carcase. Use a firm consistent pressure. The length of the wipe should be approximately 1000 cm for adult sheep, goats and pigs and 1500 cm for adult cattle and horses. The pictures at www.ukmeat.org.RedSampling.htm show the direction and path the sponge swab should follow.* ▪ *Refold the bag over the sponge and secure the bag with a closure.*
OPERATOR'S OBLIGATIONS - SAMPLING OF POULTRY	
• **Take samples from poultry**	*Take 5 samples from broilers and turkeys. 1 sample is 3 neck skins, so 15 carcases are required to be sampled. Collect samples from carcases after*

carcases. ***B13***	*chilling.*
ADVICE - SAMPLING OF POULTRY	
Apparatus	*Gloves, clean sharp scissors, alcohol wipes, sample bags, labels*
Sampling Method	▪ *Put on pair of gloves then wipe the surfaces of the gloves with alcohol wipes to kill any bacteria that may be present.* ▪ *Wipe the scissors with an alcohol wipe.* ▪ *Grip the plastic bag at the bottom and fold back over the gloved hand. Avoid the internal surface of the bag or the scissors contacting other surfaces.* ▪ *Grasp the neck skin through the bag and cut off approximately 10g with the clean scissors, repeat with two further neck skins to make a total of three in one bag.* ▪ *Fold the bag back over the sample and tie to secure the neck skin samples inside.* ▪ *Clean gloves and scissors with alcohol wipes and repeat.* *See pictures of the sampling process at www.ukmeat.org/WhiteSampling.htm*
ADVICE - HANDLING OF SAMPLES	
Labelling carcase samples	*Label the bag and record the following information:* ▪ *Date of sampling* ▪ *Species* ▪ *Origin of animal (farm postcode, slaughtering reference)* ▪ *Length of wipe for red meat: an estimate is sufficient* ▪ *Width of wipe for red meat (normally 10cm).*
Temperature Control During Storage and Transport	*Sponge and neck skin samples should kept cool and delivered to the laboratory within 2 hours. If longer than two hours the samples should be placed into an insulated coolbox containing frozen freezer blocks or crushed ice. Keep the samples cold but do not allow them to freeze.* *Sample testing should commence within 24 hours of sampling.* *Further information on taking samples is included in the ISO standard 17604 (see below).*
OPERATOR'S OBLIGATIONS - SAMPLES OF PROCESSED MEAT	

• **Take and send to the testing laboratory samples from establishments producing minced meat, meat preparations, MSM and meat products.** ***B7***	*Take a sufficient sample to enable the laboratory to take 5 x 10g or 5 x 25g test portions for Salmonella and 5 x 25g test portions for EC and ACP from one batch per producing establishment of* ▪ *Minced meat or meat preparations: once a week* ▪ *Mechanically separated meat: once a week* ▪ *Meat products: at the frequency decided and recorded by the producer as part of the HACCP- based plan.* ***Note:** minced meat and meat preparation establishments producing on average less than 2 metric tonnes per week of product (minced meat and meat preparations combined production) intended to be eaten cooked are not required to take samples. This will be reviewed in 2007.*
• **Definition of 'Batch'** ***2073/2005 Article 2***	*"Batch" means a group or set of identifiable products obtained from a given process under practically identical circumstances and produced in a given place within one defined production period.*
ADVICE - BATCHES OF PROCESSED MEAT	
Batches	*A batch is defined as product produced under near-identical production conditions. The product in the batch must be able to be identified and located and the information on how to do this must be recorded. It is the ability to describe and identify batches of production that will determine the batch size and this will differ under different production conditions.* *The following information is provided to assist food business operators in identifying a batch and how to take the 5 samples.*
Minced meat	*A batch could be one hopper load of meat after mincing. If the meat is then packed into retail packs, 5 packs should be selected throughout the batch of packs produced from the hopper and either sent to the laboratory or a sample may be taken from each pack. Samples may also be taken from the hopper attempting to sample as randomly as possible or from one large pack if the meat is stored in bulk.*
Meat preparations / Meat products	*For comminuted products such as burgers, sausages or salami, a similar approach should be taken as for minced meat.* *For meat preparations/ products made with large pieces of meat then the description of batch will determine when and how 5 units to sample are*

	selected.
Mechanically Separated Meat	*The production process will influence the definition of batch. This must be recorded and the product in a batch must be able to be identified and differentiated from product in other batches.*
Sample information	*Information about the batch of processed meat samples must be recorded on a sample form. This should include* ▪ *Name and species of product e.g. beef burger, turkey mince, pork kebabs* ▪ *Pack description e.g. retail 500g pack* ▪ *Physical state e.g. fresh or frozen* ▪ *Details of any modified atmosphere packaging (MAP)* ▪ *Date of production* ▪ *Source of meat (slaughterhouse, farm), traceability code*
OPERATOR'S OBLIGATIONS - LABORATORY PRACTICE	
• **The laboratory testing the samples must use the specified. ISO methods Alternative methods and modifications can be agreed with the CA.** ***B7***	*The laboratory undertaking testing for the food business operator should use the organism-specific method*: ▪ *For Salmonella this is EN/ISO 6759* ▪ *For Enterobacteriaceae this is ISO 21528-2* ▪ *For E.coli this is ISO 16649-1* ▪ *For Aerobic Colony count this is ISO 4833.* *Modifications to the methods such as the use of single plates for ACC can be used as long as the laboratory is accredited for the modified procedure.* ***Official Controls*** *- if the testing is undertaken under official control procedures the laboratories must be accredited by UKAS www.ukas.com*
• **Laboratory test portions - processed meat** ***B7***	*The test portion size for minced meat, mechanically separated meat, meat preparations and meat products is specified in the Regulation for Salmonella as either 25g or 10g.* *The laboratory test portion weight for minced meat, mechanically separated meat or meat preparations for ACC and EC examination is not specified in the Regulation so the ISO standard (6887-2) should be followed which specifies a 25g sample.* *The laboratory must be able to obtain both test portions from each sample*

	it receives. Test portions should be taken from throughout the sample including the surface and the interior. Preparation of the initial suspension for meat and meat products is described in ISO 6887-2.
ADVICE - LABORATORY PRACTICE	
Laboratory methods	*Ideally, the laboratory undertaking testing for the food business operator should be accredited by UKAS www.ukas.com for the examinations required in meat samples.* *As a minimum it should take part in a recognised proficiency testing scheme for the examinations required e.g. FEPAS www.csl.gov.uk/fepas.cfm.* *If contracting a laboratory to undertake microbiological testing, ask to see the accreditation schedule and the proficiency test results ideally for the two previous years.*
Pooling of samples	*For Salmonella examinations the 5 test portions can be pooled to give one 50g test portion (5 x 10g) or one 125g test portion (5 x 25g) saving on examination costs. These test portions must then be enriched in a 10 fold dilution of BPW.* ***Note**: if the derogation is applied then pooling of test portions cannot be undertaken - see Section C3.*
Samples from cattle, sheep, horses, pigs and goats	*Sponges from red meat carcases are to be examined for Salmonella, ENT and ACC.* ▪ *Add 90 mls of Buffered Peptone Water (BPW) to the swab to make a total of 100 mls (taking into account the 10mls added previously).* ▪ *Agitate the sample using a peristaltic homogeniser taking care to minimise foaming.* ▪ *Remove 10mls of BPW for ACC and ENT enumeration and follow the ISO method incubate the remainder with the sponge for 16-20 hours at 37^{o}C and proceed with salmonella determination as per the ISO method.*
Samples from turkeys and broilers	*Neck skins are to be examined for Salmonella.* *Compose a 25g sample from 3 approximately 10g neck skins. Aim to include material from all three skins avoiding fat.* *Follow the ISO method for Salmonella by adding the 25g neck skin sample to 225ml BPW.*

OPERATOR'S OBLIGATIONS - REPORTING RESULTS	
• **Reporting results for ENT & ACC** ***B7, B1***	*Results for red meat carcases for ENT and ACC must be calculated as the log number of organisms per area of carcase tested.* *The mean log value of the 5 carcases sponged per sampling session can then be calculated by adding the 5 individual log results together and dividing by 5. The mean log is then compared with the criteria.*
• **Reporting results for Salmonella** ***B7, B1***	*Results for Salmonella for red meat carcases must be reported as absence or presence in the area sponged.* *Results for Salmonella on poultry carcases must be reported as presence or absence in 25g of neck skin sample.*
ADVICE - REPORTING RESULTS	
Results database	*Enter results into the meat data base at www.ukmeat.org .* *The home page provides details of how to obtain a plant specific password and there is currently a resource facility to assist producers with entering results. The site contains information to help with calculation, expression and interpretation of results.*

B14 Samples shall be taken from processing areas and equipment used in food production when such sampling is necessary for ensuring the criteria are met. In that sampling the ISO standard 18593 shall be used as a reference method. *2073/2005 Article 5 point 2*	
OPERATOR'S OBLIGATIONS - PROCESSING ENVIRONMENT	
• **Undertake sampling and testing of the processing environment** ***B14***	*Sampling the process environment can be useful to validate and verify the cleaning procedures.* *When the criteria for carcases or processed meat are not met, sampling of the processing environment MUST BE CONSIDERED as part of your investigatory action.* *The ISO standard 18593 provides useful information and should be used as the reference method.*
ADVICE - PROCESSING ENVIRONMENT	
Rapid methods	*Rapid methods can also provide valuable information on the effectiveness of*

	cleaning. *Further information is available at www.ukmeat.org.*

C. LABELLING REQUIREMENTS

C1. When the requirements for Salmonella in minced meat, meat preparations and meat products intended to be eaten cooked of all species set down in Annex I are fulfilled, the batches of those products placed on the market must be clearly labelled by the manufacturer in order to inform the consumer of the need for thorough cooking prior to consumption. *2073/2005 Article 6*	
OPERATOR'S OBLIGATIONS - COOKING INFORMATION	
• **Label minced meat, meat preparations and meat products intended to be eaten cooked to inform the consumer of the need for thorough cooking prior to consumption.** ***C1***	*Food business operators responsible for the production of raw minced meat, meat preparations and meat products intended to be cooked before consumption, for which there is a Salmonella criterion, must label products to be sold at retail with cooking information.* *For such food made from poultry meat this requirement expires on 1.1.2010 because Salmonella is expected to be controlled in poultry flocks as a result of national control programmes (under the Zoonoses Regulation 2003/99).* *The Agency has taken advice from the Advisory Committee on the Microbiological Safety of Food, and considers that it will be sufficient to indicate clearly that the food requires cooking aided by cooking times and temperatures where appropriate for example for burgers and sausages.*
ADVICE	
Best Practice	*The wording should not include internal temperatures, as these are not easily measured by the consumer. Symbols can be used, as long as they are used in conjunction with appropriate wording.* *The FSA's Safer Food Better Business advice pack provides guidance* www.food.gov.uk/foodindustry/hygiene/implementstrategy/enforcertoolkit/ *Examples of good practice are:* *1. Cook in a hot (x ^{o}C) oven for x minutes until piping hot in the centre* *2. Grill for x minutes per side until piping hot in the centre* *3. Raw meat requires cooking.*
Guidance	*Guidance produced for caterers may be helpful:* *For information about 'Safe Food, Better Business' produced by FSA England see http://www.food.gov.uk/foodindustry/hygiene/sfbb/*

	For information about 'CookSafe' produced by FSA Scotland see http://www.food.gov.uk/foodindustry/hygiene/cooksafe/ *For information about 'Safe Catering' contact FSA Northern Ireland e-mail: esther.chartres@foodstandards.gsi.gov.uk or phone 028 9041 7737.* *For information about guidance materials in Wales contact the Environmental Health Department of the local county borough council or FSA Wales – e-mail: keith.blake@foodstandards.gsi.gov.uk or phone 029 2067 8902.*
Safe Handling	*In addition to cooking information, label raw meat and products containing raw meat appropriately to give the following safe handling advice:* ▪ *Store raw meat separately from cooked meat and other ready to eat foods* ▪ *Wash hands and preparation utensils after handling raw meat* ▪ *Keep refrigerated UNTIL USE.*

C2. **A transitional derogation is granted until 31 December 2009 as regards compliance with the value set in Annex I for Salmonella in minced meat, meat preparations and meat products intended to be eaten cooked placed on the national market of a Member State.**

The Member States using this possibility shall notify the Commission and other Member States thereof. The Member State shall:

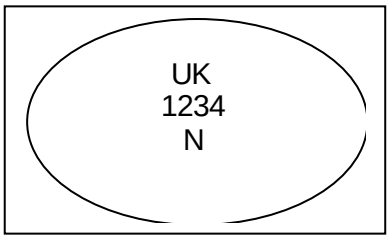
C3. **(a)** **Guarantee that the appropriate means, including labelling and a special mark which cannot be confused with the identification mark provided for in Annex II, Section I to Regulation (EC) No 853/2004, are in place to ensure the derogation applies only to the products concerned when placed on the domestic market, and that products dispatched for intra-Community trade comply with the criteria laid down in Annex I.**

(b) **Provide that the products to which such transitional derogation applies shall be clearly labelled that they must be thoroughly cooked prior to consumption.**

(c) **Undertake that when testing against the Salmonella criteria pursuant to Article 4, and for the result to be acceptable as regards the transitional derogation, no more than one out of five sample units shall be found to be positive.**

