

# Enlisted Surface Warfare Specialist (ESWS) Reactor Practice Test (Sample)

## Study Guide



**Everything you need from our exam experts!**

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# Introduction

Preparing for a certification exam can feel overwhelming, but with the right tools, it becomes an opportunity to build confidence, sharpen your skills, and move one step closer to your goals. At Examzify, we believe that effective exam preparation isn't just about memorization, it's about understanding the material, identifying knowledge gaps, and building the test-taking strategies that lead to success.

This guide was designed to help you do exactly that.

Whether you're preparing for a licensing exam, professional certification, or entry-level qualification, this book offers structured practice to reinforce key concepts. You'll find a wide range of multiple-choice questions, each followed by clear explanations to help you understand not just the right answer, but why it's correct.

The content in this guide is based on real-world exam objectives and aligned with the types of questions and topics commonly found on official tests. It's ideal for learners who want to:

- Practice answering questions under realistic conditions,
- Improve accuracy and speed,
- Review explanations to strengthen weak areas, and
- Approach the exam with greater confidence.

We recommend using this book not as a stand-alone study tool, but alongside other resources like flashcards, textbooks, or hands-on training. For best results, we recommend working through each question, reflecting on the explanation provided, and revisiting the topics that challenge you most.

**Remember:** successful test preparation isn't about getting every question right the first time, it's about learning from your mistakes and improving over time. Stay focused, trust the process, and know that every page you turn brings you closer to success.

Let's begin.

# How to Use This Guide

**This guide is designed to help you study more effectively and approach your exam with confidence. Whether you're reviewing for the first time or doing a final refresh, here's how to get the most out of your Examzify study guide:**

## **1. Start with a Diagnostic Review**

**Skim through the questions to get a sense of what you know and what you need to focus on. Your goal is to identify knowledge gaps early.**

## **2. Study in Short, Focused Sessions**

**Break your study time into manageable blocks (e.g. 30 - 45 minutes). Review a handful of questions, reflect on the explanations.**

## **3. Learn from the Explanations**

**After answering a question, always read the explanation, even if you got it right. It reinforces key points, corrects misunderstandings, and teaches subtle distinctions between similar answers.**

## **4. Track Your Progress**

**Use bookmarks or notes (if reading digitally) to mark difficult questions. Revisit these regularly and track improvements over time.**

## **5. Simulate the Real Exam**

**Once you're comfortable, try taking a full set of questions without pausing. Set a timer and simulate test-day conditions to build confidence and time management skills.**

## **6. Repeat and Review**

**Don't just study once, repetition builds retention. Re-attempt questions after a few days and revisit explanations to reinforce learning. Pair this guide with other Examzify tools like flashcards, and digital practice tests to strengthen your preparation across formats.**

**There's no single right way to study, but consistent, thoughtful effort always wins. Use this guide flexibly, adapt the tips above to fit your pace and learning style. You've got this!**

## Questions

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- 1. What is the purpose of the shaft seal in a ship?**
  - A. Adjusts engine speed**
  - B. Prevents water from entering the hull**
  - C. Regulates fuel flow**
  - D. Enhances steering control**
  
- 2. What is the purpose of the reboiler heating drain?**
  - A. To recycle steam for reuse**
  - B. To direct the steam**
  - C. To collect impurities from the system**
  - D. To vent excess pressure**
  
- 3. Which rate typically operates the coolant turbine generators?**
  - A. Electrician's Mate (EM)**
  - B. Machinist Mate (MM)**
  - C. Fire Control Technician (FC)**
  - D. Engineman (EN)**
  
- 4. What should be done if a yellow polly bag is found on board?**
  - A. Secure the area and contact the captain**
  - B. Dispose of it in the nearest trash receptacle**
  - C. Secure the area and have someone contact 7211 for an ELT**
  - D. Ignore it and continue duties**
  
- 5. What is the main responsibility of the CRA?**
  - A. Chemical research and analysis**
  - B. Chemistry controls and radiological controls associated with the propulsion plant**
  - C. Regulatory compliance for environmental safety**
  - D. Performance monitoring for reactor operations**

