Protected Distribution Systems

Student Guide

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Center for Development of Security Excellence

Lesson 1: Course Introduction

Introduction

Course Overview

Welcome to the Protected Distribution Systems course. Protected Distribution Systems (PDSs) are one solution to safeguarding classified information. But who is responsible for a PDS, and what are the requirements for approving, installing, and inspecting a PDS?

This course addresses the PDS requirements for all DoD Components. After the conclusion of the course, an optional lesson is available that covers specific PDS implementing requirements for industry under the National Industrial Security Program (NISP).

Course Objectives

Here are the course objectives. Take a moment to review them.

- Describe the purpose of a Protected Distribution System (PDS), its categories, and carrier types
- Describe how data type, threat environment, and access area affect PDS category selection
- Identify the roles and responsibilities for installation, approval, operation, and inspection of a PDS
- Identify standards and procedures for PDS installation
- Describe requirements to perform PDS inspections

Lesson 2: Overview of the PDS

Introduction

Objectives

This lesson introduces:

- The Protected Distribution System (PDS)
- Categories and carrier types
- What affects PDS category selection
- The roles and responsibilities for the PDS installation, approval, operation and inspection

Here are the lesson objectives. Take a moment to review them.

- Describe the purpose of a Protected Distribution System (PDS), its categories, and carrier types
- Describe how data type, threat environment, and access area affect PDS category selection
- Identify the roles of the Authorizing Official (AO) and the PDS owner for the PDS

Policy Guidance

The Committee on National Security Systems Instruction (CNSSI) No. 7003 provides guidance and standards for Protected Distribution Systems. The guidance was issued under the authority of National Security Directive 42: National Policy for the Security of National Security Telecommunications and Information Systems. It supersedes the National Security Telecommunications and Information Systems Security Instruction (NSTISSI) 7003, Protected Distribution Systems, dated 13 December 1996.

You may access the CNSSI No. 7003 via the Course Resources page.

Purpose and Categories

Purpose

A PDS is used to protect unencrypted national security information (NSI) that is transmitted on wire line or optical fiber. Because the NSI is unencrypted, the PDS must provide safeguards to deter exploitation. The emphasis is on intrusion detection rather than prevention of penetration.

A PDS is intended primarily for use in low and medium threat locations, and is not recommended for use in high or critical threat locations. It is also NOT PERMITTED in uncontrolled access areas. For those areas, you must use an encryption solution instead.

Categories

There are two categories of PDS.

Category 1 provides a reduced level of security and is used in more secure environments. There is a single type of carrier for a Category 1 PDS. It is called a simple carrier, and it is constructed of metal or polyvinyl chloride pipe. This type of construction can be installed at reduced costs.

A Category 2 PDS provides more significant physical levels of security protection and has five types of carriers:

- A hardened carrier is constructed of a ferrous metal, such as ferrous electrical metallic tubing, ferrous pipe conduit, or ferrous rigid sheet metal ducting. It is normally used between controlled access areas (CAAs) in the same building.
- A buried carrier is used between CAAs located in different buildings.
- A suspended carrier can be used for short runs when it is not practical to bury the carrier between buildings.
- An alarmed carrier is used when it is not practical to perform required daily inspections.
- A continuously viewed carrier can be used within an area that is already under constant surveillance for physical security reasons.

Selecting a PDS Category

The guidance for selecting a Category 1 or Category 2 PDS is based on three factors.

The first is the classification or type of data (Confidential, Secret, Top Secret, and Sensitive Compartmented Information) that is being handled.

The second is the area through which the PDS is installed, whether low threat or medium threat. A PDS is NOT recommended for use in high or critical threat locations. Use of a PDS in high and critical threat locations must be approved by the AO prior to design. Note that it is the Certified Tempest Technical Authority who defines your threat environment.

The third factor is the type of access area in which the PDS is installed, whether in a CAA with the highest restriction of unauthorized access or in a limited access area (LAA) where exploitation is considered unlikely. Recall that PDS usage is not permitted for an uncontrolled access area (UAA). Data passing through UAAs must be encrypted.

Access Areas

CNSSI No. 7003 specifically defines controlled access area, limited access area, and uncontrolled access area.

Term	Definition
Controlled Access Area (CAA)	The complete building or facility area under direct physical control within which unauthorized persons are denied unrestricted access and are either escorted by authorized persons or are under continuous physical or electronic surveillance.
Limited Access Area (LAA)	The space surrounding a PDS within which PDS exploitation is not considered likely or where legal authority to identify and remove a potential exploitation exists.
Uncontrolled Access Area (UAA)	The area external or internal to a facility over which no personnel access controls are or can be exercised or any area not meeting the definition of Controlled Access Area (CAA) or LAA.

Table 1

Table 1 from CNSSI No. 7003 defines the category of PDS required for low threat environments. For example, when the access area is controlled, a Category 1 PDS is sufficient. However, when the access area is limited, a Category 2 PDS is required if the data is Secret or higher.

Table 1. Category of PDS required for Low Threat Environments

Type of Data	Type of Access Area			
	Limited	**Confidential, Controlled**	**Secret, Controlled**	**Top Secret, Controlled**
Confidential	1			
Secret	2	1		
Top Secret	2	1	1	
Sensitive Compartmented Information	2	1	1	1

Table 2

Table 2 defines the category of PDS required for medium threat environments.

Note that, with the increase in threat environment to medium, a Category 2 PDS is required for the Confidential Controlled access area when Top Secret or Sensitive Compartmented Information is handled.

Table 2. Category of PDS required for Medium Threat Environments

Type of Data	Type of Access Area			
	Limited	**Confidential, Controlled**	**Secret, Controlled**	**Top Secret, Controlled**
Confidential	1			
Secret	2	1		
Top Secret	2	2	1	
Sensitive Compartmented Information	2	2	1	1

Responsibilities and the Approval Process

Responsibilities

The basic responsibilities for the PDS are shared by the Authorizing Official (AO) and the PDS Owner.

The AO is responsible for PDS approval, certification, and recertification. The AO also must approve reactivation of a PDS. Note that the PDS has its own approval process that is separate from the Assessment and Authorization (A&A) for systems and networks.

The PDS owner is responsible for the installation and maintenance of the PDS.

Next, look at how these responsibilities play out in the PDS approval process.

The Approval Process

All PDS requests must go through an approval process.

The PDS owner originates the request. Counterintelligence (CI) personnel are responsible for conducting a CI risk assessment to assess the potential risk of exploitation. The PDS approval request describes the specifics of the PDS, including unique facts regarding the facility, installation details, inspection methods, and schedule. The PDS owner must develop a Standard Operating Procedure (SOP) to ensure proper installation, maintenance, operation, and inspection of the PDS and submit the SOP as part of the approval documentation.

The request undergoes technical review and must be approved by the AO BEFORE the procurement of materials.

The PDS owner is then responsible for installing the PDS. Note that during construction temporary configurations that are used to test the operation of data lines or the network do not require a technical review.

When installation is complete, the AO must ensure the PDS is inspected and approved prior to initial operation.

The PDS owner is responsible for the operation, maintenance, and inspection of the PDS.

CI Risk Assessment

CNSSI No. 7003 lists these factors to consider at a minimum in the CI risk assessment.

NOTE: The information in the box below will not be on the test but is included here as additional information that may provide useful background and insight.

a. Foreign or domestic location.
b. Use of U.S. citizens for 24/7 access control.
c. Use of U.S. procured, installed, and monitored intrusion detection devices.
d. Presence of uncleared personnel or foreign nationals in, on, or nearby the controlled facility/compound.
e. Existence of any co-located, unaffiliated tenants in the facility.
f. Proximity of the PDS to other infrastructure requiring maintenance.
g. Any use or dependency on contracted security for intrusion detection/reporting/response.
h. Stand-off distance from the PDS to the perimeter of the controlled area.
i. Proximity of the PDS to uncontrolled buildings and structures beyond the perimeter and the nationality of tenants of those buildings.
j. Known human intelligence (HUMINT) and technical threat (capabilities, intentions, and activities) of the host nation.
k. Known history of foreign host and foreign intelligence security services (FISS) capabilities and activities to exploit PDS, fiber optics, and communications closets.

