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SUMMARY
The Food Safety and Inspection Service (FSIS) public health regulations (PHR) are regulations1 that have significantly higher individual noncompliance rates at establishments within 90 days of a pathogen-positive laboratory sample—Salmonella, Escherichia coli (E. coli), Listeria monocytogenes (Lm), or Campylobacter—or a public health-related enforcement action, compared to establishments with no pathogen-positive samples or enforcement actions.2 Although correlation does not necessarily indicate a higher risk in food safety, it can be helpful for agencies in allocating resources. FSIS expects establishments to comply with all regulatory requirements.

This report describes the agency’s data-driven approach to selecting the PHRs that prioritize certain inspection activities for the 2025 fiscal year (FY) spanning October 1, 2024, to September 30, 2025. FSIS uses decision criteria, including PHRs, to prioritize establishments for public health risk evaluations3 (PHRE) through which FSIS determines the need for a food safety assessment (FSA) or enforcement action. In addition to exceeding an upper threshold for PHR noncompliance rate, other decision criteria used to prioritize establishments for PHREs include pathogen testing results, recalls, outbreaks, regulatory findings, and inspection results. The list of PHRs, as well as the upper and lower thresholds that inform PHREs and alert FSIS inspection program personnel of elevated PHRs noncompliance, are updated annually (around July 1) with targeted implementation in October.

The FY2025 PHRs list is based on calendar year (CY) 2023 FSIS verification data from January 1, 2023, to December 31, 2023. For inclusion in the FY2025 PHRs list, FSIS evaluated a curated list of candidate regulations from Title 9 of the Code of Federal Regulations (CFR) to determine whether noncompliance with each regulation occurred more frequently in establishments within 90 days of having pathogen-positive samples or enforcement actions compared to establishments without positives or enforcement actions.

The final list of FY2025 PHRs (see Appendix A) consists of 67 regulations that have a higher rate of noncompliance in the 90 days before a pathogen-positive sample or enforcement action. Of the 63 PHRs identified for FY2024, 50 remain on the FY2025 PHRs list.

The average noncompliance rate of FY2025 PHRs in the 90 days before a pathogen-positive sample or enforcement action is 16.01 times higher than the average FY2025 PHRs noncompliance rate for establishments with no pathogen-positive sample and no enforcement

1 The term “regulation” is meant to include both regulations and the provisions of regulations. The Code of Federal Regulations (CFR) is composed of a set of regulations and the provisions of the regulations that define in greater detail the specific requirements of a regulation. The inclusion of provisions of regulations in the PHRs list allows FSIS to focus on specific health-related provisions of regulations that may be most informative for prioritizing public health risk evaluations (PHRE).
2 Hereafter, the term “enforcement action” refers to a public health-related Notice of Intended Enforcement (NOIE) or Notice of Suspension (NOS) that results from a Sanitation Standard Operating Procedure (SSOP), Hazard Analysis and Critical Control Point (HACCP), or Sanitation Performance Standards (SPS) violation.
3 If an establishment is selected for a PHRE, the District Office first performs the evaluation as described in FSIS Directive 5100.4 “Enforcement, Investigations and Analysis Officer (EIAO) Public Health Risk Evaluation (PHRE) Methodology” to review the operational and compliance history of the establishment to decide if a Food Safety Assessment (FSA) or enforcement action is appropriate.
action. Noncompliance with a single FY2025 PHR does not indicate a loss of process control. The aggregate set of PHRs is used to identify establishments that significantly deviate from the 90-day rolling average noncompliance rate for all similar establishments. The aggregate FY2025 PHRs noncompliance rate by establishments is evaluated and compared to thresholds (also referred to as cut points) for two broad categories of establishment operations: “Processing” (processing only) and “Combination” (both slaughter and processing).

The FY2025 cut points are computed by determining the mean and standard deviation of the log transformed non-zero FY2025 PHR rates for each of the four quarters in CY2023 (the log transformation of the non-zero FY2025 PHR rates is taken to obtain an approximately normal distribution). The mean and standard deviation are averaged over the four quarters, and the upper cut point is defined as the mean plus two times the standard deviation of the log transformed non-zero PHR rates. The antilog is then taken to obtain the upper cut point of the non-transformed PHRs noncompliance data. If an establishment’s PHRs noncompliance rates exceed the upper cut point for similar establishments, it is classified as “Upper” and may be subject to a for-cause PHRE if it has not had one in the last 180 days. The lower cut point is defined as the mean plus one and a half times the standard deviation of the log transformed non-zero PHR rates. Establishments that have PHRs noncompliance rates below the lower cut point for similar establishments are classified as “Lower.” As outlined in FSIS Directive 5100.5, establishments with a PHRs noncompliance rate between the upper and lower cut points will be notified by FSIS inspection program personnel that the establishment is at an elevated level of noncompliance. Tables S-1 and S-2 present the upper and lower FY2025 PHRs cut points for the non-transformed PHRs noncompliance data for each of the two establishment operation types. The FY2024 and FY2023 PHRs cut points are included for comparison (See Section 6 and Appendix D).

<table>
<thead>
<tr>
<th>Table S-1 PHR Upper Cut Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operation Type</td>
</tr>
<tr>
<td>-----------------</td>
</tr>
<tr>
<td>Processing</td>
</tr>
<tr>
<td>Combination</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table S-2 PHR Lower Cut Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operation Type</td>
</tr>
<tr>
<td>-----------------</td>
</tr>
<tr>
<td>Processing</td>
</tr>
<tr>
<td>Combination</td>
</tr>
</tbody>
</table>

Table S-3 presents the number of establishments in each level from January 1, 2024, to March 31, 2024, based on the PHR criterion. The period used for calculating the noncompliance rate of the PHRs was January 1, 2024, to March 31, 2024. The number of for-cause PHREs for Upper cut point establishments is approximately the same as in previous years.
### Table S-3 Number of Establishments in Levels Based Solely on the PHR Criterion

<table>
<thead>
<tr>
<th>Level</th>
<th>Processing</th>
<th>Combination</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upper</td>
<td>48</td>
<td>17</td>
<td>65</td>
</tr>
<tr>
<td>Mid</td>
<td>69</td>
<td>37</td>
<td>106</td>
</tr>
<tr>
<td>Lower</td>
<td>4,278</td>
<td>1,171</td>
<td>5,449</td>
</tr>
<tr>
<td>Total</td>
<td>4,395</td>
<td>1,225</td>
<td>5,620</td>
</tr>
</tbody>
</table>
1.0 INTRODUCTION

In January 2008, the Food Safety and Inspection Service (FSIS) published a decision tree methodology and a set of seven public health-based decision criteria for use in prioritizing establishments for Public Health Risk Evaluations (PHRE). The decision criteria include pathogen testing results, recalls, outbreaks, regulatory findings, and a record of noncompliance with certain regulations in Title 9 of the Code of Federal Regulations (CFR). The purpose of a PHRE is to review an establishment’s food safety system to verify that the establishment can produce safe and wholesome meat or poultry products in accordance with FSIS statutory and regulatory requirements. If an establishment is selected for a PHRE, the FSIS district office first performs the evaluation as described in FSIS Directive 5100.4 (Public Health Risk Evaluation Methodology) to review the operational and compliance history of the establishment to decide if a food safety assessment (FSA) or enforcement action is appropriate.

The purpose of this report is to update the list of PHRs for fiscal year (FY) 2025 based on FSIS verification inspection data from the FSIS public health information system (PHIS). The updated FY2025 PHRs list will prioritize certain inspection activities for the fiscal year spanning October 1, 2024, to September 30, 2025.

The CFR is composed of a set of regulations and the provisions of the regulations; therefore, the use of “regulation” in this report describes both regulations and their provisions. These provisions define the specific requirements of a regulation in greater detail. Including provisions in the PHRs list allows FSIS to focus on specific public health-related provisions that may be most informative for prioritizing PHREs.

FSIS used the same methodology to develop the FY2025 PHRs list as last year. For inclusion in the FY2025 PHRs list, each candidate 9 CFR regulation was evaluated to determine whether noncompliance with the verified regulation had occurred at a more frequent rate in establishments in the 90 days before Salmonella, Escherichia coli (E. coli), Listeria monocytogenes (Lm), or Campylobacter positives or enforcement actions than in establishments without positives or enforcement actions⁴. The analysis was based on one calendar year (CY) of FSIS verification inspection results recorded in PHIS, from January 1 to December 31, 2023 (CY2023).

The body of this report describes the agency’s data-driven approach to selecting the PHRs. Sections Two and Three identify how the candidate regulations are selected and outline the analysis results for selecting the appropriate PHRs from those regulations; Section Four summarizes the final list of PHRs; and Section Five explains the calculation of the cut points used for notifying districts of establishments that need to be scheduled for an FSA or a PHRE. The final FY2025 PHRs list is presented in Appendix A; Appendix B lists the candidate regulations evaluated to determine PHRs; Appendix C describes the differences between the FY2025 PHRs list and FY2024 PHRs list; and Appendix D explains the methodology and calculations used to determine the PHRs cut points.

⁴ As noted above, the term “enforcement action” refers to a public health-related Notice of Intended Enforcement (NOIE) or Notice of Suspension (NOS) that results from a Sanitation Standard Operating Procedure (SSOP), Hazard Analysis and Critical Control Point (HACCP), or Sanitation Performance Standards (SPS) violation.
The FY2025 PHRs list, as well as the upper and lower thresholds that inform PHREs and alert FSIS inspection program personnel of elevated PHRs noncompliance, are anticipated to be implemented beginning October 2024.

2.0 SELECTION OF PHRS

The PHRs candidate list will consist of verified 9 CFR regulations with which noncompliance occurs at a more frequent rate in establishments in the 90 days before *Salmonella*, *E. coli* O157:H7, non-O157 STEC, *Lm*, or *Campylobacter* positives or enforcement actions than in establishments without positives or enforcement actions. Not all regulations are related to pathogen-positive samples or enforcement actions. Therefore, to facilitate the analysis and to focus on the most relevant regulations, the list of regulations is narrowed to those related to verifying HACCP food safety process control.

Thus, the selection of PHRs is a two-step process:
1. Develop a candidate list of 9 CFR regulations related to verifying food safety process control.
2. From this list, select the subset of regulations whose individual noncompliance rates are statistically higher in establishments in the 90 days before *Salmonella*, *E. coli* O157:H7, non-O157 STEC, *Lm*, or *Campylobacter* positive or enforcement actions than in establishments without positives or enforcement actions.

Noncompliance with a single PHR does not indicate a loss of process control. The aggregate set of PHRs is used to identify establishments that significantly deviate from the 90-day rolling average noncompliance rate for all similar establishments.

2.1 Criteria for Selection of Candidate Regulations

The purpose of the list of candidate regulations is to identify a subset of 9 CFR regulations that are more directly related to a possible loss of process control. Process control refers to procedures designed by an establishment to control operating conditions necessary to produce safe, wholesome food.

Regulations are selected for the candidate list if noncompliance with the regulation provides evidence that establishments are not satisfying one of the four criteria:
1. Establish and maintain HACCP plan and critical control points (CCP),
2. Establish and maintain sanitary conditions,
3. Prevent adulteration, or
4. Implement effective corrective actions.

The following are examples of the types of regulations under each criterion that would be considered candidate regulations.

- **Establish and Maintain HACCP Plan and CCPs**
  - Failure to maintain an adequate HACCP plan.
  - Adequacy of the HACCP plan in controlling food safety hazards.
  - Critical factors specified in the process schedule shall be measured, controlled, and recorded.
  - CCPs are under control.
• **Establish and Maintain Sanitary Conditions**
  - Products are prepared, packed, or held under sanitary conditions.
  - Products do not contain any filthy, putrid, or decomposed substance.
  - Products do not contain foreign material.
  - Operates in a manner that does not deter inspection to determine sanitary conditions.

• **Prevent Adulteration**
  - No adulterated product enters commerce.
  - Product and ingredients rendered adulterated by polluted water shall be condemned.
  - Container composed of any poisonous or deleterious substance.
  - Dead, dying, disabled or diseased and similar livestock shall be condemned.
  - Lethality and stabilization requirements for cooked beef.
  - Time/temperature for heat-processing combinations of fully cooked meat patties.
  - Positive *E. coli* O157:H7 during FSIS verification testing.

• **Implement Effective Corrective Actions**
  - Select appropriate procedures and corrective actions.
  - Document corrective actions.
  - Identify and eliminate the cause.
  - Establish measures to prevent recurrence.
  - Reassess hazard analysis.

2.2 Relationship with Pathogen-Positive Samples and Enforcement Actions
The second step in selecting a list of PHRs is to determine which candidate regulations are related to a higher rate of noncompliance in the 90 days before the occurrence of a pathogen-positive sample during FSIS sampling or an enforcement action. The time period of 90 days is chosen as it is long enough to have sufficient FSIS verification data for analysis and short enough to indicate establishment operating conditions before a pathogen-positive sample or enforcement action. A candidate regulation will be included in the final list of PHRs if the noncompliance rate for the regulation is higher in establishments in the 90 days before a *Salmonella, E. coli, Lm,* or *Campylobacter* positive or an enforcement action than the average noncompliance rate in establishments that do not have a *Salmonella, E. coli, Lm,* or *Campylobacter* positive or an enforcement action.
3.0 CANDIDATE REGULATIONS
All regulations in 9 CFR were individually reviewed to determine if they satisfied any of the four criteria delineated in Section 2.1. A set of 185 9 CFR regulations were selected to indicate a potential loss of food safety process control. The list of 185 candidate regulations that are indicators of a potential loss of HACCP food safety process control is presented in Appendix B.

4.0 RELATIONSHIP BETWEEN CANDIDATE REGULATIONS AND PATHOGEN-POSITIVE SAMPLES AND ENFORCEMENT ACTIONS
The purpose of this section is to provide the results of the analysis between the list of candidate regulations and Salmonella, E. coli, Lm, or Campylobacter positives during FSIS verification testing or enforcement actions. The noncompliance rate of each of the FY2025 185 candidate regulations in establishments in the 90 days prior to a pathogen-positive sample or enforcement action was compared with the average noncompliance rate of establishments that received FSIS verification testing but had no positives or enforcement actions for CY2023. Regulations that received more than 30 verifications within a year and have a rates ratio of 3.0 or higher, along with a 95% probability (determined by a two-sided Fisher's Exact Test p-value of less than 0.05), indicating that the noncompliance rate of the regulation in establishments during the 90 days before a pathogen-positive sample or enforcement action is statistically higher than the noncompliance rate for establishments with no positives, are classified as PHRs. For FY2025 PHR rates, there was not sufficient data for Siluriformes or eggs to be considered separately. There was no Siluriformes testing done in 2023. Egg sampling data was included in the Salmonella and Listeria sections as there was only one positive in CY2023.

Candidate regulations with less than or equal to 30 verifications in the 90 days prior to a specific pathogen-positive sample or enforcement action are excluded from consideration for that specific pathogen or enforcement action since the noncompliance rate associated with these regulations is highly uncertain. The candidate regulation is still considered for pathogens or enforcement actions with more than the 30 verifications.

A rates ratio is one of several statistics useful as an effect-size measure, especially when statistical significance of dichotomous data is computed using the Fisher’s Exact test. The odds of an event occurring is calculated as the number of events divided by the number of non-events. A rates ratio is calculated by dividing the odds of a test group (in this case, the odds of receiving a noncompliance of a candidate regulation for establishments with a pathogen-positive sample or enforcement action) by the odds in the control group (in this case, the odds of receiving a noncompliance of a candidate regulation for establishments without a pathogen-positive sample or enforcement action). There is no definitive rule for determining a meaningful rates ratio size. In this report, a rates ratio size of 3.0 is taken as the threshold for a meaningful rates ratio size.

4.1 Salmonella
The purpose of this section is to provide the results of the analysis between the list of candidate regulations and Salmonella positives. The dataset used in the analysis consists of candidate PHRs noncompliance rates for the 2,229 establishments with Salmonella testing data. There were 750 establishments that had 3,963 Salmonella positives. There were 1,479 establishments that did not have any Salmonella positives. There were 55,049 total Salmonella tests performed.
Table 4-1 presents the 26 regulations that had more than 30 verifications in a year, a rates ratio of 3.0 or greater, and for which there is a 95% probability (as determined by a two-sided Fisher’s Exact Test $p$-value of less than 0.05) that the noncompliance rate of the regulation in establishments in the 90 days prior to a *Salmonella* positive is higher than the average noncompliance rate for establishments with no *Salmonella* positive for CY2023.

**Table 4-1 Comparison of Noncompliance Rates 90 Days before a *Salmonella* Positive with Those for Establishments with No *Salmonella* Positives**

<table>
<thead>
<tr>
<th>Regulation Verified</th>
<th>Description</th>
<th>On FY 2024 PHR List</th>
<th>Noncompliance Rate 90 Days before a <em>Salmonella</em> Positive</th>
<th>Noncompliance Rate for Establishments with no <em>Salmonella</em> Positives</th>
<th>Rates Ratio</th>
<th>Two-Sided Fisher Exact $p$-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>301.2_Adelterated</td>
<td>Adulterated</td>
<td>No</td>
<td>0.37</td>
<td>0.08</td>
<td>6.85</td>
<td>2.07E-18</td>
</tr>
<tr>
<td>310.22(c)</td>
<td>Disposal of SRM</td>
<td>Yes</td>
<td>0.03</td>
<td>0.00</td>
<td>9.62</td>
<td>2.77E-37</td>
</tr>
<tr>
<td>310.22(e)(1)</td>
<td>Written procedures for removal, segregation, and disposition of SRMs</td>
<td>Yes</td>
<td>0.11</td>
<td>0.02</td>
<td>7.64</td>
<td>4.43E-23</td>
</tr>
<tr>
<td>310.22(e)(3)</td>
<td>Evaluate effectiveness of procedures for removal, segregation, and disposition of SRMs</td>
<td>Yes</td>
<td>0.06</td>
<td>0.01</td>
<td>8.23</td>
<td>7.98E-12</td>
</tr>
<tr>
<td>310.22(f)(2)</td>
<td>Use of routine operational sanitation procedures on equipment used to cut through SRMs</td>
<td>Yes</td>
<td>0.03</td>
<td>0.00</td>
<td>17.60</td>
<td>1.07E-13</td>
</tr>
<tr>
<td>318.2(d)</td>
<td>Removal of U.S. retained by authorized Program employees only</td>
<td>Yes</td>
<td>0.05</td>
<td>0.01</td>
<td>6.49</td>
<td>3.33E-11</td>
</tr>
<tr>
<td>381.65(a)</td>
<td>Clean and sanitary practices; products not adulterated</td>
<td>Yes</td>
<td>0.01</td>
<td>0.00</td>
<td>6.35</td>
<td>1.81E-09</td>
</tr>
<tr>
<td>381.91(b)</td>
<td>Reprocessing of carcasses accidentally contaminated with digestive tract contents.</td>
<td>Yes</td>
<td>0.11</td>
<td>0.01</td>
<td>22.42</td>
<td>3.97E-29</td>
</tr>
<tr>
<td>416.13(a)</td>
<td>Conduct pre-op procedures</td>
<td>Yes</td>
<td>0.08</td>
<td>0.02</td>
<td>5.45</td>
<td>0.00E00</td>
</tr>
<tr>
<td>Regulation Verified</td>
<td>Description&lt;sup&gt;1&lt;/sup&gt;</td>
<td>On FY 2024 PHR List</td>
<td>Noncompliance Rate 90 Days before a <em>Salmonella</em> Positive</td>
<td>Noncompliance Rate for Establishments with no <em>Salmonella</em> Positives</td>
<td>Rates Ratio</td>
<td>Two-Sided Fisher Exact p-Value</td>
</tr>
<tr>
<td>---------------------</td>
<td>------------------------</td>
<td>---------------------</td>
<td>----------------------------------------------------------</td>
<td>---------------------------------------------------------------</td>
<td>------------</td>
<td>-----------------------------</td>
</tr>
<tr>
<td>416.13(b)</td>
<td>Conduct other procedures listed in the plan</td>
<td>Yes</td>
<td>0.01</td>
<td>0.00</td>
<td>5.58</td>
<td>0.00E00</td>
</tr>
<tr>
<td>416.13(c)</td>
<td>Plant monitors implementation of SSOP procedures</td>
<td>Yes</td>
<td>0.04</td>
<td>0.01</td>
<td>5.28</td>
<td>0.00E00</td>
</tr>
<tr>
<td>416.15(b)</td>
<td>Corrective action, procedures for</td>
<td>Yes</td>
<td>0.08</td>
<td>0.01</td>
<td>6.73</td>
<td>3.93E-83</td>
</tr>
<tr>
<td>416.2(a)</td>
<td>Grounds and Pest Control</td>
<td>Yes</td>
<td>0.12</td>
<td>0.03</td>
<td>4.94</td>
<td>0.00E00</td>
</tr>
<tr>
<td>416.2(b)(1)</td>
<td>Sound construction, good repair and sufficient size</td>
<td>Yes</td>
<td>0.13</td>
<td>0.03</td>
<td>4.18</td>
<td>0.00E00</td>
</tr>
<tr>
<td>416.2(b)(2)</td>
<td>Walls/floors/ceilings durable, impervious, cleaned and sanitized</td>
<td>Yes</td>
<td>0.10</td>
<td>0.03</td>
<td>3.48</td>
<td>0.00E00</td>
</tr>
<tr>
<td>416.2(b)(4)</td>
<td>Inedible from edible separated by time or space</td>
<td>Yes</td>
<td>0.02</td>
<td>0.00</td>
<td>6.52</td>
<td>6.18E-58</td>
</tr>
<tr>
<td>416.3(b)</td>
<td>Constructed, located and operated in a manner that does not deter inspection</td>
<td>Yes</td>
<td>0.01</td>
<td>0.00</td>
<td>3.57</td>
<td>2.83E-17</td>
</tr>
<tr>
<td>416.3(c)</td>
<td>Receptacles for storing inedible material must identify permitted use</td>
<td>Yes</td>
<td>0.05</td>
<td>0.01</td>
<td>4.88</td>
<td>1.44E-70</td>
</tr>
<tr>
<td>416.4(a)</td>
<td>Food contact surface, cleaning and sanitizing as frequency</td>
<td>Yes</td>
<td>0.12</td>
<td>0.03</td>
<td>4.50</td>
<td>0.00E00</td>
</tr>
<tr>
<td>416.4(d)</td>
<td>Product processing, handling, storage, loading, unloading, and during transportation must be protected</td>
<td>Yes</td>
<td>0.18</td>
<td>0.04</td>
<td>5.60</td>
<td>0.00E00</td>
</tr>
<tr>
<td>416.6</td>
<td>Only FSIS program employee may remove “U.S. Rejected” tag</td>
<td>Yes</td>
<td>0.19</td>
<td>0.02</td>
<td>9.62</td>
<td>4.21E-18</td>
</tr>
<tr>
<td>Regulation Verified</td>
<td>Description¹</td>
<td>On FY 2024 PHRs List</td>
<td>Noncompliance Rate 90 Days before a Salmonella Positive</td>
<td>Noncompliance Rate for Establishments with no Salmonella Positives</td>
<td>Rates Ratio</td>
<td>Two-Sided Fisher Exact p-Value</td>
</tr>
<tr>
<td>---------------------</td>
<td>---------------</td>
<td>-----------------------</td>
<td>--------------------------------------------------------</td>
<td>---------------------------------------------------------------</td>
<td>------------</td>
<td>------------------------------</td>
</tr>
<tr>
<td>417.6</td>
<td>Inadequate HACCP systems</td>
<td>No</td>
<td>0.77</td>
<td>0.05</td>
<td>62.66</td>
<td>6.27E-32</td>
</tr>
<tr>
<td>381.76(b)(6)(ii)(A)</td>
<td>NPIS Sorting, Trimming, and Reprocessing</td>
<td>Yes</td>
<td>0.01</td>
<td>0.00</td>
<td>27.45</td>
<td>4.73E-20</td>
</tr>
<tr>
<td>381.76(b)(6)(ii)(D)</td>
<td>Ready-to-Cook verification in NPIS</td>
<td>Yes</td>
<td>0.15</td>
<td>0.00</td>
<td>49.71</td>
<td>2.53E-18</td>
</tr>
<tr>
<td>310.18(c)(1)</td>
<td>Sampling locations</td>
<td>No</td>
<td>0.03</td>
<td>0.00</td>
<td>13.23</td>
<td>2.24E-05</td>
</tr>
<tr>
<td>310.26(b)</td>
<td>Carcass sorting and disposition</td>
<td>No</td>
<td>0.02</td>
<td>0.01</td>
<td>4.15</td>
<td>1.10E-03</td>
</tr>
</tbody>
</table>

¹ Refer to the Code of Federal Regulations for complete regulation descriptions.