2073/2005 Article 8

OPERATOR'S OBLIGATIONS - TRANSITIONAL DEROGATION	
	Salmonella in Minced Meat, Meat Preparations and Meat Products
• **Decide whether the minced**	***Transitional derogation*** *- until 1.1.2010, the 'removal from the market' action need not always be taken when the criteria for Salmonella in minced*

meat, meat preparation or meat product is only to be sold on the UK home market and is intended to be eaten cooked. ***C2***	*meat, meat preparations and poultry meat products intended to be eaten cooked are not met. Under the derogation, absence of Salmonella in at least 4 out of 5 sample units taken (rather than in all 5) would allow the product to remain on the market in the UK provided that the special mark shown in C3 is applied.* *This derogation does not apply to food produced in the UK that is exported to another Member State. Food produced under the derogation may with the agreement of the importing country be exported to a destination outside the EU.* *The Agency has notified the Commission that UK food business operators may apply the derogation.*
	Special Identification Mark
• **Label with the special national mark.** ***C3***	*Manufacturers will need to comply with the requirement to clearly label all such products with the national special mark (indicating it is marketed under the derogation).* *In the UK the 'special mark' is an oval touching the four sides of a surrounding oblong. It is not acceptable for the outer part of the special mark to be 'implied' by the border of a label applied to packaging.* ***The special mark***  *There is no size or pack position requirement.* *Within the oval ,the letters UK, the approval number of the premises of manufacture / production, and the letter N to denote that the product is for the national market only, must be clearly displayed.* *The general requirements for identification marks in Regulation 853/2004, Annex II Section I, paragraph B5 must be met, i.e. the special mark must be: clearly displayed; legible; in indelible ink; and the characters must be easily decipherable. (The mark is not to be confused with the oval identification mark required by Article 5 (1)(b) of Regulation 853/2004 - see*

	PART TWO Chapter 11).
• **Decide whether to manufacture under the derogation.** *C2*	*The decision to manufacture under the derogation should take into consideration the prevalence of Salmonella in the product. Applying the derogation may result in fewer batches having to be withdrawn from the market and lower cost for the producer.* *Food business operators may produce a range of products at an establishment not all of which are produced under the derogation and need to be marked. The details of which products the food business operator wishes to produce under the derogation and needs to apply the special mark to should be detailed in their HACCP based procedures.* *The decision to apply the derogation should be made **in advance** of manufacture of a product line.*
• **Place only on the UK market.** *C2*	*Meat marked with the special mark can only be sold in the EU on the market of the Member State where it was produced.*
• **Label with cooking information** *C2*	*Clearly label that the product must be thoroughly cooked prior to consumption. The cooking information applied for product produced under the derogation should not be different to that required to inform the consumer of the need for thorough cooking (see C1).*
ADVICE - TRANSITIONAL DEROGATION	
Derogation	*The meat produced under the derogation may not be any different to meat that is not derogated. The difference is in the action required concerning withdrawal of product.* *However, as only a small percentage of batches are tested (1 batch a week per establishment is estimated to be less than 1% of total UK production) the effect on the consumer risk of exposure to a contaminated product is only minimally effected by applying the derogation.* *It is important to understand that consumer protection is not achieved by the withdrawal of product but by the corrective actions for future production that are required if a product is found to contain Salmonella both derogated and non derogated (D1).*

D. UNSATISFACTORY RESULTS

D1. When the results of testing against the criteria set out in Annex 1 are unsatisfactory the food business operator shall take the measures laid down in paragraphs 2 to 4 of this article together with other corrective actions defined in their HACCP based procedures and other actions necessary to protect the health of consumers. In addition they shall take measures to find the cause of the unsatisfactory results in order to prevent the recurrence of the unacceptable microbiological contamination

When testing against food safety criteria provides unsatisfactory results the product or batch of foodstuffs shall be withdrawn or recalled from the market in accordance with Article 19 of Regulation (EC) No 178/2002. However products that are not yet at retail may be subject to further processing by a treatment eliminating the hazard.

2073/2005 Article 7

OPERATOR'S OBLIGATIONS - ACTION WHEN CRITERIA HAVE NOT BEEN MET

	FOOD SAFETY CRITERIA
• **Take the action specified in the last column of Annex I together with other actions specified in a food safety management plan when the criteria have not been met.** ***D1***	*Salmonella in minced meat, meat preparations MSM and meat products.* *The batch tested must be removed from the market if one or more of the 5 samples is positive for Salmonella (2 or more if produced under the derogation see C3). If the test portions have been combined into a single test portion for examination then this action is triggered if the combined test portion is positive (B7).* *If the product is produced under the derogation, test portions need to be examined separately to take advantage of only withdrawing batches where 2 or more of the 5 samples are confirmed as positive for Salmonella (B7).* *If the product is at retail and intended to be cooked it must be withdrawn. If the product is ready to eat a recall is required. Regulation 178/2002 provides the legal basis for these actions and the requirements for providing point of sale notices and informing the Food Standards Agency must be followed. For product intended to be cooked, the Agency would not normally place this information on its website. However in appropriate circumstances (such as an ineffective withdrawal) the Agency may decide to inform consumers.* *In all cases when the criteria have not been met and Salmonella has been detected in one or more of the 5 samples action should be taken to improve future production and improve consumer protection. This should include a review of the source of meat and on-farm action plans for control of Salmonella.*

	Note this corrective action is triggered when one or more processed meat samples is positive for meat produced under the derogation. It is only the withdrawal from the market that is triggered when 2 or more samples are positive.
	PROCESS CRITERIA
• **Take the action specified in the last column of Annex I tables together with other actions specified in a food safety management plan when the criteria have not been met.** ***D1***	*When the process criteria have not been met, Annex I to the Regulation requires that a review of the hygiene of production is undertaken. Additionally for Salmonella on poultry and pig meat carcases, review the biosecurity procedures of the farm of origin.*
ADVICE – CORRECTIVE ACTION	
Food Safety and Process Criteria corrective action	*Useful information for producers can be found in* ▪ *Defra codes of practice for producing poultry and pigs* ▪ *ZAP 13 point action plan for pig producers* ▪ *FSA guidance on biosecurity for poultry production* ▪ *FSA red meat safety information booklet* ▪ *FSA producing beef for slaughter a guide for producers*
ADVICE – SALMONELLA TYPING	
Serotyping Salmonella Isolates	*Serotyping Salmonella isolates will provide information that can be useful in pinpointing the source and also provide information on the significance of the Salmonella detected in terms of human disease.* *The Agency has established a typing and anti-microbial resistance facility for Salmonella isolates from meat carcases and processed meat.* *Instruct the testing laboratory to retain the records of presumptive Salmonella isolates at the end of the ISO procedure and follow the*

	procedure for arranging typing. *See www.ukmeat.org for details on how to request a bio bottle and a prepaid label to forward the isolate to one of four national laboratories. Isolating laboratories may also claim a small fee to cover the costs involved with processing the isolate.* *Results of the typing will be available at www.ukmeat,org protected by password for individual operators and as freely accessible nationally compiled data. The data from typing will be made available for the risk assessment to be undertaken by the EU to assess the proportionality of the Salmonella criteria on raw meat.*

D2. Food business operators shall analyse trends in test results *2073/2005 Article 7*	
OPERATOR'S OBLIGATIONS – ANALYSIS OF TRENDS	
• **Use trends in results to inform future production** ***D2***	*Trends in results may reveal unwanted developments in the manufacturing process enabling the food business operator to take corrective actions before the process is out of control.* *Results must be expressed in a format that allows trends to be seen.*
ADVICE	
FSA meat database	*Using a chart showing the results of testing for the previous 12 months will allow trends to be seen easily.* *Trend information can be generated automatically by the FSA's meat database accessible at www.ukmeat.org. The database facility has been developed to assist in the interpretation of individual business's results as well as providing accessible national data sets on a UK wide basis. Individual operator's data are password protected. There is currently a resource facility to help operators enter data, details of which are given on the home page.*

2.3.2 WHAT ARE THE OFFICIAL CONTROL REQUIREMENTS?

The competent authority shall verify compliance with the rules and criteria laid down in this Regulation in accordance with Regulation EC No 882/2004.

2073/2005 Article 1

Audits of HACCP-based procedures shall verify that food business operators apply such procedures continuously and properly, having particular regard to ensuring that the procedures provide the guarantees specified in Section II of Annex II to Regulation (EC) 2004. They shall, in particular, determine whether the procedures guarantee, to the extent possible, that products of animal origin: (a) comply with microbiological criteria laid down under Community legislation.

854/2004 Article 4 point 5a

2.3.3 APPLYING PROCEDURES CONTINUOUSLY AND PROPERLY

The operator is responsible for food safety in the food business.

852/2004 Article1 point 1a

Food … business operators at all stages of production, processing, and distribution within the businesses under their control shall ensure that foods [ ] satisfy the requirements of food law which are relevant to their activities and shall verify that such requirements are met.

178/2002 Article 17

	Operator Responsibilities for Microbiological Criteria
• **Operator responsibility includes applying and verifying the company's procedures for complying with microbiological criteria. This will include any microbiological sampling and testing procedures, keeping relevant records and the taking of corrective action if those procedures fail.**	***Operator Responsibility*** *includes maintaining and monitoring procedures for complying with microbiological criteria and taking corrective action if there is a failure.* ***These procedures should be based on HACCP principles -*** *see PART THREE Chapter 1 (Application of HACCP Principles).* ***Delegation*** *– responsibility for applying and verifying the company's products comply with microbiological criteria may be delegated to a nominated person. The HACCP based procedures would require microbiological problems to be reported to that person, who must have authority to ensure that corrective action is taken when necessary.* ***Verification*** *– undertake regular management checks to check if company procedures are being followed regarding the compliance with microbiological criteria.*

	Frequency of verification *– this will depend on the likelihood of a problem being found. Once a month may be sufficient for checking experienced staff who are following established procedures and if microbiological test results are generally acceptable/satisfactory and corrective action has not been required. The work of new or temporary people who are less familiar with the procedures and premises may need to be monitored more frequently.* ***Records*** *– keep an accurate, dated account (e.g. in the Food Safety Management diary) of the date and result of the periodic verification checks, test results and of any corrective action taken. Test results should also be entered into the FSA database for meat food business operators at www.ukmeat.org (see 2.2. General Information).* ***Corrective action*** *- take action when there is evidence of non-compliance with criteria. Further action may be necessary if there has been a failure to initiate corrective action or the planned corrective action fails to prevent a re occurrence this may include:* ▪ *Investigating the hygiene of slaughter, dressing and or processing;* ▪ *Investigations in relation to the laboratory service; and* ▪ *Improving staff instructions and training.*

TABLE 1 - SAMPLING FREQUENCY FOR RED MEAT CARCASES

<table>
<tr><th colspan="2" rowspan="2">Category</th><th rowspan="2">Annual throughput per species per year</th><th colspan="2">Sampling frequencies</th></tr>
<tr><th>Initial Frequency
(may include pre-11.1.06 tests*)</th><th>Reduced Frequency if results are satisfactory</th></tr>
<tr><td rowspan="2">Standard</td><td rowspan="2">1</td><td rowspan="2">Over:
20,000 cattle or horses;
100,000 pigs or sheep or goats.
(>400 or 2,000/week)</td><td><u>Enteros and APC</u>:
5 carcases once a week for 6 weeks for each species
(6 x 5 = 30 samples / species)</td><td><u>Enteros and APC</u>:
5 carcases once every 2 weeks.</td></tr>
<tr><td><u>Salmonella</u>:
5 carcases once a week for 30 weeks for each species
(30 x 5 = 150 samples / species)</td><td><u>Salmonella</u>:
5 carcases once every 2 weeks.</td></tr>
<tr><td rowspan="5">Small</td><td rowspan="2">2</td><td rowspan="2">Below 20,000 but over:
7,500 cattle or horses;
Below 100,000 but over 37,500 pigs or sheep or goats.
(>150 or 750/week)</td><td><u>Enteros and APC</u>:
5 carcases once a week for 2 weeks for each species
(5 x 2 = 10 samples / species)</td><td><u>Enteros and APC</u>:
5 carcases once every 4 weeks.</td></tr>
<tr><td><u>Salmonella</u>:
5 carcases once every 4 weeks for each species.</td><td><u>Salmonella</u>:
no reduction</td></tr>
<tr><td rowspan="2">3</td><td rowspan="2">Below 7,500 but over 1,500 cattle or horses;
Below 37,500 but over 7,500 pigs or sheep or goats.
(>30 or 150/week)</td><td><u>Enteros and APC</u>:
5 carcases once a week for 2 weeks for each species.
(5 x 2 = 10 samples/ species)</td><td><u>Enteros and APC</u>:
5 carcases on one day every 12 weeks.</td></tr>
<tr><td colspan="2"><u>Salmonella</u>:
not required</td></tr>
<tr><td rowspan="2">4</td><td rowspan="2">Below 1,500 but over 500 cattle or horses;
Below 7,500 but over 2,500 pigs or sheep or goats.
(>10 or 50/week)</td><td><u>Enteros and APC</u>:
5 consecutive carcases for each species
(5 samples/ species)</td><td><u>Enteros and APC</u>:
5 consecutive carcases 1 year after last satisfactory series.</td></tr>
<tr><td colspan="2"><u>Salmonella</u>:
Not required</td></tr>
<tr><td rowspan="2">5</td><td rowspan="2">Below 500 cattle or
Horses or 2,500 pigs or sheep or goats.
(<10 or 50/week)</td><td colspan="2"><u>Enteros and APC</u>:
Not required</td></tr>
<tr><td colspan="2"><u>Salmonella</u>:
Not required</td></tr>
</table>

