Developing a Food Defense Plan

"How to"

Food Defense Plan Exercises

EXERCISE A:

Assessing Broad Mitigation Strategies

Exercise A: Broad Mitigation Strategies

Step 1: Review Measures

- Read the description and proposed measure. Choose and indicate (only 1):
  - Not Applicable
  - Currently Doing (if fully doing the measure)
  - Gap (Not doing, or partially doing the measure)

- Add a comment as to why you made the particular selection.
- If you chose “Not Applicable” then move on to the next measure.

Exercise A: Broad Mitigation Strategies

Step 2: Gap Analysis

If you are not doing a measure or partially doing a measure:

- Write the action steps you are willing and able to take to perform the measure, or
- If it is not practical, cost effective, or you are otherwise unable to perform the measure in the near future, indicate “gap impractical”

Exercise A: Broad Mitigation Strategies

Step 3

(Do not do this step if you indicated "Not Applicable")

- **READ** the sample plan content
- **EDIT** it to describe what you are already doing. Also include the action steps you intend to perform.
- **DOCUMENT** basic company and contact information (on another form)

Exercise A: Broad Mitigation Strategies

Outside Security -- 1. Property Perimeter

What food defense measures does your facility have in place for the exterior of the building? Multiple layers of security to protect the property perimeter is ideal because it makes the accessibility of the facility and grounds more difficult. The outermost layer is at the perimeter of the facility.

Measure 1a. Physical barriers such as a fence or wall can be used to restrict access to the facility. Guard patrols may substitute when no physical barrier is practical. Guards can also provide an additional layer of defense when used in addition to physical barriers. **Are the facility's grounds secured to prevent entry by unauthorized persons (e.g., by guards, fence, wall, or other physical barriers)? Are there regular security patrols?**

☐ Not Applicable ☐ Currently Doing ☐ Gap

Comments:

Action Steps: ☐ Gap Impractical

Plan Content:
Facility perimeter is clear and secured to prevent unauthorized entry (for example, by fence, wall or other physical barriers). "No trespassing" signs are posted. Where no barrier is possible, the perimeter shall be patrolled on a regular basis, not less than every 30 minutes.

Exercise A: Instructions

Step 1

- Review each mitigation measure and choose (one): **NOT APPLICABLE, Currently Doing, or GAP (or partial gap)**
- Write in the “comments” block why you made the indication you made.

Step 2

- If you checked a “gap” that you believe you can correct soon, write the action steps needed to correct the gap.
- If you marked “gap” but it is not practical or not cost effective to make a change now, check “gap impractical.” (It may become practical in the future)

Step 3

- Skip any question where you had previously marked “ignore.”
- Edit/Change the text in the “Sample FD Plan” block to reflect what your company is able and willing to do. Include the items in the “action steps needed column.”

Exercise A: Discussion

- Some organizations are already doing many of these best practices. If you are one of these organizations, why are you already doing them?
- Some organizations are not doing many of these food defense practices. If you are one of these, are the suggestions reasonable? Do they seem cost effective
- Some of the suggestions are costly, or impractical for some organizations. What are some ways you can deal with these suggestions?
- Were there any measures that were especially difficult? Why?

EXERCISE B

Vulnerability Assessment: Ranking/Sorting

Exercise B: Vulnerability Assessment

Step 1: Create a Flowchart

- **Create a FLOWCHART to document the process steps in your facility (keep it simple)**

