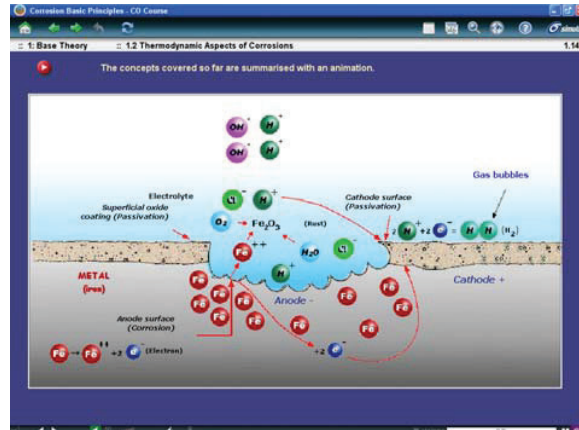


CO - CORROSION BASIC PRINCIPLES

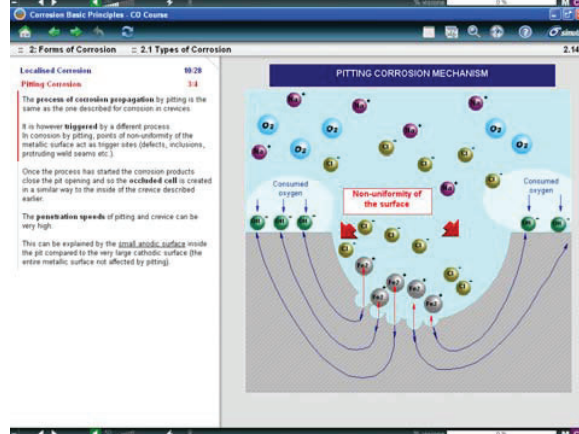
1. BASE THEORY

- 1.1 Introduction
- 1.2 Thermodynamic Aspects
- 1.3 Kinetics Principles
- 1.4 Examples of Corrosion Cells in the Pipeline
- 1.5 Internal Corrosion Parameters
- 1.6 Corrosive Environments
- Self-evaluation Test



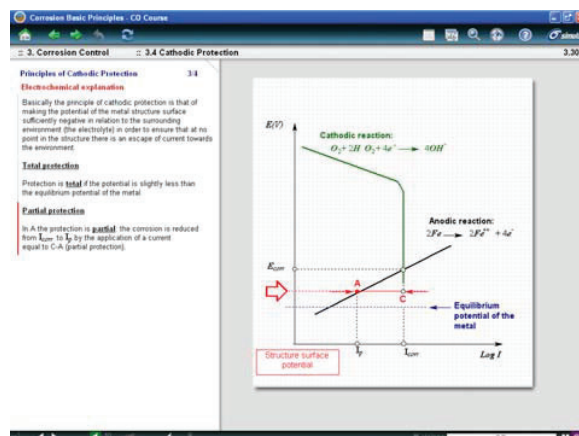
2. FORMS OF CORROSION

- 2.1 Types of Corrosion
- 2.2 Examination of Real Cases
- Self-evaluation Test



3. INTRODUCTION TO CORROSION CONTROL

- 3.1 Introduction
- 3.2 Protection from the Internal Corrosion
- 3.3 Passive Protection (Coatings)
- 3.4 Cathodic Protection
- Self-evaluation Test



NDT Supply.com, Inc.
7952 Nieman Road
Lenexa, KS 66214-1560 USA

Phone: 913-685-0675, Fax: 913-685-1125
e-mail: sales@ndtsupply.com, www.ndtsupply.com



CORROSION BASIC PRINCIPLES: DETAILED INDEX

1. BASE THEORY ([>> CO](#))

1.1 Introduction

- The Corrosive Process
- Direct and Indirect Damage
- Corrosion Classification

1.2 Thermodynamic Aspects

- Introduction
- Anode
- Cathode
- Metal Conductor
- Electrolyte
- Corrosion Cell
- Electromotive Force
- Corrosion Rate

1.3 Kinetics Principles

- Polarisation
- Passivity
- Cathodic Characteristic of Oxygen

1.4 Examples of Corrosion Cells in the Pipeline

- Introduction
- Coupling of Different Materials
- Exposure to Different Soils
- Corrosion by Differentiated Aeration
- Contact Between New and Old Pipe

1.5 Internal Corrosion Parameters

- Introduction
- Water Wetting Conditions
- Hydrodynamic Conditions
- Water Composition
- Oxygen
- Carbon Dioxide
- Hydrosulphide
- Sulphate-Reducing Bacteria

1.6 Corrosive Environments

- Corrosion in Sea water
- Corrosion in Soils
- Atmospheric Corrosion

Self-evaluation Test

2. FORMS OF CORROSION ([>> CO](#))

2.1 Types of Corrosion

- Introduction
- Uniform Corrosion
- Localised Corrosion
- Galvanic Corrosion
- Crevice Corrosion
- Pitting Corrosion
- Stress Corrosion Cracking (SCC)
- Corrosion Fatigue
- Hydrogen Induced Cracking (HIC)
- Intergranular Corrosion
- Erosion - Corrosion
- Welding and Corrosion

2.2 Examination of Real Cases

- Uniform Corrosion
- Pitting Corrosion
- Intergranular Corrosion
- Crevice Corrosion
- Stress Corrosion Cracking
- Fatigue and Corrosion fatigue

Self-evaluation Test

3. INTRODUCTION TO CORROSION CONTROL ([>> CO](#))

3.1 Introduction

- The Corrosion Control
- The Aims of Control
- Examples of Control
- Control Methods

3.2 Protection from the Internal Corrosion

- Corrosion inhibitors
- Passivating inhibitors
- Filming inhibitors

3.3 Passive Protection (Coatings)

- Introduction
- Metal Coatings
- Paints
- Thick Organic Coatings
- Coating Properties
- Surface Preparation
- Commercially Available Coatings

3.4 Cathodic Protection

- Principles of Cathodic Protection
- Cathodic Protection Systems
- Activation of the Cathodic Protection

Self-evaluation Test

NDT Supply.com, Inc.

7952 Nieman Road
Lenexa, KS 66214-1560 USA

Phone: 913-685-0675, Fax: 913-685-1125
e-mail: sales@ndtsupply.com, www.ndtsupply.com