** Tests undertaken pre 11.01.06 can be used to qualify for reduced frequency testing. For enterobacteriaceae and aerobic plate count the tests carried out for the Meat (HACCP) Regulation may be used. For salmonella the sampling and testing method must be as specified in this chapter.*

TABLE 2 - SAMPLING FREQUENCY FOR POULTRY MEAT CARCASES

<table>
<tr><th colspan="2" rowspan="2">Category</th><th rowspan="2">Annual throughput of turkeys or broilers</th><th colspan="2">Sampling frequencies
(One sample is three neck skins)</th></tr>
<tr><th>Initial Frequency
(may include pre-11.1.06 tests**)</th><th>Reduced Frequency if results are satisfactory</th></tr>
<tr><td rowspan="1">Standard</td><td>1</td><td>Over 7,500,000
(>150,000/week)</td><td><u>Salmonella</u>:
5 samples once a week for 30 weeks for each species
(30 x 5 = 150 samples)</td><td><u>Salmonella</u>:
5 samples once every 2 weeks</td></tr>
<tr><td rowspan="2">Small</td><td>2</td><td>Below 7,500,000 but over 1,000,000
(>20,000week)</td><td><u>Salmonella</u>:
5 samples once every 4 weeks for each species</td><td><u>Salmonella</u>:
No reduction</td></tr>
<tr><td>3</td><td>Below 1,000,000
(<3,000/week)</td><td colspan="2"><u>Salmonella</u>:
Not required</td></tr>
</table>

*** Tests for salmonella undertaken pre 11.01.06 can be used to qualify for reduced frequency testing providing the sampling and testing method was as specified in this chapter.*

PART THREE

3. SPECIFIED RISK MATERIAL (SRM)

3.1 WHY IS CORRECT HANDLING AND DISPOSAL OF SRM IMPORTANT?

The correct removal, handling, staining and disposal of specified risk material (SRM) in slaughterhouses and cutting plants is necessary to ensure that public health is protected from the possible risks associated with Transmissible Spongiform Encephalopathies (TSEs) in cattle, sheep and goats. Procedures that minimise the risk of TSE infectivity entering the food chain must be in place.

For example:

- Complete removal, staining and proper disposal of SRM will prevent SRM entering the food chain and therefore minimise the TSE risk to public health.
- Washing hands after handling SRM, and between handling SRM and handling the carcase, should minimise risk of cross-contamination.
- The use of leak-proof, properly lidded SRM storage and transport bins will reduce the risk from leaks and spillage.

3.2 GENERAL INFORMATION

- **What is SRM?**

  Specified Risk Material (SRM) is those parts of cattle, sheep and goats that are most likely to contain the BSE agent if the animal is infected. It is essential, therefore, that it is removed from both the human and animal food chains and destroyed.

- **Which parts of cattle, sheep and goats SRM?**

  The parts classified as SRM are set out in Point 1 of Annex V of EC Regulation 999/2001 (*as amended*). This Regulation is directly applicable in the UK and is administered and enforced through:

  - **England** - The Transmissible Spongiform Encephalopathies (England) Regulations 2010 (as amended) (SI No. 2010/801)
  - **Scotland** – The Transmissible Spongiform Encephalopathies (Scotland) Regulations 2010 (SSI No. 2010/177)
  - **Wales** – 'The Transmissible Spongiform Encephalopathies (Wales) Regulation 2008 (SI No. 2008/3154) (W.282)
  - **Northern Ireland** – 'The Transmissible Spongiform Encephalopathies Regulations (Northern Ireland) 2008 (SR No. 2008/508).

  Please see note at Section 3.3.1 below.

  Care must be taken to maintain awareness of any changes, including definitions, as they arise.

- **The current Community TSE Regulation definition of SRM is:**

Cattle	**All ages:** The tonsils, the intestines, from the duodenum to the rectum, and the mesentery. **Over 12 months:** Skull excluding the mandible but including the brains and eyes, and spinal cord. **Over 30 months:** Vertebral column, excluding the vertebrae of the tail, the spinous and transverse processes of the cervical, thoracic and lumbar vertebrae, the median sacral crest and the wings of the sacrum, but including the dorsal root ganglia.
Sheep and Goats	**All ages:** The spleen and the ileum. **Over 12 months (or have a permanent incisor erupted)**: Skull including the brains and eyes, tonsils, spinal cord.

- **How are changes to the rules notified?**

  The Agency will advise Food Business Operators (FBOs) in writing when changes come into force and explain what businesses need to do to comply. **It is important that all FBOs read and retain such correspondence.**

- **Disposal of SRM**

  SRM is classified as Category 1 animal by-product and must, after staining, be disposed of in accordance with Regulation (EC) 1774/2002 and the Animal By-Products Regulations 2005 www.opsi.gov.uk/si/si2005/20052347.htm.

  Guidance on disposal is available in a separate FSA publication – Industry Guide on Edible Co-products and Animal By-products: see http://www.food.gov.uk/multimedia/pdfs/ediblecoprod.pdf.

OPERATOR'S OBLIGATIONS	*ADVICE*

3.3.1 WHAT ARE THE LEGAL REQUIREMENTS FOR SPECIFIED RISK MATERIAL?

The following sections set out the requirements of the TSE and ABP Regulations for the prevention of SRM contamination and requirements for SRM removal, handling, staining and disposal.

Note: References below to the legal requirements refer to the England legislation. Where necessary, please refer to the separate legislation for Wales, Scotland and Northern Ireland (see Section 3.2 above). References to FSA Operations Group apply to England, Scotland and Wales only; DARD fulfils a similar role in Northern Ireland.

A. TRAINING & HACCP

A1. Food business operators ensure that food handlers are supervised and instructed and/or trained in food hygiene matters commensurate with their work activity.

852/2004 Annex II ***Training:*** *Chapter XII point 1*

TSE (England) Regulations 2010: Schedule 7, paragraph 2.

	Training, Instruction & Supervision
• **Make sure that food handlers are supervised and instructed and/or trained in food hygiene matters commensurate with their work activity.** ***A1*** • **Put in place specific working instructions detailing the measures to prevent contaminating meat with SRM.** ***B2***	*Arrange or establish a staff training programme to ensure that all staff involved in the removal, separation, staining and disposal of SRM are fully aware of the requirements of the regulations to enable then to operate a system that complies with the regulations.* *Put in place written procedures and staff instructions for SRM management. Communicate those procedures to staff and ensure that they are applied consistently. These are to include all necessary measures to avoid contaminating meat with SRM during slaughter (including stunning) and removal of SRM. Where head meat is removed specific working instructions should be put in place for the prevention of contamination of head meat during harvesting, in particular in the case when the seal is lost or the eyes are damaged.* *Supervise as appropriate and issue reminders if lapses occur.* *Keep accurate, dated records to show what instruction/ training individuals have received. Each person's training records must be kept for as long as they work at the premises.* *See also PART TWO Chapter 6 (Training) Section A1.*

OPERATOR'S OBLIGATIONS	*ADVICE*

A2. Food business operators shall put in place, implement and maintain a permanent procedure or procedures based on the HACCP principles. *852/2004 Article 5 point 1*	
	HACCP-based Procedures
• **Implement and maintain a permanent procedure or procedures based on the HACCP principles.** ***A2, B2***	*Include in the relevant HACCP plan, key procedures for removing, staining and disposing of SRM, the limits that are to be monitored (no visible contamination) the checks to be carried out, the corrective actions to be taken to ensure the safety of the meat and the records to be kept of those checks and actions.* *Include the measures taken to prevent contamination of meat with SRM during slaughter (including stunning) and removal of SRM.* *Cross reference can be made to existing staff instructions and protocols that explain procedures in detail.* *See PART THREE Chapter 1 (Application of HACCP principles).*

OPERATOR'S OBLIGATIONS	*ADVICE*

B. PITHING AND HARVESTING BOVINE HEADS AND TONGUES

B1. Laceration of central nervous tissue by means of an elongated rod-shaped instrument introduced into the cranial cavity after stunning (pithing) shall not be carried out on bovine, ovine of caprine animals whose meat is intended for human or animal consumption. *Regulation (EC) No. 999/2001 (as amended) Annex V Point 6.* *TSE (England) Regulations 2010): Schedule 7 paragraph 4*	
	Pithing
• **Do not lacerate the central nervous tissue of cattle, sheep or goats intended for human consumption by inserting a rod into the cranial cavity after stunning (known as pithing).** ***B1***	*Cattle, sheep and goats must not be pithed as this could disperse potentially contaminated central nervous system tissue (CNS) throughout animal's blood stream during slaughter.* ***Captive bolts** - to prevent possible cross contamination, where captive bolt stunning is used, the captive bolt should, if possible, be wiped clean after each use with disposable wipes, which should then be discarded as SRM.*

B2. Head meat of bovine animals above 12 months of age shall be harvested at slaughterhouses, in accordance with a control system, recognised by the competent authority, to ensure the prevention of possible contamination of head meat with central nervous system tissue. **B3. If the harvesting is performed without removing the head from the conveyor or hook, paragraphs 8.1 and 8.2 of Annex V (EC 999/2001) shall not apply.** *Regulation (EC) No. 999/2001 (as amended) Annex V points; 8 & 9* *TSE(England) Regulations 2010 : Schedule 7 paragraph 6*	
	Head Meat of Cattle over 12 Months
• **If head meat is harvested away from the conveyor or hook implement a control system (recognised by FSA Operations Group) to prevent contamination of head meat with central nervous system (CNS) tissue.**	*Heads must not be despatched to any other premises in UK, for the purpose of head meat harvesting. Whole heads may only be despatched to another Member State (MS) if an agreement to do so exists with the competent authority in the receiving MS.* *Produce a protocol for removal of head meat. This should take into account the specific requirements set out in Regulation 999/2001 outlined in the adjacent column, under 'Operator's Obligations'. Describe contamination prevention*

OPERATOR'S OBLIGATIONS	*ADVICE*
• **Include at least the following provisions:** ▪ **Harvesting is to take place in a dedicated area, physically separated from the other parts of the slaughter line.** ▪ **Where heads are removed from the conveyor or hooks before harvesting head meat, seal the frontal shot hole and *foramen magnum* with an impermeable and durable stopper.** ▪ **Where the brainstem is sampled for laboratory testing for BSE, seal the *foramen magnum* immediately after that sampling.** ▪ **Do not harvest head meat from heads where the eyes are damaged or lost immediately prior to, or after slaughter, or which are otherwise damaged in a way which might result in contamination of the head with central nervous tissue.** ▪ **Do not harvest head meat from heads that have not been sealed properly as above.** ▪ **Central Nervous System**	*measures and CNS testing requirements in the protocol that includes:* *1. The point on the slaughter line from which the head is removed.* *2. Where the head is to be removed to if meat is not intended to be removed immediately or if the line speed is faster than the speed at which meat can be removed from each individual head. Heads awaiting removal of meat should be held on a rack and **not** together in a container.* *3. Where CNS sampling is to be undertaken, this should be situated in an area separate from the slaughterline.* *4. Who is to undertake the sampling. Only trained personnel should be used.* *5. The equipment and practices to be used in taking the sample so as to prevent contamination of meat with CNS material.* *6. The action to be taken if, during head meat removal, either of the bungs or eyes become dislodged. The protocol should indicate that heads must be disposed of and the table and equipment used for harvesting to be thoroughly cleaned before work is undertaken on any further heads.* *7. The sampling regime including method and frequency (see Head Meat Sampling plan below).* *8. Where harvested meat is to be collected.* *9. Procedures covering disposal of heads.* *10. Cleaning & Disinfection regimes during harvesting and at the end of the day, in compliance with hygiene legislation.* ***Captive bolts** - Where captive bolt stunning is used, plug the captive bolt hole to prevent leakage of SRM (fragments*

OPERATOR'S OBLIGATIONS	*ADVICE*
(CNS) testing. ***B2*** • **Tongue is not regarded as head meat so the cross-contamination control system and CNS sampling plan specified in Point 8 of Annex V do not apply to its harvest. Nor is this control system applicable to the harvesting of cheek meat in the slaughterhouse if performed without removing the bovine head from the conveyor or hooks.** ***B3***	*of CNS tissue) during handling and dressing.* *Exercise care and take all appropriate hygiene precautions when detaching heads.* ***Flaying** - ensure skinning is complete when bovine heads are flayed.* ***Inspection point** - the head inspection point should be situated close to the place where the head is detached from the carcase. Transport the head to this point in a manner that is hygienic and minimises the potential for cross-contamination of meat or surroundings with SRM.* ***Bovine brains and eyes** - bovine brains and eyes must only be removed for permitted use (e.g. instructional, diagnostic or research purposes) and must not cause contamination to meat intended for human consumption.* ***Horns** – cattle horns are not SRM so can be harvested. However the cornual process of the frontal bone is SRM in cattle over 12 months of age as it is part of the skull. Care must be taken not to break into the cranial cavity during horn removal.*
	Head CNS Sampling Plan
• **Apply a sampling plan using an appropriate laboratory test to detect CNS tissue and verify that the measures to reduce contamination are properly implemented.** ***B2***	***Central Nervous System testing** – a CNS testing regime is required to be implemented if head meat harvesting is undertaken after the head has been removed from the conveyor or hooks.* *The head CNS sampling plan to be followed can be found at **Annex A** to this Chapter.*

OPERATOR'S OBLIGATIONS	*ADVICE*

B4. Tongues of bovine animals of all ages intended for human or animal consumption shall be harvested at the slaughterhouse by a transverse cut rostral to the lingual process of the basihyoid bone. *Regulation (EC) No. 999/2001 (as amended) Annex V point 7* *TSE (England) Regulations 2010: Schedule 7 paragraph 5*	
	Bovine Tongues
• **Remove bovine tongues by a transverse cut rostral to the lingual process of the basihyoid bone.** ***B4***	*Complete flaying and washing of the detached head before tongues are harvested.* *The cut should be applied at the level of the last vallate papillae. Any material behind the last vallate papillae must be disposed of as SRM. See illustrated poster distributed in July 2003. (http://www.food.gov.uk/multimedia/bigimages/srmoncattletongue.jpg)* *Trim tongues to remove any residual connective tissue;* *In animals tested for TSEs, tongues must remain correlated with the carcase pending receipt of the results.*

OPERATOR'S OBLIGATIONS	*ADVICE*

C. REMOVAL OF SRM – BOVINES

CS: REQUIREMENTS FOR SLAUGHTERHOUSES

CS1. Specified risk material shall be removed at:

(a) Slaughterhouses, or, as appropriate, other places of slaughter;

(b) Cutting plants, in the case of vertebral column of bovine animals.