Temporary Configuration

CNSSI No. 7003 specifically defines Temporary Configuration.

Temporary configurations are those which are in place for less than 30 calendar days and are confined within USG installations in areas that are not accessible to the general public, and do not process higher than Secret collateral information.

Modification, Deactivation, and Reactivation

Now consider the responsibilities for modifying, deactivating, or reactivating an approved PDS.

Before a PDS can be modified, the AO must first approve the modification. After the PDS is modified, it must be recertified by the AO. If a PDS needs to be deactivated, the PDS owner must notify the AO within 30 days of the deactivation. Before the PDS can be reactivated, the AO must approve the reactivation.

Note that, both modification and reactivation may require additional review onsite.

Review Activities

Review Activity 1

What is the purpose and use of a Protected Distribution System (PDS)?

Select all that apply. Check your answer in the Answer Key at the end of this Student Guide.

- ☐ It is used to protect unencrypted National Security Information (NSI).
- ☐ The emphasis is on prevention of penetration.
- ☐ It is intended for use in high or critical threat locations.
- ☐ It is not permitted in uncontrolled access areas.

Review Activity 2

Which category of Protected Distribution System (PDS) is appropriate for the following situations?

For each situation, select the best response. Check your answer in the Answer Key at the end of this Student Guide.

The carrier must pass through an uncontrolled access area.

- ○ Category 1
- ○ Category 2
- ○ Neither

A buried PDS connects controlled access areas.

- ○ Category 1
- ○ Category 2
- ○ Neither

A Top Secret PDS in a confidential controlled access area in a low threat environment

- ○ Category 1
- ○ Category 2
- ○ Neither

A Top Secret PDS in a confidential controlled access area in a medium threat environment

- ○ Category 1
- ○ Category 2
- ○ Neither

Review Activity 3

Who is responsible for these activities?

For each activity, select the best response. Check your answer in the Answer Key at the end of this Student Guide.

Ensure PDS is inspected and certified prior to initial operation

- ○ PDS Owner
- ○ Authorizing Official (AO)

Operation, maintenance, and inspection of PDS

- ○ PDS Owner
- ○ Authorizing Official (AO)

Installation of PDS

- ○ PDS Owner
- ○ Authorizing Official (AO)

Approving reactivation of a PDS

- ○ PDS Owner
- ○ Authorizing Official (AO)

Lesson 3: Installation Guidance

Introduction

Welcome

Proper Protected Distribution System (PDS) installation is important to ensure the security of unencrypted National Security Information (NSI).

This lesson introduces

- General installation requirements
- Installation guidance for Category 1 and Category 2 carriers
- Installation requirements for pull boxes and other PDS connections
- The requirements for marking a PDS

Sections VIII, IX, and X of CNSSI No. 7003 contain detailed installation guidance. You may access the CNSSI No. 7003 via the Course Resources page.

Objectives

Here are the lesson objectives. Take a moment to review them.

- Describe the installation requirements for Category 1 and Category 2 carriers
- Identify installation requirements for pull boxes and other Protected Distribution System (PDS) connections
- Describe the requirements for marking a PDS

General Installation Guidance

Origination and Termination

There are specific requirements regarding the origination and termination points for a PDS.

A PDS **must** originate in a controlled access area (CAA) that is controlled at the highest level of the data carried by the PDS. For example, if the PDS carries Secret data, the origination point must, at a minimum, be in an access area controlled at the level of Secret.

The PDS **should**, if possible, also terminate in a CAA that is controlled at the highest level of data carried by the PDS. However, if that is not possible, you must ensure that the PDS termination is secured with a lock box and a PDS lock.

PDS Lock

Ensure that all lock boxes use a PDS lock as defined in CNSSI No. 7003.

PDS Lock - A lock required to be resistant to surreptitious manipulation but not required to be resistant to physical penetration or interchangeable with a "high security" lock. A 3-position spin combination lock that meets the requirements of FF-L-2740B, *Federal Specification Locks, Combination, Electromechanical*, may be used as an alternative. A tamper indicative padlock with a wire loop seal may also be used.

Circuits and TEMPEST

Components of a single PDS may use circuits of more than one classification level. For example, one circuit might be Secret while another is Top Secret. However, those circuits must be separated to prevent unauthorized access by those who do not have the appropriate clearance. Access to all points with breakouts must be restricted to personnel cleared at the highest level of the classification carried in the breakout.

If it is necessary to install unclassified data cables within a PDS that is used for classified data lines, the PDS Owner must get prior approval from the Certified TEMPEST Technical Authority (CTTA). Furthermore, to protect classified data lines, a CTTA may implement additional TEMPEST countermeasures. Examples of additional countermeasures include: shielding wire or fiber optic lines; grounding metallic PDS; and isolating the PDS with non-conductive sleeves.

TEMPEST is an unclassified short name referring to investigations and studies of compromising emanations. Compromising emanations are unintentional intelligence-bearing signals that, if intercepted and analyzed, will disclose classified information when it is transmitted, received, handled, or otherwise processed by any information processing equipment. [National Industrial Security Program Operating Manual (NISPOM), Chapter 11-101]

Carriers

General Requirements

Although all carriers have their own specific installation requirements, there are some general overarching guidelines that apply to both Category 1 and Category 2 carriers.

The PDS Owner should install the carrier in plain view, because inspection of the carrier is integral to ensuring the data is not compromised. Installing the carrier above a false ceiling, below a false floor, or inside a wall makes inspection difficult. However, if the PDS Owner can arrange to make those areas inspectable, the PDS approval request must identify that information. When the PDS Owner cannot install the PDS in plain view nor make it inspectable, the PDS must be an alarmed carrier.

Category 1

For a Category 1 PDS, use a simplified carrier to install cables. The carrier must be constructed of either metal or polyvinyl chloride (PVC) pipe of at least a schedule-40 grade. Otherwise, use an armored cable. For armored carriers, the jacket must be constructed of a flexible metallic material such as copper, aluminum, or steel. Some armored cables are not constructed of a solid continuous material, such as those that use interlocking spiral segments. In this case, the metallic material must have an overall, continuous plastic sheath.

Category 2

Recall that there are five types of Category 2 carriers: hardened, buried, suspended, alarmed, and continuously viewed.

Hardened

When installing a hardened carrier, be aware of: the requirements for construction materials; the requirements on how and where to mount the carrier; and the requirements that apply when a carrier needs to pass through a void.

Construction Materials:

- Hardened carriers must be constructed of a ferrous material, namely, ferrous, electrical metallic tubing (EMT), ferrous pipe conduit, or ferrous rigid sheet metal ducting.
- Do not use flexible conduits or armored cables as a hardened carrier.

Mounting:

- To facilitate unobstructed visual inspections, allow for a clearance of at least one inch from walls, floors, ceilings, other conduits, or any object that would interfere with visual inspection.
- You may flush mount the carrier to a surface only if the surface consists of at least four inches of reinforced concrete or the equivalent.

Traversing a Void:

- When the carrier needs to pass through a void, such as a hollow wall, the carrier must pass through the center of an inspection port. The required width of the inspection port depends on the length of the void. Normally you would create an inspection port with a diameter that is greater than the carrier size plus 4 inches.

- However, for voids longer than 6 inches, you will need to create a wider inspection port (carrier size plus 8 inches).

As a final note, if the carrier connects two controlled access areas by passing through an uncontrolled access area (UAA), data in the carrier passing through the UAA must be encrypted.

Buried

Installing a buried carrier has its own set of requirements for: construction materials, permissible locations, how deep to bury it, and how to secure access to the buried carrier.

Construction Material:

- The carrier must be constructed of electrical metallic tubing (EMT), rigid pipe, polyvinyl chloride (PVC), or a similar type of plastic electrical conduit.