4.1.1 Salmonella in Intact Chicken

The dataset used in the analysis consists of candidate PHRs noncompliance rates for the 214 establishments with intact chicken Salmonella testing data, of which 171 had 516 Salmonella positives, and 43 did not have Salmonella positives. There were 9,765 total intact chicken Salmonella tests performed.

Table 4-2 presents the five regulations that had more than 30 verifications in a year, a rates ratio of 3.0 or greater, and for which there is a 95% probability (as determined by a two-sided Fisher’s Exact p-value of less than 0.05) that the noncompliance rate of the regulation in establishments in the 90 days prior to an intact chicken Salmonella positive is higher than the average noncompliance rate for establishments with no intact chicken Salmonella positive for CY2023.

Table 4-2 Comparison of Noncompliance Rates 90 Days before an Intact Chicken Salmonella Positive with Those for Establishments with No Intact Chicken Salmonella Positives

<table>
<thead>
<tr>
<th>Regulation Verified</th>
<th>Description¹</th>
<th>On FY 2024 PHRs List</th>
<th>Noncompliance Rate 90 Days before a Salmonella Positive</th>
<th>Noncompliance Rate for Establishments with no Salmonella Positives</th>
<th>Rates Ratio</th>
<th>Two-Sided Fisher Exact p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>417.2(a)(1)</td>
<td>Hazard analysis</td>
<td>Yes</td>
<td>0.02</td>
<td>0.00</td>
<td>4.62</td>
<td>3.00E-06</td>
</tr>
<tr>
<td>417.5(a)(1)</td>
<td>Written hazard analysis</td>
<td>Yes</td>
<td>0.00</td>
<td>0.00</td>
<td>5.84</td>
<td>1.32E-24</td>
</tr>
<tr>
<td>417.5(a)(2)</td>
<td>Written HACCP plan</td>
<td>Yes</td>
<td>0.00</td>
<td>0.00</td>
<td>8.90</td>
<td>9.10E-03</td>
</tr>
<tr>
<td>381.76(b)(6)(ii)(D)</td>
<td>Ready-to-Cook verification in NPIS</td>
<td>Yes</td>
<td>0.09</td>
<td>0.02</td>
<td>5.37</td>
<td>5.34E-13</td>
</tr>
<tr>
<td>381.76(b)(6)(ii)(C)</td>
<td>NPIS septicemia/toxemia</td>
<td>No</td>
<td>0.00</td>
<td>0.00</td>
<td>9.96</td>
<td>3.50E-03</td>
</tr>
</tbody>
</table>

¹ Refer to the Code of Federal Regulations for complete regulation descriptions.
4.1.2 Salmonella in Intact Turkey

The dataset used in the analysis consists of candidate PHRs noncompliance rates for the 43 establishments with intact turkey Salmonella testing data, of which three establishments had five Salmonella positives and 40 establishments did not have Salmonella positives. There were 1,331 total intact turkey Salmonella tests performed.

Table 4-3 presents the 14 regulations that had more than 30 verifications in a year, a rates ratio of 3.0 or greater, and for which there is a 95% probability (as determined by a two-sided Fisher’s Exact Test p-value of less than 0.05) that the noncompliance rate of the regulations in establishments in the 90 days prior to an intact turkey Salmonella positive is higher than the average noncompliance rate for establishments with no intact turkey Salmonella positive for CY2023.

<table>
<thead>
<tr>
<th>Regulation Verified</th>
<th>Description(^1)</th>
<th>On FY 2024 PHRs List</th>
<th>Noncompliance Rate 90 Days before a Salmonella Positive</th>
<th>Noncompliance Rate for Establishments with no Salmonella Positives</th>
<th>Rates Ratio</th>
<th>Two-Sided Fisher Exact p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>416.1</td>
<td>Operate in a manner to prevent insanitary conditions</td>
<td>Yes</td>
<td>0.12</td>
<td>0.01</td>
<td>14.71</td>
<td>2.69E-09</td>
</tr>
<tr>
<td>416.14</td>
<td>Evaluate effectiveness of SSOP's and maintain plan</td>
<td>Yes</td>
<td>0.07</td>
<td>0.01</td>
<td>9.34</td>
<td>9.40E-16</td>
</tr>
<tr>
<td>416.15(a)</td>
<td>Appropriate corrective actions</td>
<td>Yes</td>
<td>0.21</td>
<td>0.04</td>
<td>7.13</td>
<td>3.57E-04</td>
</tr>
<tr>
<td>416.15(b)</td>
<td>Corrective action, procedures for</td>
<td>Yes</td>
<td>0.24</td>
<td>0.03</td>
<td>11.24</td>
<td>4.87E-06</td>
</tr>
<tr>
<td>416.16(a)</td>
<td>Daily records required, responsible individual, initialed and dated</td>
<td>Yes</td>
<td>0.03</td>
<td>0.00</td>
<td>8.60</td>
<td>6.09E-10</td>
</tr>
<tr>
<td>416.2(a)</td>
<td>Grounds and Pest Control</td>
<td>Yes</td>
<td>0.45</td>
<td>0.09</td>
<td>8.31</td>
<td>3.16E-05</td>
</tr>
<tr>
<td>416.2(b)(2)</td>
<td>Walls/floors/ceilings durable, impervious, cleaned and sanitized</td>
<td>Yes</td>
<td>0.36</td>
<td>0.09</td>
<td>5.96</td>
<td>4.98E-03</td>
</tr>
<tr>
<td>416.4(a)</td>
<td>Food contact surface, cleaning and sanitizing as frequency</td>
<td>Yes</td>
<td>0.55</td>
<td>0.11</td>
<td>9.42</td>
<td>1.17E-06</td>
</tr>
<tr>
<td>416.4(d)</td>
<td>Product processing, handling, storage, loading, unloading, and during transportation must be protected</td>
<td>Yes</td>
<td>0.68</td>
<td>0.17</td>
<td>10.36</td>
<td>6.64E-10</td>
</tr>
<tr>
<td>417.2(a)(1)</td>
<td>Hazard analysis</td>
<td>Yes</td>
<td>0.13</td>
<td>0.01</td>
<td>22.27</td>
<td>6.57E-03</td>
</tr>
<tr>
<td>Regulation Verified</td>
<td>Description¹</td>
<td>On FY 2024 PHRs List</td>
<td>Noncompliance Rate 90 Days before a <em>Salmonella</em> Positive</td>
<td>Noncompliance Rate for Establishments with no <em>Salmonella</em> Positives</td>
<td>Rates Ratio</td>
<td>Two-Sided Fisher Exact p-Value</td>
</tr>
<tr>
<td>---------------------</td>
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<td>-------------------------------</td>
</tr>
<tr>
<td>381.65(f)</td>
<td>Procedures for controlling visible fecal contamination</td>
<td>Yes</td>
<td>0.04</td>
<td>0.01</td>
<td>3.19</td>
<td>1.19E-36</td>
</tr>
<tr>
<td>381.65(g)</td>
<td>Procedures for controlling contamination throughout the slaughter and dressing operation</td>
<td>Yes</td>
<td>0.05</td>
<td>0.01</td>
<td>5.05</td>
<td>7.40E-04</td>
</tr>
<tr>
<td>381.76(b)(6)(ii)(A)</td>
<td>NPIS Sorting, Trimming, and Reprocessing</td>
<td>Yes</td>
<td>0.02</td>
<td>0.00</td>
<td>8.28</td>
<td>7.80E-03</td>
</tr>
<tr>
<td>381.76(b)(6)(ii)(C)</td>
<td>NPIS septicemia/toxemia</td>
<td>No</td>
<td>0.00</td>
<td>0.00</td>
<td>46.81</td>
<td>1.55E-11</td>
</tr>
</tbody>
</table>

¹ Refer to the [Code of Federal Regulations](https://www.govinfo.gov/content/pkg/CFR-2023-title-93/) for complete regulation descriptions.

### 4.1.3 *Salmonella* in Ground Beef

The dataset used in the analysis consists of candidate PHRs noncompliance rates for the 1,315 establishments with ground beef *Salmonella* testing data, of which 89 establishments had 124 *Salmonella* positives and 1,226 establishments did not have *Salmonella* positives. There were 11,586 total ground beef *Salmonella* tests performed.

Table 4-4 presents the 14 regulations that had more than 30 verifications in a year, a rates ratio of 3.0 or greater, and for which there is a 95% probability (as determined by a two-sided Fisher’s Exact Test p-value of less than 0.05) that the noncompliance rate of the regulation in establishments in the 90 days prior to a ground beef *Salmonella* positive is higher than the average noncompliance rate for establishments with no ground beef *Salmonella* positive for CY2023.

<table>
<thead>
<tr>
<th>Regulation Verified</th>
<th>Description¹</th>
<th>On FY 2024 PHRs List</th>
<th>Noncompliance Rate 90 Days before a <em>Salmonella</em> Positive</th>
<th>Noncompliance Rate for Establishments with no <em>Salmonella</em> Positives</th>
<th>Rates Ratio</th>
<th>Two-Sided Fisher Exact p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>301.2_Adulterated</td>
<td>Adulterated</td>
<td>No</td>
<td>0.46</td>
<td>0.13</td>
<td>5.76</td>
<td>4.65E-03</td>
</tr>
<tr>
<td>310.22(c)</td>
<td>Disposal of SRM</td>
<td>Yes</td>
<td>0.02</td>
<td>0.00</td>
<td>7.48</td>
<td>1.48E-08</td>
</tr>
<tr>
<td>310.22(e)(1)</td>
<td>Written procedures for removal, segregation, and disposition of SRMs</td>
<td>Yes</td>
<td>0.09</td>
<td>0.01</td>
<td>6.92</td>
<td>3.02E-06</td>
</tr>
<tr>
<td>Regulation Verified</td>
<td>Description¹</td>
<td>On FY 2024 PHRs List</td>
<td>Noncompliance Rate 90 Days before a Salmonella Positive</td>
<td>Noncompliance Rate for Establishments with no Salmonella Positives</td>
<td>Rates Ratio</td>
<td>Two-Sided Fisher Exact p-Value</td>
</tr>
<tr>
<td>---------------------</td>
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<td>-----------------------------------------------------</td>
<td>-------------------------------------------------</td>
<td>------------</td>
<td>-------------------------------</td>
</tr>
<tr>
<td>310.22(c)(2)</td>
<td>Appropriate corrective actions</td>
<td>Yes</td>
<td>0.03</td>
<td>0.01</td>
<td>6.47</td>
<td>2.03E-02</td>
</tr>
<tr>
<td>310.22(c)(3)</td>
<td>Evaluate effectiveness of procedures for removal, segregation, and disposition of SRMs</td>
<td>Yes</td>
<td>0.03</td>
<td>0.01</td>
<td>4.10</td>
<td>4.76E-02</td>
</tr>
<tr>
<td>318.2(a)</td>
<td>All products subject to reinspection by program employees</td>
<td>Yes</td>
<td>0.01</td>
<td>0.00</td>
<td>5.78</td>
<td>2.09E-02</td>
</tr>
<tr>
<td>416.15(b)</td>
<td>Corrective action, procedures for</td>
<td>Yes</td>
<td>0.08</td>
<td>0.01</td>
<td>6.97</td>
<td>3.88E-03</td>
</tr>
<tr>
<td>416.2(b)(4)</td>
<td>Inedible from edible separated by time or space</td>
<td>Yes</td>
<td>0.01</td>
<td>0.00</td>
<td>5.07</td>
<td>4.11E-04</td>
</tr>
<tr>
<td>416.3(b)</td>
<td>Constructed, located and operated in a manner that does not deter inspection</td>
<td>Yes</td>
<td>0.03</td>
<td>0.00</td>
<td>6.69</td>
<td>3.32E-06</td>
</tr>
<tr>
<td>416.3(c)</td>
<td>Receptacles for storing inedible material must identify permitted use</td>
<td>Yes</td>
<td>0.06</td>
<td>0.01</td>
<td>6.51</td>
<td>8.12E-10</td>
</tr>
<tr>
<td>417.2(c)(4)</td>
<td>List of procedures and frequency</td>
<td>Yes</td>
<td>0.01</td>
<td>0.00</td>
<td>4.45</td>
<td>2.29E-30</td>
</tr>
<tr>
<td>417.4(a)</td>
<td>Adequacy of HACCP in controlling food safety hazards</td>
<td>Yes</td>
<td>0.33</td>
<td>0.03</td>
<td>13.99</td>
<td>1.70E-02</td>
</tr>
<tr>
<td>417.4(a)(1)</td>
<td>Initial validation</td>
<td>Yes</td>
<td>0.55</td>
<td>0.11</td>
<td>10.17</td>
<td>5.19E-04</td>
</tr>
<tr>
<td>310.18(a)</td>
<td>Carcasses, organs, and other parts handled in a sanitary manner</td>
<td>Yes</td>
<td>0.06</td>
<td>0.01</td>
<td>4.40</td>
<td>1.94E-05</td>
</tr>
</tbody>
</table>


### 4.1.4 Salmonella in Intact Beef
FSIS tests beef trim and beef manufacturing trimmings as a surrogate for testing intact beef. There were 970 establishments with intact beef Salmonella testing data, of which 58 establishments had 102 Salmonella positives and 912 establishments did not have Salmonella positives. There were 5,999 total intact beef Salmonella tests performed.
Table 4-5 presents the 19 regulations that had more than 30 verifications in a year, a rates ratio of 3.0 or greater, and for which there is a 95% probability (as determined by a two-sided Fisher’s Exact Test p-value of less than 0.05) that the noncompliance rate of the regulation in establishments 90 days prior to an intact beef *Salmonella* positive is higher than the average noncompliance rate for establishments with no intact beef *Salmonella* positive for CY2023.

Table 4-5 Comparison of Noncompliance Rates 90 Days before an Intact Beef *Salmonella* Positive with Those for Establishments with No Intact Beef *Salmonella* Positives

<table>
<thead>
<tr>
<th>Regulation Verified</th>
<th>Description ¹</th>
<th>On FY 2024 PHRs List</th>
<th>Noncompliance Rate 90 Days before a <em>Salmonella</em> Positive</th>
<th>Noncompliance Rate for Establishments with no <em>Salmonella</em> Positives</th>
<th>Rates Ratio</th>
<th>Two-Sided Fisher Exact p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>301.2_Adulterated</td>
<td>Adulterated</td>
<td>No</td>
<td>0.28</td>
<td>0.09</td>
<td>3.90</td>
<td>2.97E-06</td>
</tr>
<tr>
<td>310.22(c)</td>
<td>Disposal of SRM</td>
<td>Yes</td>
<td>0.04</td>
<td>0.00</td>
<td>8.92</td>
<td>2.77E-26</td>
</tr>
<tr>
<td>310.22(e)(1)</td>
<td>Written procedures for removal, segregation, and disposition of SRMs</td>
<td>Yes</td>
<td>0.13</td>
<td>0.02</td>
<td>6.84</td>
<td>8.20E-16</td>
</tr>
<tr>
<td>310.22(e)(3)</td>
<td>Evaluate effectiveness of procedures for removal, segregation, and disposition of SRMs</td>
<td>Yes</td>
<td>0.06</td>
<td>0.01</td>
<td>4.08</td>
<td>2.60E-05</td>
</tr>
<tr>
<td>310.22(f)(2)</td>
<td>Use of routine operational sanitation procedures on equipment used to cut through SRMs</td>
<td>Yes</td>
<td>0.04</td>
<td>0.00</td>
<td>20.13</td>
<td>7.60E-14</td>
</tr>
<tr>
<td>416.12(d)</td>
<td>Plan list frequency for each procedure and responsible individual</td>
<td>No</td>
<td>0.02</td>
<td>0.00</td>
<td>16.69</td>
<td>9.67E-03</td>
</tr>
<tr>
<td>416.13(b)</td>
<td>Conduct other procedures listed in the plan</td>
<td>Yes</td>
<td>0.01</td>
<td>0.00</td>
<td>5.65</td>
<td>9.75E-47</td>
</tr>
<tr>
<td>416.13(c)</td>
<td>Plant monitors implementation of SSOP procedures</td>
<td>Yes</td>
<td>0.04</td>
<td>0.01</td>
<td>4.49</td>
<td>5.05E-165</td>
</tr>
<tr>
<td>416.14</td>
<td>Evaluate effectiveness of SSOP's and maintain plan</td>
<td>Yes</td>
<td>0.01</td>
<td>0.00</td>
<td>5.22</td>
<td>1.44E-21</td>
</tr>
<tr>
<td>Regulation Verified</td>
<td>Description&lt;sup&gt;1&lt;/sup&gt;</td>
<td>On FY 2024 PHRs List</td>
<td>Noncompliance Rate 90 Days before a Salmonella Positive</td>
<td>Noncompliance Rate for Establishments with no Salmonella Positives</td>
<td>Rates Ratio</td>
<td>Two-Sided Fisher Exact p-Value</td>
</tr>
<tr>
<td>---------------------</td>
<td>-------------------------</td>
<td>-----------------------</td>
<td>------------------------------------------------------</td>
<td>---------------------------------------------------</td>
<td>-------------</td>
<td>-------------------------------</td>
</tr>
<tr>
<td>416.15(b)</td>
<td>Corrective action, procedures for</td>
<td>Yes</td>
<td>0.10</td>
<td>0.02</td>
<td>6.67</td>
<td>1.39E-05</td>
</tr>
<tr>
<td>416.2(a)</td>
<td>Grounds and Pest Control</td>
<td>Yes</td>
<td>0.10</td>
<td>0.03</td>
<td>3.86</td>
<td>1.81E-25</td>
</tr>
<tr>
<td>416.4(a)</td>
<td>Food contact surface, cleaning and sanitizing as frequency</td>
<td>Yes</td>
<td>0.11</td>
<td>0.03</td>
<td>3.46</td>
<td>1.51E-48</td>
</tr>
<tr>
<td>416.4(d)</td>
<td>Product processing, handling, storage, loading, unloading, and during transportation must be protected</td>
<td>Yes</td>
<td>0.17</td>
<td>0.05</td>
<td>3.97</td>
<td>1.72E-69</td>
</tr>
<tr>
<td>417.2(c)(4)</td>
<td>List of procedures and frequency</td>
<td>Yes</td>
<td>0.02</td>
<td>0.00</td>
<td>6.93</td>
<td>5.92E-87</td>
</tr>
<tr>
<td>417.3(a)(2)</td>
<td>CCP is under control</td>
<td>Yes</td>
<td>0.02</td>
<td>0.00</td>
<td>4.21</td>
<td>1.48E-04</td>
</tr>
<tr>
<td>417.3(b)(3)</td>
<td>No adulterated product enters commerce</td>
<td>Yes</td>
<td>0.02</td>
<td>0.00</td>
<td>8.48</td>
<td>3.52E-02</td>
</tr>
<tr>
<td>417.3(b)(4)</td>
<td>Reassessment</td>
<td>Yes</td>
<td>0.07</td>
<td>0.01</td>
<td>9.27</td>
<td>1.18E-04</td>
</tr>
<tr>
<td>417.4(a)</td>
<td>Adequacy of HACCP in controlling food safety hazards</td>
<td>Yes</td>
<td>0.50</td>
<td>0.04</td>
<td>26.32</td>
<td>1.79E-05</td>
</tr>
<tr>
<td>310.18(a)</td>
<td>Carcasses, organs, and other parts handled in a sanitary manner</td>
<td>Yes</td>
<td>0.07</td>
<td>0.02</td>
<td>4.18</td>
<td>7.14E-168</td>
</tr>
</tbody>
</table>

<sup>1</sup> Refer to the [Code of Federal Regulations](https://www.gpo.gov/fdsys/search.html?q=CFR) for complete regulation descriptions.

### 4.1.5 Salmonella in Ground Chicken

The dataset used in the analysis consists of candidate PHRs noncompliance rates for the 150 establishments with ground chicken Salmonella testing data, of which 96 establishments had 622 Salmonella positives and 54 establishments did not have Salmonella positives. There were 2,011 total ground chicken Salmonella tests performed.

Table 4-6 presents the 15 regulations that had more than 30 verifications in a year, a rates ratio of 3.0 or greater, and for which there is a 95% probability (as determined by a two-sided Fisher’s Exact p-value of less than 0.05) that the noncompliance rate of the regulation in establishments 90 days before a ground chicken Salmonella positive is higher than the average noncompliance rate for establishments with no ground chicken Salmonella positive for CY2023.
Table 4-6: Comparison of Noncompliance Rates 90 Days before a Ground Chicken Salmonella Positive with Those for Establishments with No Ground Chicken Salmonella Positives

<table>
<thead>
<tr>
<th>Regulation Verified</th>
<th>Description</th>
<th>On FY 2024 PHRs List</th>
<th>Noncompliance Rate 90 Days before a Salmonella Positive</th>
<th>Noncompliance Rate for Establishments with no Salmonella Positives</th>
<th>Rates Ratio</th>
<th>Two-Sided Fisher Exact p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>381.83</td>
<td>Septicemia or toxemia</td>
<td>No</td>
<td>0.00</td>
<td>0.00</td>
<td>3.27</td>
<td>5.37E-03</td>
</tr>
<tr>
<td>381.91(b)</td>
<td>Reprocessing of carcasses accidentally contaminated with digestive tract contents</td>
<td>Yes</td>
<td>0.36</td>
<td>0.01</td>
<td>39.53</td>
<td>1.25E-60</td>
</tr>
<tr>
<td>416.15(b)</td>
<td>Corrective action, procedures for</td>
<td>Yes</td>
<td>0.23</td>
<td>0.05</td>
<td>5.47</td>
<td>5.89E-17</td>
</tr>
<tr>
<td>417.2(a)(1)</td>
<td>Hazard analysis</td>
<td>Yes</td>
<td>0.02</td>
<td>0.01</td>
<td>4.09</td>
<td>4.02E-08</td>
</tr>
<tr>
<td>417.3(a)(1)</td>
<td>Identify and eliminate the cause</td>
<td>Yes</td>
<td>0.12</td>
<td>0.00</td>
<td>286.45</td>
<td>4.08E-91</td>
</tr>
<tr>
<td>417.3(a)(2)</td>
<td>CCP is under control</td>
<td>Yes</td>
<td>0.01</td>
<td>0.00</td>
<td>50.25</td>
<td>4.98E-24</td>
</tr>
<tr>
<td>417.3(a)(3)</td>
<td>Establish measures to prevent recurrence</td>
<td>Yes</td>
<td>0.12</td>
<td>0.00</td>
<td>192.87</td>
<td>3.01E-69</td>
</tr>
<tr>
<td>417.3(b)(4)</td>
<td>Reassessment</td>
<td>Yes</td>
<td>0.01</td>
<td>0.00</td>
<td>59.61</td>
<td>7.98E-07</td>
</tr>
<tr>
<td>417.3(c)</td>
<td>Document corrective actions</td>
<td>Yes</td>
<td>0.01</td>
<td>0.00</td>
<td>24.02</td>
<td>6.58E-04</td>
</tr>
<tr>
<td>417.4(a)(1)</td>
<td>Initial validation</td>
<td>Yes</td>
<td>0.08</td>
<td>0.01</td>
<td>14.72</td>
<td>8.82E-04</td>
</tr>
<tr>
<td>417.5(a)(2)</td>
<td>Written HACCP plan</td>
<td>Yes</td>
<td>0.00</td>
<td>0.00</td>
<td>8.05</td>
<td>8.88E-08</td>
</tr>
<tr>
<td>417.5(a)(3)</td>
<td>Records documentation and monitoring of CCP's and Critical Limits</td>
<td>Yes</td>
<td>0.00</td>
<td>0.00</td>
<td>3.70</td>
<td>2.97E-12</td>
</tr>
<tr>
<td>381.65(g)</td>
<td>Procedures for controlling contamination throughout the slaughter and dressing operation</td>
<td>Yes</td>
<td>0.01</td>
<td>0.00</td>
<td>6.18</td>
<td>9.38E-30</td>
</tr>
<tr>
<td>381.76(b)(6)(ii)(A)</td>
<td>NPIS Sorting, Trimming, and Reprocessing</td>
<td>Yes</td>
<td>0.02</td>
<td>0.00</td>
<td>11.11</td>
<td>2.82E-61</td>
</tr>
<tr>
<td>381.76(b)(6)(ii)(C)</td>
<td>NPIS septicemia/toxemia</td>
<td>No</td>
<td>0.00</td>
<td>0.00</td>
<td>5.30</td>
<td>5.24E-05</td>
</tr>
</tbody>
</table>

1 Refer to the Code of Federal Regulations for complete regulation descriptions.
4.1.6 Salmonella in Ground Turkey

The dataset used in the analysis consists of candidate PHRs noncompliance rates for the 49 establishments with ground turkey Salmonella testing data, of which 34 establishments had 263 Salmonella positives and 15 establishments did not have Salmonella positives. There were 1,331 total ground turkey Salmonella tests performed.