Regulation (EC) No. 999/2001 (as amended), Annex V, point 4.1

The TSE (England) Regulations 2010: Schedule 7 paragraph 7

CS2. Any person who removes specified risk material in any premises or place other than premises or a place in which that specified risk material may be removed under points 4.1 or 4.3(b) of Annex V of EC 999/2001 is guilty of an offence.

The TSE (England) Regulations 2010, Schedule 7, paragraph 7(1)

CS3. When a bovine animal is slaughtered in a slaughterhouse or the carcase of a bovine animal is transported to a slaughterhouse following emergency slaughter elsewhere, the occupier of the slaughterhouse must remove all specified risk material (other than those parts of the vertebral column that are specified risk material and specified risk material contained in or attached to offal) as soon as is reasonably practicable after slaughter and in any event before post-mortem inspection.

The TSE (England) Regulations 2010), Schedule 7, paragraph 8(1)

CS4. The occupier must:

(a) as soon as reasonably practicable after post-mortem inspection, consign any offal that has been removed from the carcase and that contains or is attached to specified risk material to an appropriate area of the slaughterhouse; and

(b) as soon as reasonably practicable after the offal is consigned there and in any event before the offal is removed from the slaughterhouse, remove the specified risk material.

The TSE (England) Regulations 2010), Schedule 7, paragraph 8(2)

All bovine SRM, except vertebral column and SRM contained in or attached to offal, must be removed from the carcase in the slaughterhouse, as soon as practicable after slaughter and <u>before</u> post mortem inspection ***CS1, CS2, CS3*** **All SRM contained in or attached**	*SRM Removal* *Present carcases for inspection only after all appropriate SRM has been removed.* ***Green Offal*** *- (i.e. intestines, from the duodenum to the rectum, and mesentery are SRM in bovine animals of all ages) - remove green offal completely and hygienically from the carcase and present for inspection. Carry out total separation of the intestines from other green offal in the gut room. This must include the whole length of intestines*

OPERATOR'S OBLIGATIONS	*ADVICE*
to offal must be consigned to an appropriate area of the slaughterhouse and removed as soon as is reasonably practicable <u>after</u> post mortem inspection ***CS4***	*including any bag used in bunging. Intestines and the mesentery, which are categorised as SRM, must be placed immediately in an SRM bin and subsequently stained without undue delay - see Section E below.*
	***Spinal Cord** - SRM in bovine animals over 12 months at slaughter - remove spinal cord from bovine carcases using a designated tool or knife to remove the meninges, fat and debris from the spinal canal so that no fragments of spinal cord can remain in the spinal canal;* ▪ *Ensure spinal cord and meninges do not come into contact with the floor or other surfaces of the slaughterhouse;* ▪ *Cover chain mail gloves with rubber gloves;* ▪ *Change protective clothing as often as necessary to minimise cross-contamination;* ▪ *Wash hands frequently;* ▪ *Use clean, sterilised tools for each carcase;* ▪ *Wash hands and sterilise tools after removal of SRM from each carcase;* ▪ *Where cleavers are used, the operative should examine the carcase for fragments of SRM and trim any bone spicules and dispose of them as SRM;* ▪ *Where bone dust is removed from the cut surface of the vertebral column using a low pressure warm water wash, the washings must be prevented from contaminating the slaughter hall or other carcases.*
CS: REQUIREMENTS FOR SLAUGHTERHOUSES **CS5. The FBO must consign any meat containing those parts of the vertebral column that are specified risk material as soon as is reasonably practicable –** **(a) in the case of any animal that is aged over 30 months at slaughter, to a cutting plant authorised under paragraph 13(1)(a) of Schedule 7 of the TSE (England)**	

OPERATOR'S OBLIGATIONS	*ADVICE*

Regulations 2010 or to a cutting plant located in another country of the United Kingdom and authorised under the corresponding provision applicable to that country or another member State in accordance with point 10(2) of Annex V to the Community TSE Regulation;

The TSE (England) Regulations 2010, Schedule 7, paragraph 8(3)

CS6. A control system shall be put in place for the consignment of carcases, part carcases and wholesale cuts containing vertebral column, as described, in point 1 (a) of Annex V of EC 999/2001. The system shall include at least the following measures:

(a) when removal of vertebral column is not required, carcases, part carcases or wholesale cut of carcases of bovine animals containing vertebral column shall be identified by a blue stripe on the label referred to in Regulation (EC) No 1760/2000;

(b) a specific indication of the number of bovine carcases, part carcases or wholesale cuts from which removal of vertebral column is required and from which removal of vertebral column is not required, shall be added to commercial documentation.

Regulation (EC) No. 999/2001 (as amended), Annex V, points 11.3(a) & 11.3(b).

CS7. The FBO must identify meat containing vertebral column that is not specified risk material in accordance with point 11.3(a) of Annex V to the Community TSE Regulation and provide information in accordance with point 11.3(b).

CS8. No person shall include a blue stripe in the label referred to in Article 13 of Regulation (EC) No. 1760/2000 except in accordance with point 11.3(a) of Annex V to the Community TSE Regulation.

The TSE (England) Regulations 2008, Schedule 7, paragraphs 8(4) - 8(5)

	Vertebral Column Consignment
Make sure that: • **Carcases of animals aged over 30 months at slaughter are consigned to a cutting plant authorised to remove the vertebral column, as soon as is reasonably practicable (or to another Member State).** **CS5**	***To cutting plants*** *- no specific authorisation to remove VC from carcases up to 30 months is required. Cutting plants authorised to remove VC from OTM animals can, of course, also remove VC from under 30 months animals. . Carcases and part carcases of over 30 month animals must only be consigned to cutting plants authorised to remove vertebral column from these animals.* ***Labelling*** *– carcases and part carcases under 30 months must have a blue stripe on the label applied at the slaughterhouse. Carcases of animals 30 month and over should have a plain white label.* ***Transport*** *– the recommended method of operation*

OPERATOR'S OBLIGATIONS	*ADVICE*
	(RMOP) for receiving premises (cutting plants) recommends segregation between carcases containing SRM VC and those that do not, during transportation and beyond. Meat dispatched to such operators should, ideally, be segregated before despatch.
	Blue Stripe Labels
• **Mark the label applied to meat containing vertebral column that is not SRM with a blue stripe.** ***CS6*** • **Do not apply a blue stripe to the label of any carcase that contains SRM VC.** ***CS8***	*The presence of the blue stripe on the label is an indicator that the VC is not SRM and therefore need not be removed. A label without a blue stripe (i.e. plain) indicates that the VC is SRM and must be removed.* *The absence of the blue stripe is an indicator that the VC is SRM, so must be removed. Any carcase or part carcase without a label or with a plain label should have the VC removed as SRM.* *Marking an over 30 months carcase with a blue stripe label is an offence.*
	Documentation
• **Record the specific number of carcases/part carcases requiring VC removal as SRM and those not requiring VC removal as SRM on commercial documentation.** ***CS7***	*The specific number of carcases/part carcases from which removal of VC is required and the number of those from which removal of VC is not required must be recorded in the commercial documentation accompanying the consignment.*

OPERATOR'S OBLIGATIONS	*ADVICE*

CC: REQUIREMENTS FOR CUTTING PLANTS

CC1. Specified risk material shall be removed at:

(a) Slaughterhouses, or, as appropriate, other places of slaughter,

(b) Cutting plants, in the case of vertebral column of bovine animals.

Regulation (EC) No. 999/2001 (as amended) Annex V point 4.

The TSE (England) Regulations 2010: Schedule 7, paragraph 7(1).

CC2. In the case of a cutting plant, it is an offence to remove -

(a) any part of the vertebral column that is specified risk material from bovine animal unless the plant is authorised under paragraph 13(1)(a).

The TSE (England) Regulations 2010, Schedule 7 paragraph 7(2) (a).

CC3 The occupier of a cutting plant authorised under paragraph 13(1) commits an offence if he does not, as soon as reasonably practicable after arrival at the plant of meat, and in any event before the meat is removed from the plant, remove from the meat all specified risk material of a kind which the authorisation relates.

The TSE (England) Regulations 2010; Schedule 7 paragraph 14.

	Vertebral Column Removal Authorisation
• **Only remove SRM vertebral column from over 30-month carcases in cutting plants specifically authorised to do so by the FSA.** ***CC1*** • **Only remove SRM VC from imported over 30 month carcases in cutting plants authorised to remove VC from domestically produced OTM animals.** ***CC2***	*All approved cutting plants are permitted to remove vertebral column from UK-slaughtered under 30 month bovine carcases and this may occur without FSA presence. (There is no requirement to remove VC from under 30 month bovine.)* *Only cutting plants that have been authorised under paragraph 13(1)(a) of Schedule 7 to the Transmissible Spongiform Encephalopathies (England) Regulations 2010 are permitted to remove VC from domestic and imported over 30 month carcases;* *OTM application packs are available from the FSA.* *OTM and OTM imported carcases may now be unloaded/ processed without the FSA being present on site. Operators will instead be subject to spot checks which take place on a risk-based frequency. The FSA should be given 24 hours notice of the arrival of such consignments.*

OPERATOR'S OBLIGATIONS	*ADVICE*

	Vertebral Column Removal (Cutting Plants))
• **Remove VC that is SRM from meat as soon as reasonably practicable after it arrives and in any event before the meat leaves the plant.** ***CC1, CC2, CC3***	***Vertebral column*** *- SRM in bovine animals over 30 months at slaughter.* ***Documentation*** *- commercial documentation must be checked to verify that the number of carcases received with blue stripe labels matches the number of carcases shown as not requiring VC removal, and that the number of those without blue stripe labels matches the number shown as requiring VC removal.* ***RMOP*** *- removal of SRM VC must take place in accordance with the relevant protocol and operator's required method of operation (RMOP).* *Copies of the protocol and examples of a RMOP are available from FSA (Tel: 01904-455855 – OTM Approvals).* ▪ *Carry out random checks of carcases for spinal cord and inform the FSA if any is found.* ▪ *Maintain effective separation of carcases containing SRM and those not containing SRM at all times.* ▪ *Ideally, carry out de-boning in a single batch on a dedicated line.* ▪ *It is best practice to clean after each batch has been processed. Clean and disinfect after each day's production in compliance with Food Hygiene legislation.* ▪ *Hold carcases in a separate secure chiller or on separate dedicated rails.* ▪ *Make sure that SRM is removed by staff adopting the necessary hygiene measures to avoid the risk of cross-contamination e.g. avoid touching the carcase with hands or implements that have been used to remove, or have come into contact with, SRM without washing/cleaning in between.* ▪ *After removal from the carcase, handle SRM so that there is no contact with any other animal material.* ***Staining & Disposal*** *– following removal, vertebral column must be stained and sent for disposal as SRM Category 1 ABP - see Section E.*

OPERATOR'S OBLIGATIONS	*ADVICE*

D. REMOVAL OF SRM – SHEEP AND GOATS

DS: REQUIREMENTS FOR SLAUGHTERHOUSES

DS1. Specified risk material shall be removed at: slaughterhouses, or, as appropriate, other places of slaughter.

Regulation (EC) No. 999/2001 (as amended), Annex V, point 4.

DS2. When a sheep or goat is slaughtered in a slaughterhouse or the carcase of a sheep or goat is transported to a slaughterhouse following emergency slaughter elsewhere, the occupier of the slaughterhouse must remove all specified risk material (other than the spinal cord and specified risk material in or attached to offal) as soon as reasonably practicable after slaughter and in any event before post-mortem inspection.

(2) The occupier must-

(a) as soon as reasonably practicable after post-mortem inspection, consign any offal that has been removed from the carcase and that contains or is attached to specified risk material to an appropriate area of the slaughterhouse; and

(b) as soon as reasonably practicable after the offal is consigned there and in any event before the offal is removed from the slaughterhouse, remove the specified risk material.