Location:

- Before you bury the carrier, be sure the property is owned or leased by the U. S. Government or the U.S. contractor that controls the PDS.

Depth:

- How deep you have to bury the carrier depends on the threat location.
- For low threat locations, bury the carrier one meter below the surface. If you run into a blocked passage, or you can't dig one meter down because of soil conditions, you may use a lesser depth. However, if you use a lesser depth, you must ensure that the carrier is encased in the center of eight inches of concrete.
- For medium threat locations, you must bury the carrier one meter deep AND ensure it is encased within the center of 8 inches of concrete or within an approved concrete and steel container.

Securing Access:

- To secure access to buried carriers, use a PDS lock or alarm for manholes and any other access points.

Suspended

You may use a suspended carrier for short runs when it is not practical to bury the PDS. Hang it directly between buildings and be sure it is elevated at least five meters above the ground.

Before you install it, be sure the property over which it is suspended is owned or leased by the U.S. Government or by a U.S. Government contractor or vendor that controls the PDS.

Terminate the suspended carrier in a controlled access area on each end, or have it immediately enter a hardened PDS at the building boundary.

To facilitate unimpeded inspection, ensure the carrier is clear of any obstruction and that the area where it is suspended is illuminated at night.

Alarmed

Recall that alarmed carriers are used when it is not practical to perform daily inspections.

The carrier itself should be protected by an alarm system that detects attempted penetration of the carrier. Alternatively, the space surrounding the entire carrier may be covered by a volumetric alarm system that is approved by the cognizant physical-security authorities.

The alarm system must be capable of prompt detection of penetration, and the office where the alarm is annunciated must be manned 24/7. Security forces must be able to respond within 15 minutes. The alarm system must also transmit a line fault message to the annunciator panel if the system fails.

Continuously Viewed

For a continuously viewed carrier, ensure the area where the carrier is installed is under observation 24/7, including when the area is not operational. Security personnel must investigate the area of attempted penetration within 15 minutes of discovery.

Pull Boxes and Other Connections

Pull Boxes

Connections for carriers are necessary for the PDS; however, it is important to minimize the use of pull boxes, conduit joints, and other types of connections.

Do NOT use pull boxes with pre-punched knockouts.

Construction materials for pull boxes depend on the threat area. If you are in a low threat area, use a ferrous metal with a minimum thickness of 16 gauge. If you are in a medium

threat area, use a ferrous metal with a minimum thickness of 14 gauge. Note that 14 gauge metal is thicker than 16 gauge metal.

If the pull box does not require opening after installation:

- Secure the cover to the box by welding it or applying epoxy.
- If you weld it, there must be at least one weld on each side of the box and cover.
- If you use epoxy, apply it between all mating surfaces continuously around the cover.

The requirements for pull boxes that need to be accessed after installation are as follows.

- Ensure that hinge-pins for pull box covers are non-removable.
- If you use a hasp to secure the cover, permanently attach the hasp to the box.
- Secure the cover with an approved PDS lock or tamper evident seal.

Other Connections

For connections other than pull boxes, permanently seal the connections around all surfaces either by welding, epoxy, or fusion. Seal all seams if here is more than one seam in the connection. The seal must provide a mechanical bond between the components of the carrier and must be visible for inspection.

For epoxy seals, use a thick opaque material.

Do NOT use couplers that are secured with a set screw.

For hardened carriers, connections such as elbows, couplings, and nipples must be of the same material as the carrier.

Markings

Markings

Clearly mark the PDS to make it easily identifiable to the inspector. You may use tape, paint, cable tags, or any other suitable method. Place the markings at 3 meter intervals or less. However, do not indicate on the label that this is a PDS or that it carries National Security Information (NSI). In addition, do not use red markings, as red is typically used to identify fire sprinkler systems. For example, blue tape may be used to mark the PDS.

Review Activities

Review Activity 1

When possible, where should carriers for Category 1 and Category 2 Protected Distribution Systems (PDSs) be installed?

Select the best response. Check your answer in the Answer Key at the end of this Student Guide.

- ○ Above false ceilings, below false floors, or inside walls
- ○ In plain view
- ○ Buried 1 foot or elevated 5 feet
- ○ In darkened areas

Review Activity 2

Do the statements describe a carrier requirement for a Category 1 or Category 2 Protected Distribution System (PDS)?

For each item, select the best response. Check your answer in the Answer Key at the end of this Student Guide.

Carrier is constructed of metal or PVC pipe or armored cable.

- ○ Category 1
- ○ Category 2

Carrier is constructed of ferrous pipe conduit.

- ○ Category 1
- ○ Category 2

Carrier is buried 1 meter below property owned by the U.S. Government.

- ○ Category 1
- ○ Category 2

Carrier is protected by an alarm system.

- ○ Category 1
- ○ Category 2

Review Activity 3

Select True or False for each statement. Check your answer in the Answer Key at the end of this Student Guide.

The PDS should maximize the use of pull boxes, conduit joints, and other types of connections.

- ○ True
- ○ False

If a pull box will be accessed after installation, the cover must be secured with a PDS lock or tamper evident seal.

- ○ True
- ○ False

When epoxy is used to seal connections, a thick clear material must be used.

- ○ True
- ○ False

Review Activity 4

How should a Protected Distribution System (PDS) be marked to make it easily identifiable to the inspector?

Select all that apply. Check your answer in the Answer Key at the end of this Student Guide.

- ☐ Use paint, tape, or cable tags.
- ☐ Clearly indicate PDS on the label.
- ☐ Red is the preferred labeling color.
- ☐ Markings should be spaced 3 meters or less.

Lesson 4: Inspection Guidance

Introduction

Welcome

Inspections are integral to protecting National Security Information (NSI) carried by the Protected Distribution system (PDS).

This lesson introduces requirements for visual inspections and technical inspections, as well as the requirements for alarm system verification.

CNSSI No. 7003 provides detailed guidance for PDS inspection in Section XI. You may access the CNSSI No. 7003 via the Course Resources page.

Objectives

Here are the lesson objectives. Take a moment to review them.

- Identify requirements for visual inspections of a Protected Distribution System (PDS)
- Identify requirements for technical inspections of a PDS
- Describe requirements for alarm system verification for a PDS

Inspections Overview

Introduction to Inspections

Because the PDS provides intrusion detection, rather than intrusion prevention, inspections are integral to protecting the National Security Information carried by the PDS. The required frequency of inspections depends on the type of data carried and the threat environment. Log all inspections with the date and time of the inspection and the name and title of the inspector. Maintain the log for at least one year.

When an incident of tampering, penetration, or unauthorized interception occurs, the incident must be reported immediately to all organizations that use the PDS and to the local security authority. Until the incident can be assessed, the PDS should not be used. If this is not practical, users should limit use to the greatest extent possible.

Technical inspections are required for all PDS. Visual inspections are required except for alarmed carriers and continuously viewed carriers. If the PDS is an alarmed carrier, the alarm system performance must be verified.

Visual Inspections

Introduction to Visual Inspections

Visual inspections are required for all PDS except alarmed carriers and continuously viewed carriers. The visual inspection must be performed by persons who are trained, in accordance with organizational policy, to recognize physical changes and attempts at penetration and tampering.

When performing a visual inspection, look at everything. Inspect all along the entire length of the conduit or buried carrier. Extend inspection at least five meters on each side of buried carriers. Inspect all carrier connections, boxes, locks, and seals.

Is anything amiss? Look for signs of penetration, tampering, or any other anomalies. Ensure you have adequate lighting, and inspect from a distance that allows you to detect of any attempts at intrusion.

Table 3

Table 3 from CNSSI No. 7003 provides the visual inspection schedule. Visual inspections are random and daily, and the frequency depends on the highest classification of data carried and the threat area. For example, in medium threat areas, a visual inspection may be required once, twice, or four times daily depending on the highest classification of data carried.