Table 4-7 presents the six regulations that had more than 30 verifications in a year, a rates ratio of 3.0 or greater, and for which there is a 95% probability (as determined by a two-sided Fisher’s Exact p-value of less than 0.05) that the noncompliance rate of the regulation in establishments 90 days before a ground turkey Salmonella positive is higher than the average noncompliance rate for establishments with no ground turkey Salmonella positive for CY2023.

<table>
<thead>
<tr>
<th>Regulation Verified</th>
<th>Description1</th>
<th>On FY 2024 PHRs List</th>
<th>Noncompliance Rate 90 Days before a Salmonella Positive</th>
<th>Noncompliance Rate for Establishments with no Salmonella Positives</th>
<th>Rates Ratio</th>
<th>Two-Sided Fisher Exact p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>416.13(a)</td>
<td>Conduct pre-op procedures</td>
<td>Yes</td>
<td>0.11</td>
<td>0.04</td>
<td>3.12</td>
<td>3.66E-29</td>
</tr>
<tr>
<td>416.13(c)</td>
<td>Plant monitors implementation of SSOP procedures</td>
<td>Yes</td>
<td>0.04</td>
<td>0.01</td>
<td>6.74</td>
<td>1.80E-78</td>
</tr>
<tr>
<td>416.14</td>
<td>Evaluate effectiveness of SSOP's and maintain plan</td>
<td>Yes</td>
<td>0.01</td>
<td>0.00</td>
<td>22.35</td>
<td>1.48E-15</td>
</tr>
<tr>
<td>416.4(a)</td>
<td>Food contact surface, cleaning and sanitizing as frequency</td>
<td>Yes</td>
<td>0.18</td>
<td>0.04</td>
<td>5.70</td>
<td>6.93E-30</td>
</tr>
<tr>
<td>417.3(a)(2)</td>
<td>CCP is under control</td>
<td>Yes</td>
<td>0.11</td>
<td>0.00</td>
<td>67.79</td>
<td>1.17E-24</td>
</tr>
<tr>
<td>417.3(a)(3)</td>
<td>Establish measures to prevent recurrence</td>
<td>Yes</td>
<td>0.47</td>
<td>0.06</td>
<td>15.36</td>
<td>1.29E-07</td>
</tr>
</tbody>
</table>

1 Refer to the Code of Federal Regulations for complete regulation descriptions.

4.1.7 Salmonella in Intact Pork

The dataset used in the analysis consists of candidate PHRs noncompliance rates for the 97 establishments with intact pork Salmonella testing data, of which 30 establishments had 134 Salmonella positives and 67 establishments did not have Salmonella positives. There were 1,903 total intact pork Salmonella tests performed.

Table 4-8 presents the six regulations that had more than 30 verifications in a year, a rates ratio of 3.0 or greater, and for which there is a 95% probability (as determined by a two-sided Fisher’s Exact p-value of less than 0.05) that the noncompliance rate of the regulation in establishments
90 days before an intact pork *Salmonella* positive is higher than the average noncompliance rate for establishments with no intact pork *Salmonella* positive for CY2023.

Table 4-8 Comparison of Noncompliance Rates 90 Days before an Intact Pork *Salmonella* Positive with Those for Establishments with No Intact Pork *Salmonella* Positives

<table>
<thead>
<tr>
<th>Regulation Verified</th>
<th>Description¹</th>
<th>On FY 2024 PHRs List</th>
<th>Noncompliance Rate 90 Days before a <em>Salmonella</em> Positive</th>
<th>Noncompliance Rate for Establishments with no <em>Salmonella</em> Positives</th>
<th>Rates Ratio</th>
<th>Two-Sided Fisher Exact p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>310.3</td>
<td>Carcasses and parts in certain instances to be retained</td>
<td>Yes</td>
<td>0.66</td>
<td>0.22</td>
<td>6.87</td>
<td>2.54E-08</td>
</tr>
<tr>
<td>318.24</td>
<td>Product prepared using advanced meat/bone separation machinery; process control</td>
<td>No</td>
<td>0.02</td>
<td>0.01</td>
<td>3.89</td>
<td>3.07E-02</td>
</tr>
<tr>
<td>416.16(a)</td>
<td>Daily records required, responsible individual, initialed and dated</td>
<td>Yes</td>
<td>0.00</td>
<td>0.00</td>
<td>6.61</td>
<td>2.16E-22</td>
</tr>
<tr>
<td>416.2(a)</td>
<td>Grounds and Pest Control</td>
<td>Yes</td>
<td>0.13</td>
<td>0.04</td>
<td>3.39</td>
<td>2.68E-15</td>
</tr>
<tr>
<td>417.3(b)(3)</td>
<td>No adulterated product enters commerce</td>
<td>Yes</td>
<td>0.08</td>
<td>0.01</td>
<td>12.55</td>
<td>1.59E-02</td>
</tr>
<tr>
<td>417.3(b)(4)</td>
<td>Reassessment</td>
<td>Yes</td>
<td>0.04</td>
<td>0.00</td>
<td>13.76</td>
<td>6.83E-03</td>
</tr>
</tbody>
</table>

¹ Refer to the Code of Federal Regulations for complete regulation descriptions.

### 4.1.8 *Salmonella* in Ground Pork

The dataset used in the analysis consists of candidate PHRs noncompliance rates for the 307 establishments with ground pork *Salmonella* testing data, of which 134 establishments had 917 *Salmonella* positives and 173 establishments did not have *Salmonella* positives. There were 5,107 total ground pork *Salmonella* tests performed.

Table 4-9 presents the nine regulations that had more than 30 verifications in a year, a rates ratio of 3.0 or greater, and for which there is a 95% probability (as determined by a two-sided Fisher’s Exact p-value of less than 0.05) that for which the noncompliance rate of the regulation in establishments 90 days before a ground pork *Salmonella* positive is higher than the average noncompliance rate for establishments with no ground pork *Salmonella* positive for CY2023.

Table 4-9 Comparison of Noncompliance Rates 90 Days before a Ground Pork *Salmonella* Positive with those for Establishments with No Ground Pork *Salmonella* Positives
<table>
<thead>
<tr>
<th>Regulation Verified</th>
<th>Description¹</th>
<th>On FY 2024 PHRs List</th>
<th>Noncompliance Rate 90 Days before a <em>Salmonella</em> Positive</th>
<th>Noncompliance Rate for Establishments with no <em>Salmonella</em> Positives</th>
<th>Rates Ratio</th>
<th>Two-Sided Fisher Exact p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>301.2_Adulterated</td>
<td>Adulterated</td>
<td>No</td>
<td>0.59</td>
<td>0.11</td>
<td>11.73</td>
<td>2.20E-02</td>
</tr>
<tr>
<td>310.22(c)</td>
<td>Disposal of SRM</td>
<td>Yes</td>
<td>0.03</td>
<td>0.00</td>
<td>43.98</td>
<td>2.41E-09</td>
</tr>
<tr>
<td>310.22(e)(1)</td>
<td>Written procedures for removal, segregation, and disposition of SRMs</td>
<td>Yes</td>
<td>0.13</td>
<td>0.00</td>
<td>80.15</td>
<td>2.15E-03</td>
</tr>
<tr>
<td>318.2(d)</td>
<td>Removal of U.S. retained by authorized Program employees only</td>
<td>Yes</td>
<td>0.04</td>
<td>0.01</td>
<td>5.79</td>
<td>9.65E-03</td>
</tr>
<tr>
<td>416.13(c)</td>
<td>Plant monitors implementation of SSOP procedures</td>
<td>Yes</td>
<td>0.02</td>
<td>0.00</td>
<td>3.90</td>
<td>6.46E-157</td>
</tr>
<tr>
<td>416.2(b)(4)</td>
<td>Inedible from edible separated by time or space</td>
<td>Yes</td>
<td>0.01</td>
<td>0.00</td>
<td>6.50</td>
<td>4.11E-08</td>
</tr>
<tr>
<td>416.4(d)</td>
<td>Product processing, handling, storage, loading, unloading, and during transportation must be protected</td>
<td>Yes</td>
<td>0.07</td>
<td>0.02</td>
<td>3.35</td>
<td>1.89E-46</td>
</tr>
<tr>
<td>416.6</td>
<td>Only FSIS program employee may remove “U.S. Rejected” tag</td>
<td>Yes</td>
<td>0.30</td>
<td>0.02</td>
<td>26.33</td>
<td>1.13E-06</td>
</tr>
<tr>
<td>417.3(a)(2)</td>
<td>CCP is under control</td>
<td>Yes</td>
<td>0.01</td>
<td>0.00</td>
<td>3.87</td>
<td>1.11E-05</td>
</tr>
</tbody>
</table>


### 4.1.9 *Salmonella* in Chicken Parts
The dataset used in the analysis consists of candidate PHRs noncompliance rates for the 487 establishments with chicken parts *Salmonella* testing data, of which 384 establishments had 1,280 *Salmonella* positives and 103 establishments did not have *Salmonella* positives. There were 14,630 total chicken parts *Salmonella* tests performed.
Table 4-10 presents the five regulations that had more than 30 verifications in a year, a rates ratio of 3.0 or greater, and for which there is a 95% probability (as determined by a two-sided Fisher’s Exact $p$-value of less than 0.05) that the noncompliance rate of the regulation in establishments 90 days before a chicken parts *Salmonella* positive is higher than the average noncompliance rate for establishments with no chicken parts *Salmonella* positive for CY2023.

### Table 4-10 Comparison of Noncompliance Rates 90 Days before a Chicken Parts *Salmonella* Positive with Those for Establishments with No Chicken Parts *Salmonella* Positives

<table>
<thead>
<tr>
<th>Regulation Verified</th>
<th>Description</th>
<th>On FY 2024 PHRs Listed</th>
<th>Noncompliance Rate 90 Days before a <em>Salmonella</em> Positive</th>
<th>Noncompliance Rate for Establishments with no <em>Salmonella</em> Positives</th>
<th>Rates Ratio</th>
<th>Two-Sided Fisher Exact $p$-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>416.13(b)</td>
<td>Conduct other procedures listed in the plan</td>
<td>Yes</td>
<td>0.02</td>
<td>0.01</td>
<td>3.81</td>
<td>3.05E-124</td>
</tr>
<tr>
<td>416.4(a)</td>
<td>Food contact surface, cleaning and sanitizing as frequency</td>
<td>Yes</td>
<td>0.19</td>
<td>0.06</td>
<td>3.94</td>
<td>3.09E-108</td>
</tr>
<tr>
<td>416.6</td>
<td>Only FSIS program employee may remove “U.S. Rejected” tag</td>
<td>Yes</td>
<td>0.11</td>
<td>0.01</td>
<td>10.85</td>
<td>1.25E-02</td>
</tr>
<tr>
<td>310.18(a)</td>
<td>Carcasses, organs, and other parts handled in a sanitary manner</td>
<td>Yes</td>
<td>0.03</td>
<td>0.00</td>
<td>8.43</td>
<td>5.82E-03</td>
</tr>
<tr>
<td>381.76(b)(6)(ii)(D)</td>
<td>Ready-to-Cook verification in NPIS</td>
<td>Yes</td>
<td>0.24</td>
<td>0.02</td>
<td>17.55</td>
<td>2.10E-38</td>
</tr>
</tbody>
</table>

1 Refer to the [Code of Federal Regulations](https://www.govinfo.gov/app/cfdocs/cfr/Title21/govinfo.cfm?CFRselected=21&section=310.18&entry=310.18a&hierarchy=ts&gostyle=plain) for complete regulation descriptions.

### 4.1.10 *Salmonella* in Ready-to-Eat Products

The dataset used in the analysis consists of candidate PHRs noncompliance rates for the 2,361 establishments with RTE *Salmonella* testing data, of which eight establishments had eight *Salmonella* positives and 2,353 establishments did not have *Salmonella* positives. There were 15,742 total RTE *Salmonella* tests performed.

Table 4-11 presents the one regulation that had more than 30 verifications in a year, a rates ratio of 3.0 or greater, and for which there is a 95% probability (as determined by a two-sided Fisher’s Exact $p$-value of less than 0.05) that the noncompliance rate of the regulation in establishments 90 days before a RTE *Salmonella* positive is higher than the average noncompliance rate for establishments with no RTE *Salmonella* positive for CY2023.
Table 4-11 Comparison of Noncompliance Rates 90 Days before a RTE Salmonella Positive with Those for Establishments with No RTE Salmonella Positives

<table>
<thead>
<tr>
<th>Regulation Verified</th>
<th>Description1</th>
<th>On FY 2024 PHRs List</th>
<th>Noncompliance Rate 90 Days before a Salmonella Positive</th>
<th>Noncompliance Rate for Establishments with no Salmonella Positives</th>
<th>Rates Ratio</th>
<th>Two-Sided Fisher Exact p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>416.13(a)</td>
<td>Conduct pre-op procedures</td>
<td>Yes</td>
<td>0.05</td>
<td>0.01</td>
<td>3.89</td>
<td>2.14E-04</td>
</tr>
</tbody>
</table>

1 Refer to the Code of Federal Regulations for complete regulation descriptions.

4.2 E. coli

The purpose of this section is to provide the results of the analysis between the candidate regulations and E. coli positives in the following products: MT43 (raw ground beef and veal), MT60 (beef or veal trim), MT64 (raw ground beef or beef patty components, other than trim), and MT65 (bench trim for further use in any raw, non-intact beef products). Routine E. coli testing was expanded on February 1, 2023 to include six additional STECs. The dataset used in the analysis consists of candidate PHRs noncompliance rates for the 1512 establishments with E. coli testing data, of which 52 establishments had 56 positives and 1460 establishments did not have E. coli positives. There were 17,585 total E. coli tests performed.

Table 4-12 presents the nine regulations that had more than 30 verifications in a year, a rates ratio of 3.0 or greater, and there is a 95% probability (as determined by a two-sided Fisher’s Exact p-value of less than 0.05) that the noncompliance rate of the regulation in establishments 90 days before an E. coli positive is higher than the average noncompliance rate for establishments with no E. coli positive for CY2023.

Table 4-12 Comparison of Noncompliance Rates 90 Days before an E. coli Positive with Those for Establishments with no E. coli Positives

<table>
<thead>
<tr>
<th>Regulation Verified</th>
<th>Description1</th>
<th>On FY 2024 PHRs List</th>
<th>Noncompliance Rate 90 Days before a E. coli Positive</th>
<th>Noncompliance Rate for Establishments with no E. coli Positives</th>
<th>Rates Ratio</th>
<th>Two-Sided Fisher Exact p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>310.22(b)</td>
<td>Inedible and prohibited SRM for use as human food</td>
<td>No</td>
<td>0.14</td>
<td>0.00</td>
<td>103.08</td>
<td>1.68E-02</td>
</tr>
<tr>
<td>381.65(a)</td>
<td>Clean and sanitary practices; products not adulterated</td>
<td>Yes</td>
<td>0.02</td>
<td>0.00</td>
<td>42.00</td>
<td>3.56E-02</td>
</tr>
<tr>
<td>416.15(a)</td>
<td>Appropriate corrective actions</td>
<td>Yes</td>
<td>0.06</td>
<td>0.02</td>
<td>3.66</td>
<td>1.57E-02</td>
</tr>
<tr>
<td>416.3(b)</td>
<td>Constructed, located and operated in a manner that does not deter inspection</td>
<td>Yes</td>
<td>0.02</td>
<td>0.00</td>
<td>5.24</td>
<td>8.98E-03</td>
</tr>
</tbody>
</table>
Referring to the Code of Federal Regulations for complete regulation descriptions.

### 4.3 Listeria monocytogenes

The purpose of this section is to provide the results of the analysis between the candidate regulations and $Lm$. The dataset used in the analysis consists of candidate PHRs noncompliance rates for the 2,361 establishments with $Lm$ testing data, of which 37 establishments had 39 $Lm$ positives and 2,324 establishments did not have $Lm$ positives. There were 16,007 total $Lm$ tests performed.

Table 4-13 presents the four regulations that had more than 30 verifications in a year, a rates ratio of 3.0 or greater, and for which there is 95% probability (as determined by a two-sided Fisher’s Exact $p$-value of less than 0.05) that the noncompliance rate of the regulation in establishments 90 days before a $Lm$ positive is higher than the noncompliance rate for establishments with no $Lm$ positive for CY2023.

<table>
<thead>
<tr>
<th>Regulation Verified</th>
<th>Description$^1$</th>
<th>On FY 2024 PHRs List</th>
<th>Noncompliance Rate 90 Days before a <em>E. coli</em> Positive</th>
<th>Noncompliance Rate for Establishments with no <em>E. coli</em> Positives</th>
<th>Rates Ratio</th>
<th>Two-Sided Fisher Exact $p$-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>417.2(c)(4)</td>
<td>List of procedures and frequency</td>
<td>Yes</td>
<td>0.01</td>
<td>0.00</td>
<td>4.50</td>
<td>7.08E-18</td>
</tr>
<tr>
<td>417.3(a)(1)</td>
<td>Identify and eliminate the cause</td>
<td>Yes</td>
<td>0.62</td>
<td>0.05</td>
<td>33.93</td>
<td>2.82E-08</td>
</tr>
<tr>
<td>417.3(a)(3)</td>
<td>Establish measures to prevent recurrence</td>
<td>Yes</td>
<td>0.83</td>
<td>0.12</td>
<td>35.76</td>
<td>5.22E-08</td>
</tr>
<tr>
<td>417.4(a)</td>
<td>Adequacy of HACCP in controlling food safety hazards</td>
<td>Yes</td>
<td>0.06</td>
<td>0.02</td>
<td>3.43</td>
<td>2.30E-02</td>
</tr>
<tr>
<td>311.14</td>
<td>Abrasions, bruises, abscesses, pus, etc.</td>
<td>No</td>
<td>0.01</td>
<td>0.00</td>
<td>130.81</td>
<td>4.51E-05</td>
</tr>
</tbody>
</table>

$^1$ Refer to the Code of Federal Regulations for complete regulation descriptions.
4.4 Campylobacter

The purpose of this section is to provide the results of the analysis between the candidate regulations and Campylobacter positives. The dataset used in the analysis consists of candidate PHRs noncompliance rates for the 614 establishments with Campylobacter testing data, of which 495 establishments had 4,884 Campylobacter positives and 119 establishments did not have Campylobacter positives. There were 20,885 total Campylobacter tests performed.

Table 4-14 presents the 11 regulations that had more than 30 verifications in a year, a rates ratio of 3.0 or greater, and for which there is 95% probability (as determined by a two-sided Fisher’s Exact p-value of less than 0.05) that the noncompliance rate of the regulation in establishments 90 days before a Campylobacter positive is higher than the noncompliance rate for establishments with no Campylobacter positive for CY2023.

### Table 4-14 Comparison of Noncompliance Rates 90 Days before a Campylobacter Positive with Those for Establishments with No Campylobacter Positives

<table>
<thead>
<tr>
<th>Regulation Verified</th>
<th>Description¹</th>
<th>On FY 2024 PHRs List</th>
<th>Noncompliance Rate 90 Days before a Campylobacter Positive</th>
<th>Noncompliance Rate for Establishments with no Campylobacter Positives</th>
<th>Rates Ratio</th>
<th>Two-Sided Fisher Exact p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>430.4(c)(6)</td>
<td>Lm, prerequisite program requirements</td>
<td>No</td>
<td>0.25</td>
<td>0.01</td>
<td>42.29</td>
<td>3.19E-02</td>
</tr>
<tr>
<td>310.18(a)</td>
<td>Carcasses, organs, and other parts handled in a sanitary manner</td>
<td>Yes</td>
<td>0.05</td>
<td>0.01</td>
<td>6.02</td>
<td>4.96E-06</td>
</tr>
</tbody>
</table>

¹ Refer to the Code of Federal Regulations for complete regulation descriptions.