(3) In the case of a sheep or goat over 12 months at slaughter, or which has a permanent incisor erupted through the gum, he must as soon as is reasonably practicable after slaughter –

(a) Remove the spinal cord at the slaughterhouse before the post-mortem inspection;

(b) Send the meat to a cutting plant authorised under paragraph 13(1)(b) of Schedule 7 of the TSE (England) Regulations 2010: or

(c) In accordance with point 10.1 of Annex V to the Community TSE Regulation, send the meat to a cutting plant in another member State provided that the Food Standards Agency has entered into a written agreement with the competent authority of the receiving Member State, and the dispatch is in accordance with that agreement.

The TSE (England) Regulations 2010), Schedule 7, paragraph 9

DS3. It is an offence to remove the spinal cord or any part of it from a sheep or goat aged over 12 months at slaughter or that had one or more permanent incisors erupted through the gum (other than for the purposes of veterinary or scientific examination) except by-

(a) Longitudinally splitting the whole vertebral column; or

(b) Removing a longitudinal section of the whole vertebral column including the spinal cord.

The TSE (England) Regulations 2010, Schedule 7, paragraph 12

OPERATOR'S OBLIGATIONS	*ADVICE*
FBO Age Checks	
• **Identify animals that are either over one year old or have a permanent incisor erupted through the gum**	*In consultation with the OV establish a system of age checking. Options include:* ▪ *Ante-mortem checks. Some batches of spring lambs may be clearly identifiable at ante-mortem inspection.* ▪ *Post mortem dentition checks. (Possibly at point of head removal where done manually).* ▪ *Treat all carcases as from animals with one or more permanent incisor erupted.*
	Sheep & Goat SRM
• **Remove all sheep and goat SRM in the slaughterhouse (except spinal cord in carcases being consigned to a cutting plant authorised to remove spinal cord).** • **All SRM contained in or attached to offal must be consigned to an appropriate area of the slaughterhouse and removed as soon as is reasonably practicable <u>after</u> post mortem inspection.** ***DS1, DS2***	*Present carcases for inspection only after all appropriate SRM has been removed. See SRM list at Section 3.2.*
	Skull, including brain and eyes, and tonsils
	The skull, including brain and eyes, and tonsils are SRM in sheep and goats over 12 months or with one or more permanent incisors erupted through the gum. ***Horns*** *– if horns are to be removed, do this carefully without breaking into the cranial cavity to prevent contamination of the horns by central nervous system*

OPERATOR'S OBLIGATIONS	*ADVICE*
	tissue. Such removal must occur before the head is detached from the carcase. ***Heads** - exercise care and all hygienic precautions when detaching the head to avoid SRM contamination of the carcase, adjacent carcases and the environment.* ***Head meat** - recovery of head meat from sheep and goats over 12 months of age must only occur at the slaughterhouse where appropriate facilities exist and the operation can be carried out hygienically.* *If tongue or cheek meat is to be removed for human consumption, flay the head first. Then remove the meat taking care not to contaminate the meat with brain or tonsil material. Remove any remaining visible traces of brain or tonsil.* ***Staining & disposal** – after head meat has been recovered, stain the remainder of the head and dispose of it as SRM Category 1 ABP – see Section E.*
	Spleen
	Spleen is SRM in sheep and goats of all ages. *Spleens must be removed completely and, wherever possible, whole. Ideally, separation of the spleen from green offal should take place in the slaughter hall. Make sure individual spleens are presented to FSA staff for inspection and that these remain correlated with relevant carcases until post mortem inspection is completed;* ***Staining & disposal** – following inspection, the spleen must be stained and disposed of as SRM Category 1 ABP – see Section E.*

OPERATOR'S OBLIGATIONS	*ADVICE*
	Ileum
	The ileum is SRM in sheep and goats of all ages. *Ileum separation should take place in the gut room after post-mortem inspection in accordance with the following:* ▪ To allow for a margin of error, approximately 60 cms (24") of intestine, from the ileocaecal junction towards the small intestine, should be removed. Note: Staff are not required to measure the length of intestine but to use their judgement. ▪ *The removed section of small intestine must be treated as SRM Category 1 ABP. If the ileum is not separated from the intestines, it and any attached intestine must be treated as SRM category 1 ABP.* *An illustrated poster distributed in September 2003 is available at:* www.food.gov.uk/multimedia/bigimages/sheepgoatileum.jpg ***Staining & disposal** – following inspection, the ileum must be stained and disposed of as SRM Category 1 ABP – see Section E.*
	Spinal Cord
• **Once all SRM, except spinal cord has been removed, either:** ▪ **remove the spinal cord at the slaughterhouse before the post-mortem inspection; or** ▪ **send the meat to a cutting plant authorised by the FSA to remove SRM spinal cord; or**	*Spinal cord is SRM in sheep and goats over 12 months or with one or more permanent incisors erupted through the gum.* *Spinal cord must be removed at the slaughterhouse or, unless destined for another Member State, the carcase must be consigned to an authorised cutting plant for the spinal cord to be removed there.* *Make sure carcases containing SRM spinal cord are segregated from those that do not contain SRM spinal cord.* *Where the storage of carcases awaiting spinal cord*

OPERATOR'S OBLIGATIONS	*ADVICE*
▪ **send the meat to another Member State, provided the FSA has agreed in writing to its despatch, and the Member State for which it is destined has agreed in writing to receive it.** ***DS2*** • **Remove spinal cord that is SRM either by:** ▪ **longitudinally splitting the vertebral column; or** ▪ **removing a longitudinal section of the whole vertebral column including the spinal cord.** ***DS3***	*removal as SRM is necessary, ensure the storage arrangements are secure and under the control of the OV.* *Make sure that carcases are re-presented for inspection for compliance with the Regulations following removal of the spinal cord.* ***Removal** - the only permitted methods for removing spinal cord are:* ▪ *Splitting the vertebral column longitudinally and then removing the spinal cord; or* ▪ *Removing a longitudinal section of the vertebral column containing the spinal cord.* *It is an offence to remove the spinal cord by any other method, e.g. by suction method from an unsplit carcase* ***Staining & disposal** – following inspection, the spinal cord spleen must be stained and disposed of as SRM Category 1 ABP – see Section E.*

DC: REQUIREMENTS FOR CUTTING PLANTS

DC1. (1) Any person who removes specified risk material in any premises other than premises in which that specified risk material may be removed under points 4.1 or 4.3(a) of Annex V to the Community TSE Regulation is guilty of an offence.

(2) In the case of a cutting plant, it is an offence to remove –

(a) the spinal cord form any sheep or goat over 12 months at slaughter or which has a permanent incisor erupted through the gum, unless the plant is authorised for the purpose of such removal under paragraph 13(1)(b) of Schedule 7 of the TSE (England) Regulations 2010

The TSE (England) Regulations 2008, Schedule 7, paragraph 7

DC2. The occupier of a cutting plant authorised under paragraph 13(1) commits an offence if that occupier fails to, as soon as is reasonably practicable after arrival at the plant of meat, and in any event before meat is removed from the plant, remove from the meat all specified risk material of a kind to which the authorisation relates.

The TSE (England) Regulations 2010, Schedule 7, paragraph 14

OPERATOR'S OBLIGATIONS	*ADVICE*
	Authorisation
• **Remove sheep and goat spinal cord that is SRM in slaughterhouses or, as appropriate, other places of slaughter, or in cutting plants specifically authorised for that purpose.** • **Do not remove the spinal cord from any sheep or goat over 12 months at slaughter or which has a permanent incisor erupted through the gum unless the plant is authorised.** ***DC1***	*It is an offence for cutting plants that are not authorised under paragraph 13(1) (b) of Schedule7 to the Transmissible Spongiform Encephalopathies (England) Regulations 2010 to remove SRM spinal cord.* *Requests for authorisation should be made to the FSA. TSE Policy Branch, tel: 020 7276 8048.*

OPERATOR'S OBLIGATIONS	*ADVICE*

	Spinal Cord Removal
• **Remove the spinal cord as soon as reasonably practicable after arrival of the carcase at the authorised cutting plant, and in any event before meat is removed from the plant.** ***DC2***	*Removal of the spinal cord may be carried out under FSA supervision.* ▪ *Make sure you give the FSA at least 48hours notice of the intention to remove SRM spinal cord to enable an FSA officer to attend if required.* ▪ *Make sure carcases awaiting the removal of spinal cord are stored securely;* ▪ *Maintain effective separation of carcases containing SRM and those not containing SRM at all times;* ▪ *Where spinal cord is to be removed from a hot carcase prior to chilling, split the carcase with care to prevent contamination of the environment with spinal dust, and wash the carcase using a low-pressure warm water wash;* ***Removal methods** – see DS3.*

OPERATOR'S OBLIGATIONS	*ADVICE*

E. STAINING, STORAGE & CONSIGNMENT OF SRM

E1. All specified risk material shall be stained with a dye or, as appropriate, marked immediately on removal, and disposed of in accordance with the provisions laid down in Regulation (EC) No 1774/2002, and in particular, Article 4(2)

Regulation (EC) No. 999/2001 (as amended), Annex V, point 3.

E2. (1) The occupier of any premises where specified risk material is removed commits an offence if that occupier fails to comply with point 3 of Annex V to the EU TSE Regulation (marking and disposal).

(2) For the purposes of that point –

(a) staining involves treating the material (whether by immersion, spraying or other application) with –

(i) a 0.5% weight/volume solution of the colouring agent Patent Blue V (E131, 1971 Colour Index No 42051 (a); or

(ii) such other colouring agent as may be approved in writing by the Secretary of State or the Food Standards Agency; and

(b) the stain must be applied in such a way that the colouring is and remains clearly visible –

(i) over the whole of the cut surface and the majority of the head in the case of the head of a sheep or goat; and

(ii) in the case of all other specified risk material, over the whole surface of the material.

E3. Pending consignment or disposal from the premises or place where it was removed, the occupier must ensure that specified risk material is adequately separated from any food, feedingstuff or cosmetic, pharmaceutical or medical product and held in an impervious covered container that is labelled as either –

(a) containing specified risk material; or

(b) Category 1 animal by-products and including the words "For disposal only".

E4. The occupier must ensure that the container is thoroughly washed as soon as is reasonably practicable each time it is emptied, and disinfected before use for any other purpose.

The TSE (England) Regulations 2010, Schedule 7, paragraphs 16 and 17

	Staining of SRM
• **Immediately after removal, stain all SRM with a dye and dispose of it in accordance with Regulation (EC) No 1774/2002.** ***E1*** • **Treat the material (whether by**	*SRM must be stained before it leaves the slaughterhall or cutting area unless doing so risks contamination of fresh meat, in which case stain must be applied in a suitable area as soon as the SRM leaves the slaughterhall or cutting area:* ▪ *Any material left attached to SRM (except SRM bovine vertebral column and sheep/goat spinal cord) after*

OPERATOR'S OBLIGATIONS	*ADVICE*
immersion, spraying or other application) with – ▪ **a 0.5% weight/volume solution of the colouring agent Patent Blue V (E131, 1971 Colour Index No 42051 (a); or** ▪ **such other colouring agent as may be approved; and** ▪ **apply the stain so that the colouring is and remains clearly visible –** ▪ **over the whole of the cut surface and the majority of the head in the case of the head of a sheep or goat; and** ▪ **in the case of all other SRM, over the whole surface of the material.** ***E2***	*dressing of the carcase, e.g. red offal not intended for human consumption left with thymus attached.* ▪ *Any material that comes into contact with that material or with SRM after it has been removed from the carcase.* ▪ *Make sure adequate supply of 0.5% solution of Patent Blue V is available to meet staining requirements.* ▪ *Make sure stain is prepared correctly using measuring equipment.* *Stain should be applied to each layer of SRM and a suitable tool, dedicated to the task, used to stir the SRM to ensure the stain achieves optimum coverage.*
• **Make sure that before consignment or disposal, SRM is adequately separated from any food, feedingstuff or cosmetic, pharmaceutical or medical product.**	***Storage & Disposal of SRM*** ***Storage*** *- make adequate provision for the correct storage of SRM.* *Transfer SRM to correctly labelled storage containers without undue delay, The container labels must be indelibly marked with the words:* *"Contains SRM"; or* *"Category 1 animal by-products - For disposal only".*

OPERATOR'S OBLIGATIONS	*ADVICE*
• **Keep SRM in an impervious covered container that is labelled as either –** **(a) containing SRM; or** **(b) Category 1 animal by-products and including the words "For disposal only".** ***E3*** • **Wash the container thoroughly each time it is emptied, and disinfected before use for any other purpose.** ***E4***	*Use only lidded storage containers that are made of impervious material and leak-proof.* ***Disposal*** *– must be in accordance with Regulation (EC) No 1774/2002 (The Community Animal By-products Regulation) – see 3.2 (General Information) above.* *Make provision for SRM to be removed from premises by appropriately approved Category 1 animal by-products collector. The local Animal Health Office should be able to provide details of collectors on request.* ***Guide*** *- guidance on disposal is available in a separate FSA publication – Industry Guide on Edible Co-products and Animal By-products, see www.food.gov.uk/multimedia/pdfs/ediblecoprod.pdf* *Maintain records of all SRM consigned from the premises and retain for 2 years.* ***Cleaning*** *- wash every container used for storing SRM thoroughly as soon as reasonably practicable each time it is emptied.* *Disinfect containers before use for any other purpose.*

OPERATOR'S OBLIGATIONS	*ADVICE*

F. PROHIBITION ON MECHANICALLY SEPARATED MEAT PRODUCTION

F1. It shall be prohibited in all Member States to use bones or bone-in cuts of bovine, ovine and caprine animals for the production of mechanically separated meat. *Regulation (EC) No. 999/2001 (as amended), Annex V, point 5.*	
	Mechanically Separated Meat (MSM)
• **Do not use bones or bone-in cuts of bovine, ovine or caprine animals for producing mechanically separated meat.** ***F1***	***'Mechanically separated meat'*** *means the product obtained by removing meat from flesh-bearing bones after boning, using mechanical means resulting in the loss or modification of the muscle fibre structure.* *Bones or bone-in cuts from cattle, sheep or goats must not be used for the production of mechanically separated meat.*

OPERATOR'S OBLIGATIONS	*ADVICE*

G. IMPORTS OF CARCASES / PART CARCASES

IMPORTS OF CARCASES / PART CARCASES FROM EU COUNTRIES

G1. By way of derogation from point 10.1, bovine carcases, half carcases or half carcases cut into no more than three wholesale cuts, and quarters containing no SRM other than the vertebral column, including the dorsal root ganglia, may be dispatched from one Member State to another without the latter's prior agreement.

