



NAFE Sunday Seminar July 19 2015, Seattle WA (8 PDHs)

9:00 Allan J. McDonald, PE - "Safety and Ethics Lessons Learned from the Space Shuttle Challenger and Columbia Disasters"

Allan co-authored the book "Truth, Lies and O-Rings", his account of the space shuttle Challenger disaster and the investigation that followed. He was the Director of the Space Shuttle Solid Rocket Motor Project at the time of the Challenger accident and led the redesign of the solid rocket motors as Vice President of Engineering for Space Operations.

[More about Allan J. McDonald, PE](#)

11:00 Nigel Ellis, Ph.D., PE, 485F - "Fall Protection Safety with Case Histories, Solutions and Opportunities".

Dr. Ellis is the author of "Introduction to Fall Protection", published by ASSE. Fall protection has become standard for access to work stations at height. Fall protection equipment has become preferred over engineering hazards out of the workplace. However, successful training and inspection is difficult to implement at a reasonable cost and harness suspension trauma has been shown to be a danger. So, fall exposure reduction goals have provided an emphasis on Prevention through Design (PtD) which has been promoted by NIOSH to provide engineering solutions and opportunities for engineers to contribute now and in the future.

[More about Dr. Ellis](#)

12:15 Round Table Discussion (includes lunch)

1:30 Robert Anderson, Ph.D., PE, 402F "Analytical Techniques in Forensic Engineering"

The presentation covers the description of more than 20 sophisticated analytical techniques for materials characterization. It includes examples of how these techniques can be used by the forensic engineer.

For example, XPS (X-ray Photoelectron Spectroscopy) measures the kinetic energy of photoelectron ejected from a sample. This technique is used to identify and characterize stains and thin coatings on surfaces. XPS has been used forensically to determine the cause of a corrosion failure of a copper pipe buried in soil.

AES (Auger Electron Spectroscopy) characterizes the subsurface composition of a material using the low energy Auger electron emissions. AES has been used to determine whether an arc bead was formed before a fire, or whether the arc bead was formed as a result of the fire.

[More about Dr. Anderson](#)

2:30 Panel Discussion – “Practical Advice Resolving Problems That May Occur In Forensic Engineering Practice”

A panel of experienced forensic engineers will discuss actual examples of problems and their resolution. Attendees will be encouraged to share some of their own experiences. The emphasis will be on “learning from experience”. The panel will share their ideas toward professional, ethical, and successful practice.

Seminar materials will include copies of Agreement Documents that Marvin Specter has developed and used for many years.

Panelists: Marvin Specter, PE, Paul Stephens, PE, William Bracken, PE, Jerry Ogden, PE, Michael Leshner, PE.

4:00 Q&A - All Speakers – All Topics

4:30 Adjourn

The NAFE Sunday Seminar is brought to you by the NAFE Education Committee

Michael Leshner, PE – Chair

Robin Davies, PE – Co-Chair