Table 3. Visual Inspection Schedule

Highest Classification of Data Carried	**Random Inspections *Per Day***	
	***Low* Threat Area**	***Medium* Threat Area**
Confidential	None	One
Secret	One	Two
Top Secret or Sensitive Compartmented Information	Two	Four

Technical Inspections

Introduction to Technical Inspections

The technical inspection must be performed by persons trained, in accordance with organizational policy, to recognize physical changes that indicate attempts at penetration and tampering, as well as changes in technical aspects such as bypass circuitry, attachment or removal of devices, and suspicious signal levels.

Technical inspectors:

- Visually and physically verify the integrity of the PDS carrier, whether conduit or buried path
- Inspect all connections, pull boxes, terminal boxes, and lock boxes
- Use hand-held mirrors, if needed, to inspect all sides of the carrier and boxes
- Open and inspect all pull boxes that are not permanently sealed
- Verify lock combination numbers, lock serial numbers, and tamper-seal serial numbers
- Verify the mechanical security of connections and covers

Initial Technical Inspection

An initial technical inspection must be performed prior to approval of PDS operation.

After approval, technical inspections must be performed at random intervals at a frequency determined by data classification and threat environment.

The initial inspection documents the path of the PDS, the locations of all pull boxes, and locations for all conduit joints at intervals less than the length of conduit segments (typically 10 feet). The PDS may be documented using detailed “as-built” installation drawings or photographs.

At subsequent technical inspections, the inspector verifies the path of the PDS and the location of pull boxes and joints.

When test equipment is locally available and resident expertise allows, the initial inspection must also measure and record the electrical characteristics of the PDS lines to obtain a baseline electrical profile of the PDS.

Then, at subsequent technical inspections, the inspector makes a comparison to the baseline to identify possible tampering attempts.

Table 4

Table 4 from CNSSI No. 7003 provides the technical inspection schedule.

Inspections are random and annual, and the frequency depends on the highest classification of data carried and the threat environment. Low threat environments require one random annual inspection for all data classifications. For medium threat environments, a technical inspection must be performed once, twice, or four times annually depending on the highest classification of data carried.

Table 4. PDS Technical Inspection Schedule

Highest Classification of Data Carried	Random Inspections *Per Year*	
	***Low* Threat Environment**	***Medium* Threat Environment**
Confidential	One	One
Secret	One	Two
Top Secret or Sensitive Compartmented Information	One	Four

Alarm System Verification

Introduction to Alarm System Verification

When daily visual inspections of a PDS are not practical, an alarm system must be used. Each separate alarm section or zone must be verified.

The Standard Operating Procedure (SOP) for each alarmed carrier must be implemented to do the following:

- Verify the performance for the alarmed carriers at the required scheduled intervals
- Ensure that the response by security personnel in the area of the possible attempted penetration is within 15 minutes of discovery
- Provide for inspection of the PDS to determine the cause of the alarm
- Define the action to be taken regarding termination of transmission
- Initiate an investigation of any attempt at intrusion.

Table 5

Table 5 from CNSSI No. 7003 provides the PDS Alarm Circuit Verification Schedule. Note that a PDS may have more than one alarmed carrier, and those carriers may carry different classifications of data. You must verify the performance for each alarmed carrier. Verify the performance monthly, weekly, or daily depending on the highest classification of data carried.

Table 5. PDS Alarm Circuit Verification Schedule

Highest Classification of Data Carried	Interval
Confidential	Monthly
Secret	Weekly
Top Secret or Sensitive Compartmented Information	Daily

Review Activities

Review Activity 1

For which of the following types of carriers are visual inspections required?

Select all that apply. Check your answer in the Answer Key at the end of this Student Guide.

- ☐ Alarmed carriers
- ☐ Buried carriers
- ☐ Continuously viewed carriers
- ☐ Suspended carriers

Review Activity 2

The required frequency for random daily visual inspections depends on which of the following?

Select all that apply. Check your answer in the Answer Key at the end of this Student Guide.

- ☐ How deep the carrier is buried
- ☐ The classification of data carried
- ☐ The threat area
- ☐ The number of pull boxes and connections

Review Activity 3

Which of the following are required for technical inspections?

Select all that apply. Check your answer in the Answer Key at the end of this Student Guide.

- ☐ Open and inspect inside pull boxes that are not permanently sealed
- ☐ Verify lock combination numbers, lock serial numbers, and tamper-seal serial numbers
- ☐ Verify the mechanical security of connections and covers
- ☐ Determine the cause of the alarm

Review Activity 4

How frequently must the performance of each alarmed carrier be verified?

Select the best response. Check your answer in the Answer Key at the end of this Student Guide.

- ○ Once, twice, or four times annually depending on the threat environment
- ○ Monthly, weekly, or daily depending on the classification of data carried
- ○ Once before operation is approved, and at random intervals subsequently
- ○ Once, twice, or four times daily depending on the classification of data and the threat environment

Lesson 5: Course Conclusion

Conclusion

Course Summary

In this course you learned about Protected Distribution Systems (PDSs) and who is responsible for them.

You learned about the requirements for:

- Approving the use of a PDS
- Installing a PDS
- Inspecting a PDS

The course addressed the PDS requirements for all DoD Components. An optional lesson (NISP PDS Requirements) is also available that covers specific PDS implementing requirements for industry under the National Industrial Security Program (NISP).

Objectives

Congratulations. You have completed the Protected Distribution Systems course.

You should now be able to perform all of the listed activities.

- Describe the purpose of a Protected Distribution System (PDS), its categories, and carrier types
- Describe how data type, threat environment, and access area affect PDS category selection
- Identify the roles and responsibilities for installation, approval, operation, and inspection of a PDS
- Identify standards and procedures for PDS installation
- Describe requirements to perform PDS inspections

To receive course credit, you must take the *Protected Distribution Systems* examination. If you accessed the course through the Security Training, Education, and Professionalization Portal (STEPP), please use that system to register for the online exam. Otherwise, select the Take Exam button on the last screen of the course to take the online exam and receive your certificate.

Lesson 6: NISP PDS Requirements

Introduction

Introduction to Lesson Topics

In addition to the Committee on National Security Systems Instruction (CNSSI) No. 7003, cleared contractors participating in the National Industrial Security Program (NISP) are also subject to Defense Counterintelligence and Security Agency (DCSA) guidelines. The DCSA, Protected Distribution Systems Standard Operating Procedures (PDS SOP) clarifies the existing regulatory requirements for requesting, installing, inspecting, approving, and managing the security of a PDS.

This lesson introduces NISP specific guidance regarding DCSA roles and responsibilities and the DCSA approval process. It covers NISP specific guidance for PDS installation and inspection and NISP guidance for modifying, deactivating, or reactivating a PDS.

You may access The CNSSI No. 7003 via the Course Resources page.

Objectives

Here are the lesson objectives. Take a moment to review them.

- Identify NISP-specific guidance for PDS regarding roles, project cycle, installation, inspection, modification, deactivation, and reactivation
  - Identify DCSA roles and responsibilities for a PDS
  - Identify NISP guidance for the approval process
  - Describe requirements for the use and installation of PDS locks
  - Describe NISP requirements for certification inspections
  - Identify NISP requirements for PDS modification, deactivation, and reactivation

Responsibilities and the Approval Process

Roles and Responsibilities

Responsibilities for a PDS are very much a coordination effort among DCSA employees and industry contractors participating in the NISP.

DCSA employees include:

- The DCSA Authorizing Official (AO)
- The DCSA Information Systems Security Professional (ISSP) assigned as the Security Control Assessor (SCA), which we will refer to the ISSP/SCA

- The DCSA Industrial Security Representative (IS Rep)
- The DCSA Counterintelligence Special Agent (CISA)

Representing industry are:

- The Facility Security Officer (FSO)
- The Information System Security Manager (ISSM)

DCSA Responsibilities

The DCSA Authorizing Official (AO) approves or disapproves all PDS requests within DCSA cognizant contractor facilities.

