CIP Nuclear Theory Exam

Exam Preparation Guide

Table of Contents

Introduction

The CIP Nuclear exam is designed to assess whether a candidate has the requisite knowledge, skills and abilities (KSAs) that a minimally qualified coating inspector, specifically working with coating inspections in the Nuclear industry must possess. The 75 questions are based on the KSAs a coating inspector in nuclear power plants (NPPs) needs to be successful in the job. It is required that a candidate have the CIP Level 1 or CIP Level 2 Certification if seeking the Nuclear endorsement.

Exam Name	AMPP CIP Nuclear Exam
Time	2 Hours
Number of Questions	75
Format	Live Online Remote Proctoring (Examity*)
Passing Score	Pass or Fail

**Delivered through Examity NOT AT Pearson Testing Center*

Target Audience

CIP Nuclear benefits anyone interested conducting inspections in a nuclear power plant setting or those who would like to gain a better understanding of NPP coating requirements if they are a non CIP-certified coating application and inspection in the nuclear industry. The CIP Nuclear Exam and training was designed for coating inspectors to demonstrate understanding of the unique challenges presented by nuclear facility's restrictive and safety-critical environment. This endorsement is targeted to the following candidates:

- NPP quality assurance managers
- Qualified coating inspectors
- Inspection firms – qualified inspectors and managers
- Coating manufacturers sales and technical representatives
- Coating inspection and evaluation personnel at architectural engineering firms
- Coating contractors
- Coating evaluation personnel from the Nuclear Regulatory Commission (U.S.)
- Paint supervisors at nuclear power plants

The person who may successfully complete the CIP Nuclear course and exam is able to demonstrate an understanding of the verbatim compliance required in NPPs. Additionally, they should understand government, industry, and plant-specific regulations, technical specifications, and procedures to perform inspections in various areas of NPP and classify surface preparation and coating application of different Coating Service Level areas.

Requirements

Requirements for CIP Nuclear

Prerequisites & Work Experience Requirements:

- None required if Education

-OR-

- CIP Level 1 at minimum if seeking Nuclear Endorsement
- 160 hours of work on coatings focused projects for a nuclear power plant

Core Course Requirements:

Successfully complete the following course:

- **Course – Nuclear Power Plant Training for Coating Inspectors**

Core Exam Requirements:

- Exam - CIP Nuclear Exam

Application Requirements:

- Approved Nuclear Specialty application

Exam Blue Print

NOTE: At the end of the exam the candidate will receive a chart with strengths and weaknesses that correspond to the Domains listed below. You will have the option to email or print it.

Domain 1 – Introduction to CIP Nuclear Technical Standards and Standards Organization Nuclear Coating Inspector Duties and Responsibilities Overview The Nuclear Coatings Inspector's Check List	**15-19 %**
Domain 2 – General Concepts Electricity Generated by Nuclear Power Plants (NPP) Nuclear Power Plant Operations Typical Boiling Water Reactor (BWR) Typical Pressurized Water Reactor (PWR) Typical Pressurized Heavy-Water Reactor (PHWR) (CANDU) Areas of Nuclear Power Plants NPP Incidents Measuring Radiation's Effects Industry Regulation Coating Work Participants Roles and Responsibilities NPP Coating Terms DBA Unqualified Coating Systems Nonconforming Coatings Health and Safety Nuclear Coatings Program Ownership, Scope and Development NPP Workplace Considerations	**23-27 %**
Domain 3 – Nuclear Power Plants Coating Systems Criteria for Coatings Systems in NPPs Purpose of Coating Systems in an NPP Corrosion Protection Nuclear Power Plant Coating System Standards: Criterion III DBA Qualification Testing Standards: Criterion XI Procurement of Nuclear Safety-Related Coatings: Criteria IV and VII NPP Coating Systems Applicability NPP Building Materials Typical Specifications for Nuclear Safety-Related Coatings	**10-14 %**
Domain 4 – Surface Preparation and Application Surface Preparation Guidance Surface Preparation Specifications NACE, SSPC Joint and ISO Standards Containment and Filtration Tenting High Efficiency Particulate Air (HEPA) Filters Charcoal Filters	**14-18 %**