Step 2: Evaluate and Rank

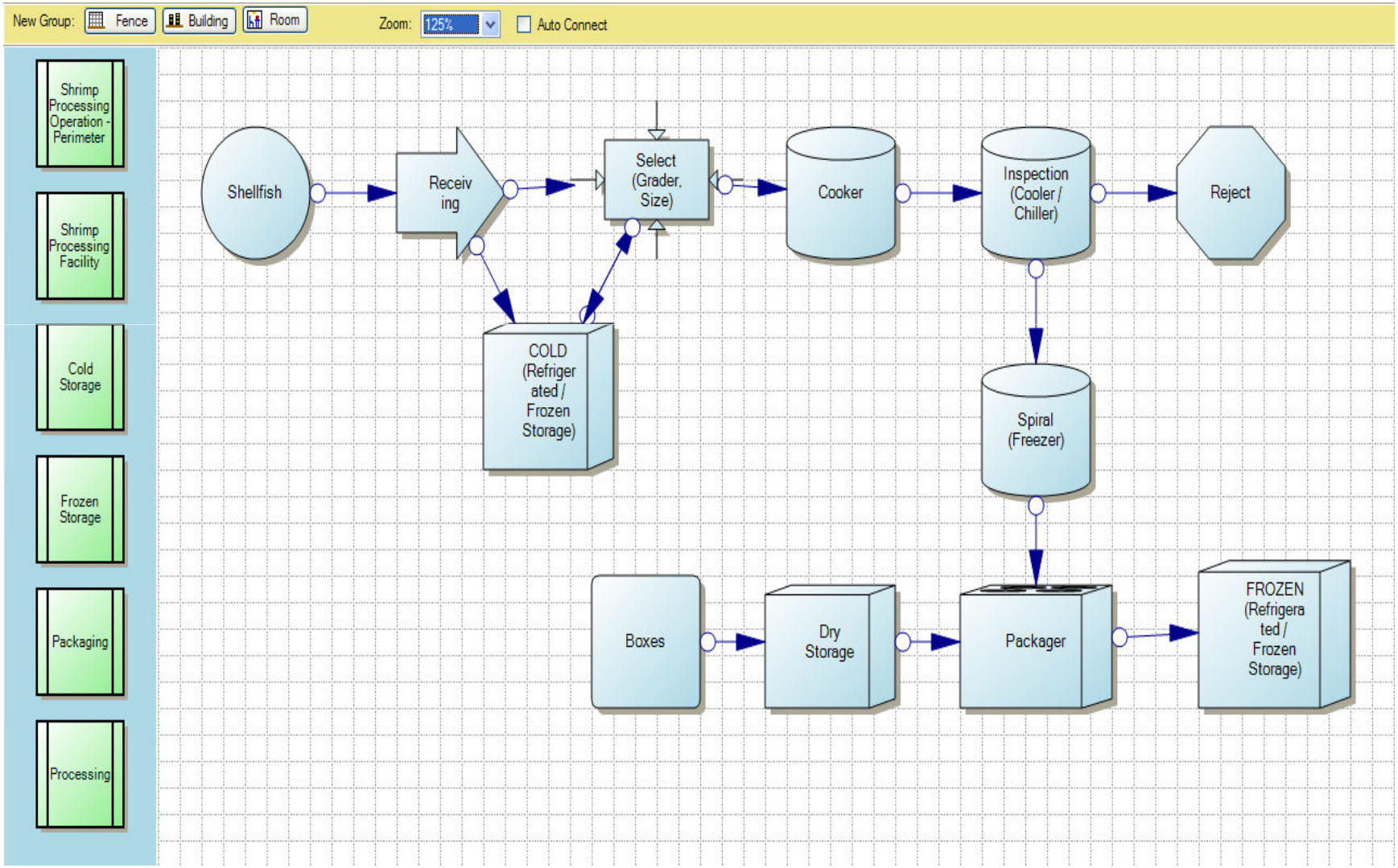
- **EVALUATE** each step and score each using the scales for vulnerability, accessibility, and volume

Exercise B: Vulnerability Assessment

Step 3: Ranking and Sorting

- **ADD** the vulnerability and accessibility scores together.
- **RANK** (prioritize) process steps from lowest to highest risk
- **MARK** the process steps with the **HIGHEST SUMS**. (For this exercise, mark 3 to 5 process steps)
- These are your critical process steps.

Exercise B: Create a Flowchart



Accessibility Scale

(Can I get to the target?)