The DCSA ISSP/SCA and IS Rep:

- Review PDS initial installation requests and change requests
- Process PDS requests while coordinating with the FSO and ISSM as necessary for additional details
- Review threat level information provided by the Information Owner, DCSA Counterintelligence, and other sources as available
- Coordinate TEMPEST requirements with the Certified TEMPEST Technical Authority (CTTA) if identified by contract guidance
- Coordinate with the FSO and ISSM to evaluate the PDS at the facility's location
- Record PDS activities in the industrial Security Facilities Database (ISFD)

In addition, although the use of a PDS is not recommended for high or critical threat locations, a PDS may be used in those locations if approved on a case-by-case basis. In these cases, the ISSP/SCA provides approval recommendations and a Counterintelligence (CI) Risk Assessment to the DCSA AO. The CISA may assist the ISSP/SCA, IS Rep, FSO, ISSM, and AO in providing a CI Risk Assessment for a PDS located in a high or critical threat location.

Industry Responsibilities

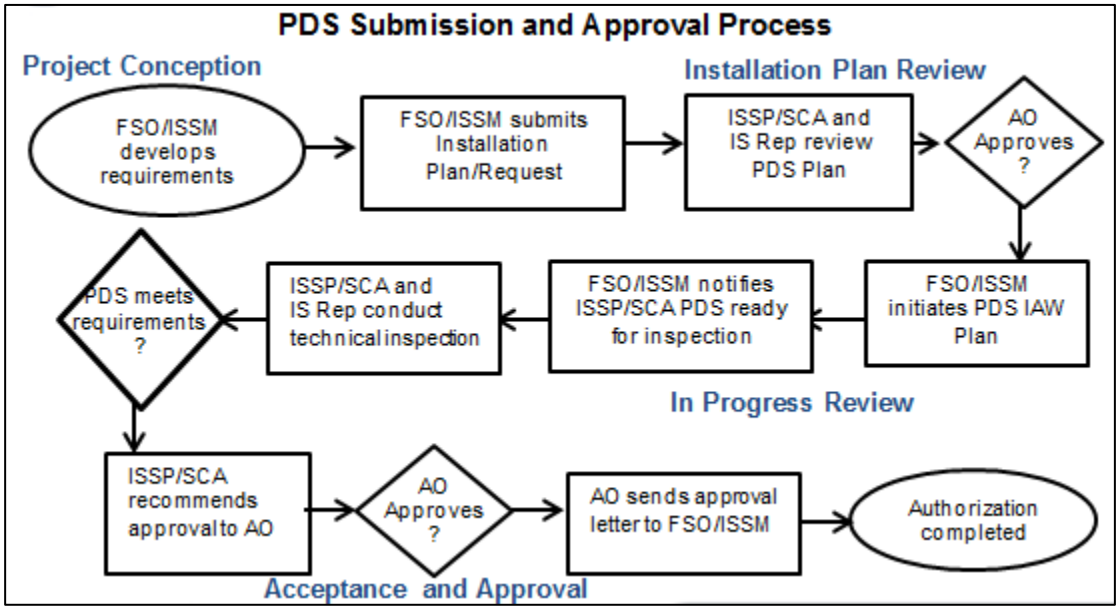
The FSO and ISSM:

- Review and then either concur or non-concur with all internal requests for a PDS installation at their facility
- Coordinate requirements for facility PDS projects
- Determine the facility threat picture by working with the CISA, ISSP/SCA, and IS Rep

- Coordinate TEMPEST emanation requirements with the Program CTTA if imposed by the contract
- Submit the PDS Installation Plan to the NISP Authorization Office (NAO)
- Ensure construction does not start until the ISSP/SCA or IS Rep issue a favorable review of the PDS Installation Plan
- Ensure PDS policy compliance
- Ensure local inspections and reviews are accomplished and documented
- Ensure that deactivation of a PDS is reported to the ISSP/SCA within 30 days

PDS Approval Process

Now take a look at how the roles play out in the PDS Submission and Approval Process.



In the Project Conception phase, the FSO and ISSM identify requirements for classified processing and an on-site survey. They conduct research to determine whether a PDS is the most viable and cost-effective option.

The ISSM develops the initial PDS Installation Plan and submits the plan for review to the assigned ISSP/SCA and IS Rep and copies the NAO headquarters mailbox so that NAO staff members can capture and track submissions for the PDS. The PDS information is then available on the PDS SharePoint site.

The ISSP/SCA and IS Rep review the Plan and provide corrective feedback or recommend approval to the AO.

After AO approval, installation begins. The ISSM ensures the assigned ISSP/SCA and IS Rep are involved during all phases of the project, including hardware installation.

The FSO or ISSM notify the ISSP/SCA when the PDS is ready for inspection.

The ISSP/SCA or IS Rep conduct the initial technical inspection.

When all requirements are met, the ISSP/SCA sends an approval recommendation to the AO.

If the AO does not concur, the FSO and ISSM must rework the plan.

If the AO does concur, the AO grants the Approval Letter for the PDS. The ISSP/SCA must forward a copy of the PDS authorization letter to the NAO mailbox. NAO headquarters staff members post the authorization letter to the PDS SharePoint site repository. The approval letter and the PDS Installation Plan are submitted as artifacts in support of System Security Plans requiring the use of PDS.

NISP Installation Guidance

Installation Introduction

CNSSI No. 7003 provides installation guidance in:

- SECTION VIII – GENERAL PDS INSTALLATION GUIDANCE
- SECTION IX – CATEGORY 1 PDS INSTALLATION GUIDANCE
- SECTION X – CATEGORY 2 PDS INSTALLATION GUIDANCE

In addition, the DCSA PDS SOP provides installation standards and procedures in its Appendix C Installation Standards and Procedures.

This topic covers the NISP specific guidance that is in addition to guidance in CNSSI No. 7003. NISP includes specific installation guidance for:

- Penetration points
- Termination and junction boxes
- The conduit and raceway
- Combination and key control for PDS locks
- REDLINE drawings

Penetration Points

When a PDS conduit needs to go through a wall or floor, drill the penetration point just large enough to fit the conduit. The conduit itself needs to be continuous and non-jointed at the penetration point, because all joints must be exposed for visual inspection. Ensure the

finished conduit has a snug fit through the penetration, and fill any empty spaces around the conduit with mortar or other filling material. Then restore the penetrated surfaces to their original condition or better, and paint the repaired surfaces with a matching paint color. For exterior foundations, seal the passages watertight.

Termination and Junction Boxes

All user termination boxes and junction boxes must be constructed of 14 or 16 gauge galvanized sheet steel depending on the threat area and have a one-piece body construction. The boxes must have at least four interior wall-fastening points and be fastened to the wall with screws or bolts. They must be mounted so all surfaces, except for the mounted side, are fully visible and have at least one inch of inspectable space on all sides. All drain holes must be closed with a pop-rivet, bolt, or screw and nut combination and sealed around all mated surfaces with opaque hardening epoxy that contrasts in color with the box and PDS pipe. Do not use a clear epoxy.

There are additional requirements for locks, hasps, and hinges.

Locks

The padlock shackle must be able to fit the approved padlock. The padlock hardware must be placed so that the lock:

- Is readily visible
- Hangs freely
- Does NOT lie against the box
- Does NOT rest on top of the box

Hasps

If the box comes with a factory-installed locking mechanism that is made of plastic or soft metal, retrofit the product by:

1. Removing the mechanism
2. Installing an extended metal hasp over the resulting hole in the door
3. Permanently attaching the hasp to the box (Acceptable methods include tack weld or securing connecting hardware inside the box.)

Note that some products come with built-in hasps and do not require a retrofit.

Hinges

Door hinge pins must be non-removable and internal to the box, or the pins must be blocked so as not to be removable. External hinges that can be removed are not acceptable.

Conduit and Raceway

For the conduit and raceway, determine the best location for its route, ensure it provides access to each floor to meet customer requirements, and minimize the number of penetrations.

The conduit must NOT be installed through any other cable distribution runs, and there must be at least one inch clearance from any material that may obstruct visual inspection.