Regulation (EC) No. 999/2001 (as amended), Annex V, point 10.2.

G2. Member States may allow dispatch of heads or of un-split carcases containing SRM to another Member State only after that Member State has agreed to receive the material and has approved the conditions of dispatch and transport.

Regulation (EC) No. 999/2001 (as amended), Annex V, point 10.1.

G3. For the purposes of point 10(1) and point 10(2) of Annex V to the EU TSE Regulation, where meat containing those parts of the vertebral column of a bovine animal that are SRM is brought into England from another member State, the importer must send it directly to a cutting plant authorised under paragraph 13(1)(a), and failure to do so is an offence.

The TSE (England) Regulations 2010, Schedule 7, paragraph 15

G4. SRM shall be removed at: (a) slaughterhouses, or, as appropriate, other places of slaughter, (b) cutting plants, in the case of vertebral column of bovine animals.

Regulation (EC) No. 999/2001 (as amended), Annex V, point 4.1.

G5. A control system shall be put in place for the removal of vertebral column as specified in point 1(a) . The system shall include at least the following measures;

(a) when removal of vertebral column is not required, carcases or wholesale cuts of carcases of bovine animals containing vertebral column shall be identfied by a clearly visible blue stripe on the label referred to in Regulation (EC) No. 1760/2000;

(b) specific information on the number of bovine carcases or wholesale cuts of carcases, from which removal of the vertebral column is required as well as the number where removal of vertebral column is not required, shall be added on the commercial document relating to consignments of meat. When applicable, the specific information shall be added to the document referred to in Article 2(1) of Commission Regulation (EC) No. 136/2004 in the case of imports.

Regulation (EC) No. 999/2001 (as amended), Annex V, point 11.3.

	Authorisation of Imports
• **Bovine carcases or permitted wholesale cuts containing no SRM other than the vertebral column may be imported without prior agreement.** ***G1***	*Only bovine carcases, half carcases, half carcases cut into no more than three wholesale cuts, and quarters containing no SRM other than the vertebral column are permitted to be imported without prior agreement. This means that imports of smaller cuts, for example, boxed bone-in cuts from cattle over 30 months of age, are not permitted.*

OPERATOR'S OBLIGATIONS	*ADVICE*
• **Before importing heads or carcases containing SRM, make sure that the FSA (the UK competent authority) has agreed to receive this material from the despatching Member State, which must be sent direct to authorised cutting plants.** • G2, G3**Only authorised premises may accept and handle imports of bone-in OTM carcases or permitted wholesale cuts.** ***G3, G4***	*Check with the FSA if there is an agreement for receiving imports of bovine heads or carcases containing specified risk material (SRM). If not, approach the exporter to ask their competent authority to seek the FSA's agreement to this trade.* ***Note** that at present it in the UK, bovine head meat may only be harvested in slaughterhouses. It is therefore not permitted to import whole bovine heads for removal of head meat in cutting plants.* *Make sure that the premises has a suitable authorisation issued by the FSA before agreeing to receive imports of bone-in OTM carcases or permitted wholesale cuts from outside the UK. Cutting plants must also be authorised to remove spinal cord in sheep/goats before importing unsplit carcases containing SRM.* ***Removal, staining & disposal of SRM vertebral column*** *Refer to guidance in Sections CC and E above.*
	Labels and Documentation
• **Use a blue stripe label to identify carcases or wholesale cuts not requiring removal of vertebral column.** ***G5a, G9, G12*** • **Consignment documents must contain the number of carcases or wholesale cuts from which removal of the vertebral column is required and the number where it is not**	*Carcases/part carcases received with a blue stripe on the label will be from animals under 30 months of age and therefore the vertebral column is not SRM and need not be removed. If the carcase/part carcase has a plain white label or no label at all the vertebral column must be removed, stained and disposed of as Cat 1 ABP.* *The documentation accompanying the consignment should indicate both the number of carcases/part carcases that require vertebral column to be removed and the number that do not.* *Keep records of consignments that contain VC SRM for OV inspection when required.*

OPERATOR'S OBLIGATIONS	*ADVICE*
required. ***G5b, G9, G12***	

IMPORTS OF BOVINE, OVINE AND CAPRINE CARCASES / PART CARCASES FROM OUTSIDE THE EU

- **MEAT FROM COUNTRIES / REGIONS WITH NEGLIGIBLE RISK**

G6. Imports of products of bovine, ovine and caprine animals referred to in Section A of Chapter C of Annex IX of Regulation 999/2001 (*as amended)* from a country or region with negligible BSE risk shall be subject to the presentation of an animal health certificate in accordance to Section B of that chapter.

Regulation (EC) No. 999/2001(as amended), Annex IX, Chapter C, Section B.

- **MEAT FROM COUNTRIES / REGIONS WITH CONTROLLED RISK**

G7. Imports of products of bovine, ovine and caprine animals referred to in Section A of Chapter C of Annex IX of Regulation 999/2001 *(as amended*) from a country or region with controlled risk shall be subject to the presentation of an animal health certificate in accordance to point 1 of Section C of that chapter.

Regulation (EC) No. 999/2001(as amended), Annex IX, Chapter C, Section C, point 1.

G8. By way of derogation from point 1(d) of Chapter C, Section C, carcases, half carcases or half carcases cut into no more than three wholesale cuts, and quarters containing no SRM other than the vertebral column including the dorsal root ganglia, may be imported from countries/regions with controlled risk.

Regulation (EC) No. 999/2001(as amended), Annex IX, Chapter C, Section C, point 2.

G9. When removal of vertebral column is not required, carcases or wholesale cuts of carcases of bovine animals containing vertebral column shall be identified by a blue stripe on the label referred to in Regulation (EC) 1760/2000. The number of bovine carcases or wholesale cuts of carcases, from which removal of vertebral column is required as well as the number for which vertebral column is not required shall be added to the document referred to in Article 2(1) of Regulation (EC) No 136/2004.

Regulation (EC) No. 999/2001(as amended), Annex IX, Chapter C, Section C, points 3 & 4.

- **MEAT FROM COUNTRIES/REGIONS WITH UNDETERMINED RISK**

G10. Imports of products of bovine, ovine and caprine animals referred to in Section A from a country or region with undetermined BSE risk shall be subject to the presentation of an animal health certificate in accordance to point 1 of Section D of that chapter.

Regulation (EC) No. 999/2001(as amended), Annex IX, Chapter C, Section D, point 1.

G11. By way of derogation from point 1(c), carcases, half carcases or half carcases cut into no more than three wholesale cuts, and quarters containing no specified risk material other than the vertebral column including the dorsal root ganglia, may be imported.

Regulation (EC) No. 999/2001(as amended), Annex IX, Chapter C, Section D, point 2.

OPERATOR'S OBLIGATIONS	*ADVICE*

G12. When removal of vertebral column is not required, carcases or wholesale cuts of carcases of bovine animals containing vertebral column shall be identified by a clearly visible blue stripe on the label referred to in Regulation (EC) 1760/2000. Specific information on the number of bovine carcases or wholesale cuts of carcases, from which removal of vertebral column is required and from which removal of the vertebral column is not required shall be added to the document referred to in Article 2(1) of Regulation (EC) No 136/2004 in case of imports.

Regulation (EC) No. 999/2001(as amended), Annex IX, Chapter C, Section D, points 3 & 4.

	Imports from 3rd Countries with Negligible Risk
• **Reject consignments from 3rd countries with negligible risk without the necessary animal health certificate.** ***G6***	*Only accept whole carcases or permitted cuts from bovines with animal health certificates. The certificate should attest that:* *a) the country is classified as posing a negligible risk;* *b) the animals from which the product were derived were born, continuously reared and slaughtered in that country and passed ante- and post-mortem inspections;* *c) If the country has had indigenous BSE cases:* *(i) the animals were born after the date the feed ban was introduced;* *(ii) products do not contain or are not derived from SRM, or mechanically separated meat derived from ruminant bones.* *Contact the FSA at least 72 hours (or a mutually agreed period of notice) in advance of an imported beef delivery.* *The FSA may carry out random / intelligence-led checks of imported consignments.*
	Imports from 3rd Countries with Controlled Risk
• **Reject permitted consignments from 3rd countries with controlled risk that do not have the necessary health certificate.** ***G7, G8***	*Only accept whole carcases or permitted cuts from bovines with animal health certificates. The certificate should attest that:* *a) the country is classified as posing a controlled risk;* *b) the animals from which the meat is derived passed ante- and post-mortem inspections;* *c) The animals from which the meat is derived have not been slaughtered after stunning by gas injection, or*

OPERATOR'S OBLIGATIONS	*ADVICE*
• **Follow labelling and documentation requirements.** ***G9***	*slaughtered by gas injection or slaughtered after pithing;* *d) products do not contain or are not derived from SRM, or mechanically separated meat derived from ruminant bones.* *Contact the FSA at least 72 hours (or a mutually agreed period of notice) in advance of an imported beef delivery. The FSA may carry out random / intelligence-led checks of imported consignments.* ***Labelling and documentation:*** *see G5a and G5b above.*
	Imports from 3rd Countries with Undetermined Risk
• **Reject permitted consignments from 3rd countries with undetermined risk that do not have the necessary health certificate.** ***G10, G11***	*Only accept whole carcases or permitted cuts from bovines with animal health certificates. The certificate should attest that:* *a) the country is classified as posing an undetermined risk;* *b) the animals from which the meat is derived have not been fed meat and bone meal or greaves from ruminants and passed ante- and post-mortem inspections ;* *c) the animals from which the meat is derived have not been slaughtered after stunning by gas injection, or slaughtered by gas injection or slaughtered after pithing;* *d) products do not contain or are not derived from SRM, nervous and lymphatic tissue exposed during the boning process or mechanically separated meat derived from ruminant bones* *Contact the FSA at least 72 hours (or a mutually agreed period of notice) in advance of an imported beef delivery. The FSA may carry out random / intelligence-led checks of*

OPERATOR'S OBLIGATIONS	*ADVICE*
• **Follow labelling and documentation requirements.** ***G12***	*imported consignments.* ***Labelling and documentation:*** *see G5a and G5b above.*

OPERATOR'S OBLIGATIONS	*ADVICE*

H. EXPORTS OF CARCASES / PART CARCASES

REQUIREMENTS FOR EXPORTED CARCASES CONTAINING SRM

H1. Member States may allow the dispatch of heads or of unsplit carcases containing SRM to another Member State only after that Member State has agreed to receive the material and has approved the conditions of dispatch and transport

Regulation (EC) No. 999/2001 (as amended), Annex V, point 10.1

H2. By way of derogation from point 10.1, carcases, half carcases or half carcases cut into no more than three wholesale cuts, and quarters containing no SRM other than vertebral column may be dispatched from one Member State to another without the latter's prior agreement.

Regulation (EC) No. 999/2001 (as amended), Annex V, point 10.2

H3. Exports outside of the Community of heads and of fresh meat of bovine, ovine or caprine animals containing specified risk material is prohibited.

Regulation (EC) No 999/2001 (as amended) Annex V, paragraph 10.3.

	Exports of Carcases containing SRM
• **Seek prior agreement to export heads or un-split carcases containing SRM from the destination Member State.** ***H1*** • **Export only whole, half and quarter carcases, and the permitted wholesale cuts containing SRM vertebral column.** ***H2***	*To export carcases of meat containing SRM (e.g. un-split sheep carcases over 12 months of age containing spinal cord) to another Member State it is necessary to obtain the agreement of the competent authority in the receiving Member State.* *The FSA will contact the Competent Authority of the destination Member State on your behalf. Provide the TSE Policy team at FSA, Aviation House, 125 Kingsway, London WC2B 6NH, with full written details of the intended product, and the name, address, approval number, contact details of both the exporting and the receiving establishments.* *The destination Competent Authority will inform the FSA if it agrees to the particular product being sent to their territory or not. If agreed, approved conditions of dispatch and transport will be set out, which the FSA will pass to the operator to carry out.* ***Labelling and Documentation:*** *Carcases must have a plain white label indicating that vertebral column must be removed before the meat is sold to consumers. See*

OPERATOR'S OBLIGATIONS	*ADVICE*
	Section CS above *Indicate on the consignment documents the number of carcases that require the vertebral column to be removed, and the number of carcases that do not.*
	Prohibited Exports
• **Ensure no carcases or part carcases containing SRM or heads are exported to countries outside the European Union.** ***H3***	*Operators exporting this material to third countries are in breach of the TSE Regulations and will, therefore, be subject to enforcement action.*

OPERATOR'S OBLIGATIONS	*ADVICE*

3.3.2 WHAT ARE THE OFFICIAL CONTROL REQUIREMENTS?

Member States shall carry out frequent official controls to verify the correct application of the Regulations and that measures are taken to avoid any contamination, particularly in slaughterhouses, cutting plants or other places where SRM is removed.