CRITERIA	SCALE
Easily Accessible (e.g., target is outside building and no perimeter fence).	9 – 10
Accessible (e.g., target is inside building, but in unsecured part of facility).	7 – 8
Partially Accessible (e.g. inside building, but in a relatively unsecured, but busy, part of facility).	5 – 6
Hardly Accessible (e.g., inside building in a secured part of facility).	3 – 4
Not Accessible (e.g., there are physical barriers, alarms, and human observation to prevent reaching the target).	1 – 2

Vulnerability Scale

(Once I get to the target, can I contaminate the product?)

CRITERIA	SCALE
Highly Vulnerable (e.g., product is openly exposed and there is lots of time to allow for easy introduction of contaminants without being seen).	9 – 10
Vulnerable (e.g., product has some open exposure and there is sufficient time to almost always allow for introduction of contaminants without being seen).	7 – 8
Somewhat Vulnerable (e.g., product has limited exposure points and limited times when contaminant can be added without being seen).	5 – 6
Barely Vulnerable (e.g., product has limited exposure points but is almost always under observation while in production).	3 – 4
Not Vulnerable (e.g., product is in sealed vessels/pipes with no practical exposure points or it is under full and controlled observation).	1 – 2

Volume Scale

(What is the impact of a single contamination at this point?)

CRITERIA	SCALE
Very Large Volume Impact (e.g., a single instance of contamination at this point would contaminate multiple days of the production of this line).	9 – 10
Large Volume Impact (e.g., a single instance of contamination at this point would contaminate multiple shifts of the production of this line).	7 – 8
Medium Volume Impact (e.g., a single instance of contamination at this point would contaminate one shift or less of the production of this line).	5 – 6
Small Volume Impact (e.g., a single instance of contamination at this point would contaminate two hours or less of the production of this line).	3 – 4
Low Volume Impact (e.g., a single instance of contamination at this point would contaminate 30 minutes or less of the production of this line).	1 – 2

Exercise B: Vulnerability Assessment

List Unit Operations	Accessibility Score	Vulnerability Score	Volume Score	Sum	Indicate Highest 25%	Targeted Mitigation Strategy	Add to Action Plan & FD Plan
Receiving	9	7	9				
Cold Storage	5	4	6				
Selection (Grading/Size)	4	3	2				
Cooker	6	5	4				
Cooler/Chiller	7	7	7				
Spiral Freezer	5	3	1				
Packager	6	3	1				
Dry Storage	5	2	4				
Frozen Storage	3	5	3				

Exercise B: Vulnerability Assessment

List Unit Operations	Accessibility Score	Vulnerability Score	Volume Score	Sum	Indicate Highest 25%	Targeted Mitigation Strategy	Add to Action Plan & FD Plan
Receiving	9	7	9	25	✓		
Cold Storage	5	4	6	15			
Selection (Grading/Size)	4	3	2	9			
Cooker	6	5	4	15			
Cooler/Chiller	7	7	7	21	✓		
Spiral Freezer	5	3	1	5			
Packager	6	3	1	10			
Dry Storage	5	2	4	11			
Frozen Storage	3	5	3	11			

Exercise B: Instructions

Step 1

- Draw a simple flowchart of your production process. If you have a very complex process, or many processes, draw one of them, or a portion of one.

Step 2

- Using the flowchart you drew, list the process steps down the left column.
- Use the scoring sheets provided to give each process step a score between 1 and 10 for each of the score columns.

Step 3

- **ADD** (sum) the score columns together to result in an overall total score.
- **MARK** the process steps with the **HIGHEST SUMS**. (For this exercise, mark 3 to 5 process steps). These are your critical process steps.

Exercise B: Discussion

- When you looked at the process steps that resulted in a higher total score, did those "feel" like the most susceptible to an intentional contamination? Why?
- Were there some areas you think should have scored higher? Why?
- In those process steps that had the highest total scores, can you think of ways to make them less desirable as a target of intentional contamination? What are those ways?