Except for factory-provided conduit coloring, such as baked on enamel, conduits must not be painted, as paint applied to a PDS conduit could conceal tamper evidence.

Ensure all joints are permanently sealed around all surfaces with a hardening epoxy cement of a contrasting and opaque color. This includes penetrations into steel communication cabinets and ventilated security containers. Epoxy must be neatly applied. Sloppy epoxy application is more easily tampered with, as the reapplication by an intruder takes less time and effort.

There are additional guidelines for false drop ceilings.

False Drop Ceilings

For false or drop ceilings, use anchors that attach to the ceiling's metal frame to secure the PDS conduit. Ensure at least one inch of clearance is maintained between the PDS and the ceiling. Do not install the PDS above a drop ceiling unless all portions are inspectable.

Combination and Key Control for Locks

Facilities are required to establish local procedures for controlling combinations and keys.

- Combinations come with factory settings. Change the factory setting before installing the lock.
- Always change the combination when it has been compromised or is suspected of having been compromised.
- Also change the combination when personnel with knowledge of the combination depart the facility or no longer require access.

In accordance with the National Industrial Security Program Operating Manual (NISPOM), combinations and keys must be controlled and secured to the highest classification level of the information processed. That is, if the information carried by the PDS is SECRET, the keys and combinations to PDS padlocks are considered SECRET and must be stored accordingly.

REDLINE Drawings

REDLINE drawings, also called as-built drawings, are floor plans that indicate the location of all PDS hardware, pull boxes and terminal boxes, conduit joints, and short conduit lengths.

The contractor or installer prepares the drawings when installation is complete for inclusion in the PDS Installation Plan. The Plan is submitted to the assigned ISSP/SCA (Information Systems Security Professional/Security Control Assessor) or IS Rep (Industrial Security Representative).

NISP Inspection Guidance

Inspection Introduction

CNSSI No. 7003 provides PDS inspection guidance in Section XI - PDS INSPECTION.

The DCSA PDS SOP provides additional PDS inspection guidance in sections 6. Certification Inspection and Technical Acceptance and 9. PDS Inspection Guidance.

This topic covers NISP specific inspection guidance for:

- Certification inspections
- Visual inspections of unalarmed PDS
- Alarmed PDS testing
- Technical inspections
- Checks for pull boxes that are secured with a hasp and lock

Certification Inspection

The DCSA PDS SOP provides detailed guidance for the certification inspection and technical acceptance of a PDS.

After installation, a certification inspection must occur prior to use of the PDS. To aid in this inspection, the end user coordinates with the assigned ISSP/SCA and IS Rep and provides:

- REDLINE drawings
- Coordinated open access to all rooms, junction boxes, and termination boxes
- Padlocks to secure the PDS as the certification inspection progresses

The ISSP/SCA or IS Rep begin the certification inspection with REDLINE drawings in hand at the building entry point where the encrypted signal enters the building, usually a secure communications equipment room. This is considered the Point of Presence (PoP).

The ISSP/SCA or IS Rep walk the entire PDS line and note the integrity and accuracy of: the conduit run along the wall or ceiling; the location of each junction and termination box; and the labeling scheme.

The ISSP/SCA or IS Rep inspect each joint, coupling, and connector and look inside every junction and user termination box.

After the ISSP/SCA or IS Rep approve each box, the ISSM secures the box with a labeled padlock corresponding to the REDLINE drawing.

If the PDS meets the requirements, the ISSP/SCA makes an approval recommendation to the AO. The AO then either approves the PDS Installation Plan and forwards it to the owning facility, or denies approval and requires the facility to make additional corrections. The approved PDS Installation Plan is a required artifact for any of the facility's classified local area network (LAN) authorizations that use the approved PDS.

Visual Inspections and Alarmed PDS Testing

DCSA PDS SOP clarifies requirements for visual inspections and alarmed PDS testing.

Random daily visual inspections are required for all unalarmed PDS runs. This includes all internal installations and external installations, such as buried or suspended PDS. While unalarmed PDS must be inspected daily, all alarmed PDS must be tested weekly.

Logs are required for both visual inspections and alarmed PDS testing, and the logs must be retained for at least one DCSA inspection cycle.

The ISSM or FSO must ensure that the PDS Implementation Plan includes procedures for visual inspection and alarm testing. In addition, the PDS Implementation Plan must include examples of anomalies to annotate during visual inspection.

Technical Inspections

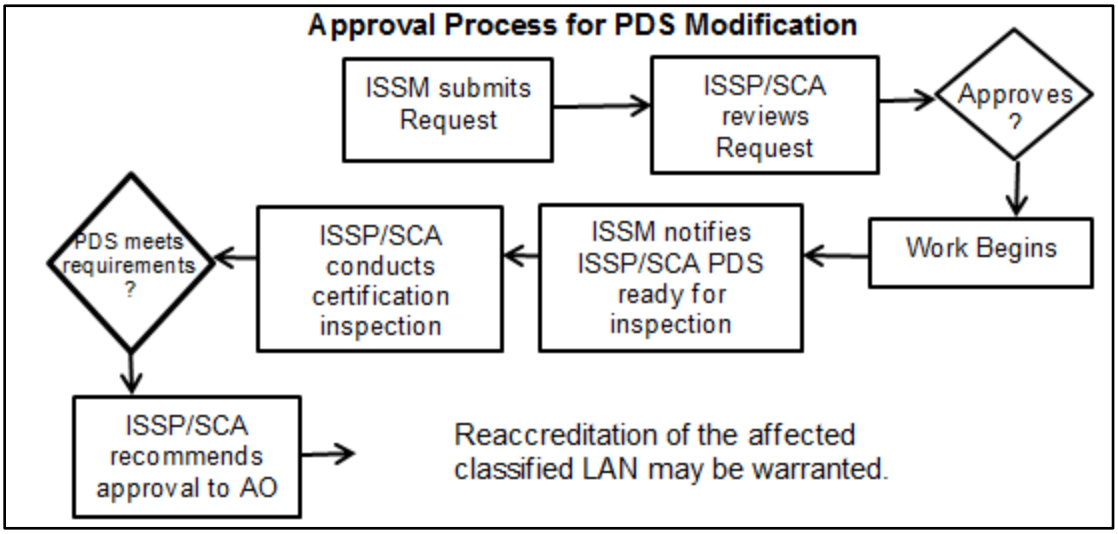
Technical inspections are required at least once annually for low threat environments. They are required twice annually for medium threat environments. Results of technical inspections must be documented in a memorandum for record (MFR) and maintained for at least three years.

Pull Box Checks

End of day checks are required for any pull boxes that are secured with a hasp and lock. The opening and closing of termination boxes must be documented.

Modification, Deactivation, and Reactivation

Modification



A PDS installation may remain active while parts of the PDS are modified; however, any modification to the PDS must go through an approval process much like the initial submission and approval process.

The ISSM begins by submitting the request to modify the PDS to the ISSP/SCA, who must approve the request before work begins. The AO may define additional security measures during the modification period to protect active segments of the PDS installation. At no time will active cables be exposed without adequate, approved security measures in place.

After the modification work is complete, the ISSM notifies the ISSP/SCA that the PDS is ready for inspection.

The ISSP/SCA then conducts another technical certification inspection of the PDS.

If the PDS, as modified, meets the requirements, the ISSP/SCA makes the recommendation to the AO for approval.

Depending on the extent of the modification, a reaccreditation of the affected classified LAN may be warranted.

Deactivation of PDS Segment

When a PDS segment is no longer required to be active, the ISSM or FSO must verify that all affected PDS signal lines are physically disconnected from the communications cabinet and that the affected segments are conspicuously labeled as inactive. For example, when a user termination box is no longer required, such as when a PDS user moves out of an office, and an uncleared person moves in, the PDS signal line to the user termination box must be physically disconnected at the communications room.

A letter indicating that the user termination box is inactive must be placed prominently near the termination box. The letter must be signed by the ISSM. In addition, a small INACTIVE or NOT IN USE placard must be affixed on all junction and user termination boxes along the deactivated segment.

