

Exercise 3

Physical Security



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Version: 2.0

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Exercise Scenario



Figure 1: Steel Production Plant floor

1 Exploring Physical Security at a Steel Manufacturer

A steel products plant has a highly automated production process and uses Operational Technology (OT) to control the various machines and processes. The OT in a steel plant includes:

- Programmable Logic Controllers (PLC) to control individual machines and processes
- Supervisory Control And Data Acquisition (SCADA) systems to monitor and control the overall production process
- Human-Machine Interfaces (HMI) to allow operators to interact with the OT.

The OT in a steel mill is critical to the safe and efficient operation of the plant. If the OT were to be compromised, it could lead to serious consequences, such as:

- Injuries to workers
- Damage to equipment
- Release of hazardous materials
- Production disruptions

Therefore, it is important to implement strong physical security measures to protect the OT in a steel mill. These measures could include:

- Perimeter security to prevent unauthorised access to the plant
- Access control to restrict access to sensitive areas
- Video surveillance to monitor the plant
- Security guards to patrol the plant
- Intrusion detection systems to detect unauthorised entry
- By implementing strong physical security measures, the risk of a cyberattack on the OT in a steel mill can be greatly reduced.

2 Scenario

You are working at a manufacturing plant that uses OT to control the production process. One day, a security guard notices a suspicious person lurking around the perimeter of the plant. The guard calls the plant manager, who decides to evacuate the plant and call the police.

3 Roles

- Security guard
- Plant manager
- Police officer
- Remaining class - Employees (divided into groups of 4).

4 Objective

The learners will work together to identify the vulnerabilities in the plant's physical security and develop recommendations for improving it.

5 Instructions

- The facilitator will divide the learners into groups of 4.
- Each group will be assigned one of the following roles: security guard, plant manager, police officer, or learner.
- The facilitator will provide each group with a copy of the scenario.
- The groups will have 30 minutes to discuss the scenario and develop recommendations for improving the plant's physical security.
- Each group will then present their recommendations to the class.

6 Discussion Questions

- What were the vulnerabilities in the plant's physical security?
- What recommendations did the learners develop to improve the plant's physical security?
- How can these recommendations be implemented?

7 Evaluation

The facilitator will evaluate the learners' performance based on the following criteria:

- The accuracy of their analysis of the scenario
- The creativity of their recommendations
- The clarity of their presentation.

8 Conclusion

This tabletop exercise is a valuable way for learners to learn about the importance of physical security for OT. It also gives learners the opportunity to develop their critical thinking and problem-solving skills.

9 Additional Questions

Here are some additional questions that could be asked during the discussion:

- What are the different types of physical security measures that can be used to protect OT?
- What are the challenges of implementing physical security measures at OT sites?
- How can the security of OT be improved in the future?
- This tabletop exercise can be adapted to different levels of complexity and can be used to address specific security concerns. It is a valuable tool for improving the security of OT and for educating learners about the importance of this issue.

10 Handout Sheets

10.1 Handout Sheet #1 - Security Guard



You are working at a manufacturing plant that uses OT to control the production process. One day, a security guard notices a suspicious person lurking around the perimeter of the plant. The guard calls the plant manager, who decides to evacuate the plant and call the police.

- Your role is to protect the physical security of the plant.
- You should be aware of the vulnerabilities in the plant's physical security and develop recommendations for improving it.
- You should also be able to identify and respond to suspicious activity.

You have 30 minutes to discuss the scenario and develop recommendations for improving the plant's physical security.

Discussion Questions

- What were the vulnerabilities in the plant's physical security?
- What recommendations did the learners develop to improve the plant's physical security?
- How can these recommendations be implemented?
- What are the different types of physical security measures that can be used to protect OT?
- What are the challenges of implementing physical security measures at OT sites?
- How can the security of OT be improved in the future?

10.2 Handout Sheet #2 - Plant Manager



You are working at a manufacturing plant that uses OT to control the production process. One day, a security guard notices a suspicious person lurking around the perimeter of the plant. The guard calls the plant manager, who decides to evacuate the plant and call the police.

- Your role is to ensure the safe and efficient operation of the plant.
- You should be aware of the risks to the plant's OT and develop recommendations for mitigating these risks.
- You should also be able to make decisions about the plant's physical security.

You have 30 minutes to discuss the scenario and develop recommendations for improving the plant's physical security.

Discussion Questions

- What were the vulnerabilities in the plant's physical security?
- What recommendations did the learners develop to improve the plant's physical security?
- How can these recommendations be implemented?
- What are the different types of physical security measures that can be used to protect OT?
- What are the challenges of implementing physical security measures at OT sites?
- How can the security of OT be improved in the future?

10.3 Handout Sheet #3 - Police Officer



You are working at a manufacturing plant that uses OT to control the production process. One day, a security guard notices a suspicious person lurking around the perimeter of the plant. The guard calls the plant manager, who decides to evacuate the plant and call the police.

- Your role is to investigate and respond to security incidents.
- You should be able to identify and collect evidence of a security breach.
- You should also be able to work with the plant management to mitigate the risks to the plant's OT.

You have 30 minutes to discuss the scenario and develop recommendations for improving the plant's physical security.

Discussion Questions

- What were the vulnerabilities in the plant's physical security?
- What recommendations did the learners develop to improve the plant's physical security?
- How can these recommendations be implemented?
- What are the different types of physical security measures that can be used to protect OT?
- What are the challenges of implementing physical security measures at OT sites?
- How can the security of OT be improved in the future?

10.4 Handout Sheet #4 - Employee



You are working at a manufacturing plant that uses OT to control the production process. One day, a security guard notices a suspicious person lurking around the perimeter of the plant. The guard calls the plant manager, who decides to evacuate the plant and call the police.

- Your role is to learn about the importance of physical security for OT.
- You should be able to identify the vulnerabilities in the plant's physical security and develop recommendations for improving it.
- You should also be able to discuss the different types of physical security measures that can be used to protect OT.

You have 30 minutes to discuss the scenario and develop recommendations for improving the plant's physical security.

Discussion Questions

- What were the vulnerabilities in the plant's physical security?
- What recommendations did the learners develop to improve the plant's physical security?
- How can these recommendations be implemented?
- What are the different types of physical security measures that can be used to protect OT?
- What are the challenges of implementing physical security measures at OT sites?
- How can the security of OT be improved in the future?

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