Mixed Waste VOC and HAP Considerations Plant Restrictions Maintenance and Repair (M&R) Surface Preparation M&R Non-Immersion Service Levels and Methods of Surface Preparation Coatings Application NPP Coating Systems Application and Related Criteria Preparation and Application Underwater	
Domain 5 – Roles of Participants in NPP Coatings Inspection Work Safety Personnel Responsibilities and Qualifications Review Roles of the Regulatory Organizations The Nuclear Regulatory Commission Career Paths and Career Planning General Requirements for Nuclear Inspection Personnel NCI Certification Coatings Planner/Scheduler Relationships with the NRC	**7-11 %**
Domain 6 – Inspection of NPP Coatings Types and Uses Pre-entry Training General Safety Types of Inspections Coating Service Levels I and III Coatings Pre-Job Inspection Typical Surveillance Inspections Typical Hold Point Inspections Documentation Enforcing Specification Requirements Tools Storage and M&TE Foreign Materials Exclusion (FME)	**8-12 %**
Domain 7 – Coating Condition Assessment for CSL I Areas Coating System Condition Assessment (CSCA) Visual Inspections for CSCA Coating Degradation Mechanisms USI A- and GSI NRC Generic Letters Qualified vs Unqualified Coatings Inventory ASTM D Management of Non-conforming Coatings for CSL I Areas Control of Coating Debris Use of Collected Data by NCS Describing Failure Mode of Coatings	**7-11 %**

Types of Questions

Description of Questions

The questions consist of multiple-choice questions where some questions may have more than one answer. Items with more than one correct answer may contain the phrase **"*SELECT ALL THAT APPLY*"** and you will need to select more than one answer choice. The questions are based on the knowledge and skills required in the CIP Nuclear industry.

Sample Questions

The sample questions are included to illustrate the formats and types of questions that will be on the exam. Your performance on the sample questions should not be viewed as a predictor of your performance on the actual exam.

1. What are the categories of water-modified nuclear reactors operating commercially worldwide?
   SELECT ALL THAT APPLY
   - A. Boiling Water Reactor
   - B. Fast Light-Water Neutron Reactor
   - C. Pressurized Heavy-Water Reactor
   - D. Pressurized Water Reactor

2. What is the acronym for the United States Code of Federal Regulations
   - A. USCF
   - B. CFR
   - C. USFR
   - D. CFRUS

3. The most prevalent type of work done in NPPs is:
   - A. new plant construction (New Con).
   - B. rehabilitation or reconstruction (R&R).
   - C. maintenance and repair (M&R).

4. In NPPs, the surveillance process which primarily uses visual inspection to generate an evaluation of how a coating system is performing is the:
   - A. Coating System Condition Assessment (CSCA)
   - B. Safety-Related Coating System (SRCS).
   - C. Coating Degradation Mechanism (CDM).
   - D. Qualified or Unqualified Coatings Inventory (QUCI).

Answer Key:

1. **A, C, D**
   Reference: CIP Nuclear Manual Chapter 2

2. **B**
   Reference: CIP Nuclear Manual Chapter 1

3. **C**
   Reference: CIP Nuclear Manual Chapter 4

4. **A**
   Reference CIP Nuclear Manual Chapter 7

Preparation

Required Training for Certification

AMPP CIP Nuclear

Suggested Study Material

AMPP CIP Nuclear Manual

AMPP Coating Inspector Program 1 Manual

AMPP Coating Inspector Program 2 Manual

Reference Material Provided During Exam

The CIP Nuclear Course manual is provided in electronic form during the exam.

What to Expect on Test Day

Remote Online Exam Proctoring

** Remote online proctored exams are offered for select exams.*

AMPP has partnered with Examity to offer remote online proctoring for the CIP Nuclear Exam. With the Examity platform, you can take the exam from home without the need to arrange for a proctor or take the exam at a testing site. Please visit this link for information you should know.
https://naceinstitute.org/certification-resources/online-exam-proctoring

Examity Demonstration with Automated Proctor

Please visit this link for a demonstration of the computer-based exam. You will have the opportunity to get familiar with how it all works.
https://vimeo.com/399635210/2eb75207b8