For all affected locks, the ISSM or FSO must ensure the combinations are changed and stored appropriately.

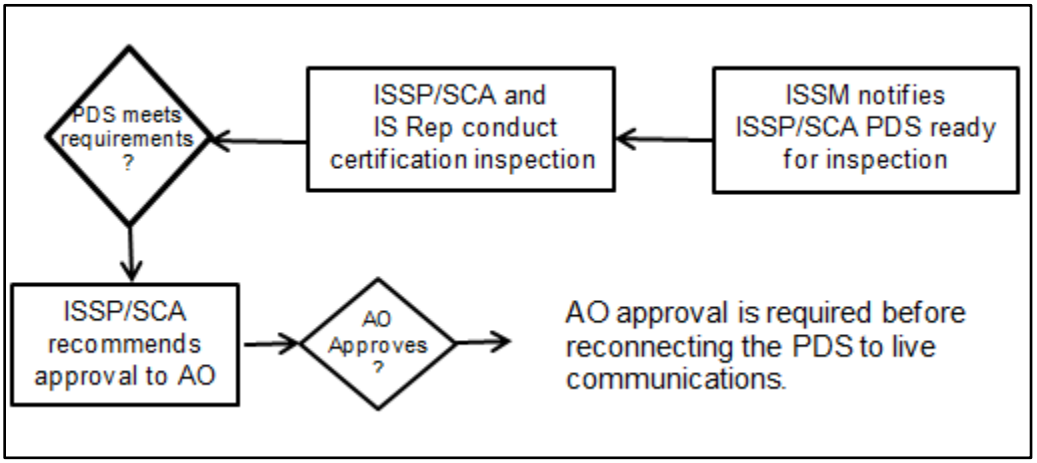
All active segments must still undergo PDS inspections.

Deactivation of Entire PDS

When a complete PDS system is no longer required:

- The ISSM deactivates the PDS and, if warranted, removes and stores all termination equipment.
- The ISSM ensures the padlock combinations for all segments, junction boxes, and security containers are changed and stored appropriately.
- An INACTIVE or NOT IN USE placard must be placed on all junction boxes and user termination boxes.

Reactivation



When a PDS needs to be reactivated, certain requirements must be met before the reactivation can occur. The ISSM coordinates with the ISSP/SCA or IS Rep for a technical certification inspection. The AO must approve the PDS before it can be connected to live communications.

Review Activities

Review Activity 1

What are the responsibilities regarding deactivation of a Protected Distribution System (PDS)?

Select the best response. Check your answer in the Answer Key at the end of this Student Guide.

- ○ The FSO or ISSM coordinate with ISSP/SCA or IS Rep for a technical certification inspection.
- ○ The FSO or ISSM report deactivation to ISSP/SCA within 30 days.
- ○ The ISSM submits the request to deactivate the PDS to the ISSP/SCA.
- ○ PDS deactivation must go through an approval process.

Review Activity 2

Who is responsible for these tasks?

For each item, select the best response. Check your answer in the Answer Key at the end of this Student Guide.

Submits Installation Plan

- ○ ISSP/SCA or IS Rep
- ○ FSO or ISSM

Reviews PDS Plan

- ○ ISSP/SCA or IS Rep
- ○ FSO or ISSM

Initiates PDS installation in accordance with the Plan

- ○ ISSP/SCA or IS Rep
- ○ FSO or ISSM

Conducts technical inspection

- ○ ISSP/SCA or IS Rep
- ○ FSO or ISSM

Recommends approval to AO

- ISSP/SCA or IS Rep
- FSO or ISSM

Review Activity 3

What are the requirements for padlock hardware installation on termination boxes?

Select all that apply. Check your answer in the Answer Key at the end of this Student Guide.

- Lock must rest against the box.
- Lock must be readily visible.
- Lock must hang freely.
- Lock must lie on top of the box.

Review Activity 4

Select True or False for each statement.

Check your answer in the Answer Key at the end of this Student Guide.

A certification inspection is required before PDS installation.

- True
- False

The ISSP/SCA removes all padlocks and verifies combinations.

- True
- False

The ISSP/SCA inspects a sampling of joints, couplings, and connectors for compliance.

- True
- False

The ISSP/SCA inspects inside each junction and user termination box.

- True
- False

The ISSM secures each approved box with the padlock indicated on REDLINE drawing.

- True
- False

Review Activity 5

Which of the following statements are accurate regarding modification of a Protective Distribution System (PDS)?

Select all that apply. Check your answer in the Answer Key at the end of this Student Guide.

- ☐ The ISSM must notify the ISSP/SCA at least 30 days before modifying the PDS.
- ☐ A PDS installation may remain active while parts of the PDS are modified.
- ☐ After the modification is complete, the ISSP/SCA conducts another technical certification of the PDS.
- ☐ Modifications to a PDS do not require an approval process.

Conclusion

Summary

You have completed the NISP PDS Requirements lesson.

To receive credit for this lesson, you must take the *NISP PDS Guidance* examination. If you accessed the course through the Security Training, Education, and Professionalization Portal (STEPP), please use that system to register for the online exam. Otherwise, select the Take Exam button on the last screen of the course to take the online exam and receive your certificate.

Appendix A: Answer Key

Lesson 2 Review Activities

Review Activity 1

What is the purpose and use of a Protected Distribution System (PDS)?

- ☑ It is used to protect unencrypted National Security Information (NSI). *(correct response)*
- ☐ The emphasis is on prevention of penetration.
- ☐ It is intended for use in high or critical threat locations.
- ☑ It is not permitted in uncontrolled access areas. *(correct response)*

Feedback: *A PDS is used to protect unencrypted NSI with an emphasis on intrusion detection rather than prevention of penetration. It is intended for use in low and medium threat locations and is not permitted in uncontrolled access areas.*

Review Activity 2

Which category of Protected Distribution System (PDS) is appropriate for the following situations?

The carrier must pass through an uncontrolled access area.

- ○ Category 1
- ○ Category 2
- ⊙ Neither *(correct response)*

Feedback: *Neither category may be used. A PDS may not be used for an uncontrolled access area (UAA). Data passing through UAAs must be encrypted.*

A buried PDS connects controlled access areas.

- ○ Category 1
- ⊙ Category 2 *(correct response)*
- ○ Neither

Feedback: *A buried PDS is considered a Category 2 PDS.*

A Top Secret PDS in a confidential controlled access area in a low threat environment

- ⦿ Category 1 *(correct response)*
- ○ Category 2
- ○ Neither

Feedback: *A Category 1 may be used in this situation.*

A Top Secret PDS in a confidential controlled access area in a medium threat environment

- ○ Category 1
- ⦿ Category 2 *(correct response)*
- ○ Neither

Feedback: *A Category 2 is needed for this situation.*

Review Activity 3

Who is responsible for these activities?

Ensure PDS is inspected and certified prior to initial operation

- ○ PDS Owner
- ⦿ Authorizing Official (AO) *(correct response)*

Feedback: *The AO must ensure the PDS is inspected and certified prior to initial operation.*

Operation, maintenance, and inspection of PDS

- ⦿ PDS Owner *(correct response)*
- ○ Authorizing Official (AO)

Feedback: *The PDS Owner is responsible for the operation, maintenance, and inspection of the PDS.*

Installation of PDS

- ⦿ PDS Owner *(correct response)*
- ○ Authorizing Official (AO)

Feedback: *The PDS Owner is responsible for the installation of the PDS.*

Approving reactivation of a PDS

- ○ PDS Owner
- ⊙ Authorizing Official (AO) *(correct response)*

Feedback: *Before a PDS can be reactivated, the AO must approve the reactivation.*

Lesson 3 Review Activities

Review Activity 1

When possible, where should carriers for Category 1 and Category 2 Protected Distribution Systems (PDSs) be installed?