- 6. What does TLD stand for in the context of radiation measurement?**
- A. Thermal Luminescent Dosimeter**
  - B. Thermal Light Detector**
  - C. Thermal Luminosity Device**
  - D. Time Lapse Detector**
- 7. Which watch is responsible for ensuring safe levels of water are maintained?**
- A. Cooling Watch, MM**
  - B. Water Control Watch, MM**
  - C. Reactor Safety Watch, EM**
  - D. Load Control Watch, SM**
- 8. What was the first naval nuclear-powered surface ship?**
- A. USS George Washington**
  - B. USS Long Beach**
  - C. USS Nimitz**
  - D. USS Missouri**
- 9. What is the primary task of the compressor in the A/C systems?**
- A. Remove humidity from air**
  - B. Pump refrigerant gas**
  - C. Control room temperature**
  - D. Filter air**
- 10. Who controls water inventory and what is their rate?**
- A. Water Plant Operator, MM**
  - B. Water Control Watch, MM**
  - C. Cooling Control Chief, EM**
  - D. Reactor Maintenance Supervisor, SM**

## Answers

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1. B
2. B
3. A
4. C
5. B
6. A
7. B
8. B
9. B
10. B

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## **Explanations**

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## 1. What is the purpose of the shaft seal in a ship?

- A. Adjusts engine speed
- B. Prevents water from entering the hull**
- C. Regulates fuel flow
- D. Enhances steering control

The purpose of the shaft seal in a ship is to prevent water from entering the hull. The shaft seal serves a critical function by creating a watertight barrier at the point where the propeller shaft exits the hull. This is essential for maintaining the integrity of the vessel's structure and ensuring that it remains buoyant and seaworthy. When a ship is operating in water, there is always a risk of water intrusion due to the pressure difference between the exterior and the interior of the hull. The shaft seal is designed to withstand this pressure and keep the internal compartments dry, thereby protecting machinery and electrical systems located within the hull. This is vital for the overall safety of the ship and its crew. By effectively sealing the area around the rotating shaft, the seal enables effective propulsion while minimizing the risk of leaks. The other choices pertain to different systems and functionalities that are not related to the primary role of the shaft seal. The adjustment of engine speed is typically managed by other components of the propulsion system, fuel flow regulation is handled by the fuel system, and steering control is primarily achieved through the rudder and associated mechanisms.

## 2. What is the purpose of the reboiler heating drain?

- A. To recycle steam for reuse
- B. To direct the steam**
- C. To collect impurities from the system
- D. To vent excess pressure

The purpose of the reboiler heating drain is primarily to facilitate the efficient and effective operation of the system by allowing for the proper routing of steam. In a typical reboiler setup, steam is generated, and the reboiler serves to heat a liquid, typically a coolant or a mixture involved in a thermal process. The drain from the reboiler prevents the accumulation of any condensate or non-useable steam, enabling the system to maintain its operational integrity. By directing steam properly through the system, it ensures that the heat exchange process remains efficient and that the fluids being heated are consistently processed without back pressure or blockages, which could affect the overall performance. This routing is critical to maintaining optimal flow and ensuring that the heating process meets the operational requirements. The focus of directing steam rather than concerns over recycling, impurity collection, or excess pressure venting highlights the importance of precise management of steam flow for maximizing efficiency in thermal exchanges within the reactor systems.

**3. Which rate typically operates the coolant turbine generators?**

- A. Electrician's Mate (EM)**
- B. Machinist Mate (MM)**
- C. Fire Control Technician (FC)**
- D. Engineman (EN)**

The Electrician's Mate (EM) rating is primarily responsible for operating and maintaining the coolant turbine generators within a reactor plant. This specialized role involves a deep understanding of electrical systems and their components, which are critical for generating electricity and ensuring proper power distribution throughout the vessel. Electrician's Mates are trained to diagnose and repair electrical equipment, manage electrical power distribution, and understand the nuances of steam and electrical engineering. Their expertise is essential during routine operations and emergency situations, making them integral to the safe operation of reactor systems. In contrast, other ratings such as Machinist Mates (MM) focus on mechanical systems and machinery, Fire Control Technicians (FC) specialize in weapon systems and combat systems technology, and Enginemen (EN) are more concerned with shipboard diesel engines and auxiliary machinery. While each of these rates plays a vital role within the ship's systems, the specific operation of coolant turbine generators aligns with the distinct skill set possessed by Electrician's Mates.

