Steven T. Maher, PE CSP

EDUCATION

- Master of Science, Mechanical Engineering, Carnegie-Mellon University, Pittsburgh, PA, 1983
- Bachelor of Science, Mechanical Engineering, Duke University, Durham, NC, 1979

PROFESSIONAL CREDENTIALS & AFFILIATIONS

- Professional Engineer - Chemical Engineering – California
- Professional Engineer - Mechanical Engineering – Pennsylvania
- Certified Safety Professional - Systems Safety
- Incident Command System (ICS) IS-100 Certified
- National Incident Management System (NIMS) IS-700 Certified
- National Response Plan (NRP) IS-800 Certified
- Southern California Society for Risk Analysis (SCSRA)

Mr. Maher has over 36 years of experience in safety, involving both qualitative and **quantitative risk assessment**. For the past 32 years, he has been responsible for the project management and technical performance of a broad spectrum of mitigation planning, emergency preparedness & response planning, **process safety, risk assessment & management,** loss prevention, **and safety management system development & assessment projects** for **petroleum (flammables storage &distribution, production, refining, offshore)**, chemical, wastewater treatment & distribution, and anhydrous/aqueous ammonia systems.

Mr. Maher has published and presented numerous technical papers to the safety community. He has also authored/co-authored process safety books and technical manuals/guidebooks. Mr. Maher has also taught many classes associated with process safety and risk management, notably at the University of California (Irvine) and University of Southern California. He is currently the primary instructor for a multi-part HAZOP Study Facilitation Series and Offshore Facility SEMS Series that are broadcast as Webinars from the Risk Management Professionals Training Center. Videos of these Webinars can be viewed on http://RMPCorp.com/Webinars/.

In addition, Mr. Maher has been lead engineer or project manager for a wide spectrum of projects supporting clients':

- **Process Safety Management (PSM) Program**
- **Process Hazard Analysis (PHA) – Especially, Hazard & Operability (HAZOP) Studies**
- **Layer of Protection Analysis (LOPA) & Related Techniques (e.g., Risk-Graph, SOA)**
- **Safety Integrity Level (SIL) Assignment/Verification**
- **Prevention Program Development and Safety Management System Compliance Audits**
- **Safety & Environmental Management System (SEMS)**
- **Incident Investigation and Root Cause Analysis (RCA)**
- **Quantitative Risk Assessment (QRA)**
- **Fire/Explosion and Toxic/Flammable Gas Atmospheric Dispersion Consequence Modeling**
- **CalARP and Federal Risk Management Plans (RMP)**

A key PHA and risk assessment technique, HAZOP Studies, has been a focal point for Mr. Maher's career. Mr. Maher has been teaching HAZOP Study training courses since 1986, and has applied the technique to complex industrial processes throughout the world. Mr. Maher is experienced in the application of SIL Assignment/Verification for Safety-Instrumented Systems (SIS), and also the application of Layer of Protection Analysis (LOPA). Mr. Maher also was the original architect for Risk Management Professionals' HAZOP Study Software Tool – PHAPlus™.

Mr. Maher has been performing HAZOP Studies and various types of hazard reviews for Onshore & Offshore Facilities since the late 1980s. Mr. Maher was the lead engineer for a landmark 1989 evaluation of Platform Safety Shut-down System reliability using Fault Tree Analysis and Quantitative Risk Assessment techniques that was published in "Offshore Platform Safety Shutdown System Effectiveness," Safety Developments in the Offshore Oil and Gas Industry, Institution of Mechanical Engineers, Glasgow, Scotland, April 1991. Recently, Mr. Maher has been a key presenter in a variety of Webinars associated with Offshore Facility Safety and Environmental Management Systems (SEMS) (see reference above), as well as championing a 12-part HAZOP Study Facilitation Webinar Series. Recent publications include:

- "PSM/RMP Modernization Programs in California (2016 Developments and Correlation to Evolution at the Federal Level," published for the 2017 Global Congress on Process Safety (GCPS)
- "Using HAZOP/LOPA to Create an Effective Mechanical Integrity Program" published for the 2017 GCPS
- "Effectively Addressing New PSM/RMP Damage Mechanism Review Requirements with an Integrated PHA (iPHA)" published for the 2015 GCPS

Mr. Maher has played an active role in "setting the pace" for helping industry address process safety and risk management regulatory requirements. These activities have included serving on prestigious guideline development and best practices steering committees, such as the Center for Chemical Process Safety (CCPS) and the American Petroleum Institute (API). Mr. Maher also authored one of the sections in the "LEPC Region I – California Accidental Release Prevention Program (CalARP) – Implementation Guidance Document".