### Table 4-14 Comparison of Noncompliance Rates 90 Days before a Campylobacter Positive with Those for Establishments with No Campylobacter Positives

<table>
<thead>
<tr>
<th>Regulation Verified</th>
<th>Description¹</th>
<th>On FY 2024 PHRs List</th>
<th>Noncompliance Rate 90 Days before a Campylobacter Positive</th>
<th>Noncompliance Rate for Establishments with no Campylobacter Positives</th>
<th>Rates Ratio</th>
<th>Two-Sided Fisher Exact p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>416.13(b)</td>
<td>Conduct other procedures listed in the plan</td>
<td>Yes</td>
<td>0.03</td>
<td>0.01</td>
<td>4.89</td>
<td>2.51E-230</td>
</tr>
<tr>
<td>416.16(a)</td>
<td>Daily records required, responsible individual, initialed and dated</td>
<td>Yes</td>
<td>0.00</td>
<td>0.00</td>
<td>4.98</td>
<td>2.06E-51</td>
</tr>
<tr>
<td>416.2(a)</td>
<td>Grounds and Pest Control</td>
<td>Yes</td>
<td>0.23</td>
<td>0.04</td>
<td>8.00</td>
<td>1.71E-197</td>
</tr>
<tr>
<td>416.2(b)(1)</td>
<td>Sound construction, good repair and sufficient size</td>
<td>Yes</td>
<td>0.22</td>
<td>0.05</td>
<td>5.15</td>
<td>2.38E-119</td>
</tr>
<tr>
<td>416.2(b)(2)</td>
<td>Walls/floors/ceilings durable, impervious, cleaned and sanitized</td>
<td>Yes</td>
<td>0.19</td>
<td>0.04</td>
<td>5.41</td>
<td>6.53E-150</td>
</tr>
<tr>
<td>Regulation Verified</td>
<td>Description¹</td>
<td>On FY 2024 PHRs List</td>
<td>Noncompliance Rate 90 Days before a Campylobacter Positive</td>
<td>Noncompliance Rate for Establishments with no Campylobacter Positives</td>
<td>Rates Ratio</td>
<td>Two-Sided Fisher Exact p-Value</td>
</tr>
<tr>
<td>---------------------</td>
<td>---------------</td>
<td>----------------------</td>
<td>----------------------------------------------------------</td>
<td>-------------------------------------------------------------------</td>
<td>------------</td>
<td>-----------------------------</td>
</tr>
<tr>
<td>416.2(b)(4)</td>
<td>Inedible from edible separated by time or space</td>
<td>Yes</td>
<td>0.04</td>
<td>0.01</td>
<td>6.94</td>
<td>7.15E-23</td>
</tr>
<tr>
<td>416.3(b)</td>
<td>Constructed, located and operated in a manner that does not deter inspection</td>
<td>Yes</td>
<td>0.04</td>
<td>0.01</td>
<td>6.01</td>
<td>2.75E-11</td>
</tr>
<tr>
<td>416.3(c)</td>
<td>Receptacles for storing inedible material must identify permitted use</td>
<td>Yes</td>
<td>0.12</td>
<td>0.01</td>
<td>10.51</td>
<td>1.58E-43</td>
</tr>
<tr>
<td>416.4(a)</td>
<td>Food contact surface, cleaning and sanitizing as frequency</td>
<td>Yes</td>
<td>0.22</td>
<td>0.04</td>
<td>6.31</td>
<td>3.96E-248</td>
</tr>
<tr>
<td>417.2(c)(4)</td>
<td>List of procedures and frequency</td>
<td>Yes</td>
<td>0.01</td>
<td>0.00</td>
<td>4.31</td>
<td>5.79E-52</td>
</tr>
<tr>
<td>381.76(b)(6)(ii)(D)</td>
<td>Ready-to-Cook verification in NPIS</td>
<td>Yes</td>
<td>0.18</td>
<td>0.03</td>
<td>7.02</td>
<td>2.28E-10</td>
</tr>
</tbody>
</table>

¹ Refer to the Code of Federal Regulations for complete regulation descriptions.

### 4.4.1 Campylobacter in Intact Chicken

The dataset used in the analysis consists of candidate PHRs noncompliance rates for the 213 establishments with intact chicken Campylobacter testing data, of which 208 establishments had 2,092 Campylobacter positives and five establishments did not have Campylobacter positives. There were 8,422 total intact chicken Campylobacter tests performed.

Table 4-15 presents the seven regulations that had more than 30 verifications in a year, a rates ratio of 3.0 or greater, and for which there is 95% probability (as determined by a two-sided Fisher’s Exact p-value of less than 0.05) that the noncompliance rate of the regulation in establishments 90 days before a Campylobacter positive is higher than the noncompliance rate for establishments with no Campylobacter positive for CY2023.

**Table 4-15 Comparison of Noncompliance Rates 90 Days before a Campylobacter Intact Chicken Positive with Those for Establishments with No Campylobacter Intact Chicken Positives**
### Table 4-16 Comparison of Noncompliance Rates 90 Days before a *Campylobacter* Intact Turkey Positive with Those for Establishments with No *Campylobacter* Intact Turkey Positives

<table>
<thead>
<tr>
<th>Regulation Verified</th>
<th>Description[^1]</th>
<th>On FY 2024 PHRs List</th>
<th>Noncompliance Rate 90 Days before a <em>Campylobacter</em> Positive</th>
<th>Noncompliance Rate for Establishments with no <em>Campylobacter</em> Positives</th>
<th>Rates Ratio</th>
<th>Two-Sided Fisher Exact p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>416.1</td>
<td>Operate in a manner to prevent insanitary conditions</td>
<td>Yes</td>
<td>0.01</td>
<td>0.00</td>
<td>3.76</td>
<td>3.95E-02</td>
</tr>
<tr>
<td>416.13(b)</td>
<td>Conduct other procedures listed in the plan</td>
<td>Yes</td>
<td>0.03</td>
<td>0.00</td>
<td>16.23</td>
<td>8.92E-33</td>
</tr>
<tr>
<td>416.2(a)</td>
<td>Grounds and Pest Control</td>
<td>Yes</td>
<td>0.28</td>
<td>0.07</td>
<td>4.98</td>
<td>1.07E-12</td>
</tr>
<tr>
<td>416.2(b)(1)</td>
<td>Sound construction, good repair and sufficient size</td>
<td>Yes</td>
<td>0.28</td>
<td>0.04</td>
<td>8.36</td>
<td>4.42E-12</td>
</tr>
<tr>
<td>416.2(b)(2)</td>
<td>Walls/floors/ceilings durable, impervious, cleaned and sanitized</td>
<td>Yes</td>
<td>0.24</td>
<td>0.02</td>
<td>13.19</td>
<td>2.88E-15</td>
</tr>
<tr>
<td>416.4(a)</td>
<td>Food contact surface, cleaning and sanitizing as frequency</td>
<td>Yes</td>
<td>0.25</td>
<td>0.04</td>
<td>7.18</td>
<td>7.18E-18</td>
</tr>
<tr>
<td>416.4(d)</td>
<td>Product processing, handling, storage, loading, unloading, and during transportation must be protected</td>
<td>Yes</td>
<td>0.35</td>
<td>0.10</td>
<td>4.90</td>
<td>1.14E-20</td>
</tr>
</tbody>
</table>


### 4.4.2 *Campylobacter* in Intact Turkey

The dataset used in the analysis consists of candidate PHRs noncompliance rates for the 43 establishments with intact turkey *Campylobacter* testing data, of which eight establishments had 12 *Campylobacter* positives and 35 establishments did not have *Campylobacter* positives. There were 1,331 total intact turkey *Campylobacter* tests performed.

Table 4-16 presents the four regulations that had more than 30 verifications in a year, a rates ratio of 3.0 or greater, and for which there is 95% probability (as determined by a two-sided Fisher’s Exact $p$-value of less than 0.05) that the noncompliance rate of the regulations in establishments 90 days before an intact turkey *Campylobacter* positive is higher than the noncompliance rate for establishments with no intact turkey *Campylobacter* positive for CY2023.

**Table 4-16 Comparison of Noncompliance Rates 90 Days before a *Campylobacter* Intact Turkey Positive with Those for Establishments with No *Campylobacter* Intact Turkey Positives**
<table>
<thead>
<tr>
<th>Regulation Verified</th>
<th>Description(^1)</th>
<th>On FY2024 PHRs List</th>
<th>Noncompliance Rate 90 Days before a <em>Campylobacter</em> Positive</th>
<th>Noncompliance Rate for Establishments with no <em>Campylobacter</em> Positives</th>
<th>Rates Ratio</th>
<th>Two-Sided Fisher Exact p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>416.2(b)(1)</td>
<td>Sound construction, good repair and sufficient size</td>
<td>Yes</td>
<td>0.20</td>
<td>0.05</td>
<td>4.31</td>
<td>5.96E-03</td>
</tr>
<tr>
<td>417.2(c)(4)</td>
<td>List of procedures and frequency</td>
<td>Yes</td>
<td>0.03</td>
<td>0.00</td>
<td>6.76</td>
<td>6.00E-18</td>
</tr>
<tr>
<td>417.3(c)</td>
<td>Document corrective actions</td>
<td>Yes</td>
<td>0.67</td>
<td>0.09</td>
<td>19.60</td>
<td>2.83E-02</td>
</tr>
<tr>
<td>381.76(a)</td>
<td>Post-mortem inspection, when required, extent</td>
<td>Yes</td>
<td>0.05</td>
<td>0.00</td>
<td>15.58</td>
<td>4.15E-04</td>
</tr>
</tbody>
</table>

\(^1\) Refer to the [Code of Federal Regulations](#) for complete regulation descriptions.

### 4.4.3 *Campylobacter* in Ground Chicken

The dataset used in the analysis consists of candidate PHRs noncompliance rates for the 98 establishments with ground chicken *Campylobacter* testing data, of which 47 establishments had 194 *Campylobacter* positives and 51 establishments did not have *Campylobacter* positives. There were 1,923 total ground chicken *Campylobacter* tests performed.

Table 4-17 presents the one regulations that had more than 30 verifications in a year, a rates ratio of 3.0 or greater, and for which there is a 95% probability (as determined by a two-sided Fisher’s Exact p-value of less than 0.05) that the noncompliance rate of the regulation in establishments 90 days before a ground chicken *Campylobacter* positive is higher than the average noncompliance rate for establishments with no ground chicken *Campylobacter* positive for CY2023.

**Table 4-17 Comparison of Noncompliance Rates 90 Days before a Ground Chicken *Campylobacter* Positive with Those for Establishments with No Ground Chicken *Campylobacter* Positives**

<table>
<thead>
<tr>
<th>Regulation Verified</th>
<th>Description(^1)</th>
<th>On FY2024 PHRs List</th>
<th>Noncompliance Rate 90 Days before a <em>Campylobacter</em> Positive</th>
<th>Noncompliance Rate for Establishments with no <em>Campylobacter</em> Positives</th>
<th>Rates Ratio</th>
<th>Two-Sided Fisher Exact p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>416.2(b)(1)</td>
<td>Sound construction, good repair and sufficient size</td>
<td>Yes</td>
<td>0.24</td>
<td>0.07</td>
<td>3.99</td>
<td>4.21E-20</td>
</tr>
</tbody>
</table>

\(^1\) Refer to the [Code of Federal Regulations](#) for complete regulation descriptions.
4.4.4 Campylobacter in Ground Turkey

The dataset used in the analysis consists of candidate PHRs noncompliance rates for the 49 establishments with ground turkey Campylobacter testing data, of which 18 establishments had 39 Campylobacter positives and 31 establishments did not have Campylobacter positives. There were 1,314 total ground turkey Campylobacter tests performed.

Table 4-18 presents the seven regulations that had more than 30 verifications in a year in total, a rates ratio of 3.0 or greater, and for which there is a 95% probability (as determined by a two-sided Fisher’s Exact p-value of less than 0.05) that the noncompliance rate of the regulations in establishments 90 days before a ground turkey Campylobacter positive is higher than the average noncompliance rate for establishments with no ground turkey Campylobacter positive for CY2023.

Table 4-18 Comparison of Noncompliance Rates 90 Days before a Ground Turkey Campylobacter Positive with those for Establishments with No Ground Turkey Campylobacter Positives

<table>
<thead>
<tr>
<th>Regulation Verified</th>
<th>Description1</th>
<th>On FY2024 PHRs List</th>
<th>Noncompliance Rate 90 Days before a Campylobacter Positive</th>
<th>Noncompliance Rate for Establishments with no Campylobacter Positives</th>
<th>Rates Ratio</th>
<th>Two-Sided Fisher Exact p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>381.91(b)</td>
<td>Reprocessing of carcasses accidentally contaminated with digestive tract contents</td>
<td>Yes</td>
<td>0.13</td>
<td>0.03</td>
<td>4.72</td>
<td>6.84E-05</td>
</tr>
<tr>
<td>416.13(c)</td>
<td>Plant monitors implementation of SSOP procedures</td>
<td>Yes</td>
<td>0.05</td>
<td>0.01</td>
<td>3.75</td>
<td>1.37E-53</td>
</tr>
<tr>
<td>416.14</td>
<td>Evaluate effectiveness of SSOP’s and maintain plan</td>
<td>Yes</td>
<td>0.02</td>
<td>0.00</td>
<td>16.34</td>
<td>4.06E-37</td>
</tr>
<tr>
<td>416.16(a)</td>
<td>Daily records required, responsible individual, initialed and dated</td>
<td>Yes</td>
<td>0.01</td>
<td>0.00</td>
<td>3.75</td>
<td>1.27E-10</td>
</tr>
<tr>
<td>416.2(b)(2)</td>
<td>Walls/floors/ceilings durable, impervious, cleaned and sanitized</td>
<td>Yes</td>
<td>0.20</td>
<td>0.07</td>
<td>3.45</td>
<td>1.53E-11</td>
</tr>
<tr>
<td>416.4(a)</td>
<td>Food contact surface, cleaning and sanitizing as frequency</td>
<td>Yes</td>
<td>0.16</td>
<td>0.05</td>
<td>3.36</td>
<td>6.14E-08</td>
</tr>
<tr>
<td>417.5(a)(3)</td>
<td>Records documentation and monitoring of CCP's and Critical Limits</td>
<td>Yes</td>
<td>0.01</td>
<td>0.00</td>
<td>4.22</td>
<td>3.79E-08</td>
</tr>
</tbody>
</table>

1 Refer to the Code of Federal Regulations for complete regulation descriptions.
### 4.4.5 *Campylobacter* in Chicken Parts

The dataset used in the analysis consists of candidate PHRs noncompliance rates for the 487 establishments with chicken parts *Campylobacter* testing data, of which 416 establishments had 2,547 *Campylobacter* positives and 71 establishments did not have *Campylobacter* positives. There were 12,779 total chicken parts *Campylobacter* tests performed.

Table 4-19 presents the 12 regulations which had more than 30 verifications in a year, a rates ratio of 3.0 or greater, and for which there is a 95% probability (as determined by a two-sided Fisher’s Exact $p$-value of less than 0.05) that the noncompliance rate of the regulation in establishments 90 days before a chicken parts *Campylobacter* positive is higher than the average noncompliance rate for establishments with no chicken parts *Campylobacter* positive for CY2023.

<table>
<thead>
<tr>
<th>Regulation Verified</th>
<th>Description¹</th>
<th>On FY 2024 PHRs List</th>
<th>Noncompliance Rate 90 Days before a <em>Campylobacter</em> Positive</th>
<th>Noncompliance Rate for Establishments with no <em>Campylobacter</em> Positives</th>
<th>Rates Ratio</th>
<th>Two-Sided Fisher Exact $p$-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>416.13(a)</td>
<td>Conduct pre-op procedures</td>
<td>Yes</td>
<td>0.11</td>
<td>0.03</td>
<td>3.66</td>
<td>8.96E-145</td>
</tr>
<tr>
<td>416.13(b)</td>
<td>Conduct other procedures listed in the plan</td>
<td>Yes</td>
<td>0.02</td>
<td>0.00</td>
<td>8.37</td>
<td>7.18E-157</td>
</tr>
<tr>
<td>416.14</td>
<td>Evaluate effectiveness of SSOP's and maintain plan</td>
<td>Yes</td>
<td>0.00</td>
<td>0.00</td>
<td>3.03</td>
<td>4.48E-11</td>
</tr>
<tr>
<td>416.16(a)</td>
<td>Daily records required, responsible individual, initialed and dated</td>
<td>Yes</td>
<td>0.00</td>
<td>0.00</td>
<td>3.93</td>
<td>2.50E-24</td>
</tr>
<tr>
<td>416.2(a)</td>
<td>Grounds and Pest Control</td>
<td>Yes</td>
<td>0.20</td>
<td>0.05</td>
<td>4.95</td>
<td>8.05E-70</td>
</tr>
<tr>
<td>416.2(b)(2)</td>
<td>Walls/floors/ceilings durable, impervious, cleaned and sanitized</td>
<td>Yes</td>
<td>0.16</td>
<td>0.05</td>
<td>3.77</td>
<td>1.85E-53</td>
</tr>
<tr>
<td>416.2(b)(4)</td>
<td>Inedible from edible separated by time or space</td>
<td>Yes</td>
<td>0.03</td>
<td>0.01</td>
<td>4.08</td>
<td>2.19E-06</td>
</tr>
<tr>
<td>416.3(b)</td>
<td>Constructed, located and operated in a manner that does not deter inspection</td>
<td>Yes</td>
<td>0.02</td>
<td>0.01</td>
<td>3.90</td>
<td>4.10E-04</td>
</tr>
<tr>
<td>416.3(c)</td>
<td>Receptacles for storing inedible material must identify permitted use</td>
<td>Yes</td>
<td>0.10</td>
<td>0.01</td>
<td>9.74</td>
<td>1.04E-22</td>
</tr>
<tr>
<td>416.4(a)</td>
<td>Food contact surface, cleaning and sanitizing as frequency</td>
<td>Yes</td>
<td>0.19</td>
<td>0.05</td>
<td>4.20</td>
<td>4.29E-87</td>
</tr>
</tbody>
</table>
Regulation Verified | Description[^1] | On FY 2024 PHRs List | Noncompliance Rate 90 Days before a *Campylobacter* Positive | Noncompliance Rate for Establishments with no *Campylobacter* Positives | Rates Ratio | Two-Sided Fisher Exact p-Value
---|---|---|---|---|---|---
416.4(d) | Product processing, handling, storage, loading, unloading, and during transportation must be protected | Yes | 0.25 | 0.06 | 5.50 | 1.94E-168
417.2(c)(4) | List of procedures and frequency | Yes | 0.01 | 0.00 | 9.04 | 1.46E-40

[^1]: Refer to the [Code of Federal Regulations](#) for complete regulation descriptions.

### 4.5 Enforcement Actions

The purpose of this section is to investigate the relationship between the candidate regulations and public health-related enforcement actions at meat and poultry establishments. FSIS enforcement actions, as defined in the Rules of Practice (*9 CFR 500.1*), include regulatory control actions, withholding actions, and suspensions. A regulatory control action is taken by FSIS inspectors when immediate correction of a deficiency is required. Establishment management does not have to be notified in advance. When a deficiency does not pose an imminent threat to public health, a notice of intended enforcement (NOIE) is issued to an establishment indicating that FSIS is considering withholding the marks of inspection or suspending the assignment of inspectors if not corrected. The establishment is requested to provide immediate corrective action and to specify preventive measures to prevent recurrence. FSIS determines further action based on the response provided. Only public health related NOIEs or suspensions are included in this analysis. These are NOIEs or suspensions that result from a sanitation standard operating procedure (SSOP), HACCP, or sanitation performance standards violation.

The enforcement action list of regulations is selected from the same list of candidate regulations used to select all other FY2025 PHRs. The enforcement action list consists of candidate *9 CFR* regulations in which noncompliances occur at a more frequent rate in establishments 90 days prior to an NOIE or suspension than in establishments without an NOIE or suspension for CY2023. The dataset used in the analysis consists of candidate PHRs noncompliance rates for the 5,917 active meat and poultry establishments, of which 67 establishments had 72 enforcement actions and 5,850 establishments did not have any enforcement actions.

Table 4-20 presents the 36 regulations that had more than 30 verifications in a year, a rates ratio of 3.0 or greater, and for which there is 95% probability (as determined by a two-sided Fisher’s Exact p-value of less than 0.05) that the noncompliance rate of the regulation in establishments 90 days before an enforcement action is higher than the noncompliance rate for establishments with no enforcement action for CY2023.

<table>
<thead>
<tr>
<th>Regulation Verified</th>
<th>Description[^1]</th>
<th>On FY 2024 PHRs List</th>
<th>Noncompliance Rate 90 Days before a <em>Campylobacter</em> Positive</th>
<th>Noncompliance Rate for Establishments with no <em>Campylobacter</em> Positives</th>
<th>Rates Ratio</th>
<th>Two-Sided Fisher Exact p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>416.4(d)</td>
<td>Product processing, handling, storage, loading, unloading, and during transportation must be protected</td>
<td>Yes</td>
<td>0.25</td>
<td>0.06</td>
<td>5.50</td>
<td>1.94E-168</td>
</tr>
<tr>
<td>417.2(c)(4)</td>
<td>List of procedures and frequency</td>
<td>Yes</td>
<td>0.01</td>
<td>0.00</td>
<td>9.04</td>
<td>1.46E-40</td>
</tr>
</tbody>
</table>

[^1]: Refer to the [Code of Federal Regulations](#) for complete regulation descriptions.