Regulation (EC) No. 999/2001 (as amended), Annex V point 11.1.

Official controls must be carried out to check that the removal, separation and, where appropriate, marking of SRM is properly carried out.

Official controls must be carried out to ensure that meat plant operators take all necessary measures to avoid contaminating meat with SRM during slaughter (including stunning) and removal of SRM.

Regulation (EC) No. 854/2004 Annex I Chapter II E

Audits must be conducted to verify continuous compliance with meat plant operators' own procedures concerning any collection, transport, storage, handling, processing and use or disposal of SRM for which the meat plant operator is responsible.

Audits must be conducted to ensure that operators' procedures guarantee, as far as possible, that meat does not contain SRM except as provided for under Community legislation (e.g. bovine carcases in slaughterhouses containing SRM VC) and has been produced in accordance with Community legislation on TSEs.

Regulation (EC) No. 854/2004 Annex I Chapter 1 points 1 & 2(c)

Audits by officials of HACCP –based procedures shall verify that food business operators apply such procedures continuously and properly.

Regulation (EC) No. 854/2004 Article 4 point 5

3.3.3 APPLYING PROCEDURES CONTINUOUSLY AND PROPERLY

The operator is responsible for food safety in the food business

Regulation (EC) No. 852/2004 Article 1 point 1a

Food business operators shall put in place, implement and maintain a permanent procedure or procedures based on the HACCP principles.

Regulation (EC) No. 852/2004 Article 5 point 1

Food business operators at all stages of production, processing and distribution within the businesses under their control shall ensure that foods satisfy the requirements of food law which are relevant to their activities and shall verify that such requirements are met.

Regulation (EC) No 178/2002, Article 17 [DN: check]

	Operator Responsibilities for SRM
• **Operator responsibility includes applying and**	***Operator Responsibility*** *– includes maintaining and monitoring SRM management procedures and taking*

OPERATOR'S OBLIGATIONS	*ADVICE*
verifying the establishment's SRM handling and disposal procedures and taking corrective action if those procedures fail. • **Implement and maintain a permanent procedure or procedures based on the HACCP principles.**	*corrective action if there is a failure.* ***These procedures should be based on HACCP principles -*** *see A2 above and PART THREE Chapter 1 (Application of HACCP Principles).* ***Delegation*** *– responsibility for the application and verification of SRM handling and disposal procedures may be delegated to a nominated person, to whom problems are reported and who has sufficient authority to ensure that corrective action is taken when necessary.* ***Verification*** *– check at least daily that staff are following the establishment's SRM handling and disposal procedures. Work of new or temporary staff who may be less familiar with the procedures and premises may need to be monitored more frequently.* ***Records*** *– keep an accurate, dated account (e.g. in a diary/daybook) of each periodic verification check and of any corrective action taken.* ***Corrective action*** *– Take action when any failures of SRM handling and disposal procedures are identified.*

HEAD MEAT SAMPLING PLAN

(see Section 3.3.1 B2)

REGIME (i)

WEEK 1	
1 - 200 heads /day	*On a daily basis, for every 50 heads the following samples should be taken.* *One sample from head (left or right cheek) prior to removal of head meat*[*1]*.* ***and*** *One sample of meat harvested from the head*[*2]*.*
>200 heads /day	*On a daily basis, for every 100 heads the following samples should be taken:* *One sample from head (left or right cheek) prior to removal of head meat*[*1]***.*** ***and*** *One sample of meat harvested from the head*[*2]*.*

Note: The samples need not be from the same head within the batch of 50 or 100.

Results: If all results negative the following Regime (ii) can be followed for Week 2. If positive results obtained, repeat Regime (i) until negative results obtained.

REGIME (ii)

WEEK 2	
Every 100 heads	*On a weekly basis, for every 100 heads the following samples should be taken:* *One sample from head (left or right cheek) prior to removal of head meat*[*1]***.*** ***and*** *One sample of meat harvested from the head*[*2]*.*

Note: The samples need not be from the same head within a batch of 100. The batch can straddle more than one day.

Results: If all negative results, the following Regime (iii) can be followed. If positive results obtained, repeat Regime (i) until negative results obtained then repeat Regime (ii) until negative results obtained before proceeding to Regime (iii).

REGIME (iii)

WEEK 3	
1 – 300 / week	*Over a fortnight the following samples should be taken.* *One sample from head (left or right cheek) prior to removal of head meat**[1]* ***and*** *One sample of meat harvested from the head**[2]**.* **Note : The samples need not be from the same head and need not be taken the same day over a fortnight**
>300 / week	*Over a fortnight the following samples should be taken* *Two samples each of* *A sample from head (left or right cheek) prior to removal of head meat**[1]* ***and*** *Meat harvested from the head**[2]**.* **Note: The four samples need not be taken from the same head. All four samples may not be from the one head.**

Results: If positive results received, revert to Regime (ii). If negative results then obtained revert back to regime (iii) or if positive results obtained, revert to Regime (i) until negative results obtained; then follow Regime (ii) until negative results obtained before moving back to Regime (iii).

*** NOTES**

*[1] Where a sample is to be taken from the left or right cheek it should be ensured that material from the surface of the cheek is included in the sample.

*[2] Where head meat is to be sampled from an individual head after removal from the head, the meat should be collected separately and the sample taken prior to the meat from that head being placed in the larger container holding meat from all heads.

PART THREE

4. TSE[1] TESTING (including requirements for abattoirs slaughtering OTM[2] cattle)

[1] Transmissible Spongiform Encephalopathy

[2] Over Thirty Months

4.1 Why is TSE Testing important?

Testing of cattle, sheep and goats for TSE diseases provides information on the level of these diseases in these animals. This information enables the effectiveness of disease control measures to be assessed and helps to ensure that controls to protect consumers are proportionate to the risk.

BSE (Bovine Spongiform Encephalopathy) testing of cattle aged over 48 months (O48M)[3] slaughtered for human consumption also provides assurance to consumers that no cattle either with undetected clinical BSE or those close to developing clinical disease will be allowed to enter the food supply. Removal of specified risk material is the key public health protection measure for BSE while the disposal of any cattle that test positive for BSE (and the 1 before and 2 after on the slaughter line) further reduces the possible risk to consumers of exposure to BSE.
Failure to follow TSE testing requirements would be a breach of UK and EU law and could undermine the public's confidence in the safety of UK meat production.

---

3 Imported cattle not born in one of the countries listed in the Annex to Commission Decision 2009/719 must be tested for BSE if aged over 30 months when slaughtered or over 24 months if subject to emergency slaughter or the OV judges testing is necessary at ante mortem inspection.
The countries listed in the Annex are Austria, Belgium, Denmark, Finland, France, Germany, Greece, Republic of Ireland, Italy, Luxembourg, Netherlands, Portugal, Slovenia, Spain, Sweden and the United Kingdom.

4.2 GENERAL INFORMATION

Legislation [4]

1. The rules for the prevention, control and eradication of TSEs, including the requirements for BSE/TSE testing, are laid down in Regulation (EC) 999/2001 *as amended.* This Regulation is directly applicable in the UK[5] and is administered and enforced through the following legislation:

   - England - The Transmissible Spongiform Encephalopathies (England) Regulations 2008 (SI No. 2008/1881) (as amended)
   - Wales - The Transmissible Spongiform Encephalopathies (Wales) Regulations 2008 (SI No. 2008/3154 (W.252)) (as amended)
   - Scotland - The Transmissible Spongiform Encephalopathies (Scotland) Regulations 2006 (SSI No. 2006/530) (as amended)
   - Northern Ireland - The Transmissible Spongiform Encephalopathies Regulations (Northern Ireland) 2008 (SR 2008 No. 508) (as amended)

Cattle born before 1 August 1996

2. Cattle born or reared in the UK before 1 August 1996 are ineligible for the food supply. This includes cattle imported before 1 August 1996 but not cattle imported on or after 1 August 1996.

OTM Cattle that do not require BSE testing

3. It is illegal to slaughter OTM cattle for human consumption unless the abattoir has an RMOP[6] approved by the FSA in GB or DARD in NI. The RMOP is a legally-binding document setting out how the slaughterhouse operator will batch cattle before slaughter and ensure OTM carcases will be sent to an OTM-authorised cutting plant for removal and disposal of the vertebral column as SRM. Further information and guidance for operators wishing to slaughter OTM cattle that do not require BSE testing is available at: http://www.defra.gov.uk/foodfarm/farmanimal/diseases/atoz/bse/otm/review/slaughterhouse30-48m.pdf

Slaughter of cattle that require BSE testing

4. Slaughter for human consumption of cattle that require BSE testing may take place only in abattoirs that have an RMOP approved by the MHS in GB or DARD in NI. Cattle aged over

---

[4] Links to UK and EU legislation are available at: http://www.defra.gov.uk/foodfarm/farmanimal/diseases/atoz/bse/legislation/index.htm

[5] The law applies automatically in the UK from the date that it comes into force.

[6] **RMOP** = Required Method of Operation

48 months (O48M) and other cattle[7] that require testing must receive a negative BSE test result before they are permitted to enter the food supply.

5. For abattoirs that wish to slaughter cattle that require BSE testing, the approval process involves a series of steps. In summary these are:
   - the premises must meet certain minimum requirements (the prerequisites). If the prerequisites are not in place, an application will not proceed;
   - the FBO will need to document the proposed process in an RMOP. The RMOP must set out the procedures that will be followed to ensure the FBO complies with the BSE testing requirements and the processing of OTM carcases;
   - the completed RMOP is reviewed by the FSA (DARD in NI);
   - once the RMOP has been finalised, the FBO must undertake a formal assessment trial over 2 days using cattle aged under thirty months to simulate OTM/O48M procedures;
   - once the trial has been completed successfully, the FBO must agree with MHS/DARD the date on which OTM/O48M processing will start;
   - on the agreed start date and before OTM/O48M processing starts, the OV will sign the RMOP. The OV's signature constitutes approval to slaughter OTM/O48M cattle for human consumption.

6. Full guidance on the requirements for approval to slaughter OTM / O48M cattle for human consumption are contained in an application pack available from MHS / DARD. The pack and information on brain stem sampling may be found on the Defra website at: http://www.defra.gov.uk/foodfarm/farmanimal/diseases/atoz/bse/otm/review/guidance-otm.htm

7. Any O48M cattle and other cattle that require BSE testing discovered at post mortem in an abattoir that is not approved to slaughter cattle that require BSE testing must still be tested although the carcases would not be eligible for the food supply.

Testing of sheep slaughtered for human consumption

8. Regulation 999/2001 requires the UK to carry out TSE surveillance on sheep. This surveillance includes testing a random sample of sheep slaughtered for human consumption aged over 18 months. The sheep survey is carried out only at specific abattoirs selected by Defra, Welsh Assembly Government, Scottish Government or DARD.

---

[7] Cattle that were not born in one of the countries listed in the Annex to Commission Decision 2009/719 must be tested if aged over 30 months when slaughtered or over 24 months if subject to emergency slaughter or the OV judges testing is necessary at ante mortem inspection. The countries listed in the Annex are Austria, Belgium, Denmark, Finland, France, Germany, Greece, Republic of Ireland, Italy, Luxembourg, Netherlands, Portugal, Slovenia, Spain, Sweden and the United Kingdom.

OPERATOR'S OBLIGATIONS	ADVICE

4.3 What are the legal requirements for OTM Cattle and TSE Testing?

The following sections set out the legal requirements that apply to the slaughter of OTM cattle and sheep.

Note: References to the legal requirements refer to the *Transmissible Spongiform Encephalopathies (England) Regulations 2008 (as amended)*. Please refer as necessary to the separate legislation for Wales, Scotland and Northern Ireland (see paragraph 1 of Section 4.2).

A. OVER THIRTY MONTH (OTM) CATTLE

A1. It is an offence for the occupier to use a slaughterhouse to slaughter for human consumption a bovine animal aged over 30 months unless the Secretary of State has approved the Required Method of Operation ("RMOP") for that slaughterhouse and that occupier.

Schedule 2, paragraph 5(1)

A2. The RMOP must, as a minimum -

(a) describe the procedures that will be followed; and

(b) describe all the systems and procedures specified.

Schedule 2, paragraph 5(2)

A3. The Secretary of State must approve the RMOP if satisfied that all the requirements will be complied with. The occupier must demonstrate this by means of an assessment of two days duration in which animals are slaughtered (using bovine animals under 30 months old).

Schedule 2, paragraph 5(3)

A4. If a bovine animal aged over 30 months is slaughtered for human consumption other than in accordance with the RMOP, the occupier of the slaughterhouse is guilty of an offence.