- ○ Above false ceilings, below false floors, or inside walls
- ⊙ In plain view *(correct response)*
- ○ Buried 1 foot or elevated 5 feet
- ○ In darkened areas

Feedback: *The carrier should be installed in plain view, as inspection of the carrier is integral to ensuring data is not compromised.*

Review Activity 2

Do the statements describe a carrier requirement for a Category 1 or Category 2 Protected Distribution System (PDS)?

Carrier is constructed of metal or PVC pipe or armored cable.

- ⊙ Category 1 *(correct response)*
- ○ Category 2

Feedback: *A carrier for a Category 1 PDS must be constructed of metal PVC pipe of at least a schedule-40 grade or armored cable.*

Carrier is constructed of ferrous pipe conduit.

- ○ Category 1
- ⊙ Category 2 *(correct response)*

Feedback: *A Category 2 hardened carrier must be constructed of ferrous EMT, ferrous pipe conduit, or ferrous rigid sheet metal ducting.*

Carrier is buried 1 meter below property owned by the U.S. Government.

- ○ Category 1
- ⊙ Category 2 *(correct response)*

Feedback: *A buried cable is used for a Category 2 PDS.*

Carrier is protected by an alarm system.

- ○ Category 1
- ⊙ Category 2 *(correct response)*

Feedback: *An alarmed carrier is for a Category 2 PDS.*

Review Activity 3

Select True or False for each statement.

The PDS should maximize the use of pull boxes, conduit joints, and other types of connections.

- ○ True
- ⊙ False *(correct response)*

Feedback: *The PDS should MINIMIZE the use of pull boxes and other connections.*

If a pull box will be accessed after installation, the cover must be secured with a PDS lock or tamper evident seal.

- ⊙ True *(correct response)*
- ○ False

Feedback: *The statement is true. The cover must be secured with an approved PDS lock or tamper evident seal.*

When epoxy is used to seal connections, a thick clear material must be used.

- ○ True
- ⊙ False *(correct response)*

Feedback: *The epoxy must be a thick OPAQUE material so that it is clearly visible.*

Review Activity 4

How should a Protected Distribution System (PDS) be marked to make it easily identifiable to the inspector?

- ☑ Use paint, tape, or cable tags. *(correct response)*
- ☐ Clearly indicate PDS on the label.
- ☐ Red is the preferred labeling color.
- ☑ Markings should be spaced 3 meters or less. *(correct response)*

Feedback: *Tape, paint, or cable tags may be used and should be placed at 3 meter intervals or less. Never label the PDS as a PDS, and do not use red, as red is reserved for fire sprinkler systems.*

Lesson 4: Review Activities

Review Activity 1

For which of the following types of carriers are visual inspections required?

- ☐ Alarmed carriers
- ☑ Buried carriers *(correct response)*
- ☐ Continuously viewed carriers
- ☑ Suspended carriers *(correct response)*

Feedback: *Visual inspections are required for all PDS carriers except alarmed carriers and continuously viewed carriers.*

Review Activity 2

The required frequency for random daily visual inspections depends on which of the following?

- ☐ How deep the carrier is buried
- ☑ The classification of data carried *(correct response)*
- ☑ The threat area *(correct response)*
- ☐ The number of pull boxes and connections

Feedback: *The frequency of random daily visual inspections depends on the highest classification of data carried and the threat area.*

Review Activity 3

Which of the following are required for technical inspections?

- ☑ Open and inspect inside pull boxes that are not permanently sealed *(correct response)*
- ☑ Verify lock combination numbers, lock serial numbers, and tamper-seal serial numbers *(correct response)*
- ☑ Verify the mechanical security of connections and covers *(correct response)*
- ☐ Determine the cause of the alarm

Feedback*: Technical inspections involve opening and inspecting inside pull boxes, verifying lock combination numbers and serial numbers, and verifying the mechanical security of connections and covers.*

Review Activity 4

How frequently must the performance of each alarmed carrier be verified?

- ○ Once, twice, or four times annually depending on the threat environment
- ⦿ Monthly, weekly, or daily depending on the classification of data carried *(correct response)*
- ○ Once before operation is approved, and at random intervals subsequently
- ○ Once, twice, or four times daily depending on the classification of data and the threat environment

Feedback*: The performance for each alarmed carrier must be verified monthly, weekly, or daily depending on the highest classification of data carried.*

Lesson 6: Review Activities

Review Activity 1

What are the responsibilities regarding deactivation of a Protected Distribution System (PDS)?

- ○ The FSO or ISSM coordinate with ISSP/SCA or IS Rep for a technical certification inspection.
- ⦿ The FSO or ISSM report deactivation to ISSP/SCA within 30 days. *(correct response)*
- ○ The ISSM submits the request to deactivate the PDS to the ISSP/SCA.
- ○ PDS deactivation must go through an approval process.

Feedback: *The FSO or /ISSM must report the deactivation to the ISSP/SCA within 30 days.*

Review Activity 2

Who is responsible for these tasks?

Submits Installation Plan

- ○ ISSP/SCA or IS Rep
- ⦿ FSO or ISSM *(correct response)*

Feedback: *The FSO or ISSM submits the Installation Plan/Request.*

Reviews PDS Plan

- ⦿ ISSP/SCA or IS Rep *(correct response)*
- ○ FSO or ISSM

Feedback*: The ISSP/SCA or IS Rep review the PDS Plan.*

Initiates PDS installation in accordance with the Plan

- ○ ISSP/SCA or IS Rep
- ⦿ FSO or ISSM *(correct response)*

Feedback: *The FSO or ISSM initiate PDS installation in accordance with the Plan.*

Conducts technical inspection

- ⦿ ISSP/SCA or IS Rep *(correct response)*
- ○ FSO or ISSM

Feedback: *The ISSP/SCA or IS Rep conduct the technical inspection.*

Recommends approval to AO

- ⦿ ISSP/SCA or IS Rep *(correct response)*
- ○ FSO or ISSM

Feedback*: The ISSP/SCA recommends approval to the AO.*

Review Activity 3

What are the requirements for padlock hardware installation on termination boxes?

- ☐ Lock must rest against the box.
- ☑ Lock must be readily visible. *(correct response)*
- ☑ Lock must hang freely. *(correct response)*
- ☐ Lock must lie on top of the box.

Feedback: *The lock must be readily visible and hang freely. It must not lie on top of the box or rest against the box.*

Review Activity 4

Select True or False for each statement.

A certification inspection is required before PDS installation.

- ○ True
- ⦿ False *(correct response)*

Feedback: *A certification inspection is required after installation and prior to use.*

The ISSP/SCA removes all padlocks and verifies combinations.

- ○ True
- ⦿ False *(correct response)*

Feedback: *The statement is false. Padlocks are affixed to approved boxes.*

The ISSP/SCA inspects a sampling of joints, couplings, and connectors for compliance.

- ○ True
- ⦿ False *(correct response)*

Feedback: *The ISSP/SCA inspects ALL joints, couplings, and connectors.*

The ISSP/SCA inspects inside each junction and user termination box.

- ⦿ True *(correct response)*
- ○ False

Feedback: *The ISSP/SCA inspects inside each junction box and user termination box.*

The ISSM secures each approved box with the padlock indicated on REDLINE drawing.

- ⊙ True *(correct response)*
- ○ False

***Feedback**: After each box is approved, the ISSM secures each box with the padlock indicated on REDLINE drawing.*

Review Activity 5

Which of the following statements are accurate regarding modification of a Protective Distribution System (PDS)?

- ☐ The ISSM must notify the ISSP/SCA at least 30 days before modifying the PDS.
- ☑ A PDS installation may remain active while parts of the PDS are modified. *(correct response)*
- ☑ After the modification is complete, the ISSP/SCA conducts another technical certification of the PDS. *(correct response)*
- ☐ Modifications to a PDS do not require an approval process.

***Feedback:** A PDS installation may remain active while parts of the PDS are modified; however, any modifications must go through an approval process. After modifying a PDS, the ISSP/SCA must conduct another technical certification of the PDS.*