### Table 4-20 Comparison of Noncompliance Rates 90 Days before an Enforcement Action with Those for Establishments with No Enforcement Actions
<table>
<thead>
<tr>
<th>Regulation Verified</th>
<th>Description¹</th>
<th>On FY 2024 PHRs List</th>
<th>Noncompliance Rate 90 Days before an Enforcement Action</th>
<th>Noncompliance Rate for Establishments with no Enforcement Actions</th>
<th>Rates Ratio</th>
<th>Two-Sided Fisher Exact p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>301.2_Adulterated</td>
<td>Adulterated</td>
<td>No</td>
<td>0.75</td>
<td>0.04</td>
<td>72.46</td>
<td>2.57E-04</td>
</tr>
<tr>
<td>310.22(c)</td>
<td>Disposal of SRM</td>
<td>Yes</td>
<td>0.02</td>
<td>0.01</td>
<td>3.67</td>
<td>2.65E-02</td>
</tr>
<tr>
<td>310.22(e)(4)(i)</td>
<td>Maintain daily records</td>
<td>No</td>
<td>0.03</td>
<td>0.00</td>
<td>18.57</td>
<td>9.16E-05</td>
</tr>
<tr>
<td>310.25(a)</td>
<td>Verification criteria for E. coli testing meat</td>
<td>No</td>
<td>0.04</td>
<td>0.01</td>
<td>4.24</td>
<td>8.18E-03</td>
</tr>
<tr>
<td>318.2(a)</td>
<td>All products subject to reinspection by program employees</td>
<td>Yes</td>
<td>0.02</td>
<td>0.00</td>
<td>10.94</td>
<td>1.61E-02</td>
</tr>
<tr>
<td>381.1_Adulterated</td>
<td>Adulterated</td>
<td>No</td>
<td>0.33</td>
<td>0.01</td>
<td>33.35</td>
<td>4.49E-02</td>
</tr>
<tr>
<td>416.1</td>
<td>Operate in a manner to prevent insanitary conditions</td>
<td>Yes</td>
<td>0.03</td>
<td>0.01</td>
<td>6.03</td>
<td>2.79E-18</td>
</tr>
<tr>
<td>416.12(c)</td>
<td>Plan identifies procedures for pre-op</td>
<td>Yes</td>
<td>0.04</td>
<td>0.00</td>
<td>21.88</td>
<td>4.36E-03</td>
</tr>
<tr>
<td>416.13(b)</td>
<td>Conduct other procedures listed in the plan</td>
<td>Yes</td>
<td>0.01</td>
<td>0.00</td>
<td>3.34</td>
<td>3.10E-14</td>
</tr>
<tr>
<td>416.14</td>
<td>Evaluate effectiveness of SSOP's and maintain plan</td>
<td>Yes</td>
<td>0.01</td>
<td>0.00</td>
<td>6.28</td>
<td>2.81E-17</td>
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<tr>
<td>416.15(a)</td>
<td>Appropriate corrective actions</td>
<td>Yes</td>
<td>0.18</td>
<td>0.02</td>
<td>13.55</td>
<td>3.90E-09</td>
</tr>
<tr>
<td>416.15(b)</td>
<td>Corrective action, procedures for</td>
<td>Yes</td>
<td>0.24</td>
<td>0.02</td>
<td>14.77</td>
<td>1.32E-08</td>
</tr>
<tr>
<td>416.2(a)</td>
<td>Grounds and Pest Control</td>
<td>Yes</td>
<td>0.25</td>
<td>0.03</td>
<td>9.98</td>
<td>5.40E-07</td>
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<tr>
<td>416.3(c)</td>
<td>Receptacles for storing inedible material must identify permitted use</td>
<td>Yes</td>
<td>0.08</td>
<td>0.01</td>
<td>7.09</td>
<td>1.00E-03</td>
</tr>
<tr>
<td>416.4(a)</td>
<td>Food contact surface, cleaning and sanitizing as frequency</td>
<td>Yes</td>
<td>0.18</td>
<td>0.04</td>
<td>5.79</td>
<td>1.98E-32</td>
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<tr>
<td>417.2(a)(1)</td>
<td>Hazard analysis</td>
<td>Yes</td>
<td>0.06</td>
<td>0.01</td>
<td>6.90</td>
<td>7.33E-10</td>
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<tr>
<td>Regulation Verified</td>
<td>Description¹</td>
<td>On FY 2024 PHRs List</td>
<td>Noncompliance Rate 90 Days before an Enforcement Action</td>
<td>Noncompliance Rate for Establishments with no Enforcement Actions</td>
<td>Rates Ratio</td>
<td>Two-Sided Fisher Exact p-Value</td>
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<tr>
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<td>---------------------------------------------------------------</td>
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</tr>
<tr>
<td>417.3(a)(1)</td>
<td>Identify and eliminate the cause</td>
<td>Yes</td>
<td>0.12</td>
<td>0.02</td>
<td>8.07</td>
<td>5.38E-05</td>
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<tr>
<td>417.3(a)(2)</td>
<td>CCP is under control</td>
<td>Yes</td>
<td>0.01</td>
<td>0.00</td>
<td>3.19</td>
<td>8.71E-05</td>
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<tr>
<td>417.3(a)(3)</td>
<td>Establish measures to prevent recurrence</td>
<td>Yes</td>
<td>0.15</td>
<td>0.02</td>
<td>8.23</td>
<td>4.36E-07</td>
</tr>
<tr>
<td>417.3(b)(1)</td>
<td>Segregate and hold the affected product</td>
<td>No</td>
<td>0.08</td>
<td>0.00</td>
<td>55.17</td>
<td>7.84E-04</td>
</tr>
<tr>
<td>417.3(b)(2)</td>
<td>Determine the acceptability of the affected product</td>
<td>No</td>
<td>0.08</td>
<td>0.00</td>
<td>63.11</td>
<td>6.10E-04</td>
</tr>
<tr>
<td>417.3(b)(3)</td>
<td>No adulterated product enters commerce</td>
<td>Yes</td>
<td>0.14</td>
<td>0.00</td>
<td>141.43</td>
<td>2.47E-06</td>
</tr>
<tr>
<td>417.3(b)(4)</td>
<td>Reassessment</td>
<td>Yes</td>
<td>0.03</td>
<td>0.00</td>
<td>12.55</td>
<td>1.22E-02</td>
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<td>417.3(c)</td>
<td>Document corrective actions</td>
<td>Yes</td>
<td>0.20</td>
<td>0.01</td>
<td>41.91</td>
<td>1.56E-03</td>
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<tr>
<td>417.4(a)</td>
<td>Adequacy of HACCP in controlling food safety hazards</td>
<td>Yes</td>
<td>0.10</td>
<td>0.03</td>
<td>3.66</td>
<td>9.18E-03</td>
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<tr>
<td>417.4(a)(1)</td>
<td>Initial validation</td>
<td>Yes</td>
<td>0.19</td>
<td>0.06</td>
<td>3.68</td>
<td>3.53E-02</td>
</tr>
<tr>
<td>417.5(a)(1)</td>
<td>Written hazard analysis</td>
<td>Yes</td>
<td>0.02</td>
<td>0.00</td>
<td>6.87</td>
<td>1.74E-24</td>
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<tr>
<td>417.5(a)(2)</td>
<td>Written HACCP plan</td>
<td>Yes</td>
<td>0.01</td>
<td>0.00</td>
<td>9.80</td>
<td>4.90E-13</td>
</tr>
<tr>
<td>417.5(a)(3)</td>
<td>Records documentation and monitoring of CCP's and Critical Limits</td>
<td>Yes</td>
<td>0.01</td>
<td>0.00</td>
<td>4.70</td>
<td>1.41E-10</td>
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<tr>
<td>430.4(b)(3)</td>
<td>Alternative 3</td>
<td>Yes</td>
<td>0.09</td>
<td>0.01</td>
<td>8.73</td>
<td>1.19E-04</td>
</tr>
<tr>
<td>430.4(c)(3)</td>
<td>Lm, maintain sanitation in post-lethality processing environment</td>
<td>Yes</td>
<td>0.00</td>
<td>0.00</td>
<td>8.65</td>
<td>2.39E-02</td>
</tr>
<tr>
<td>430.4(c)(5)</td>
<td>Lm, evaluate control measures in Sanitation SOP</td>
<td>Yes</td>
<td>0.07</td>
<td>0.00</td>
<td>45.21</td>
<td>2.67E-02</td>
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</table>
### Regulation Verified

<table>
<thead>
<tr>
<th>Regulation Verified</th>
<th>Description&lt;sup&gt;1&lt;/sup&gt;</th>
<th>On FY 2024 PHRs List</th>
<th>Noncompliance Rate 90 Days before an Enforcement Action</th>
<th>Noncompliance Rate for Establishments with no Enforcement Actions</th>
<th>Rates Ratio</th>
<th>Two-Sided Fisher Exact p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>418.3</td>
<td>Recall Plans</td>
<td>No</td>
<td>0.04</td>
<td>0.00</td>
<td>42.87</td>
<td>1.32E-03</td>
</tr>
<tr>
<td>381.65(f)</td>
<td>Procedures for controlling visible fecal contamination</td>
<td>Yes</td>
<td>0.05</td>
<td>0.01</td>
<td>7.85</td>
<td>5.70E-42</td>
</tr>
<tr>
<td>381.65(g)</td>
<td>Procedures for controlling contamination throughout the slaughter and dressing operation</td>
<td>Yes</td>
<td>0.05</td>
<td>0.00</td>
<td>11.41</td>
<td>4.65E-08</td>
</tr>
<tr>
<td>381.76(b)(6)(ii)(A)</td>
<td>NPIS Sorting, Trimming, and Reprocessing</td>
<td>Yes</td>
<td>0.29</td>
<td>0.01</td>
<td>67.52</td>
<td>9.18E-15</td>
</tr>
</tbody>
</table>

<sup>1</sup> Refer to the Code of Federal Regulations for complete regulation descriptions.

### 5.0 LIST OF FY2025 PHRS

The purpose of this section is to combine the above lists of pathogen-specific and enforcement PHRs into a single FY2025 PHRs list. Table 5-1 presents the complete list of the 63 FY2025 PHRs. These 67 PHRs were selected since they were verified more than 30 times in a year, had a rates ratio of 3.0 or greater, and had higher noncompliance rates in establishments 90 days before *Salmonella, E. coli, Lm, Campylobacter* positives or enforcement actions than in establishments with no positives or enforcement actions.

#### Table 5-1 List of FY2025 PHRs

<table>
<thead>
<tr>
<th>Regulation Verified</th>
<th>Description&lt;sup&gt;1&lt;/sup&gt;</th>
<th>On FY 2024 PHRs List</th>
<th>Average Rates Ratio</th>
<th>Average of Two-Sided Fisher Exact p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>301.2_Adulterated</td>
<td>Adulterated</td>
<td>No</td>
<td>20.14</td>
<td>5.37E-03</td>
</tr>
<tr>
<td>310.18(a)</td>
<td>Carcasses, organs, and other parts handled in a sanitary manner</td>
<td>Yes</td>
<td>5.76</td>
<td>1.46E-03</td>
</tr>
<tr>
<td>310.18(c)(1)</td>
<td>Sampling locations</td>
<td>No</td>
<td>13.23</td>
<td>2.24E-05</td>
</tr>
<tr>
<td>310.22(b)</td>
<td>Inedible and prohibited SRM for use as human food</td>
<td>No</td>
<td>103.08</td>
<td>1.68E-02</td>
</tr>
<tr>
<td>310.22(c)</td>
<td>Disposal of SRM</td>
<td>Yes</td>
<td>14.73</td>
<td>5.30E-03</td>
</tr>
<tr>
<td>310.22(e)(1)</td>
<td>Written procedures for removal, segregation, and disposition of SRMs</td>
<td>Yes</td>
<td>25.39</td>
<td>5.39E-04</td>
</tr>
<tr>
<td>310.22(e)(2)</td>
<td>Appropriate corrective actions</td>
<td>Yes</td>
<td>6.47</td>
<td>2.03E-02</td>
</tr>
<tr>
<td>310.22(e)(3)</td>
<td>Evaluate effectiveness of procedures for removal, segregation, and disposition of SRMs</td>
<td>Yes</td>
<td>5.47</td>
<td>1.59E-02</td>
</tr>
<tr>
<td>310.22(e)(4)(i)</td>
<td>Maintain daily records</td>
<td>No</td>
<td>18.57</td>
<td>9.16E-05</td>
</tr>
<tr>
<td>Regulation Verified</td>
<td>Description</td>
<td>On FY 2024 PHRs List</td>
<td>Average Rates Ratio</td>
<td>Average of Two-Sided Fisher Exact p-Value</td>
</tr>
<tr>
<td>---------------------</td>
<td>-------------</td>
<td>----------------------</td>
<td>---------------------</td>
<td>----------------------------------------</td>
</tr>
<tr>
<td>310.22(f)(2)</td>
<td>Use of routine operational sanitation procedures on equipment used to cut through SRMs</td>
<td>Yes</td>
<td>18.87</td>
<td>9.16E-14</td>
</tr>
<tr>
<td>310.25(a)</td>
<td>Verification criteria for E. coli testing meat</td>
<td>No</td>
<td>4.24</td>
<td>8.18E-03</td>
</tr>
<tr>
<td>310.26(b)</td>
<td>Carcass sorting and disposition</td>
<td>No</td>
<td>4.15</td>
<td>1.10E-03</td>
</tr>
<tr>
<td>310.3</td>
<td>Carcasses and parts in certain instances to be retained.</td>
<td>Yes</td>
<td>6.87</td>
<td>2.54E-08</td>
</tr>
<tr>
<td>311.14</td>
<td>Abrasions, bruises, abscesses, pus, etc.</td>
<td>No</td>
<td>130.81</td>
<td>4.51E-05</td>
</tr>
<tr>
<td>318.2(a)</td>
<td>All products subject to reinspection by program employees</td>
<td>Yes</td>
<td>8.36</td>
<td>1.85E-02</td>
</tr>
<tr>
<td>318.2(d)</td>
<td>Removal of U.S. retained by authorized Program employees only</td>
<td>Yes</td>
<td>6.14</td>
<td>4.82E-03</td>
</tr>
<tr>
<td>318.24</td>
<td>Product prepared using advanced meat/bone separation machinery; process control</td>
<td>No</td>
<td>3.89</td>
<td>3.07E-02</td>
</tr>
<tr>
<td>381.1_Adulterated</td>
<td>Adulterated</td>
<td>No</td>
<td>33.35</td>
<td>4.49E-02</td>
</tr>
<tr>
<td>381.65(a)</td>
<td>Clean and sanitary practices; products not adulterated</td>
<td>Yes</td>
<td>24.17</td>
<td>1.78E-02</td>
</tr>
<tr>
<td>381.65(f)</td>
<td>Procedures for controlling visible fecal contamination</td>
<td>Yes</td>
<td>5.52</td>
<td>5.96E-37</td>
</tr>
<tr>
<td>381.65(g)</td>
<td>Procedures for controlling contamination throughout the slaughter and dressing operation</td>
<td>Yes</td>
<td>7.55</td>
<td>2.47E-04</td>
</tr>
<tr>
<td>381.76(a)</td>
<td>Post-mortem inspection, when required, extent</td>
<td>Yes</td>
<td>15.58</td>
<td>4.15E-04</td>
</tr>
<tr>
<td>381.76(b)(6)(ii)(A)</td>
<td>NPIS Sorting, Trimming, and Reprocessing</td>
<td>Yes</td>
<td>28.59</td>
<td>1.95E-03</td>
</tr>
<tr>
<td>381.76(b)(6)(ii)(C)</td>
<td>NPIS septicemia/toxemia</td>
<td>No</td>
<td>20.69</td>
<td>1.19E-03</td>
</tr>
<tr>
<td>381.76(b)(6)(ii)(D)</td>
<td>Ready-to-Cook verification in NPIS</td>
<td>Yes</td>
<td>19.91</td>
<td>5.71E-11</td>
</tr>
<tr>
<td>381.83</td>
<td>Septicemia or toxemia</td>
<td>No</td>
<td>3.27</td>
<td>5.37E-03</td>
</tr>
<tr>
<td>381.91(b)</td>
<td>Reprocessing of carcasses accidentally contaminated with digestive tract contents</td>
<td>Yes</td>
<td>22.22</td>
<td>2.28E-05</td>
</tr>
<tr>
<td>416.1</td>
<td>Operate in a manner to prevent insanitary conditions</td>
<td>Yes</td>
<td>6.87</td>
<td>1.03E-02</td>
</tr>
<tr>
<td>416.12(c)</td>
<td>Plan identifies procedures for pre-op</td>
<td>Yes</td>
<td>21.88</td>
<td>4.36E-03</td>
</tr>
<tr>
<td>416.12(d)</td>
<td>Plan list frequency for each procedure &amp; responsible individual</td>
<td>No</td>
<td>16.69</td>
<td>9.67E-03</td>
</tr>
<tr>
<td>416.13(a)</td>
<td>Conduct pre-op procedures</td>
<td>Yes</td>
<td>4.03</td>
<td>5.35E-05</td>
</tr>
<tr>
<td>416.13(b)</td>
<td>Conduct other procedures listed in the plan</td>
<td>Yes</td>
<td>6.84</td>
<td>4.43E-15</td>
</tr>
<tr>
<td>416.13(c)</td>
<td>Plant monitors implementation of SSOP procedures</td>
<td>Yes</td>
<td>4.83</td>
<td>2.74E-54</td>
</tr>
<tr>
<td>416.14</td>
<td>Evaluate effectiveness of SSOP's &amp; maintain plan</td>
<td>Yes</td>
<td>10.43</td>
<td>7.46E-12</td>
</tr>
<tr>
<td>416.15(a)</td>
<td>Appropriate corrective actions</td>
<td>Yes</td>
<td>8.11</td>
<td>5.34E-03</td>
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<tr>
<td>Regulation Verified</td>
<td>Description</td>
<td>On FY 2024 PHRs List</td>
<td>Average Rates Ratio</td>
<td>Average of Two-Sided Fisher Exact p-Value</td>
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<td>---------------------</td>
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</tr>
<tr>
<td>416.15(b)</td>
<td>Corrective action, procedures for</td>
<td>Yes</td>
<td>8.64</td>
<td>6.50E-04</td>
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<tr>
<td>416.16(a)</td>
<td>Daily records required, responsible individual, initialed and dated</td>
<td>Yes</td>
<td>5.58</td>
<td>1.47E-10</td>
</tr>
<tr>
<td>416.2(a)</td>
<td>Grounds and Pest Control</td>
<td>Yes</td>
<td>6.05</td>
<td>3.95E-06</td>
</tr>
<tr>
<td>416.2(b)(1)</td>
<td>Sound construction, good repair &amp; sufficient size</td>
<td>Yes</td>
<td>5.20</td>
<td>1.19E-03</td>
</tr>
<tr>
<td>416.2(b)(2)</td>
<td>Walls/floors/ceilings durable, impervious, cleaned &amp; sanitized</td>
<td>Yes</td>
<td>5.88</td>
<td>8.30E-04</td>
</tr>
<tr>
<td>416.2(b)(4)</td>
<td>Inedible from edible separated by time or space</td>
<td>Yes</td>
<td>5.82</td>
<td>8.26E-05</td>
</tr>
<tr>
<td>416.3(b)</td>
<td>Constructed, located &amp; operated in a manner that does not deter inspection</td>
<td>Yes</td>
<td>5.08</td>
<td>1.88E-03</td>
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<tr>
<td>416.3(c)</td>
<td>Receptacles for storing inedible material must identify permitted use</td>
<td>Yes</td>
<td>7.33</td>
<td>3.85E-03</td>
</tr>
<tr>
<td>416.4(a)</td>
<td>Food contact surface, cleaning &amp; sanitizing as frequency</td>
<td>Yes</td>
<td>5.39</td>
<td>1.23E-07</td>
</tr>
<tr>
<td>416.4(d)</td>
<td>Product processing, handling, storage, loading, unloading, and during transportation must be protected</td>
<td>Yes</td>
<td>5.61</td>
<td>1.11E-10</td>
</tr>
<tr>
<td>416.6</td>
<td>Only FSIS program employee may remove &quot;U.S. Rejected&quot; tag</td>
<td>Yes</td>
<td>15.60</td>
<td>4.16E-03</td>
</tr>
<tr>
<td>417.2(a)(1)</td>
<td>Hazard analysis</td>
<td>Yes</td>
<td>9.47</td>
<td>1.64E-03</td>
</tr>
<tr>
<td>417.2(c)(4)</td>
<td>List of procedures &amp; frequency</td>
<td>Yes</td>
<td>6.00</td>
<td>2.18E-18</td>
</tr>
<tr>
<td>417.3(a)(1)</td>
<td>Identify and eliminate the cause</td>
<td>Yes</td>
<td>109.48</td>
<td>1.79E-05</td>
</tr>
<tr>
<td>417.3(a)(2)</td>
<td>CCP is under control</td>
<td>Yes</td>
<td>25.86</td>
<td>4.92E-05</td>
</tr>
<tr>
<td>417.3(a)(3)</td>
<td>Establish measures to prevent recurrence</td>
<td>Yes</td>
<td>63.05</td>
<td>1.54E-07</td>
</tr>
<tr>
<td>417.3(b)(1)</td>
<td>Segregate and hold the affected product</td>
<td>No</td>
<td>55.17</td>
<td>7.84E-04</td>
</tr>
<tr>
<td>417.3(b)(2)</td>
<td>Determine the acceptability of the affected product</td>
<td>No</td>
<td>63.11</td>
<td>6.10E-04</td>
</tr>
<tr>
<td>417.3(b)(3)</td>
<td>No adulterated product enters commerce</td>
<td>Yes</td>
<td>54.15</td>
<td>1.71E-02</td>
</tr>
<tr>
<td>417.3(b)(4)</td>
<td>Reassessment</td>
<td>Yes</td>
<td>23.80</td>
<td>4.79E-03</td>
</tr>
<tr>
<td>417.3(c)</td>
<td>Document corrective actions</td>
<td>Yes</td>
<td>28.51</td>
<td>1.02E-02</td>
</tr>
<tr>
<td>417.4(a)</td>
<td>Adequacy of HACCP in controlling food safety hazards</td>
<td>Yes</td>
<td>11.85</td>
<td>1.23E-02</td>
</tr>
<tr>
<td>417.4(a)(1)</td>
<td>Initial validation</td>
<td>Yes</td>
<td>9.52</td>
<td>1.22E-02</td>
</tr>
<tr>
<td>417.5(a)(1)</td>
<td>Written hazard analysis</td>
<td>Yes</td>
<td>6.36</td>
<td>1.53E-24</td>
</tr>
<tr>
<td>417.5(a)(2)</td>
<td>Written HACCP plan</td>
<td>Yes</td>
<td>8.92</td>
<td>3.03E-03</td>
</tr>
<tr>
<td>417.5(a)(3)</td>
<td>Records documentation and monitoring of CCP's and Critical Limits</td>
<td>Yes</td>
<td>4.20</td>
<td>1.27E-08</td>
</tr>
<tr>
<td>417.6</td>
<td>Inadequate HACCP systems</td>
<td>No</td>
<td>62.66</td>
<td>6.27E-32</td>
</tr>
<tr>
<td>418.3</td>
<td>Recall Plans</td>
<td>No</td>
<td>42.87</td>
<td>1.32E-03</td>
</tr>
<tr>
<td>430.4(b)(3)</td>
<td>Alternative 3</td>
<td>Yes</td>
<td>8.73</td>
<td>1.19E-04</td>
</tr>
<tr>
<td>430.4(c)(3)</td>
<td><em>Lm</em>, maintain sanitation in post-lethality processing environment</td>
<td>Yes</td>
<td>8.65</td>
<td>2.39E-02</td>
</tr>
</tbody>
</table>
Regulation Verified | Description\(^1\) | On FY 2024 PHRs List | Average Rates Ratio | Average of Two-Sided Fisher Exact p-Value
---|---|---|---|---
430.4(c)(5) | \(Lm\), evaluate control measures in Sanitation SOP | Yes | 45.21 | 2.67E-02
430.4(c)(6) | \(Lm\), prerequisite program requirements | No | 42.29 | 3.19E-02

\(^1\) Refer to the [Code of Federal Regulations](https://www.ecfr.gov) for complete regulation descriptions.

In FY2024 there were 63 PHRs, 50 of which are FY2025 PHRs. There are 13 regulations on the FY2024 PHRs list that are not on the FY2025 PHRs list (see Appendix C). There are 17 regulations that are on the FY2025 PHRs list that were not on the FY2024 PHRs list.

Table 5-2 lists the number of regulations triggered by different pathogens or enforcement actions for inclusion in the FY2025 PHRs list. Most regulations were triggered by multiple events. Similar to the FY2024 PHRs list, *Salmonella* pathogen-positive samples and enforcement actions triggered the most regulations.

**Table 5-2 Events That Triggered Inclusion of a Regulation in the FY2025 PHRs List**

<table>
<thead>
<tr>
<th>Product</th>
<th>Number of Regulations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Campylobacter</td>
<td>11</td>
</tr>
<tr>
<td>Campylobacter Chicken Parts</td>
<td>12</td>
</tr>
<tr>
<td>Campylobacter Ground Chicken</td>
<td>1</td>
</tr>
<tr>
<td>Campylobacter Ground Turkey</td>
<td>7</td>
</tr>
<tr>
<td>Campylobacter Intact Chicken</td>
<td>7</td>
</tr>
<tr>
<td>Campylobacter Intact Turkey</td>
<td>4</td>
</tr>
<tr>
<td>Enforcements</td>
<td>36</td>
</tr>
<tr>
<td>Listeria</td>
<td>4</td>
</tr>
<tr>
<td>(E. coli)</td>
<td>9</td>
</tr>
<tr>
<td>Salmonella</td>
<td>26</td>
</tr>
<tr>
<td>Salmonella Chicken Parts</td>
<td>5</td>
</tr>
<tr>
<td>Salmonella Ground Beef</td>
<td>14</td>
</tr>
<tr>
<td>Salmonella Ground Chicken</td>
<td>15</td>
</tr>
<tr>
<td>Salmonella Ground Pork</td>
<td>9</td>
</tr>
<tr>
<td>Salmonella Ground Turkey</td>
<td>6</td>
</tr>
<tr>
<td>Salmonella Intact Beef</td>
<td>19</td>
</tr>
<tr>
<td>Salmonella Intact Chicken</td>
<td>5</td>
</tr>
<tr>
<td>Salmonella Intact Pork</td>
<td>6</td>
</tr>
<tr>
<td>Salmonella Intact Turkey</td>
<td>14</td>
</tr>
<tr>
<td>RTE Salmonella</td>
<td>1</td>
</tr>
</tbody>
</table>

There were 22 regulations triggered by a single type of event: 10 were from Enforcement Actions, three were from *Salmonella*, two were from \(E. coli\), two were from *Salmonella* intact pork, one was from *Listeria*, one was from *Salmonella* in ground beef, one was from *Campylobacter* in intact turkey, one was from *Salmonella* in ground chicken, and one was from *Salmonella*.
Salmonella in intact beef. Table 5-3 presents the regulations triggered for inclusion in the FY2025 PHRs list by only a single pathogen product or enforcement action type (event).