In the next exercise we will consider mitigation strategies for these most at-risk operations.

EXERCISE C

Focused Mitigation Strategies

Exercise C: Focused Mitigation Strategies

Step 1

- Determine a mitigation measure that will reduce the susceptibility of each of the process operations that had the highest scores in Exercise B, using one of these three resources:
  - Review the mitigation database (or mitigation handout) for suggestions
  - Discuss additional mitigation strategies with your breakout group
  - Ask your facilitators for their suggestions

Exercise C: Focused Mitigation Strategies

Step 2

- Write the mitigation measure in the “Focused Mitigation Strategy” column

Step 3

- Determine where in the Food Defense Plan to add these additional mitigation measures (what measure number or paragraph number of Exercise A).
- Further edit the Exercise A worksheet to include the additional operations, action steps needed, and Food Defense Plan content.

Exercise C: Focused Mitigation Strategies

List Unit Operations	Accessibility Score	Vulnerability Score	Volume Score	Sum	Indicate Highest 25%	Targeted Mitigation Strategy	Add to Action Plan & FD Plan
Receiving	9	7	9	25	✓	Ensure that trucks remain locked until unloading. Verify seal integrity of arriving shipments.	✓
Cold Storage	5	4	6	15			
Selection (Grading/Size)	4	3	2	9			
Cooker	6	5	4	15			
Cooler/Chiller	7	7	7	21	✓	Ensure adequate lighting around the cooler. Secure air vents with one way valves.	✓
Spiral Freezer	5	3	1	5			
Packager	6	3	1	10			
Dry Storage	5	2	4	11			
Frozen Storage	3	5	3	11			

Exercise C: Instructions

- Only do Exercise C for the (approximately 25% of the) process operations that had the highest overall score.

Step 1

- Determine a mitigation measure that will reduce the susceptibility of each of the process operations that had the highest scores in Exercise B

Step 2

- Write the selected measure in the “Focused Mitigation Strategy” column

Step 3

- Add action steps needed, and Food Defense Plan content to the Exercise A documents.

Exercise C: Discussion

- Where did you get your best ideas on additional mitigation measures?
- How does adding these additional measures improve your Food Defense Plan?

Common Vulnerabilities

Common Vulnerabilities

- Vulnerability Assessment results show:
  - Common vulnerabilities exist regardless of particular food product
  - Common vulnerabilities can be organized into several broad activity types

Activity Type I

- Coating
- Mixing
- Grinding
- Rework

Effect of these steps would be even distribution of a contaminant

Activity Type II

- Ingredient Staging
- Ingredient Preparation
- Ingredient Addition

Open process steps with access to product stream

Activity Type III

- Bulk Liquid Receiving
- Bulk Liquid Loading

} High probability of uniform mixing

Activity Type IV

- Bulk Liquid Storage
- Non-bulk liquid holding and surge tanks

Tanks are often agitated to prevent separation; often in isolated areas of facility

A FEW WORDS ABOUT COSTS

Low Cost Measures

- Supervisor observations
- Restri access
- Visitor control
- Reporti activity
- Prohibit items

The cost of these measures, and others are modest. They require some administrative time to set up, some time to train employees (initial training and refresher training), and simple items or tools. Then they require some inspection or review to make sure you are continuing to do them.

- Ask vendors to have a Food Defense plan

Modest Cost Measures

- Lock bulk storage and unloading
- Vehic
- Exit al
- Add lig
- Random inspections
- Chang cks or s igns er

These measures have a modest cost. Inspections and patrols require some labor time on a recurring basis. Adding locks and the ability to lock areas has a small one-time cost.

High Cost Measures

- New fenci… …nd walls …evices perime… …trolled
- Electro… …ea
- Additio…

These measures have significant cost and should be measured against the anticipated reduction in risk. They can be incorporated into renovation plans or new facilities. Or they can be introduced in a phased approach over time.

Developing a Food Defense Plan