

CORROSION & CORROSION CONTROL IN LIGHT WATER REACTORS, PROVIDED BY STRUCTURAL INTEGRITY ASSOCIATES

CLASSROOM INSTRUCTORS

Barry Gordon, P.E., FNACE

Education:

- M.S. and B.S. Metallurgy and Material Science, Carnegie Mellon University

Accreditations/Industry Leadership:

- Fellow and Corrosion Specialist in the National Association of Corrosion Engineers (NACE)
- Certified LWR corrosion instructor for California, ASME, the US NRC and International Atomic Energy Agency
- Developed and qualified hydrogen water chemistry (HWC) and co-patented zinc injection for stress corrosion cracking mitigation in BWRs
- Holder of four patents related to corrosion mitigation in BWRs

Background:

- Mr. Gordon has over 45 years of experience and expertise in materials' corrosion behavior in nuclear power plant environments. He has authored/co-authored numerous EPRI, MRP and BWRVIP reports, as well as over 75 publications, including co-authoring three books on LWR corrosion phenomena.

CONTACT INFORMATION

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INTENDED AUDIENCE

Nuclear program engineers, chemists, designers, maintenance engineers, inspectors and regulators who desire a practical knowledge of LWR corrosion degradation mechanisms and their mitigation



TYPE

Classroom Training



DURATION

Four and a half days (32 PDH)

LEARNING OBJECTIVES

Corrosion is a significant concern for many components on nuclear power generation facilities. Left unresolved, corrosion can cause serious damage that can be difficult to resolve.

This course focuses on fundamentals, causes, and control of corrosion in light water reactors (LWRs). LWR corrosion degradation mechanisms covered include general/ uniform corrosion, galvanic corrosion, de-alloying corrosion, crevice corrosion, pitting corrosion, intergranular attack (IGA), corrosion fatigue/environmentally assisted fatigue (EAF), intergranular stress corrosion cracking (IGSCC), primary water stress corrosion cracking (PWSCC) and irradiation assisted stress corrosion cracking (IASCC).

The course includes a color reference manual and a flash drive.

This course provides the technical background necessary to understand the nature of corrosion phenomena. What makes this course unique is that it identifies real-world applications, as well as covers case histories of each type of degradation.

Topics Covered:

- Fundamentals of corrosion
- Corrosion mechanisms and their effect on components and systems
- Mitigation of corrosion in light water reactor systems
- Case studies

KEY INDUSTRY DOCUMENTS

1. NUREG-0313, Rev. 2
2. NUREG/CR-6923
3. NUREG-1925, Rev. 3
4. NUREG 1771
5. NUREG-7103
6. NUREG-6909
7. NUREG-6892
8. NUREG/CR-7103
9. Proceedings of the International Symposium on Environmental Degradation of Materials in Nuclear Power Systems - Water Reactors