### Table 5-3 Regulations Triggered for Inclusion in the FY2025 PHRs List by Only a Single Event

<table>
<thead>
<tr>
<th>Regulation Verified</th>
<th>Description</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>310.18(c)(1)</td>
<td>Sampling locations</td>
<td>Salmonella</td>
</tr>
<tr>
<td>310.22(b)</td>
<td>Inedible and prohibited SRM for use as human food</td>
<td>E. coli</td>
</tr>
<tr>
<td>310.22(c)(2)</td>
<td>Appropriate corrective actions</td>
<td>Salmonella Ground Beef</td>
</tr>
<tr>
<td>310.22(e)(4)(i)</td>
<td>Maintain daily records</td>
<td>Enforcements</td>
</tr>
<tr>
<td>310.25(a)</td>
<td>Verification criteria for E. coli testing meat</td>
<td>Enforcements</td>
</tr>
<tr>
<td>310.26(b)</td>
<td>Carcass sorting and disposition</td>
<td>Salmonella</td>
</tr>
<tr>
<td>310.3</td>
<td>Carcasses and parts in certain instances to be retained.</td>
<td>Salmonella Intact Pork</td>
</tr>
<tr>
<td>311.14</td>
<td>Abrasions, bruises, abscesses, pus, etc.</td>
<td>E. coli</td>
</tr>
<tr>
<td>318.24</td>
<td>Product prepared using advanced meat/bone separation machinery; process control</td>
<td>Salmonella Intact Pork</td>
</tr>
<tr>
<td>381.1_Adluterated</td>
<td>Adulterated</td>
<td>Enforcements</td>
</tr>
<tr>
<td>381.76(a)</td>
<td>Post-mortem inspection, when required, extent</td>
<td>Campylobacter Intact Turkey</td>
</tr>
<tr>
<td>381.83</td>
<td>Septicemia or toxemia</td>
<td>Salmonella Ground Chicken</td>
</tr>
<tr>
<td>416.12(c)</td>
<td>Plan identifies procedures for pre-op</td>
<td>Enforcements</td>
</tr>
<tr>
<td>416.12(d)</td>
<td>Plan list frequency for each procedure &amp; responsible individual</td>
<td>Salmonella Intact Beef</td>
</tr>
<tr>
<td>417.3(b)(1)</td>
<td>Segregate and hold the affected product</td>
<td>Enforcements</td>
</tr>
<tr>
<td>417.3(b)(2)</td>
<td>Determine the acceptability of the affected product</td>
<td>Enforcements</td>
</tr>
<tr>
<td>417.6</td>
<td>Inadequate HACCP systems</td>
<td>Salmonella</td>
</tr>
<tr>
<td>418.3</td>
<td>Recall Plans</td>
<td>Enforcements</td>
</tr>
<tr>
<td>430.4(b)(3)</td>
<td>Alternative 3</td>
<td>Enforcements</td>
</tr>
<tr>
<td>430.4(c)(3)</td>
<td>Lm, maintain sanitation in post-lethality processing environment</td>
<td>Enforcements</td>
</tr>
<tr>
<td>430.4(c)(5)</td>
<td>Lm, evaluate control measures in Sanitation SOP</td>
<td>Enforcements</td>
</tr>
<tr>
<td>430.4(c)(6)</td>
<td>Lm, prerequisite program requirements</td>
<td>Listeria</td>
</tr>
</tbody>
</table>

1 Refer to the Code of Federal Regulations for complete regulation descriptions.

### 6.0 CUT POINTS FOR FY2025 PHRS

The FY2025 PHRs are one of seven public health-based decision criteria that are used in prioritizing PHREs. Other decision criteria include pathogen testing results, recalls, outbreaks, regulatory findings, and inspection results. The decision criteria are intended for use in identifying establishments that may pose a greater risk to public health than other establishments and thus warrant certain prioritized inspection activities by FSIS inspection program personnel.

Noncompliance with a single FY2025 PHRs may not indicate a loss of process control. The aggregate set of PHRs is used to identify establishments that significantly deviate from the 90-day rolling average noncompliance rate for all similar establishments. The rate is calculated as
the number of times PHRs regulations are cited as non-compliant divided by the number of times the PHRs regulations are verified. This combines the verifications for all the PHRs regulations in a 90-day period together into a single aggregate ratio. The aggregate FY2025 PHRs noncompliance rate by establishments is compared to cut points that have been set for two broad categories of establishment operations: processing and combination. Only establishments with 20 or more verifications and at least two noncompliances were considered when developing cut points.

The aggregate non-zero PHRs noncompliance rates are approximately log normally distributed, so the rates can be log transformed to obtain an approximately normal distribution (see Appendix D). Then to determine a set of annual FY2025 cut points, the mean and standard deviation of the log transformed rates (for establishments having more than 20 verifications in the past 90 days and at least two noncompliances) for each of the four quarters and each of the two types of establishment operation are computed. These results are given in Table 6-1. Notice that the means are negative since they are the means of the natural log of a number between zero and one (the non-zero PHRs noncompliance rates).

<table>
<thead>
<tr>
<th>CY2023</th>
<th>Mean of Natural Log PHR rate</th>
<th>Standard Deviation PHR rate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Processing</td>
<td>Combination</td>
</tr>
<tr>
<td>Jan-Mar</td>
<td>-4.94</td>
<td>-4.74</td>
</tr>
<tr>
<td>Apr-Jun</td>
<td>-4.97</td>
<td>-4.76</td>
</tr>
<tr>
<td>Jul-Sept</td>
<td>-4.91</td>
<td>-4.69</td>
</tr>
<tr>
<td>Oct-Dec</td>
<td>-4.99</td>
<td>-4.80</td>
</tr>
<tr>
<td>Average</td>
<td>-4.95</td>
<td>-4.75</td>
</tr>
</tbody>
</table>

The mean and standard deviation are averaged over the four quarters, and the annual upper cut point is defined as the mean plus two standard deviations. Establishments with PHRs noncompliance rates higher than the upper cut point for similar establishments are classified as the Upper level and are candidates to receive a for-cause PHRE. For example, the upper cut point for the log transformed data for Combination establishments is \(-4.74827 + 2\times0.9691177 = -4.74827 + 1.938235 = -2.81003\). The cut point of the original, non-transformed PHRs noncompliance data is the antilog of \(-2.81003\) or \(\text{Exp}(-2.81003) = 6.02\%\). Establishments that are below the upper-level threshold but meet or exceed the lower-level threshold will be notified by FSIS inspection program personnel of an elevated level of noncompliance.

The PHRs cut points are defined as follows for each of the two establishment types: (1) processing and (2) slaughter/processing combination:

- Any establishment with a PHR rate less than the lower cut point for all establishments with the same type would continue receiving routine inspection procedures. These establishments are performing better on average than their peers with respect to compliance with the PHRs.
- Establishments with a PHR rate greater than or equal to the lower cut point but less than the upper cut point for all establishments with the same establishment type would
continue to receive routine inspection procedures and be alerted through FSIS inspection program personnel of elevated PHRs noncompliance levels.

- Establishments with a PHR rate greater than the upper cut point for establishments with the same establishment type that have not had an FSA in the last 180 days are prioritized for a PHRE.

Tables 6-2 and 6-3 present the FY2025 PHRs upper and lower cut points for each of the two establishment operation types. The FY2024 and FY2023 PHRs cut points are included for comparison. (see Appendix D). The cut points are determined once a year. The next update to the cut points is planned for October 2025.

### Table 6-2 FY2025 PHRs Upper-Level Cut Points

<table>
<thead>
<tr>
<th>Operation Type</th>
<th>FY2025 PHRs Cut Points</th>
<th>FY2024 PHRs Cut Points</th>
<th>FY2023 PHRs Cut Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processing</td>
<td>3.51%</td>
<td>3.76%</td>
<td>3.65%</td>
</tr>
<tr>
<td>Combination</td>
<td>6.02%</td>
<td>7.17%</td>
<td>7.48%</td>
</tr>
</tbody>
</table>

### Table 6-3 FY2025 PHRs Lower-Level Cut Points

<table>
<thead>
<tr>
<th>Operation Type</th>
<th>FY2025 PHRs Cut Points</th>
<th>FY2024 PHRs Cut Points</th>
<th>FY2023 PHRs Cut Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processing</td>
<td>2.35%</td>
<td>2.49%</td>
<td>2.45%</td>
</tr>
<tr>
<td>Combination</td>
<td>3.71%</td>
<td>4.44%</td>
<td>4.59%</td>
</tr>
</tbody>
</table>

Table 6-4 presents the number of establishments in each level based solely on the FY2025 PHRs criterion and the cut points in Tables 6-2 and 6-3. Establishments that qualify for the upper level but have less than 20 verifications or only one noncompliance are moved to the mid-level classification. Sixty-five establishments are in the upper level, and candidates are to receive a recommendation for a for-cause PHRE. Table 6-4 is based on regulatory noncompliances from January 1 to March 31, 2024.

### Table 6-4 Classification of Establishments Based Solely on the PHRs Criterion

<table>
<thead>
<tr>
<th>Classification</th>
<th>Processing</th>
<th>Combination</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upper</td>
<td>48</td>
<td>17</td>
<td>65</td>
</tr>
<tr>
<td>Mid</td>
<td>69</td>
<td>37</td>
<td>106</td>
</tr>
<tr>
<td>Lower</td>
<td>4,278</td>
<td>1,171</td>
<td>5,449</td>
</tr>
<tr>
<td>Total</td>
<td>4,395</td>
<td>1,225</td>
<td>5,620</td>
</tr>
</tbody>
</table>
7.0 CONCLUSION
The purpose of this report is to develop a transparent and data-driven approach for selecting FY2025 PHRs used to prioritize certain FY2025 FSIS inspection activities. This process involves:
1. Selecting a list of candidate regulations related to food safety process control.
2. Selecting a subset of these regulations whose noncompliance rates are higher in establishments 90 days prior to a pathogen-positive sample or enforcement action.
3. Using this subset to determine cut points to determine which establishments should be flagged for a PHRE or an alert throughout the year.

The list of FY2025 PHRs has 67 regulations whose individual noncompliance rates are higher in establishments 90 days before *Salmonella*, *E. coli, Lm*, or *Campylobacter* positives or enforcement action than in establishments without positives or enforcement actions. Fifty regulations on the FY2024 PHRs list are also on the FY2025 PHRs list.

Establishments that have PHRs noncompliance rates higher than the antilog of the mean plus two standard deviations of the log transformed distribution of the non-zero PHR rates for similar establishments are recommended to receive a PHRE. Upon completion of a PHRE, the FSIS district office may perform an FSA or take enforcement actions as appropriate based on its analysis of establishment performance as described in FSIS Directive 5100.4.
APPENDIX A: FY2025 PHRS

Table A-1 presents the list of 67 FY2025 Public Health Regulations (PHRs). On average, these PHRs have noncompliance rates 90 days prior to a pathogen-positive sample or enforcement action that is 16.01 times higher than the PHRs noncompliance rates for establishments with no pathogen-positive sample or enforcement action.

Table A-1 List of FY2025 PHRs

<table>
<thead>
<tr>
<th>Regulation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>301.2_Adulterated</td>
<td>Adulterated</td>
</tr>
<tr>
<td>310.22(b)</td>
<td>Inedible and prohibited SRM for use as human food</td>
</tr>
<tr>
<td>310.22(c)</td>
<td>Disposal of SRM</td>
</tr>
<tr>
<td>310.22(e)(1)</td>
<td>Written procedures for removal, segregation, and disposition of SRMs</td>
</tr>
<tr>
<td>310.22(e)(2)</td>
<td>Appropriate corrective actions</td>
</tr>
<tr>
<td>310.22(e)(3)</td>
<td>Evaluate effectiveness of procedures for removal, segregation, and disposition of SRMs</td>
</tr>
<tr>
<td>310.22(e)(4)(i)</td>
<td>Maintain daily records</td>
</tr>
<tr>
<td>310.22(f)(2)</td>
<td>Use of routine operational sanitation procedures on equipment used to cut through SRMs</td>
</tr>
<tr>
<td>310.25(a)</td>
<td>Verification criteria for E. coli testing meat</td>
</tr>
<tr>
<td>310.3</td>
<td>Carcasses and parts in certain instances to be retained.</td>
</tr>
<tr>
<td>318.2(a)</td>
<td>All products subject to reinspection by program employees</td>
</tr>
<tr>
<td>318.2(d)</td>
<td>Removal of U.S. retained by authorized Program employees only</td>
</tr>
<tr>
<td>318.24</td>
<td>Product prepared using advanced meat/bone separation machinery; process control</td>
</tr>
<tr>
<td>381.1_Adulterated</td>
<td>Adulterated</td>
</tr>
<tr>
<td>381.65(a)</td>
<td>Clean and sanitary practices; products not adulterated</td>
</tr>
<tr>
<td>381.83</td>
<td>Septicemia or toxemia</td>
</tr>
<tr>
<td>381.91(b)</td>
<td>Reprocessing of carcasses accidentally contaminated with digestive tract contents.</td>
</tr>
<tr>
<td>416.1</td>
<td>Operate in a manner to prevent insanitary conditions</td>
</tr>
<tr>
<td>416.12(c)</td>
<td>Plan identifies procedures for pre-op</td>
</tr>
<tr>
<td>416.12(d)</td>
<td>Plan list frequency for each procedure &amp; responsible individual</td>
</tr>
<tr>
<td>416.13(a)</td>
<td>Conduct pre-op procedures</td>
</tr>
<tr>
<td>416.13(b)</td>
<td>Conduct other procedures listed in the plan</td>
</tr>
<tr>
<td>416.13(c)</td>
<td>Plant monitors implementation of SSOP procedures</td>
</tr>
<tr>
<td>416.14</td>
<td>Evaluate effectiveness of SSOP's &amp; maintain plan</td>
</tr>
<tr>
<td>416.15(a)</td>
<td>Appropriate corrective actions</td>
</tr>
<tr>
<td>Code</td>
<td>Description</td>
</tr>
<tr>
<td>----------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>416.15(b)</td>
<td>Corrective action, procedures for</td>
</tr>
<tr>
<td>416.16(a)</td>
<td>Daily records required, responsible individual, initialed and dated</td>
</tr>
<tr>
<td>416.2(a)</td>
<td>Grounds and Pest Control</td>
</tr>
<tr>
<td>416.2(b)(1)</td>
<td>Sound construction, good repair &amp; sufficient size</td>
</tr>
<tr>
<td>416.2(b)(2)</td>
<td>Walls/floors/ceilings durable, impervious, cleaned &amp; sanitized</td>
</tr>
<tr>
<td>416.2(b)(4)</td>
<td>Inedible from edible separated by time or space</td>
</tr>
<tr>
<td>416.3(b)</td>
<td>Constructed, located &amp; operated in a manner that does not deter inspection</td>
</tr>
<tr>
<td>416.3(c)</td>
<td>Receptacles for storing inedible material must identify permitted use</td>
</tr>
<tr>
<td>416.4(a)</td>
<td>Food contact surface, cleaning &amp; sanitizing as frequency</td>
</tr>
<tr>
<td>416.4(d)</td>
<td>Product processing, handling, storage, loading, unloading, and during transportation must be protected</td>
</tr>
<tr>
<td>416.6</td>
<td>Only FSIS program employee may remove “U.S. Rejected” tag</td>
</tr>
<tr>
<td>417.2(a)(1)</td>
<td>Hazard analysis</td>
</tr>
<tr>
<td>417.2(c)(4)</td>
<td>List of procedures &amp; frequency</td>
</tr>
<tr>
<td>417.3(a)(1)</td>
<td>Identify and eliminate the cause</td>
</tr>
<tr>
<td>417.3(a)(2)</td>
<td>CCP is under control</td>
</tr>
<tr>
<td>417.3(a)(3)</td>
<td>Establish measures to prevent recurrence</td>
</tr>
<tr>
<td>417.3(b)(1)</td>
<td>Segregate and hold the affected product</td>
</tr>
<tr>
<td>417.3(b)(2)</td>
<td>Determine the acceptability of the affected product</td>
</tr>
<tr>
<td>417.3(b)(3)</td>
<td>No adulterated product enters commerce</td>
</tr>
<tr>
<td>417.3(b)(4)</td>
<td>Reassessment</td>
</tr>
<tr>
<td>417.3(c)</td>
<td>Document corrective actions</td>
</tr>
<tr>
<td>417.4(a)</td>
<td>Adequacy of HACCP in controlling food safety hazards</td>
</tr>
<tr>
<td>417.4(a)(1)</td>
<td>Initial validation</td>
</tr>
<tr>
<td>417.5(a)(1)</td>
<td>Written hazard analysis</td>
</tr>
<tr>
<td>417.5(a)(2)</td>
<td>Written HACCP plan</td>
</tr>
<tr>
<td>417.5(a)(3)</td>
<td>Records documentation and monitoring of CCP's and Critical Limits</td>
</tr>
<tr>
<td>417.6</td>
<td>Inadequate HACCP systems</td>
</tr>
<tr>
<td>430.4(b)(3)</td>
<td>Alternative 3</td>
</tr>
<tr>
<td>430.4(c)(3)</td>
<td><em>Lm</em>, maintain sanitation in post-lethality processing environment</td>
</tr>
<tr>
<td>430.4(c)(5)</td>
<td><em>Lm</em>, evaluate control measures in Sanitation SOP</td>
</tr>
<tr>
<td>430.4(c)(6)</td>
<td><em>Lm</em>, prerequisite program requirements</td>
</tr>
<tr>
<td>310.18(a)</td>
<td>Carcasses, organs, and other parts handled in a sanitary manner</td>
</tr>
<tr>
<td>418.3</td>
<td>Recall Plans</td>
</tr>
<tr>
<td>Code</td>
<td>Description</td>
</tr>
<tr>
<td>------</td>
<td>-------------</td>
</tr>
<tr>
<td>381.65(f)</td>
<td>Procedures for controlling visible fecal contamination</td>
</tr>
<tr>
<td>381.65(g)</td>
<td>Procedures for controlling contamination throughout the slaughter and dressing operation</td>
</tr>
<tr>
<td>381.76(a)</td>
<td>Post-mortem inspection, when required, extent</td>
</tr>
<tr>
<td>381.76(b)(6)(ii)(A)</td>
<td>NPIS Sorting, Trimming, and Reprocessing</td>
</tr>
<tr>
<td>381.76(b)(6)(ii)(D)</td>
<td>Ready-to-Cook verification in NPIS</td>
</tr>
<tr>
<td>381.76(b)(6)(ii)(C)</td>
<td>NPIS septicemia/toxemia</td>
</tr>
<tr>
<td>311.14</td>
<td>Abrasions, bruises, abscesses, pus, etc.</td>
</tr>
<tr>
<td>310.18(c)(1)</td>
<td>Sampling locations</td>
</tr>
<tr>
<td>310.26(b)</td>
<td>Carcass sorting and disposition</td>
</tr>
</tbody>
</table>

1 Refer to the Code of Federal Regulations for complete regulation descriptions.
APPENDIX B: FY2025 CANDIDATE REGULATIONS

Table B-1 presents the list of candidate regulations. Of the 180 candidate regulations, two regulations did not have any verifications for the time period as they were replaced with a new regulation or removed from possible verifications prior to this analysis. The noncompliance rates in Table B-1 are based on Public Health Information System (PHIS) data from January 1 through December 31, 2023.

Table B-1 FY2025 List of Candidate Regulations

<table>
<thead>
<tr>
<th>Regulation1</th>
<th>Description2</th>
<th>FY 2024 Optional Regulations3</th>
<th>Mandatory Regulation3</th>
<th>Total Regulations Verified</th>
<th>Total Noncompliant Regulations Verified</th>
<th>PHRs Noncompliance Rate</th>
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<tbody>
<tr>
<td>301.2 Adulterated</td>
<td>Adulterated</td>
<td>No</td>
<td>No</td>
<td>2916</td>
<td>140</td>
<td>4.80%</td>
</tr>
<tr>
<td>304.3(a)</td>
<td>Develop written SSOP</td>
<td>No</td>
<td>No</td>
<td>351</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td>304.3(c)</td>
<td>Conduct hazard analysis and develop HACCP plan for new product</td>
<td>No</td>
<td>No</td>
<td>204</td>
<td>5</td>
<td>2.45%</td>
</tr>
<tr>
<td>309.2(a)</td>
<td>Livestock suspected of being diseased or affected with certain conditions; identifying suspects</td>
<td>No</td>
<td>No</td>
<td>88</td>
<td>1</td>
<td>1.14%</td>
</tr>
<tr>
<td>309.3</td>
<td>(Modernized ONLY) Dead, dying, disabled or diseased and similar livestock</td>
<td>No</td>
<td>No</td>
<td>65</td>
<td>2</td>
<td>3.08%</td>
</tr>
<tr>
<td>309.4</td>
<td>(Modernized ONLY) Livestock showing symptoms of metabolic, toxic, nervous, or diseases</td>
<td>No</td>
<td>No</td>
<td>35</td>
<td>2</td>
<td>5.71%</td>
</tr>
<tr>
<td>309.5</td>
<td>(Modernized ONLY) Swine; disposal because of hog cholera</td>
<td>No</td>
<td>No</td>
<td>13</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td>309.9</td>
<td>(Modernized ONLY) Swine erysipelas</td>
<td>No</td>
<td>No</td>
<td>15</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td>310.22(b)</td>
<td>Inedible and prohibited</td>
<td>No</td>
<td>No</td>
<td>2250</td>
<td>7</td>
<td>0.31%</td>
</tr>
<tr>
<td>Regulation(^1)</td>
<td>Description(^2)</td>
<td>FY 2024 PHRs</td>
<td>Mandatory Regulation(^3)</td>
<td>Total Regulations Verified</td>
<td>Total Noncompliant Regulations Verified</td>
<td>PHRs Noncompliance Rate</td>
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<tr>
<td>310.22(c)</td>
<td>Disposal of SRM</td>
<td>Yes</td>
<td>Yes</td>
<td>54789</td>
<td>235</td>
<td>0.43%</td>
</tr>
<tr>
<td>310.22(d)(2)</td>
<td>Exports have equivalent level of protection from human exposure to BSE as similar US products</td>
<td>No</td>
<td>No</td>
<td>37</td>
<td>0</td>
<td>0.00%</td>
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<tr>
<td>310.22(e)(1)</td>
<td>Written procedures for removal, segregation, and disposition of SRMs</td>
<td>Yes</td>
<td>No</td>
<td>9796</td>
<td>171</td>
<td>1.75%</td>
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<td>310.22(e)(2)</td>
<td>Appropriate corrective actions</td>
<td>Yes</td>
<td>No</td>
<td>2495</td>
<td>27</td>
<td>1.08%</td>
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<tr>
<td>310.22(e)(3)</td>
<td>Evaluate effectiveness of procedures for removal, segregation, and disposition of SRMs</td>
<td>Yes</td>
<td>No</td>
<td>7126</td>
<td>83</td>
<td>1.16%</td>
</tr>
<tr>
<td>310.22(e)(4)(i)</td>
<td>Maintain daily records</td>
<td>No</td>
<td>No</td>
<td>64255</td>
<td>133</td>
<td>0.21%</td>
</tr>
<tr>
<td>310.22(f)(2)</td>
<td>Use of routine operational sanitation procedures on equipment used to cut through SRMs</td>
<td>Yes</td>
<td>No</td>
<td>13132</td>
<td>34</td>
<td>0.26%</td>
</tr>
<tr>
<td>310.22(g)(1)</td>
<td>Maintain positive control of beef carcasses with the vertebral columns to another federal inspected establishment</td>
<td>No</td>
<td>No</td>
<td>1012</td>
<td>2</td>
<td>0.20%</td>
</tr>
<tr>
<td>310.22(g)(4)</td>
<td>Maintain records of official establishment showing proper</td>
<td>No</td>
<td>No</td>
<td>3080</td>
<td>15</td>
<td>0.49%</td>
</tr>
<tr>
<td>Regulation</td>
<td>Description</td>
<td>FY 2024 PHRs</td>
<td>Mandatory Regulation</td>
<td>Total Regulations Verified</td>
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<td>PHRs Noncompliance Rate</td>
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<tr>
<td>310.25(a)</td>
<td>Verification criteria for E. coli testing meat</td>
<td>No</td>
<td>No</td>
<td>29056</td>
<td>340</td>
<td>1.17%</td>
</tr>
<tr>
<td>310.25(b)</td>
<td>Pathogen reduction performance standards; Salmonella</td>
<td>No</td>
<td>No</td>
<td>159</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td>310.25(b)(3)(ii)</td>
<td>PR livestock - Failure to maintain adequate HACCP Plan</td>
<td>No</td>
<td>No</td>
<td>29</td>
<td>2</td>
<td>6.90%</td>
</tr>
<tr>
<td>310.3</td>
<td>Carcasses and parts in certain instances to be retained</td>
<td>Yes</td>
<td>No</td>
<td>1875</td>
<td>240</td>
<td>12.80%</td>
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<tr>
<td>311.16</td>
<td>(Modernized ONLY) Carcasses so infected that consumption of the meat may cause food poisoning</td>
<td>No</td>
<td>No</td>
<td>236</td>
<td>27</td>
<td>11.44%</td>
</tr>
<tr>
<td>311.17</td>
<td>(Modernized ONLY) Necrobacillosis, pyemia, septicemia</td>
<td>No</td>
<td>No</td>
<td>254</td>
<td>5</td>
<td>1.97%</td>
</tr>
<tr>
<td>311.24</td>
<td>(Modernized ONLY) Hogs affected with tapeworm cysts</td>
<td>No</td>
<td>No</td>
<td>38</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td>315.2</td>
<td>Carcasses and parts passed for cooking</td>
<td>No</td>
<td>No</td>
<td>35</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td>316.6</td>
<td>Products not to be removed from official establishments unless marked in accordance with the regulations</td>
<td>No</td>
<td>No</td>
<td>11535</td>
<td>49</td>
<td>0.42%</td>
</tr>
<tr>
<td>317.24(a)</td>
<td>Packaging materials</td>
<td>No</td>
<td>No</td>
<td>1192</td>
<td>10</td>
<td>0.84%</td>
</tr>
<tr>
<td>Regulation¹</td>
<td>Description²</td>
<td>FY 2024 PHRs</td>
<td>Mandatory Regulation³</td>
<td>Total Regulations Verified</td>
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<td>PHRs Noncompliance Rate</td>
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</tr>
<tr>
<td>318.1(b)</td>
<td>Only inspected and passed poultry product to enter official establishment</td>
<td>No</td>
<td>No</td>
<td>103347</td>
<td>10</td>
<td>0.01%</td>
</tr>
<tr>
<td>318.14(a)</td>
<td>Product and ingredients rendered adulterated by polluted water shall be condemned</td>
<td>No</td>
<td>No</td>
<td>170</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td>318.14(b)</td>
<td>Establishment shall be thoroughly cleaned and disinfected under FSIS supervision</td>
<td>No</td>
<td>No</td>
<td>510</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td>318.14(c)</td>
<td>Hermetically sealed contaminated containers shall be examined/rehandled under FSIS supervision</td>
<td>No</td>
<td>No</td>
<td>109</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td>318.16(b)</td>
<td>Pesticides chemicals and other residues in products not to exceed Federal Food, Drug, and Cosmetic Act levels - Meat ingredients</td>
<td>No</td>
<td>No</td>
<td>116</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td>318.17(a)(1)(2)</td>
<td>Lethality and Stabilization requirements for cooked beef</td>
<td>No</td>
<td>No</td>
<td>1782</td>
<td>2</td>
<td>0.11%</td>
</tr>
<tr>
<td>318.17(b)</td>
<td>Lethality and Stabilization processes other</td>
<td>No</td>
<td>No</td>
<td>363</td>
<td>0</td>
<td>0.00%</td>
</tr>
</tbody>
</table>