**4. What should be done if a yellow polly bag is found on board?**

- A. Secure the area and contact the captain**
- B. Dispose of it in the nearest trash receptacle**
- C. Secure the area and have someone contact 7211 for an ELT**
- D. Ignore it and continue duties**

When a yellow polly bag is found on board, securing the area and having someone contact the designated emergency response team, such as 7211 for an Explosive Ordnance Disposal (EOD) alert or Elimination Team (ELT), is the appropriate action. The yellow polly bag may indicate the presence of hazardous materials or explosives since these bags are often used to contain potentially dangerous substances or equipment. Therefore, it's essential to treat the situation with caution to ensure the safety of everyone on board. Proper protocol involves isolating the area to prevent any potential harm and notifying qualified personnel who can assess and handle the situation safely. In contrast, securing the area and contacting the captain may not involve the immediate expertise required to deal with hazardous materials. Disposing of the bag in the nearest trash receptacle is risky and could lead to dangerous consequences if the contents are hazardous. Ignoring the bag entirely and continuing duties poses a significant safety threat, as it could be a serious hazard that requires immediate investigation and remediation. Thus, contacting the relevant emergency team ensures a prompt and professional response to mitigate any potential risks associated with the contents of the bag.

## 5. What is the main responsibility of the CRA?

- A. Chemical research and analysis
- B. Chemistry controls and radiological controls associated with the propulsion plant**
- C. Regulatory compliance for environmental safety
- D. Performance monitoring for reactor operations

The primary responsibility of the Chemistry Readiness Assistant (CRA) revolves around managing the chemistry controls and radiological controls specific to the propulsion plant. This includes ensuring that the chemical makeup of the water and other systems within the reactor meet required standards to prevent corrosion, manage the radionuclide levels, and maintain operational integrity. Additionally, the CRA plays a critical role in monitoring water chemistry and implementing control measures for radiological safety, thereby guaranteeing the safety and effectiveness of the reactor's operations. This focus on both chemistry and radiological aspects is essential for efficient reactor operation and for protecting the crew and the environment from potential hazards associated with radiation and chemical exposure. In contrast, while the other options touch on important aspects of naval operations, they do not encapsulate the specific duties tied to the CRA's role in relation to the propulsion plant.

## 6. What does TLD stand for in the context of radiation measurement?

- A. Thermal Luminescent Dosimeter**
- B. Thermal Light Detector
- C. Thermal Luminosity Device
- D. Time Lapse Detector

The term TLD in the context of radiation measurement stands for Thermal Luminescent Dosimeter. A TLD is a device that measures ionizing radiation exposure by utilizing materials that emit light when heated. The intensity of the light emitted is proportional to the amount of radiation the dosimeter has been exposed to. This method is highly effective for personal monitoring of radiation doses received by individuals, particularly in environments where exposure may occur. Thermal Luminescent Dosimeters are commonly used in various fields, including healthcare, nuclear power, and research, to ensure that personnel do not exceed safe radiation exposure limits. The materials used in TLDs are sensitive to radiation, and their ability to accumulate and then release energy as light makes them valuable tools for ensuring safety in radiation-prone environments. The other options provided do not accurately capture the definition or function of TLD in radiation measurement. There is no widely recognized device or measurement technique referred to as a Thermal Light Detector, Thermal Luminosity Device, or Time Lapse Detector in this context, making the correct choice clear.