Schedule 2, paragraph 5(4)

	Requirement for an approved RMOP
• **Obtain approval to slaughter OTM cattle before slaughtering any for human consumption.** ***A1*** • **The RMOP must describe the procedures that will be undertaken to comply with all the legislative requirements.** ***A2***	*Guidance on the slaughterhouse approval process is available at* *http://www.defra.gov.uk/foodfarm/farmanimal/diseases/atoz/bse/otm/review/slaughterhouse30-48m.pdf*

OPERATOR'S OBLIGATIONS	ADVICE
	RMOP approval
• **Undertake a trial of the procedures specified in the RMOP before the RMOP is approved.** ***A3***	*The assessment trial is covered in the guidance on the approval process referred to above. The trial must be carried out using cattle aged under 30 months. The MHS (DARD in NI) has responsibility to approve RMOPs on behalf of the Secretary of State.*
	Compliance with the RMOP
• **Slaughter and process cattle in accordance with the RMOP.** ***A4***	*Make sure the RMOP is fully complied with at all times. An amendment to the RMOP may be requested at any stage, for example if required due to changes in plant practices or facilities. The OV must be informed of intended amendments and sufficient time allowed for the OV to discuss these changes with the LV. Amendments must be agreed and signed by both parties before being implemented.*

A5. Animal identification and separation

The RMOP must describe the system that enables -

(a) bovine animals born or reared in the United Kingdom before 1st August 1996 to be identified and ensures that they are not slaughtered for human consumption;

(b) bovine animals over 30 months of age to be identified and ensures that they are sampled; and

(c) bovine animals subject to "special emergency slaughtering", or suspected of having a disease or condition that may adversely affect animal or human health to be identified and ensures that they are sampled.

It must also describe the system that ensures that animals over 30 months of age are batched before slaughter separately from those aged 30 months or under; and slaughtered in batches separately from those aged 30 months or under.

A6. Brain stem sampling

The RMOP must show that there are -

(a) sufficient staff trained and competent in the taking, labelling, packaging and dispatch of brain stem samples;

(b) hygienic facilities for sampling; and

(c) sampling procedures that do not jeopardise the hygienic production of meat intended for human consumption.

OPERATOR'S OBLIGATIONS	ADVICE

It must describe how health and safety guidelines designed to minimise the risk of exposure of staff to BSE during brain stem sampling and packaging will be complied with.

A7. Correlation of sample to carcase and all other parts of the body

The RMOP must describe the system linking the brain stem sample to the carcase and all parts of the body (including the blood and the hide).

A8. Retention of carcases

The RMOP must describe –

(a) the system that ensures that all carcases are retained either in a sealed or locked chiller or on a sealed or locked rail in an unsealed chiller pending the receipt of the test result;

(b) the system that ensures that the chronological order in which the animals were slaughtered can be determined; and

(c) how the occupier will ensure that there is suitable and sufficient chiller space for retaining carcases.

A9. Retention of parts of the body

The RMOP must describe the system that ensures that all parts of the body (including the blood and the hide) are retained pending the receipt of the BSE test result.

A10. Disposal before receipt of the result

The RMOP must describe the disposal route for all carcases and all parts of the body (including the blood and the hide) disposed of before the test result is received.

A11. Other measures following sampling

The RMOP must describe the systems in place that ensure —

(a) brain stem samples are packaged in accordance with packaging instructions P650 of the European Agreement Concerning the International Carriage of Dangerous Goods by Road (version applicable as from 1st January 2005)[8];

(b) test results are received, either by fax or by other electronic means; and

(c) everything required to be disposed of is identified and disposed of accordingly.

A12. Removal of vertebral column

The RMOP must describe the system that ensures that—

(a) those parts of the vertebral column that are specified risk material are not removed in the slaughterhouse; and

(b) the meat containing that specified risk material is consigned to a cutting plant authorised to remove it.

Schedule 2, Part 2.

[8] ISBN 92-1-139097-4.

OPERATOR'S OBLIGATIONS	ADVICE
	Contents of the RMOP
• **The RMOP must cover all the processes specified in the legislation.** ***A5-A12***	*Guidance on drawing up the RMOP may be found at http://www.defra.gov.uk/foodfarm/farmanimal/diseases/atoz/bse/otm/review/guidance-otm.htm*
	Cattle born in Listed Countries
• **All cattle aged over 48 months must be tested for BSE either when they are slaughtered for human consumption or when they die or are killed other than for human consumption.** ***A5***	*Cattle born in one of the listed Member States should retain the following country prefix on their eartag identification[9]:* *AT (Austria); BE (Belgium); DK (Denmark); FI (Finland); FR (France); DE (Germany); EL (Greece); IE (Ireland); IT (Italy); LU (Luxembourg); NL (Netherlands); PT (Portugal); SI (Slovenia); ES (Spain); SE (Sweden); UK (United Kingdom).*
	Cattle born in any other Country
• **All cattle with eartags which do not have the country prefixes listed above or which were born in a Third Country must be tested for BSE as follows:** ▪ **aged over 24 months if died or killed other than for human consumption;** ▪ **aged over 24 months if emergency slaughtered for human consumption or sick at ante-mortem inspection; and** ▪ **aged over 30 months if slaughtered normally for human consumption.** ***A5***	*Cattle born in a Third Country (i.e. not one of the 27 EU Member States) and imported into a Member State will be re-tagged with a tag showing the importing Member State's country prefix (unless slaughtered within 20 days). The Third Country import information should be available in the passport.*

[9] Commission Regulation (EC) 911/2004

OPERATOR'S OBLIGATIONS	ADVICE
	Batching
• **There must be a system for batching animals over 30 months of age before slaughter separately from those aged 30 months or under; and slaughtered in batches separately from those aged 30 months or under.** ***A5***	*The Regulations require OTM and younger cattle (UTM) to be separately batched before slaughter. In addition, FSA would prefer O48M-authorised abattoirs to segregate cattle into three batches of UTM, OTM to 48 months and O48M.* *However, where there are difficulties in segregating cattle before slaughter and MHS are satisfied that an effective system is in place for ensuring post-slaughter that OTM carcases are sent to an OTM-approved cutting plant, segregation of OTM and UTM cattle before slaughter does not need to take place.* *Nevertheless, segregation before slaughter of those cattle that require BSE testing from those that do not will continue to be a requirement in abattoirs handling cattle that require BSE testing.*

A13. The occupier of a slaughterhouse in which a bovine animal that requires BSE testing is slaughtered must – **(a) take a sample comprising the brain stem for testing;** **(b) ensure that the animal from which the sample has been taken can be identified; and** **(c) arrange for the sample to be delivered to an approved testing laboratory**. *Schedule 2, paragraph 3(1)*	
	Obligation to sample
• **Take a brain stem sample from all cattle that require BSE testing and send it to an approved testing laboratory.** ***A13***	Guidance from the Veterinary Laboratories Agency on procedures for brain stem removal and sampling may be found at *http://www.defra.gov.uk/foodfarm/farmanimal/diseases/atoz/bse/documents/bsesampling030906.pdf* *A list of approved laboratories is available at http://www.defra.gov.uk/vla/services/ser_bse_lab_approvals.htm*

OPERATOR'S OBLIGATIONS	ADVICE

A14. Retention of products and disposal

Pending receipt of the BSE test result, the occupier of a slaughterhouse, hide market or tannery, must either -

(a) retain all carcases and all parts of the body (including the blood and the hide) that will have to be disposed of in the event of a positive result; or

(b) dispose of them in accordance with sub-paragraph (2) (A15 below).

Schedule 2, paragraph 6(1)

A15. If a positive result is received for a sampled animal, the occupier must immediately dispose of -

(a) the carcase and all parts of the body of that animal (including the blood and the hide); and

(b) unless a derogation has been granted, the carcase and all parts of the body (including the blood and the hide) of the animal immediately preceding that animal on the slaughter line and the two animals immediately following it.

Schedule 2, paragraph 6(2)

A16. If a substandard or no sample has been sent to an approved testing laboratory, or if an insufficient test result is received, in respect of an animal required to be tested, the occupier must immediately dispose of -

(a) the carcase and all parts of the body (including the blood and the hide) of that animal; and

(b) unless a derogation has been granted, the carcase and all parts of the body (including the blood but not the hide) of the animal immediately preceding that animal on the slaughter line and the two animals immediately following it.

If a "No-test" result is received, the occupier must immediately dispose of the carcase and all parts of the body (including the blood and the hide) of that animal.

Schedule 2, paragraph 6(3) and 6(4)

A17. The Secretary of State may grant in writing a derogation if satisfied that the slaughterhouse operates a system that prevents contamination between carcases.

Schedule 2, paragraph 6 (5)

	Retention of products and disposal
• **Retain all carcases and body parts of sampled animals, including the blood and the hide, until the BSE test results have been received.** ***A14*** • **Dispose of the carcase and all body parts of any animal that tests positive for BSE plus**	*Guidance on the requirements for retention of carcases and body parts pending receipt of test results, and for disposal of carcases and body parts where a positive, insufficient or "no test" result is received, may be found at* *http://www.defra.gov.uk/foodfarm/farmanimal/diseases/atoz/bse/otm/review/guidance-otm.htm* ***Hides** from tested animals may be either retained at the slaughterhouse under official control until BSE test results are received or transported to hide premises, if*

OPERATOR'S OBLIGATIONS	ADVICE
those of the '1 before and 2 after' i.e. the animal immediately preceding that animal on the slaughter line and the two animals immediately following it. ***A15*** • **Dispose of the carcase and all body parts of any animal that receives an insufficient result plus those carcases and all body parts, except the hides, of the '1 before and 2 after'.** • **Dispose of the carcase and all body parts of any animal that receives a "No-test" result.** ***A16*** • **A derogation from the '1 before and 2 after' rule may be sought if there is a system in place preventing contamination between carcases.** ***A17***	*procedures set out in an agreed protocol are followed.* *Strict conditions are applied for granting a derogation from the '1 before and 2 after rule'. The OV can advise on the type of arrangements for preventing contamination between carcases that might qualify.* ***Negative Results** - Disposal in all cases where a negative result has not been received MUST be by incineration or rendering followed by incineration or biodiesel production (tallow) in line with ABP requirements.*

OPERATOR'S OBLIGATIONS	*ADVICE*

B. CATTLE & GOATS NOT INTENDED FOR HUMAN CONSUMPTION

EU and domestic TSE legislation require these animals to be treated as fallen stock and tested:

B1. The occupier of a slaughterhouse in which a bovine animal aged over 48 months old or a goat aged 18 months or over, has died or has been killed but it is not intended for human consumption, must:

- inform the OV within 24 hours from the time the animal died or was killed, to ensure that it is tested for surveillance purposes as required by EU and domestic TSE Regulation;

- for bovines:

(a) arrange for the carcase to be sent to an animal by-products premises that is an approved sampling site so that a brainstem sample can be taken and tested; or

(b) if approved to slaughter cattle requiring BSE testing, take a brain stem sample and send it for analysis with other O48M samples but using code FSCA2. The carcase must then be disposed of by incineration or rendering and incineration or biodiesel production in line with ABP requirements (tallow) unless a negative result is received.

- for goats

- detain the body until it has been collected free of charge by the Competent Authority to be tested and destroyed.

Part 1, Paragraph 1 and 1A.

	Fallen Stock – Cattle aged over 48 months and other Cattle that require BSE testing
• **Within 24 hours either deliver the body or arrange for it to be delivered to an approved sampling site to arrive within 72 hours of death** ***B1***	*Circumstances may arise in which an animal has to be killed and disposed of as fallen stock. Examples include:* ▪ *A bovine animal born or reared in the UK before August 1996;* ▪ *Cattle without a passport and/or eartags where it is not possible to identify these animals.* ▪ *Cattle with 7 or more teeth erupted and a passport indicating that it is UTM will be considered as OTM and destroyed. This is because such cattle cannot be aged less than 30 months and fraud in relation to the cattle identification regulations must be suspected.*

OPERATOR'S OBLIGATIONS	ADVICE
	A list of approved sampling sites for fallen cattle is available at http://www.defra.gov.uk/animalhealth/inspecting-and-licensing/abp/fallenstock/approvedsites.htm
	Fallen Stock - Goats aged over 18 months
• **Notify the Secretary of State within 24 hours of the death of a goat aged over 18 months. If directed, detain the carcase until it has been collected** ***B1***	*Goats aged over 18 months which are not intended for human consumption need to be treated as fallen stock and tested.* *Within 24 hours of the death, call the TSE Helpline on 0800 525 890. You will be informed if the goat carcase will be collected, free of charge. If it is not to be collected, it must be disposed of as animal by-product.*

OPERATOR'S OBLIGATIONS	ADVICE

C. TESTING OF SHEEP

C1. In relation to any sheep selected for sampling, the occupier of a slaughterhouse, hide market or tannery must—

(a) retain the carcase and all parts of the body (including the blood and the hide) pending receipt of the test result; and

(b) in the event of a positive result, immediately dispose of the carcase and all parts of the body (including the blood and the hide).

Schedule 2, paragraph 6(6) for sheep

	Sheep Survey
▪ *All parts of the body of any sheep sampled for testing must be retained pending receipt of the test result except for parts disposed of directly by incineration or rendering and incineration. All parts of any sheep that tests positive must be disposed of by incineration or rendering and incineration or biodiesel production (tallow) in line with ABP requirements.* ***C1***	*Sampling of sheep for TSE testing is carried out only at certain slaughterhouses selected to participate in the survey.* *A specimen protocol for the slaughterhouse procedures for the sheep survey may be found at:* *http://www.defra.gov.uk/foodfarm/farmanimal/diseases/atoz/bse/documents/sheepabattoirguidance.pdf*