¹ Regulation number
² Description of regulation
³ Mandatory regulation
<table>
<thead>
<tr>
<th>Regulation</th>
<th>Description</th>
<th>FY 2024 PHRs</th>
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<th>Total Noncompliant Regulations Verified</th>
<th>PHRs Noncompliance Rate</th>
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</thead>
<tbody>
<tr>
<td>318.17(c)</td>
<td>Validation of new or altered process</td>
<td>No</td>
<td>No</td>
<td>35</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td></td>
<td>schedules (for cooked beef)</td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>318.2(a)</td>
<td>All products subject to reinspection</td>
<td>Yes</td>
<td>No</td>
<td>40192</td>
<td>51</td>
<td>0.13%</td>
</tr>
<tr>
<td></td>
<td>by program employees</td>
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<td></td>
<td></td>
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<tr>
<td>318.2(d)</td>
<td>Removal of U.S. retained by</td>
<td>Yes</td>
<td>No</td>
<td>6066</td>
<td>50</td>
<td>0.82%</td>
</tr>
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<td></td>
<td>authorized Program employees only</td>
<td></td>
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<td>318.23(b)(1)</td>
<td>Time/Temperature for heat-</td>
<td>No</td>
<td>No</td>
<td>424</td>
<td>0</td>
<td>0.00%</td>
</tr>
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<td></td>
<td>processing combinations of fully-cooked</td>
<td></td>
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<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>meat patties</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
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<td>318.23(b)(3)</td>
<td>Heat deviations for meat patties</td>
<td>No</td>
<td>No</td>
<td>89</td>
<td>0</td>
<td>0.00%</td>
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<td>318.23(c)(1)</td>
<td>Stabilization requirements for meat</td>
<td>No</td>
<td>No</td>
<td>259</td>
<td>0</td>
<td>0.00%</td>
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<td></td>
<td>patties</td>
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<td>Stabilization processes for meat</td>
<td>No</td>
<td>No</td>
<td>75</td>
<td>0</td>
<td>0.00%</td>
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<td></td>
<td>patties other than HACCP</td>
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<td>318.23(c)(4)</td>
<td>Labeling statement for partially</td>
<td>No</td>
<td>No</td>
<td>194</td>
<td>0</td>
<td>0.00%</td>
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<td>cooked patties</td>
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<td>318.23(c)(5)</td>
<td>Labeling statement for char-marked</td>
<td>No</td>
<td>No</td>
<td>37</td>
<td>0</td>
<td>0.00%</td>
</tr>
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<td></td>
<td>patties</td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>318.24</td>
<td>Product prepared using advanced</td>
<td>No</td>
<td>No</td>
<td>2776</td>
<td>11</td>
<td>0.40%</td>
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<td>meat/bone separation machinery;</td>
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<td></td>
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<td>process control</td>
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<td></td>
<td></td>
</tr>
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<td>318.6(b)(1)</td>
<td>Requirements for use of</td>
<td>No</td>
<td>No</td>
<td>1819</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td>Regulation¹</td>
<td>Description²</td>
<td>FY 2024 PHRs</td>
<td>Mandatory Regulation³</td>
<td>Total Regulations Verified</td>
<td>Total Noncompliant Regulations Verified</td>
<td>PHRs Noncompliance Rate</td>
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</tr>
<tr>
<td>318.6(b)(4)</td>
<td>Detached spinal cords</td>
<td>No</td>
<td>No</td>
<td>8873</td>
<td>0</td>
<td>0.00%</td>
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<tr>
<td>318.6(b)(6)</td>
<td>Tonsils</td>
<td>No</td>
<td>No</td>
<td>9605</td>
<td>0</td>
<td>0.00%</td>
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<tr>
<td>318.6(b)(8)</td>
<td>Intestines as ingredients</td>
<td>No</td>
<td>No</td>
<td>147</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td>319.5(b)</td>
<td>Mechanically separated (beef) - prohibited for use in human food</td>
<td>No</td>
<td>No</td>
<td>266</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td>381.1_Adulterated</td>
<td>Adulterated</td>
<td>No</td>
<td>No</td>
<td>2263</td>
<td>35</td>
<td>1.55%</td>
</tr>
<tr>
<td>381.144(a)</td>
<td>Packaging materials not to be composed of any poisonous or deleterious substance</td>
<td>No</td>
<td>No</td>
<td>1796</td>
<td>2</td>
<td>0.11%</td>
</tr>
<tr>
<td>381.150(a)</td>
<td>Lethality and Stabilization requirements for cooked poultry</td>
<td>No</td>
<td>No</td>
<td>492</td>
<td>5</td>
<td>1.02%</td>
</tr>
<tr>
<td>381.150(c)</td>
<td>Lethality and Stabilization processes other than HACCP for cooked poultry</td>
<td>No</td>
<td>No</td>
<td>36</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td>381.150(d)</td>
<td>Validation of new or altered process schedules by scientifically supportable means (cooked poultry)</td>
<td>No</td>
<td>No</td>
<td>5</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td>381.151(a)</td>
<td>Product and ingredients rendered adulterated by polluted water shall be condemned</td>
<td>No</td>
<td>No</td>
<td>310</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td>381.22(a)</td>
<td>Develop written SSOP</td>
<td>No</td>
<td>No</td>
<td>162</td>
<td>1</td>
<td>0.62%</td>
</tr>
<tr>
<td>381.22(b)</td>
<td>Conduct hazard analysis and develop and</td>
<td>No</td>
<td>No</td>
<td>1102</td>
<td>1</td>
<td>0.09%</td>
</tr>
<tr>
<td>Regulation¹</td>
<td>Description²</td>
<td>FY 2024 PHRs</td>
<td>Mandatory Regulation³</td>
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</tr>
<tr>
<td>381.22(c)</td>
<td>Conduct hazard analysis and develop HACCP plan for new product</td>
<td>No</td>
<td>No</td>
<td>203</td>
<td>3</td>
<td>1.48%</td>
</tr>
<tr>
<td>381.37(a)</td>
<td>Product not produced under supervision of program employee</td>
<td>No</td>
<td>No</td>
<td>1452</td>
<td>12</td>
<td>0.83%</td>
</tr>
<tr>
<td>381.65(a)</td>
<td>Clean and sanitary practices; products not adulterated</td>
<td>Yes</td>
<td>No</td>
<td>23577</td>
<td>92</td>
<td>0.39%</td>
</tr>
<tr>
<td>381.71(a)</td>
<td>Condemnation on ante-mortem inspection</td>
<td>Yes</td>
<td>No</td>
<td>760</td>
<td>9</td>
<td>1.18%</td>
</tr>
<tr>
<td>381.72(a)</td>
<td>Poultry</td>
<td>No</td>
<td>No</td>
<td>118</td>
<td>0</td>
<td>0.00%</td>
</tr>
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<td>381.72(b)</td>
<td>Ratites</td>
<td>No</td>
<td>No</td>
<td>10</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td>381.83</td>
<td>Septicemia or toxemia</td>
<td>No</td>
<td>No</td>
<td>1367333</td>
<td>44</td>
<td>0.00%</td>
</tr>
<tr>
<td>381.85</td>
<td>Special Diseases (organisms or toxins dangerous to the consumer)</td>
<td>No</td>
<td>No</td>
<td>72</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td>381.91(a)</td>
<td>Certain contaminated carcasses to be condemned</td>
<td>Yes</td>
<td>No</td>
<td>2929</td>
<td>7</td>
<td>0.24%</td>
</tr>
<tr>
<td>381.91(b)</td>
<td>Reprocessing of carcasses accidentally contaminated with digestive tract contents</td>
<td>Yes</td>
<td>No</td>
<td>6689</td>
<td>207</td>
<td>3.09%</td>
</tr>
<tr>
<td>416.1</td>
<td>Operate in a manner to prevent insanitary conditions</td>
<td>Yes</td>
<td>Yes</td>
<td>654590</td>
<td>3528</td>
<td>0.54%</td>
</tr>
<tr>
<td>416.12(c)</td>
<td>Plan identifies procedures for pre-op</td>
<td>Yes</td>
<td>No</td>
<td>37347</td>
<td>65</td>
<td>0.17%</td>
</tr>
<tr>
<td>416.12(d)</td>
<td>Plan list frequency for</td>
<td>No</td>
<td>No</td>
<td>53427</td>
<td>73</td>
<td>0.14%</td>
</tr>
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<tr>
<td>416.13(a)</td>
<td>Conduct pre-op procedures</td>
<td>Yes</td>
<td>Yes</td>
<td>803535</td>
<td>15392</td>
<td>1.92%</td>
</tr>
<tr>
<td>416.13(b)</td>
<td>Conduct other procedures listed in the plan</td>
<td>Yes</td>
<td>Yes</td>
<td>2015679</td>
<td>7146</td>
<td>0.35%</td>
</tr>
<tr>
<td>416.13(c)</td>
<td>Plant monitors implementation of SSOP procedures</td>
<td>Yes</td>
<td>Yes</td>
<td>2849726</td>
<td>27014</td>
<td>0.95%</td>
</tr>
<tr>
<td>416.14</td>
<td>Evaluate effectiveness of SSOP's and maintain plan</td>
<td>Yes</td>
<td>Yes</td>
<td>1790292</td>
<td>2603</td>
<td>0.15%</td>
</tr>
<tr>
<td>416.15(a)</td>
<td>Appropriate corrective actions</td>
<td>Yes</td>
<td>Yes</td>
<td>60811</td>
<td>636</td>
<td>1.05%</td>
</tr>
<tr>
<td>416.15(b)</td>
<td>Corrective action, procedures for</td>
<td>Yes</td>
<td>Yes</td>
<td>38516</td>
<td>616</td>
<td>1.60%</td>
</tr>
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<td>416.16(a)</td>
<td>Daily records required, responsible individual, initialed and dated</td>
<td>Yes</td>
<td>Yes</td>
<td>3026935</td>
<td>4053</td>
<td>0.13%</td>
</tr>
<tr>
<td>416.2(a)</td>
<td>Grounds and Pest Control</td>
<td>Yes</td>
<td>No</td>
<td>188165</td>
<td>5952</td>
<td>3.16%</td>
</tr>
<tr>
<td>416.2(b)(1)</td>
<td>Sound construction, good repair and sufficient size</td>
<td>Yes</td>
<td>No</td>
<td>151395</td>
<td>5874</td>
<td>3.88%</td>
</tr>
<tr>
<td>416.2(b)(2)</td>
<td>Walls/floors/ceilings durable, impervious, cleaned and sanitized</td>
<td>Yes</td>
<td>No</td>
<td>206149</td>
<td>7475</td>
<td>3.63%</td>
</tr>
<tr>
<td>416.2(b)(4)</td>
<td>Inedible from edible separated by time or space</td>
<td>Yes</td>
<td>No</td>
<td>114891</td>
<td>399</td>
<td>0.35%</td>
</tr>
<tr>
<td>416.3(b)</td>
<td>Constructed, located and operated in a manner that does not deter inspection</td>
<td>Yes</td>
<td>No</td>
<td>77139</td>
<td>374</td>
<td>0.48%</td>
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</tr>
<tr>
<td>416.3(c)</td>
<td>Receptacles for storing inedible material must identify permitted use</td>
<td>Yes</td>
<td>No</td>
<td>63750</td>
<td>729</td>
<td>1.14%</td>
</tr>
<tr>
<td>416.4(a)</td>
<td>Food contact surface, cleaning and sanitizing as frequency</td>
<td>Yes</td>
<td>No</td>
<td>257399</td>
<td>9234</td>
<td>3.59%</td>
</tr>
<tr>
<td>416.4(d)</td>
<td>Product processing, handling, storage, loading, unloading, and during transportation must be protected</td>
<td>Yes</td>
<td>No</td>
<td>234801</td>
<td>10760</td>
<td>4.58%</td>
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<td>416.5(c)</td>
<td>Any person who appears to have any abnormal source of microbial contamination</td>
<td>No</td>
<td>No</td>
<td>29995</td>
<td>8</td>
<td>0.03%</td>
</tr>
<tr>
<td>416.6</td>
<td>Only FSIS program employee may remove “U.S. Rejected” tag</td>
<td>Yes</td>
<td>No</td>
<td>2357</td>
<td>75</td>
<td>3.18%</td>
</tr>
<tr>
<td>417.2(a)(1)</td>
<td>Hazard analysis</td>
<td>Yes</td>
<td>Yes</td>
<td>132491</td>
<td>1401</td>
<td>1.06%</td>
</tr>
<tr>
<td>417.2(c)</td>
<td>Contents of HACCP Plan</td>
<td>Yes</td>
<td>No</td>
<td>26997</td>
<td>38</td>
<td>0.14%</td>
</tr>
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<td>417.2(c)(4)</td>
<td>List of procedures and frequency</td>
<td>Yes</td>
<td>Yes</td>
<td>1399633</td>
<td>4261</td>
<td>0.30%</td>
</tr>
<tr>
<td>417.3(a)(1)</td>
<td>Identify and eliminate the cause</td>
<td>Yes</td>
<td>Yes</td>
<td>30083</td>
<td>537</td>
<td>1.79%</td>
</tr>
<tr>
<td>417.3(a)(2)</td>
<td>CCP is under control</td>
<td>Yes</td>
<td>Yes</td>
<td>143523</td>
<td>613</td>
<td>0.43%</td>
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<td>417.3(a)(3)</td>
<td>Establish measures to prevent recurrence</td>
<td>Yes</td>
<td>Yes</td>
<td>27077</td>
<td>617</td>
<td>2.28%</td>
</tr>
<tr>
<td>417.3(a)(4)</td>
<td>No adulterated product enters commerce</td>
<td>Yes</td>
<td>Yes</td>
<td>46969</td>
<td>128</td>
<td>0.27%</td>
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<tr>
<td>417.3(b)(1)</td>
<td>Segregate and hold the affected product</td>
<td>No</td>
<td>Yes</td>
<td>23771</td>
<td>50</td>
<td>0.21%</td>
</tr>
<tr>
<td>417.3(b)(2)</td>
<td>Determine the acceptability of the affected product</td>
<td>No</td>
<td>Yes</td>
<td>23183</td>
<td>45</td>
<td>0.19%</td>
</tr>
<tr>
<td>417.3(b)(3)</td>
<td>No adulterated product enters commerce</td>
<td>Yes</td>
<td>Yes</td>
<td>33535</td>
<td>48</td>
<td>0.14%</td>
</tr>
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<td>417.3(b)(4)</td>
<td>Reassessment</td>
<td>Yes</td>
<td>Yes</td>
<td>48971</td>
<td>163</td>
<td>0.33%</td>
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<td>417.3(c)</td>
<td>Document corrective actions</td>
<td>Yes</td>
<td>Yes</td>
<td>24572</td>
<td>188</td>
<td>0.77%</td>
</tr>
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<td>417.4(a)</td>
<td>Adequacy of HACCP in controlling food safety hazards</td>
<td>Yes</td>
<td>No</td>
<td>6332</td>
<td>204</td>
<td>3.22%</td>
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<td>417.4(a)(1)</td>
<td>Initial validation</td>
<td>Yes</td>
<td>No</td>
<td>5037</td>
<td>275</td>
<td>5.46%</td>
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<td>417.4(b)</td>
<td>Reassessment of hazard analysis</td>
<td>Yes</td>
<td>Yes</td>
<td>28834</td>
<td>60</td>
<td>0.21%</td>
</tr>
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<td>417.5(a)(1)</td>
<td>Written hazard analysis</td>
<td>Yes</td>
<td>Yes</td>
<td>1495411</td>
<td>3499</td>
<td>0.23%</td>
</tr>
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<td>417.5(a)(2)</td>
<td>Written HACCP plan</td>
<td>Yes</td>
<td>Yes</td>
<td>1331441</td>
<td>1147</td>
<td>0.09%</td>
</tr>
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<td>417.5(a)(3)</td>
<td>Records documentation and monitoring of CCP’s and Critical Limits</td>
<td>Yes</td>
<td>Yes</td>
<td>1435877</td>
<td>3291</td>
<td>0.23%</td>
</tr>
<tr>
<td>417.5(f)</td>
<td>Official Review</td>
<td>No</td>
<td>No</td>
<td>89933</td>
<td>76</td>
<td>0.08%</td>
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<td>417.6</td>
<td>Inadequate HACCP systems</td>
<td>No</td>
<td>No</td>
<td>502</td>
<td>92</td>
<td>18.33%</td>
</tr>
<tr>
<td>430.4(a)</td>
<td>Lm, post-lethality exposed RTE</td>
<td>Yes</td>
<td>Yes</td>
<td>309677</td>
<td>85</td>
<td>0.03%</td>
</tr>
<tr>
<td>430.4(b)(1)</td>
<td>Alternative 1</td>
<td>No</td>
<td>No</td>
<td>726</td>
<td>2</td>
<td>0.28%</td>
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<td>430.4(b)(2)</td>
<td>Alternative 2</td>
<td>No</td>
<td>No</td>
<td>11830</td>
<td>49</td>
<td>0.41%</td>
</tr>
<tr>
<td>430.4(b)(3)</td>
<td>Alternative 3</td>
<td>Yes</td>
<td>No</td>
<td>16292</td>
<td>265</td>
<td>1.63%</td>
</tr>
<tr>
<td>430.4(c)(2)</td>
<td>Lm, documentation that supports decision in hazard analysis</td>
<td>Yes</td>
<td>Yes</td>
<td>303401</td>
<td>108</td>
<td>0.04%</td>
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<tr>
<td>430.4(c)(3)</td>
<td><em>Lm</em>, maintain sanitation in post-lethality processing environment</td>
<td>Yes</td>
<td>Yes</td>
<td>301810</td>
<td>92</td>
<td>0.03%</td>
</tr>
<tr>
<td>430.4(c)(4)</td>
<td><em>Lm</em>, validate and verify control measures in HACCP plan</td>
<td>No</td>
<td>No</td>
<td>3058</td>
<td>11</td>
<td>0.36%</td>
</tr>
<tr>
<td>430.4(c)(5)</td>
<td><em>Lm</em>, evaluate control measures in Sanitation SOP</td>
<td>Yes</td>
<td>No</td>
<td>4606</td>
<td>9</td>
<td>0.20%</td>
</tr>
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<td>430.4(c)(6)</td>
<td><em>Lm</em>, prerequisite program requirements</td>
<td>No</td>
<td>No</td>
<td>4221</td>
<td>45</td>
<td>1.07%</td>
</tr>
<tr>
<td>310.18(a)</td>
<td>Carcasses, organs, and other parts handled in a sanitary manner</td>
<td>Yes</td>
<td>Yes</td>
<td>378973</td>
<td>5258</td>
<td>1.39%</td>
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<tr>
<td>310.18(b)</td>
<td>Brains, cheek meat, head trimmings from animals slaughtered by gunshot</td>
<td>No</td>
<td>No</td>
<td>21484</td>
<td>3</td>
<td>0.01%</td>
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<tr>
<td>590.422</td>
<td>Condemnation of adulterated product</td>
<td>No</td>
<td>No</td>
<td>1344</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td>418.2</td>
<td>Notification of adulterated or misbranded product in commerce</td>
<td>Yes</td>
<td>No</td>
<td>2232</td>
<td>63</td>
<td>2.82%</td>
</tr>
<tr>
<td>418.3</td>
<td>Recall Plans</td>
<td>No</td>
<td>No</td>
<td>22708</td>
<td>28</td>
<td>0.12%</td>
</tr>
<tr>
<td>354.242(b)</td>
<td>All equipment and utensils clean and sanitary</td>
<td>No</td>
<td>No</td>
<td>109</td>
<td>1</td>
<td>0.92%</td>
</tr>
<tr>
<td>354.242(h)</td>
<td>Tools and equipment used in preparation to be kept clean and sanitary</td>
<td>No</td>
<td>No</td>
<td>62</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td>354.243(a)</td>
<td>No handling or storage of objectionable materials</td>
<td>No</td>
<td>No</td>
<td>33</td>
<td>0</td>
<td>0.00%</td>
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<tr>
<td>381.193(a)</td>
<td>Poultry not intended for human food in commerce</td>
<td>No</td>
<td>No</td>
<td>182</td>
<td>13</td>
<td>7.14%</td>
</tr>
<tr>
<td>590.510(c)(1)</td>
<td>Checks and eggs with a portion of the shell missing</td>
<td>No</td>
<td>No</td>
<td>3616</td>
<td>117</td>
<td>3.24%</td>
</tr>
<tr>
<td>590.510(c)(2)</td>
<td>Eggs with clean shells damaged in candling or transfer</td>
<td>No</td>
<td>No</td>
<td>3363</td>
<td>10</td>
<td>0.30%</td>
</tr>
<tr>
<td>590.510(c)(3)</td>
<td>Eggs with meat or blood spots</td>
<td>No</td>
<td>No</td>
<td>2581</td>
<td>4</td>
<td>0.15%</td>
</tr>
<tr>
<td>590.510(d)</td>
<td>Loss or inedible eggs placed in dedicated container</td>
<td>No</td>
<td>No</td>
<td>3262</td>
<td>6</td>
<td>0.18%</td>
</tr>
<tr>
<td>381.65(f)</td>
<td>Procedures for controlling visible fecal contamination</td>
<td>Yes</td>
<td>No</td>
<td>1624376</td>
<td>11350</td>
<td>0.70%</td>
</tr>
<tr>
<td>381.65(g)</td>
<td>Procedures for controlling contamination throughout the slaughter and dressing operation</td>
<td>Yes</td>
<td>No</td>
<td>114852</td>
<td>586</td>
<td>0.51%</td>
</tr>
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<td>381.65(h)</td>
<td>Recordkeeping requirements</td>
<td>Yes</td>
<td>No</td>
<td>22382</td>
<td>26</td>
<td>0.12%</td>
</tr>
<tr>
<td>381.76(a)</td>
<td>Post-mortem inspection, when required, extent</td>
<td>Yes</td>
<td>No</td>
<td>6708</td>
<td>41</td>
<td>0.61%</td>
</tr>
<tr>
<td>381.94(a)</td>
<td>Verification criteria for E. coli testing ratites</td>
<td>No</td>
<td>No</td>
<td>1102</td>
<td>3</td>
<td>0.27%</td>
</tr>
<tr>
<td>381.76(b)(6)(ii)(A)</td>
<td>NPIS Sorting, Trimming, and Reprocessing</td>
<td>Yes</td>
<td>No</td>
<td>68583</td>
<td>432</td>
<td>0.63%</td>
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<td>381.76(b)(6)(ii)(D)</td>
<td>Ready-to-Cook verification in NPIS</td>
<td>Yes</td>
<td>No</td>
<td>4612</td>
<td>464</td>
<td>10.06%</td>
</tr>
<tr>
<td>381.76(b)(6)(ii)(C)</td>
<td>NPIS septicemia/toxemia</td>
<td>No</td>
<td>No</td>
<td>1477877</td>
<td>53</td>
<td>0.00%</td>
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<tr>
<td>381.76(b)(6)(ii)(B)</td>
<td>NPIS reprocessing and salvage</td>
<td>Yes</td>
<td>No</td>
<td>82275</td>
<td>57</td>
<td>0.07%</td>
</tr>
<tr>
<td>537.1</td>
<td>Basic Requirements</td>
<td>No</td>
<td>No</td>
<td>24750</td>
<td>74</td>
<td>0.30%</td>
</tr>
<tr>
<td>537.2</td>
<td>Hazard Analysis and HACCP plan</td>
<td>No</td>
<td>No</td>
<td>111</td>
<td>0</td>
<td>0.00%</td>
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<tr>
<td>540.1</td>
<td>Dead fish</td>
<td>No</td>
<td>No</td>
<td>241</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td>548.2</td>
<td>Requirements concerning ingredients and other articles used in the preparation of fish products</td>
<td>No</td>
<td>No</td>
<td>1530</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td>548.8</td>
<td>Polluted water contamination at establishment</td>
<td>No</td>
<td>No</td>
<td>1202</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td>311.14</td>
<td>Abrasions, bruises, abscesses, pus, etc.</td>
<td>No</td>
<td>No</td>
<td>28194</td>
<td>14</td>
<td>0.05%</td>
</tr>
<tr>
<td>539.1(c)</td>
<td>Fish found to be in a state of spoilage or decomposition</td>
<td>No</td>
<td>No</td>
<td>226</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td>548.1(a)</td>
<td>Clean and sanitary fish preparation, fixtures or appliances</td>
<td>No</td>
<td>No</td>
<td>3281</td>
<td>52</td>
<td>1.58%</td>
</tr>
<tr>
<td>309.3(e)</td>
<td>Establishment notify IPP of non-ambulatory livestock; Prompt condemnation and disposal</td>
<td>No</td>
<td>No</td>
<td>45</td>
<td>1</td>
<td>2.22%</td>
</tr>
<tr>
<td>431.4</td>
<td>Critical factors and the application of the process schedule</td>
<td>No</td>
<td>Yes</td>
<td>10201</td>
<td>20</td>
<td>0.20%</td>
</tr>
<tr>
<td>431.9(b)</td>
<td>Procedures for handling of process deviations</td>
<td>No</td>
<td>Yes</td>
<td>9168</td>
<td>1</td>
<td>0.01%</td>
</tr>
<tr>
<td>Regulation¹</td>
<td>Description²</td>
<td>FY 2024 PHRs</td>
<td>Mandatory Regulation³</td>
<td>Total Regulations Verified</td>
<td>Total Noncompliant Regulations Verified</td>
<td>PHRs Noncompliance Rate</td>
</tr>
<tr>
<td>------------</td>
<td>--------------</td>
<td>--------------</td>
<td>-----------------------</td>
<td>---------------------------</td>
<td>----------------------------------------</td>
<td>------------------------</td>
</tr>
<tr>
<td>431.9(c)(1)</td>
<td>Process deviations identified in-process</td>
<td>No</td>
<td>No</td>
<td>92</td>
<td>1</td>
<td>1.09%</td>
</tr>
<tr>
<td>431.9(c)(2)</td>
<td>Process deviations identified through record review</td>
<td>No</td>
<td>No</td>
<td>31</td>
<td>5</td>
<td>16.13%</td>
</tr>
<tr>
<td>431.9(d)</td>
<td>Process deviation file</td>
<td>No</td>
<td>No</td>
<td>114</td>
<td>1</td>
<td>0.88%</td>
</tr>
<tr>
<td>431.11</td>
<td>Personnel and training</td>
<td>No</td>
<td>No</td>
<td>50</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td>431.12</td>
<td>Recall procedure</td>
<td>No</td>
<td>No</td>
<td>40</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td>309.19(a)</td>
<td>Market hog sorting activities</td>
<td>No</td>
<td>No</td>
<td>1700</td>
<td>5</td>
<td>0.29%</td>
</tr>
<tr>
<td>309.19(c)</td>
<td>Sorted and removed hogs identified; written procedures</td>
<td>No</td>
<td>No</td>
<td>1313</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td>309.19(d)</td>
<td>Records of animals disposed of per day</td>
<td>No</td>
<td>No</td>
<td>5548</td>
<td>3</td>
<td>0.05%</td>
</tr>
<tr>
<td>309.19(e)</td>
<td>Notifiable animal disease</td>
<td>No</td>
<td>No</td>
<td>102</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td>310.18(c)</td>
<td>Written procedures to prevent contamination; all swine slaughter</td>
<td>Yes</td>
<td>No</td>
<td>9984</td>
<td>25</td>
<td>0.25%</td>
</tr>
<tr>
<td>310.18(c)(1)</td>
<td>Sampling locations</td>
<td>No</td>
<td>No</td>
<td>1825</td>
<td>3</td>
<td>0.16%</td>
</tr>
<tr>
<td>310.18(c)(1)(i)</td>
<td>Very low volume establishments</td>
<td>No</td>
<td>No</td>
<td>3329</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td>310.18(c)(2)(i)</td>
<td>Sampling frequency</td>
<td>No</td>
<td>No</td>
<td>3180</td>
<td>2</td>
<td>0.06%</td>
</tr>
<tr>
<td>310.18(c)(2)(ii)</td>
<td>Sampling frequency for very low volume establishments</td>
<td>No</td>
<td>No</td>
<td>2072</td>
<td>6</td>
<td>0.29%</td>
</tr>
<tr>
<td>310.18(c)(2)(iii)</td>
<td>Records of test results for sampling program</td>
<td>Yes</td>
<td>No</td>
<td>26668</td>
<td>19</td>
<td>0.07%</td>
</tr>
<tr>
<td>Regulation 1</td>
<td>Description 2</td>
<td>FY 2024 PHRs</td>
<td>Mandatory Regulation 3</td>
<td>Total Regulations Verified</td>
<td>Total Noncompliant Regulations Verified</td>
<td>PHRs Noncompliance Rate</td>
</tr>
<tr>
<td>-------------</td>
<td>---------------------------------------------------------------------------------</td>
<td>--------------</td>
<td>------------------------</td>
<td>---------------------------</td>
<td>----------------------------------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td>310.18(d)</td>
<td>Daily records sufficient to document the implementation and monitoring of contamination control procedures</td>
<td>Yes</td>
<td>No</td>
<td>40719</td>
<td>21</td>
<td>0.05%</td>
</tr>
<tr>
<td>310.26(b)</td>
<td>Carcass sorting and disposition</td>
<td>No</td>
<td>Yes</td>
<td>3884</td>
<td>49</td>
<td>1.26%</td>
</tr>
<tr>
<td>310.26(d)(2)</td>
<td>Document number of carcasses disposed of per day</td>
<td>No</td>
<td>No</td>
<td>2893</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td>590.504(e)</td>
<td>Permit shipment of egg products pending lab results</td>
<td>No</td>
<td>No</td>
<td>186</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td>590.720</td>
<td>Disposition of restricted eggs</td>
<td>No</td>
<td>No</td>
<td>1303</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td>590.580(b)</td>
<td>Sampled and analyzed from the final package form</td>
<td>No</td>
<td>No</td>
<td>2006</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td>590.504(a)</td>
<td>Operations involving the processing, storing, and handling of eggs, ingredients, and egg products must be done in a sanitary manner</td>
<td>No</td>
<td>No</td>
<td>7347</td>
<td>36</td>
<td>0.49%</td>
</tr>
<tr>
<td>590.504(b)(1)</td>
<td>Eggs and egg products are subject to inspection in each official plant processing egg products for commerce</td>
<td>No</td>
<td>No</td>
<td>3833</td>
<td>1</td>
<td>0.03%</td>
</tr>
<tr>
<td>590.504(b)(2)</td>
<td>Any eggs and egg products not processed in accordance</td>
<td>No</td>
<td>No</td>
<td>3394</td>
<td>10</td>
<td>0.29%</td>
</tr>
<tr>
<td>Regulation¹</td>
<td>Description²</td>
<td>FY 2024 PHRs</td>
<td>Mandatory Regulation³</td>
<td>Total Regulations Verified</td>
<td>Total Noncompliant Regulations Verified</td>
<td>PHRs Noncompliance Rate</td>
</tr>
<tr>
<td>------------</td>
<td>--------------</td>
<td>--------------</td>
<td>------------------------</td>
<td>----------------------------</td>
<td>-----------------------------------------</td>
<td>--------------------------</td>
</tr>
<tr>
<td>590.516(a)</td>
<td>Cleaning of eggs prior to packaging, breaking, or pasteurizing</td>
<td>No</td>
<td>No</td>
<td>5154</td>
<td>60</td>
<td>1.16%</td>
</tr>
<tr>
<td>590.522</td>
<td>Each egg used in processed egg product must be broken in a sanitary manner and examined to ensure contents are acceptable for human consumption</td>
<td>No</td>
<td>No</td>
<td>4662</td>
<td>17</td>
<td>0.36%</td>
</tr>
<tr>
<td>590.570</td>
<td>Control of pathogens in pasteurized egg products</td>
<td>No</td>
<td>No</td>
<td>616</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td>590.580(b)(2)</td>
<td>Samples must be analyzed for the presence of Salmonella spp. with such frequency and using such laboratory methods as is sufficient to ensure that product is not adulterated. For each category of product, sampling should be conducted on a rotating basis</td>
<td>No</td>
<td>No</td>
<td>2042</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td>Regulation</td>
<td>Description</td>
<td>FY 2024 PHRs</td>
<td>Mandatory Regulation</td>
<td>Total Regulations Verified</td>
<td>Total Noncompliant Regulations Verified</td>
<td>PHRs Noncompliance Rate</td>
</tr>
<tr>
<td>------------</td>
<td>-------------</td>
<td>--------------</td>
<td>----------------------</td>
<td>---------------------------</td>
<td>----------------------------------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td>591.1</td>
<td>Basic requirements</td>
<td>No</td>
<td>No</td>
<td>2687</td>
<td>1</td>
<td>0.04%</td>
</tr>
<tr>
<td>590.580(b)(1)</td>
<td>Pasteurized liquid, frozen, and dried egg products, and heat treated dried egg whites must be sampled and analyzed for the presence of Salmonella spp.</td>
<td>No</td>
<td>No</td>
<td>2090</td>
<td>0</td>
<td>0.00%</td>
</tr>
</tbody>
</table>