**7. Which watch is responsible for ensuring safe levels of water are maintained?**

- A. Cooling Watch, MM**
- B. Water Control Watch, MM**
- C. Reactor Safety Watch, EM**
- D. Load Control Watch, SM**

The Water Control Watch, MM is responsible for ensuring safe levels of water are maintained within the system. This role is crucial because maintaining appropriate water levels is essential for the effective and safe operation of a ship's reactor. If water levels are too low, it can lead to inadequate cooling and potential overheating, while excessive water levels might affect operating parameters and system integrity. The watch ensures monitoring, controls water levels, and performs necessary adjustments to support reactor operations safely. This responsibility encompasses tasks like checking gauges, confirming system status, and ensuring that water chemistry remains within specified limits to prevent corrosion and other chemical imbalances. Thus, the Water Control Watch plays a vital role in reactor safety and operational efficiency, aligning with the fundamental principles of reactor plant management and maintenance.

**8. What was the first naval nuclear-powered surface ship?**

- A. USS George Washington**
- B. USS Long Beach**
- C. USS Nimitz**
- D. USS Missouri**

The first naval nuclear-powered surface ship was the USS Long Beach (CGN-9), which was commissioned in 1961. This ship represented a significant advancement in naval technology, being the first guided missile cruiser to be powered by a nuclear reactor. The use of nuclear power allowed the USS Long Beach to operate for extended periods without the need to refuel, providing significant operational advantages over conventionally powered ships. The USS Long Beach's design focused on advanced missile systems and weapons capabilities, demonstrating the United States Navy's commitment to modernizing its fleet during the Cold War era. This ship showcased the potential of nuclear propulsion to enhance naval capabilities, leading to the development of future vessels powered by nuclear energy. The other options, while also notable ships, are either aircraft carriers or battleships, and therefore do not represent the milestone of being the first nuclear-powered surface ship. The USS George Washington and USS Nimitz are both aircraft carriers, with the former being the first nuclear-powered aircraft carrier, commissioned after the Long Beach. The USS Missouri was a conventionally powered battleship and does not fit within the nuclear ship category.

**9. What is the primary task of the compressor in the A/C systems?**

- A. Remove humidity from air**
- B. Pump refrigerant gas**
- C. Control room temperature**
- D. Filter air**

The primary task of the compressor in air conditioning (A/C) systems is to pump refrigerant gas. The compressor is a critical component that compresses the refrigerant, raising its pressure and temperature. This process is essential because it allows the refrigerant to absorb heat from the indoor air as it evaporates inside the evaporator coil. Once compressed, the refrigerant then flows to the condenser, where it releases this heat outside, allowing the cycle to continue. In this context, the compressor plays a central role in the refrigeration cycle, which makes cooling possible. It actively moves the refrigerant through the system, functioning as the engine of the A/C system. Without the compressor, the other components such as the evaporator and condenser would not operate effectively, as there would be no flow of refrigerant to facilitate the heat exchange process.

**10. Who controls water inventory and what is their rate?**

- A. Water Plant Operator, MM**
- B. Water Control Watch, MM**
- C. Cooling Control Chief, EM**
- D. Reactor Maintenance Supervisor, SM**

The appropriate choice is the Water Control Watch, which is primarily responsible for monitoring and controlling water inventory within the reactor plant. This role is vital in ensuring that there is a steady supply of water for various systems, such as the steam generators and secondary systems, which rely on precise water levels for efficient and safe operation. Water Control Watch personnel are trained to manage these levels meticulously, as the water inventory directly impacts reactor safety and operational capability. They implement procedures to assess water conditions and make adjustments as necessary, ensuring that systems function within their designated parameters. Understanding the responsibilities associated with managing water inventory is crucial, as inadequate water levels can lead to significant operational issues or safety hazards in a reactor environment. Their role ensures that management of the water system is consistent, effective, and aligns with overall reactor operations.

## Next Steps

**Congratulations on reaching the final section of this guide. You've taken a meaningful step toward passing your certification exam and advancing your career.**

**As you continue preparing, remember that consistent practice, review, and self-reflection are key to success. Make time to revisit difficult topics, simulate exam conditions, and track your progress along the way.**

**If you need help, have suggestions, or want to share feedback, we'd love to hear from you. Reach out to our team at [hello@examzify.com](mailto:hello@examzify.com).**

**Or visit your dedicated course page for more study tools and resources:**

**<https://eswsreactor.examzify.com>**

**We wish you the very best on your exam journey. You've got this!**

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