1Regulations 417.3(a) and 417.4(a)(3) are not included in this table as they had zero regulations verified in CY2023.
2Refer to the Code of Federal Regulations for complete regulation descriptions.
3Mandatory Regulations are the regulatory requirements that must be verified each time IPP perform the task.
APPENDIX C: COMPARISON OF FY2024 PHRS LIST WITH FY2025 PHRS LIST

There are 13 regulations from the FY2024 PHRs list that no longer appear in the FY2025 PHRs list. These are shown in Table C-1.

Table C-1 Regulations on the FY2024 PHRs List No Longer on the FY2025 PHRs List

<table>
<thead>
<tr>
<th>FY2024 PHRs</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>381.71(a)</td>
<td>Condemnation on ante mortem inspection</td>
</tr>
<tr>
<td>381.91(a)</td>
<td>Certain contaminated carcasses to be condemned</td>
</tr>
<tr>
<td>417.2(c)</td>
<td>Contents of HACCP Plan</td>
</tr>
<tr>
<td>417.3(a)(4)</td>
<td>No adulterated product enters commerce.</td>
</tr>
<tr>
<td>417.4(b)</td>
<td>Reassessment of hazard analysis</td>
</tr>
<tr>
<td>430.4(a)</td>
<td>Lm, post-lethality exposed RTE</td>
</tr>
<tr>
<td>430.4(c)(2)</td>
<td>Lm, documentation that supports decision in hazard analysis</td>
</tr>
<tr>
<td>418.2</td>
<td>Notification of adulterated or misbranded product in commerce</td>
</tr>
<tr>
<td>381.65(h)</td>
<td>Recordkeeping requirements</td>
</tr>
<tr>
<td>381.76(b)(6)(ii)(B)</td>
<td>NPIS reprocessing and salvage</td>
</tr>
<tr>
<td>310.18(c)</td>
<td>Written procedures to prevent contamination; all swine slaughter</td>
</tr>
<tr>
<td>310.18(c)(2)(iii)</td>
<td>Records of test results for sampling program</td>
</tr>
<tr>
<td>310.18(d)</td>
<td>Daily records sufficient to document the implementation and monitoring of contamination control procedures</td>
</tr>
</tbody>
</table>

Refer to the Code of Federal Regulations for complete regulation descriptions.

There are 17 regulations on the FY2025 PHRs list that were not on the FY2024 PHRs list.
<table>
<thead>
<tr>
<th>FY2025 PHRs</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>301.2</td>
<td>Adulterated</td>
</tr>
<tr>
<td>310.22(b)</td>
<td>Inedible and prohibited SRM for use as human food</td>
</tr>
<tr>
<td>310.22(e)(4)(i)</td>
<td>Maintain daily records</td>
</tr>
<tr>
<td>310.25(a)</td>
<td>Verification criteria for E. coli testing meat</td>
</tr>
<tr>
<td>318.24*</td>
<td>Product prepared using advanced meat/bone separation machinery; process control</td>
</tr>
<tr>
<td>381.1</td>
<td>Adulterated</td>
</tr>
<tr>
<td>381.83</td>
<td>Septicemia or toxemia</td>
</tr>
<tr>
<td>416.12(d)</td>
<td>plan list frequency for each procedure &amp; responsible individual</td>
</tr>
<tr>
<td>417.3(b)(1)</td>
<td>Segregate and hold the affected product</td>
</tr>
<tr>
<td>417.3(b)(2)</td>
<td>Determine the acceptability of the affected product</td>
</tr>
<tr>
<td>417.6</td>
<td>Inadequate HACCP systems</td>
</tr>
<tr>
<td>430.4(c)(6)</td>
<td>Lm, prerequisite program requirements</td>
</tr>
<tr>
<td>418.3</td>
<td>Recall Plans</td>
</tr>
<tr>
<td>381.76(b)(6)(ii)(C)</td>
<td>NPIS septicemia/toxemia</td>
</tr>
<tr>
<td>311.14</td>
<td>Abrasions, bruises, abscesses, pus, etc.</td>
</tr>
<tr>
<td>310.18(c)(1)*</td>
<td>Sampling locations</td>
</tr>
<tr>
<td>310.26(b)</td>
<td>Carcass sorting and disposition</td>
</tr>
</tbody>
</table>


*Indicates first time regulation qualified for PHRs list.
APPENDIX D: METHODOLOGY AND CALCULATION OF PHRS CUT POINTS

The purpose of this appendix is to explain the methodology and calculations used to develop the PHRs cut points. The PHRs noncompliance rate is calculated by the following formula using the most recent 90 days of establishment verification inspection data:

\[
sPHR \text{ Noncompliance Rate} = \frac{\text{Total Noncompliant PHRs}}{\text{Total PHRs Verified}}
\]

Establishments are categorized into one of two establishment types: (1) processing only and (2) slaughter/processing; named processing, and combination in the main body of the report. The establishment type is determined by the type of HACCP inspection task codes performed at each establishment. If an establishment has only 03A through 03I codes, it is classified as a processing only establishment. If an establishment has a combination of 03A through 03J codes, it is classified as a slaughter/processing establishment.

The aggregate non-zero PHRs noncompliance rates are approximately log normally distributed. That means that the natural logarithm of the non-zero PHRs noncompliance rates is approximately normally distributed. Figure D-1 presents a histogram for the log transformed non-zero PHRs noncompliance data. Only establishments with greater than or equal to 20 verifications and at least 2 noncompliances are considered.

**Figure D-1 Log Transformed Non-Zero Noncompliance Rates of PHRs with 20 or More Verifications 90 Days before a Pathogen-Positive Sample or Enforcement Action**
This distribution is approximately normally distributed. Three goodness of fit tests, shown in Figure D-2, indicate near-normality.

**Figure D-2 Goodness of Fit for Normal Distribution of the Log Transformation**

<table>
<thead>
<tr>
<th>Test</th>
<th>Statistic</th>
<th>Statistic Value</th>
<th>p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kolmogorov-Smirnov</td>
<td>D</td>
<td>0.04621964</td>
<td>Pr &gt; D</td>
</tr>
<tr>
<td>Cramer-von Mises</td>
<td>W-Sq</td>
<td>1.15925194</td>
<td>Pr &gt; W-Sq</td>
</tr>
<tr>
<td>Anderson-Darling</td>
<td>A-Sq</td>
<td>6.83733311</td>
<td>Pr &gt; A-Sq</td>
</tr>
</tbody>
</table>

The final list of log-transformed cut points is derived from the average of the mean and standard deviation of the log transformed non-zero PHR rate from four quarters of PHRs data. (The antilog of these cut points is taken to obtain the cut points of the non-transformed PHRs noncompliance data). Table D-1 shows the number of establishments, mean and standard deviation for each establishment type, as well as the level distribution (based only on PHRs noncompliances) using the quarterly cut points.

**Table D-1 Quarterly PHRs Mean, Standard Deviation and Level Distribution**

<table>
<thead>
<tr>
<th>Quarter/Establishment Type</th>
<th>Number of Establishments</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Level</th>
<th>Tier Distribution (Number of Establishments)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1CY2023</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Combination</td>
<td>1,160</td>
<td>-4.74631</td>
<td>0.966794</td>
<td>Mid</td>
<td>108</td>
</tr>
<tr>
<td>Processing</td>
<td>4,370</td>
<td>-4.94156</td>
<td>0.795851</td>
<td>Lower</td>
<td>5,354</td>
</tr>
<tr>
<td>Q2CY2023</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Combination</td>
<td>1,202</td>
<td>-4.75661</td>
<td>0.962888</td>
<td>Mid</td>
<td>109</td>
</tr>
<tr>
<td>Processing</td>
<td>4,381</td>
<td>-4.96941</td>
<td>0.789097</td>
<td>Lower</td>
<td>5,405</td>
</tr>
<tr>
<td>Q3CY2023</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Combination</td>
<td>1,223</td>
<td>-4.69452</td>
<td>0.963164</td>
<td>Mid</td>
<td>95</td>
</tr>
<tr>
<td>Processing</td>
<td>4,418</td>
<td>-4.90836</td>
<td>0.807980</td>
<td>Lower</td>
<td>5,459</td>
</tr>
<tr>
<td>Q4CY2023</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Combination</td>
<td>1,230</td>
<td>-4.79833</td>
<td>0.983625</td>
<td>Mid</td>
<td>106</td>
</tr>
</tbody>
</table>
Table D-2 shows the average mean and standard deviation of the log transformed non-zero PHR rate over four quarters for each establishment type based on the quarterly data in Table D-1. Table D-3 shows the upper and lower cut points for FY2025 PHRs. Table D-4 show the distribution of establishments using data from January to March 2024 utilizing the proposed FY2025 PHRs.

Table D-2 Average Mean and Standard Deviation of Log Transformed Non-Zero PHR rates by Establishment Type

<table>
<thead>
<tr>
<th>Statistic</th>
<th>Combination</th>
<th>Processing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>-4.74827</td>
<td>-4.9526415</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>0.9691177</td>
<td>0.8008517</td>
</tr>
</tbody>
</table>

Table D-3 FY2025 PHRs Upper and Lower Cut Points

<table>
<thead>
<tr>
<th>Operation Type</th>
<th>Upper Cut Points</th>
<th>Lower Cut Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processing</td>
<td>3.51%</td>
<td>2.35%</td>
</tr>
<tr>
<td>Combination</td>
<td>6.02%</td>
<td>3.71%</td>
</tr>
</tbody>
</table>

Table D-4 March 2024 Level Distribution Based on the Previous Year’s (FY2024) PHRs Cut Points

(Note: Establishments that qualify for the upper level but with less than 20 verifications or only one noncompliance are moved to the mid-level classification).

<table>
<thead>
<tr>
<th>Classification</th>
<th>Establishments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upper</td>
<td>48</td>
</tr>
<tr>
<td>Mid</td>
<td>92</td>
</tr>
<tr>
<td>Lower</td>
<td>5,480</td>
</tr>
<tr>
<td>Total</td>
<td>5,620</td>
</tr>
</tbody>
</table>